

**ENVIRONMENTAL ASSESSMENT AND
SECTION 4(f) EVALUATION**

PROJECT NH 0016(72)11, PCN 022E
CUSTER COUNTY
SOUTH DAKOTA

US16 – From 1 mile West of Jewel Cave National Monument
to 0.5 miles East of Jewel Cave National Monument

Grading and Asphalt Concrete Surfacing

Submitted Pursuant to
42 U.S.C. 4332(2)(c), 49 U.S.C. 303, and 23 U.S.C. 138

By the
U.S. Department of Transportation
Federal Highway Administration
and
South Dakota Department of Transportation

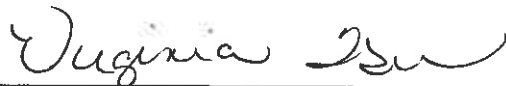
July 2013

The following persons may be contacted for additional information
concerning this document:

Tom Lehmkuhl, Environmental Engineer
SD Dept. of Transportation
700 East Broadway
Pierre, SD 57501
(605) 773-3180

Virginia Tsu
Federal Highway Administration
116 East Dakota, Suite A
Pierre, SD 57501
(605) 224-8033

7/19/2013
Date of Approval for Public Availability


Virginia Tsu, Acting Division Administrator

Page Intentionally Blank

TABLE OF CONTENTS

CHAPTER 1 – PURPOSE OF AND NEED FOR PROPOSED ACTION	1
1.1 INTRODUCTION.....	1
1.2 PROJECT LOCATION AND DESCRIPTION	1
1.3 PURPOSE OF PROJECT.....	3
1.4 NEED FOR PROPOSED ACTION.....	3
1.5 EXISTING ENVIRONMENT	4
1.6 OTHER PROJECTS	4
CHAPTER 2 – ALTERNATIVES.....	6
2.1 OPTION 1 – “NO ACTION” ALTERNATIVE	6
2.2 OPTION 2 – REHABILITATE THE EXISTING ALIGNMENT	6
2.3 OPTION 3 – GRADING ALONG EXISTING ALIGNMENT PREFERRED ALTERNATIVE	6
CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS.....	8
3.1 AIR QUALITY	8
3.2 PEDESTRIAN AND BICYCLISTS	9
3.3 CONSTRUCTION	9
3.4 CUMULATIVE IMPACTS.....	9
3.5 ECONOMIC RESOURCES	10
3.6 FLOODPLAIN.....	10
3.7 HISTORICAL AND CULTURAL RESOURCES.....	11
3.8 INVASIVE SPECIES	13
3.9 LAND USE.....	14
3.10 NOISE	15
3.11 PUBLIC FACILITIES, UTILITIES, AND SERVICES.....	16
3.12 REGULATED MATERIALS	17
3.13 SECTION 4(F) AND 6(F) RESOURCES	18
3.14 THREATENED AND ENDANGERED SPECIES.....	19
3.15 VISUAL AND AESTHETICS	20
3.16 WATER QUALITY AND STORM WATER RUNOFF	20

3.17 WETLANDS AND OTHER WATER OF THE U.S.....	21
CHAPTER 4 – COORDINATION AND COMMENTS	23
4.1 AGENCY COORDINATION	23
4.2 TRIBAL CONSULTATION.....	23
4.3 PUBLIC INVOLVEMENT.....	24
4.4 FUTURE PUBLIC INVOLVEMENT.....	25
CHAPTER 5 – DISPOSITION OF THE EA.....	26
5.1 MITIGATION EFFORTS	26
5.2 REQUIRED PERMITS AND ACTIONS.....	26
5.3 ENVIRONMENTAL COMMITMENTS.....	27
CHAPTER 6 – REFERENCES	29

LIST OF TABLES

Table 3-1	Temporary & Permanent ROW impacts to Jewel Cave National Park
Table 3-2	South Dakota Species List of Endangered & Threatened in Custer County

LIST OF FIGURES

Figure 1-1	Project Location Map
Figure 2-1	Option 3 – Preferred Alternative, Grading Along Existing Alignment
Figure 3-1	Jewel Cave National Monument
Figure 3-2	Drainage Areas of Concern

LIST OF APPENDICES

Appendix A	Agency Coordination
Appendix B	Wildlife, Fish, and Plant Sensitive Habitat Report

ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Places
ARSD	Administrative Rules of South Dakota
APE	Area of Potential Effect
BMPs	best management practices
CAAA	Clean Air Act Amendments of 1990
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FS	Forest Service
FY	Fiscal Year
LWCF	Land and Water Conservation Fund
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ROW	Right of Way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SDDENR	South Dakota Department of Environmental and Natural Resources
SDGFP	South Dakota Game, Fish, and Parks
SDDOT	South Dakota Department of Transportation
SHPO	State Historic Preservation Office
STIP	State Transportation Improvement Plan
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened & Endangered
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
US16	U.S. Highway 16
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
UST	Underground storage tank

CHAPTER 1

PURPOSE OF AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The South Dakota Department of Transportation (SDDOT) initiated a proposed action in response to the need for improvement identified through a project selection process administered by the SDDOT's Division of Planning and Programming.

This Project is listed in the South Dakota Statewide Transportation Improvement Program (STIP). This proposed project action is to address the purpose and need described within this document.

During the scoping process it was determined that an Environmental Assessment (EA) would be prepared for this Project. This EA is developed in accordance with the National Environmental Policy Act of 1969 as amended (NEPA) and implemented in accordance with the NEPA regulations of the Council on Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) 1500-1508 and the Federal Highway Administration (FHWA) 23 CFR 771 as well as corresponding regulations and guidelines of the U.S. Department of Transportation (USDOT). In addition, this EA outlines the development of project alternatives and documents potential social, economic, and environmental impacts of the alternatives as well as the involvement of the public and relevant resource agencies in the NEPA process.

US Highway 16 is a SDDOT maintained roadway. Project NH 0016(72)11 - PCN 022E is a Federal aid highway project occurring on lands managed by the Forest Service as well as the National Park Service.

1.2 PROJECT LOCATION AND DESCRIPTION

The US16 project is located east of Custer, South Dakota and includes the section of US Highway 16 from approximately one mile west of Jewel Cave National Monument to approximately one mile east of the Jewel Cave National Monument boundaries. On February 7, 1908, President Theodore Roosevelt signed a proclamation that established Jewel Cave National Monument under the authority of the 1906 Antiquities Act. This created the Monument as part of the National Park System to protect the cave which became known for the jewel-like calcite crystals that line the cave walls. The limits for this Project are within the boundaries of the United States Department of Agriculture (USDA) – Forest Service's Hell Canyon Ranger District of the Black Hills National Forest and the National Park's Services boundaries for the Jewel Cave National Monument.

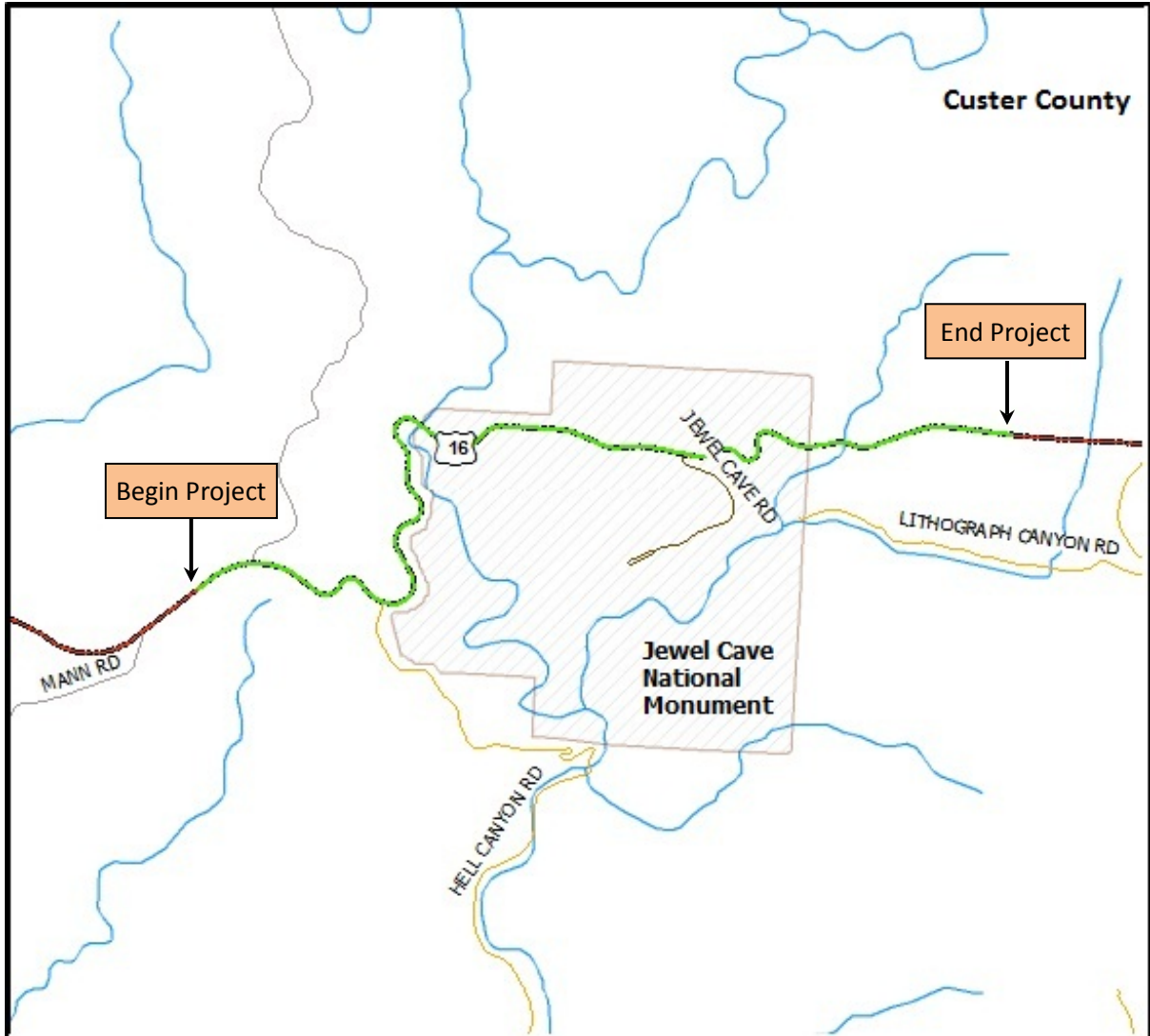
The Project was developed by SDDOT in association with FHWA, U.S. Forest Service – Hell Canyon Ranger District, and the National Park Service – Jewel Cave National Monument to evaluate and resolve safety issues in the project area (See Figure 1-1). The Project will be constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) design standards. A description of the proposed action is contained within **Chapter 2 – Alternatives**.



Project Location Map

US16 – From 1 mile West of Jewel Cave National Monument to 0.5 miles East of Jewel Cave National Monument

Figure 1-1



Legend

- Project
- US Highway 16
- Jewel Cave National Park
- Rivers & Streams

1.3 PURPOSE OF PROJECT

The purpose of this action is to provide a safe and efficient transportation system that meets current design standards and will accommodate current and projected traffic volumes for the next 20 years while also providing safe and accommodable access for the traveling public to Jewel Cave National Monument.

1.4 NEED FOR PROPOSED ACTION

The need for this proposed project action is based on the following:

Safety

The existing highway contains several elements that are potential safety hazards for drivers. The following are the potential hazards:

- Narrow roadway width with sharp horizontal curves leads to issues with large trucks negotiating the curves and leaving enough room for an oncoming vehicle.
- The existing roadway conditions of no shoulders and a lack of passing opportunities to the public and the thousands of travelers visiting Jewel Cave National Monument annually.
- Existing roadway is on a steep grade, contains sharp turns, and commonly experiences rock falls from steep roadway cuts.
- Multiple areas exist along the roadway where sun exposure is very limited by the tree cover consequently not allowing sun exposure on the roadway to aid in melting of ice.

System Linkage

This portion of US Highway 16 is considered a scenic byway and is a major east/west highway carrying traffic from Yellowstone National Park to the Black Hills National Forest. US Highway 16 provides access to the only entrance to Jewel Cave National Monument.

Geometric Deficiencies

The present highway was originally constructed in 1936 and was last surfaced in 1977. Current average daily traffic (ADT) along the project length is 1360. The 20 year traffic is projected for 1785 vehicles per day.

Present roadway is comprised of substandard geometrics that include narrow driving surface, no shoulders, deterioration of the existing surface, lack of sight distance, and lack of passing opportunities. This combination of the narrow roadway with sharp horizontal curves leads to issues with large trucks negotiating the curves and leaving enough room for an oncoming vehicle. A review of the accident history showed that the deficient roadway width was a major factor to a vehicle collision involving a large truck negotiating a curve and hitting an oncoming vehicle.

Project is comprised of a thin asphalt (less than 5 inches of asphalt) section with a weak base (less than 6 inches of base). According to the SDDOT 2012 Highway Needs and Project Analysis Report, this segment of highway section has a present Surface Condition Index (SCI) equivalent of 2.42. The data that is used to compute this index is gathered on a yearly basis and this SCI index provides an indication of the overall health of the highway pavement. The index uses a

scale of 0 (worst) to 5 (best). This Project segment was triggered for reconstruction by the SDDOT's Pavement Management System which is directly in charge of the analysis of the pavement conditions and roadway data to aid with the recommendation of highway projects for inclusion into the STIP. For a segment to trigger for reconstruction the Pavement Management System looks at many variables. Some of the variables include the existing roadway width, ADT, grade age, and the distress ratings. Along with the distresses, the performance curves for each distress are used to project the distresses. For each treatment strategy in the analysis an incremental benefit cost ratio is calculated. The Pavement Management System uses the incremental benefit cost for all pavement segments and all treatment strategies and the budget available to create the optimal solution based upon all of these factors for all segments.

The sections of roadway on either side of Project were recently improved to include 12' lanes with 6' shoulders. An SCI equivalent exceeding 4.20 is shown for these adjacent sections. For development of Project, logical termini that connect the segments of adjoining roadway were selected.

1.5 EXISTING ENVIRONMENT

The Project corridor is located in the southwest corner of South Dakota in Custer County and partially within the Jewel Cave National Monument located within the Black Hills region. Jewel Cave National Monument occupies approximately 1,279 acres of land and contains Jewel Cave which is currently the third longest cave in the entire world. Jewel Cave is located approximately 13 miles west of the town of Custer, SD.

The area is characterized by steep topography and deep caverns. Terrain in the Project area is classified as mountainous. Ponderosa pine forest dominates the landscape.

1.6 OTHER PROJECTS

Several transportation projects are planned within the vicinity of the Project and each of them have been or will be addressed in separate NEPA documents. The following are NPS and FS projects of proximity in addition to SDDOT projects that are currently programmed in the SDDOT Statewide Transportation Improvement Plan (STIP) for FY 2013 to 2017.

- ❖ NPS - Jewel Cave National Monument
Parking lot construction & filtration system installation - 2013
- ❖ USDA – Forest Service, Black Hill National Forest Current and Recent NEPA Projects
 - http://www.fs.fed.us/nepa/project_list.php?forest=110203
- ❖ NH 0016(71)25, PCN 01RN, Custer County
Epoxy Deck Seals; Epoxy Deck Seals & Joint Modification (Str. 17-214-079, 17-221-074, & 17-226-073)
0.1 E, 0.3 W & 1.3 W Jct US 385 S over French Creek
2014 Programmed Letting
- ❖ P 016A(04)25, PCN 01RM, Custer County
Epoxy Deck Seals (Str. 17-254-067, 17-256-066, & 17-359-068)
1.8 E, 2.0 E Jct SD 89 N over French Creek & 0.2 W Jct SD 36 over Grace Coolidge Ck.
2014 Programmed Letting
- ❖ BRF 016A(07)25, PCN 02A5, Custer County

Scour Protection (Str. 17-254-067 & 17-255-066)
US16A - 1.8 E & 2.0 E of SD89N
2014 Programmed Letting

CHAPTER 2

ALTERNATIVES

Two alternatives and the “No-Build” alternative were considered to address safety deficiencies and current and future highway transportation needs.

2.1 OPTION 1 – DO NOTHING

Federal regulations (40 CFR 1500) require the consideration of a “No-Build” alternative. The No-Build alternative would not meet the needs for the Project. This alternative is the existing condition with no project-related activities. It would not provide any improvements to the existing US Highway 16 nor would it address safety deficiencies or meet transportation demands. General maintenance would continue on the roadway in the future. Maintenance activities would not be improvements but would maintain the roadway in its current condition. The No-Build alternative serves as a baseline for existing environmental conditions against which other alternatives are compared.

2.2 OPTION 2 – REHABILITATE THE EXISTING ALIGNMENT

The rehabilitation of the existing highway by resurfacing was considered. While this alternative would provide a smoother driving surface, it would not solve the safety problems associated with the existing narrow roadway, its sharp horizontal curves, and lack of shoulders. This alternative does not meet the purpose and need for the project and was eliminated from further consideration.

2.3 OPTION 3 – GRADING ALONG EXISTING ALIGNMENT PREFERRED ALTERNATIVE

This alternative would construct 12' lanes plus 2' shoulders closely matching the existing alignment with some slight modifications to improve sight distance, snow storage, rock fall catchment, and flattening curves at two areas to address safety concerns [See Figure 2-1]. Impacts from this preferred alternative option would occur primarily within the existing right-of-way (ROW).

Section 4(f) properties regulated under 23 CFR 774 require protection of publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites. There is one entrance to Jewel Cave accessible only by US Highway 16. An alignment along the existing was preferential over an alternative route off from the existing alignment in order to maintain this sole access to the Jewel Cave National Monument. Option 3 would have a *de minimis* use of the Jewel Cave National Monument since the Project would not adversely affect the activities, features, or attributes qualifying the Jewel Cave National Monument as a Section 4(f) resource.

Based on the ability of the alternative to meet the project objective while minimizing the effects to the affected environment, Option 3 has been identified as the preferred alternative.

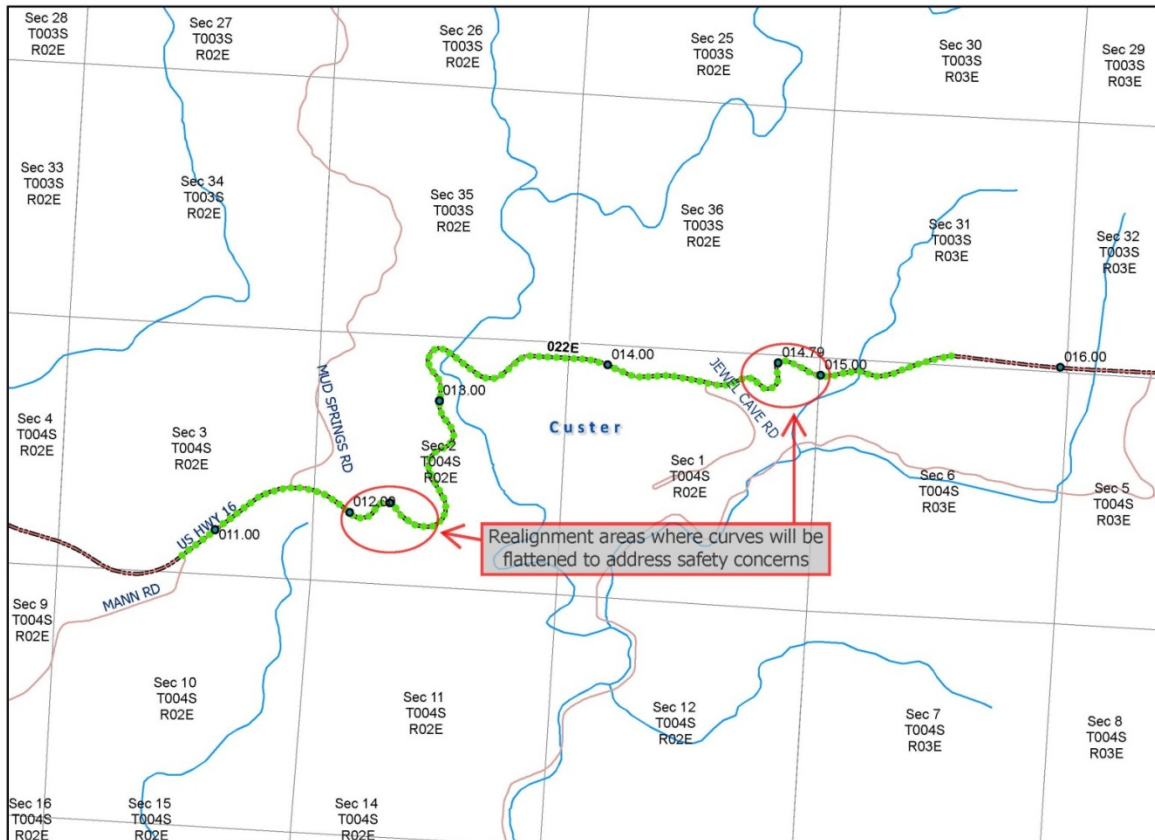
Chapter 3 – Affected Environment and Environmental Impacts, contains a summary of potential impacts to environmental resources for preferred alternative, Option 3, in comparison to the No-Build Alternative.



Option 3 – Preferred Alternative Grading Along Existing Alignment

Figure
2-1

US16 – From 1 mile West of Jewel Cave National Monument
to 0.5 miles East of Jewel Cave National Monument



1 in=0.5 miles

AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter describes the existing social, economic, and environmental setting for the area affected by the No-Build Alternative and Option 3, Preferred Alternative. This EA does not evaluate the following resources, which are not present in the Project Area: farmland, environmental justice, relocations, wild and scenic rivers, coastal barriers, and coastal zones. This chapter does not discuss the environmental resources which were not impacted by the Preferred Alternative, which includes climate, greenhouse gases, energy, vibrations, and utilities.

3.1 AIR QUALITY

The U.S. Environmental Protection Agency (USEPA) regulates air pollutants by primary and secondary national Ambient Air Quality Standards (NAAQS). The South Dakota Department of Environment and Natural Resources (SDDENR) has adopted the Federal regulations by reference and operates a network of air monitors at various locations that track the concentration of particulate matter, one of the regulated pollutants. The Study area is in attainment of primary and secondary regulatory standards for ambient air quality, with air quality monitoring results well below the standards (SDDENR, 2010).

The No-Build Alternative would not adversely impact air quality in the Project area. Although there would not be any emissions generated from construction of the Project, air emissions from vehicles within the area would continue.

The Preferred Alternative would have no significant long-term impact on air quality in the study area. Temporary, minor air quality impacts associated with point source and fugitive emissions from construction equipment, vehicle delays, and disruption of ground cover through grading activities generating dust will occur with Project. These impacts will be minimized to the best extent possible as well as mitigated in accordance with the dust control measures stated in the SDDOT's *Standard Specifications for Roads and Bridges*.

This Project has been determined to generate minimal air quality impacts for Clean Air Act Amendments (CAAA) criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concerns. As such, this Project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the No-Build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecast a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

3.2 PEDESTRIAN AND BICYCLISTS

Consideration was given to pedestrian and bicycle facilities. Designated trails within the Jewel Cave National Monument are for hiking only and are not designed for bicycles (Superintendent's Compendium, January 2011). Pedestrian/bicycle traffic in the study area is currently limited, and the comparatively narrow paved width and lack of shoulders through the corridor does not encourage pedestrian/bicycle use on the existing US Highway 16. However, increased shoulder width is included to better accommodate pedestrians and bicyclists.

The No-Build Alternative would not improve safety for pedestrians/bicyclists or motorists.

No mitigation measures to the Preferred Alternative were recommended, or determined to be required, for pedestrian and bicyclists.

3.3 CONSTRUCTION

Although, the No-Build Alternative would include maintenance of the existing facilities, no construction would occur.

Construction of the proposed Project would create temporary construction impacts and be limited to an anticipated period of two construction seasons. Impacts may include noise, dust emissions from ground disturbing activities, emissions from construction equipment, storm water runoff, and traffic delays. Best Management Practices (BMPs) that will be utilized to reduce construction impacts are listed and described in **Chapter 5.1 – Mitigation Efforts**.

The disturbed acreage from construction activities will exceed one acre. Under the Storm Water Act, the National Pollutant Discharge Elimination System (NPDES) requires all construction activities that disturb more than one acre to receive a construction NPDES permit. Project will be required to obtain a general permit for stormwater discharges associated with construction activities from the SDDENR. The purpose of the permit, known as the "General Permit for Storm Water Discharges Associated with Construction Activities", is to prevent any storm water from becoming polluted prior to leaving a construction site through the implementation of BMPs. A Notice of Intent will be filed with the SDDENR and a Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented.

Construction-related impacts for the Preferred Alternative are not considered to be significant due to compliance with the SDDOT Standard Specifications for Roads and Bridges (SDDOT, 2004) and the SDDOT Construction Manual (SDDOT, March 2008).

3.4 CUMULATIVE IMPACTS

Cumulative effects analysis seeks a determination or estimation to the impact on human and natural environment which results from the direct and indirect impacts of a particular action when added to past, present, and reasonably foreseeable future actions of others. The Council on Environmental Quality Regulations for Implementing the

Procedural Provisions of the National Environmental Policy Act (40 CFR 1500-1508) defines cumulative impacts as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. They may arise from single or multiple actions and result in additive or interactive effects. Before cumulative impacts can be evaluated, a proposed action must have advanced far enough in the planning process that its implementation is reasonably foreseeable. Reasonably foreseeable actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents.

Reasonably foreseeable projects within vicinity of the Project are noted in **Chapter 1.6 – Other Projects**.

The only cumulative impact from these projects would be an increase in surface water runoff due to an increase in impervious surface created.

3.5 ECONOMIC RESOURCES

This section addresses economic impacts within the Project Area. No household residences are located within the Project area. The limits for this Project are fully within the boundaries of the Black Hill National Forest and the National Park's Services boundaries for the Jewel Cave National Monument.

The No-Build Alternative would potentially impact access to the Jewel Cave National Monument when roadway maintenance occurs that may require temporary closure of the existing highway.

Project's Preferred Alternative will straighten sharp curves just east of the visitor center entrance, increase shoulder widths, and provide safe and accommodable access for the traveling public to the Jewel Cave National Monument. The Preferred Alternative would create traffic delays to visitors accessing the visitor center at the Jewel Cave National Monument due to traffic control measures within the construction zone. Access to Jewel Cave National Monument will be maintained throughout construction.

3.6 FLOODPLAIN

Executive Order 11988 (18 CFR 725) requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Under the No-Build Alternative, the floodplain within the study area would remain unchanged.

Custer County is a participating community of the FEMA National Flood Insurance Program (NFIP). From the FEMA Flood Insurance Rate Maps (FIRMs) a 100 year floodzone or Zone A is identified within the study area but no base flood elevations are established for this location. Coordination for this Project occurred with the Custer County Floodplain Administrator and SDDOT practices, policies, and procedures are consistent with those in the National Flood Insurance Program (See Appendix A). The Preferred Alternative will have no impact on floodplains.

3.7 HISTORICAL AND CULTURAL RESOURCES

Possible impacts of Federal project undertakings on historic and archeological properties must be considered to comply with Section 106 of the National Historic Preservation Act. This consideration begins with whether the proposed project has a potential to impact historic properties. If impacts are possible, then properties that could be affected need to be identified and any effects evaluated, while consulting with the State Historic Preservation Officer (SHPO), other consulting parties, and involving the public.

There would be no construction activities associated with the No-Build Alternative. The No-Build Alternative would not adversely affect any known cultural resources.

On November 21, 2012, in accordance with Section 106 of the National Historic Preservation Act (36 CFR 800), the SDDOT solicited comments on this Project from nineteen American Indian Tribes that have a vested interest in highway projects occurring in Custer County and to those with expressed interest to highway projects occurring in the Blacks Hills National Forest. This consultation was done in coordination with the Tribal Consultation list maintained by the Forest Service. A complete listing of the nineteen tribes is documented in **Chapter 4.2 – Tribal Consultation**.

The SD Archaeological Research Center (ARC) conducted a Level III intensive survey of the Project Area (ARC, 2012; ARC, 2013). Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe was involved with this investigation. Ms. Boeker noted that the current use and expansion of the US Highway 16 road route would not further negatively impact any traditional or sacred cultural properties (Boeker, personal communication July 9, 2012 noted in CIS #2666).

The ARC investigation yielded six archaeological sites (39CU844, 39CU1172, 39CU1177, 39CU2177, 39CU3343, & 39CU3911) within the proposed Project area and four additional sites (39CU725, 39CU843, 39CU1173, & 39CU3342) within 66 feet (20 meters) of Project boundary area. The precise location of archaeological sites are determined to be confidential, therefore are intentionally excluded from this document:

- Site 39CU725 is a Prehistoric period artifact scatter. In 1985 this site was documented as *Not Eligible* for listing on the NRHP due to the low potential for this site to contain buried cultural deposits. Considering the NRHP status of site in conjunction with site being outside of the Project's area of potential effect a Section 106 finding of *No Historic Properties Affected* was recommended for Site 39CU725.
- Site 39CU843 is a multi-component Prehistoric/Historic period artifact scatter and was previously recorded in 1987 and 1993. Site meets the eligibility for NRHP

- listing. The ARC report recommends a determination of *No Historic Properties Affected* based on site avoidance through delineation with temporary fencing prior to construction.
- Site 39CU844 is the Jewel Cave Hotel site which was first recorded in 1987 and evaluated in 2000 and 2002 to determine its NRHP eligibility. Site is comprised of moderate density Historic period artifact scatter and Prehistoric period artifact scatter. Site has been determined by ARC as eligible for listing on the NRHP under Criterion A for its association with the development of tourism in the State of South Dakota. The ARC report recommends a determination of *No Adverse Effect* to Site 39CU844 with the following provisos:
 - That all ground disturbing activities are restricted to the current fill limits area staked out by the SDDOT at 39CU844 and illustrated in Figure 3 of intensive cultural resources investigation report.
 - That the use of all heavy machinery is restricted to within the fill limits and that their use is prohibited on all portions of 39CU844 except within the impact area.
 - That the portions of 39CU844 that are not to be disturbed will be delineated in the field by temporary fencing.
 - That a qualified archaeologist will monitor the road construction activities in the immediate vicinity of site 39CU844 in order to ensure that no contributing areas of site will be disturbed and to mitigate any incidental discovery of cultural materials or features during the road construction.
 - Site 39CU1172, the Forest Jewel site, is a well-documented Prehistoric period occupation site. The ARC report recommends a *No Adverse Effect* determination based on site avoidance.
 - Site 39CU1173 is a Prehistoric period artifact scatter that is unevaluated for NRHP eligibility. Site was previously recorded in 1991 and in 2009. The ARC report recommends a *No Historic Properties Affected* determination based on site avoidance through delineation with temporary fencing prior to construction.
 - Site 39CU1177 is a Historic period artifact scatter. Site was previously recorded in 1991. The ARC report recommends that Site 39CU1177 be determined *Not Eligible* for nomination to the NRHP and a Section 106 finding of *No Historic Properties Affected*.
 - Site CU2400001/39CU2177 is a historic highway grade with associated culvert structures. Site was previously recorded in 2005 as recommended NRHP Eligible but it is not currently considered a "scenic byway" nor is it a component of any NRHP listed Historic Landscape District. There are eleven associated contributing culverts included: CU024000003, CU024000004, CU024000005, CU024000006, CU024000007, CU024000008, CU024000009, CU024000010, CU024000011, CU024000012, and CU024000013. The highway and culverts were determined Eligible based on NRHP Criteria A due to the importance of tourism in the development of the State of South Dakota as well as the national park system. The ARC recommends a Section 106 finding of *No Adverse Effect* for the proposed improvements to CU2400001/39CU2177 and the eleven associated contributing culverts.
 - Site 39CU3342 is a Prehistoric period isolated find. Site was previously recorded in 2005. The ARC report recommends a Section 106 finding of *No Historic Properties Affected* based on a *Not Eligible* determination for NHRP eligibility.

- Site 39CU3343 is a Prehistoric period isolated find and was previously recorded in 2005. A Section 106 finding of *No Historic Properties Affected* is recommended by the ARC report based on its *Not Eligible* NRHP status.
- Site 39CU3911 is a Historic period artifact scatter. Site was previously recorded in 2009. The ARC report recommends a Section 106 finding of *No Historic Properties Affected* based on its *Not Eligible* NRHP status.

The determination of effects has been coordinated with the State Historic Preservation Office (See SHPO, 2013 in Appendix A). The SHPO concurred with a Section 106 determination of *No Adverse Effect* for this project undertaking with the following stipulations:

1. All ground disturbing activities are restricted to the current fill limits area staked out by the SDDOT as 39CU844 and illustrated in Figure 3 of the report.
2. The use of all heavy machinery is restricted to within the fill limits and that their use is prohibited on all portion of 39CU844 except within the impact area, shown in Figure 3, which was texted during the March 13, 2013 investigation.
3. The portion of 39CU844 that are not to be disturbed will be delineated in the field by temporary fencing by a qualified archaeologist.
4. A qualified archaeologist will monitor the road construction activities in the immediate vicinity of site 39CU844 in order to ensure that no contributing areas of the site will be disturbed and to mitigate any incidental discovery of cultural materials or features during road construction, and will submit a monitoring report to SHPO if any cultural materials are located.

If evidence for cultural resources is uncovered during Project construction activities, then such activities shall cease until an appropriate course of action is determined with SHPO plus any interested agencies or tribes.

3.8 INVASIVE SPECIES

Invasive species coordination occurs under the FHWA guidance that followed the implementation of Executive Order (EO) 13112. This guidance calls on Executive Branch agencies to work to prevent and control the introduction and spread of invasive species. FHWA guidance for NEPA analysis state that the study should address the likelihood of introducing or spreading invasive species and a description of measures being taken to minimize potential harm

The No-Build Alternative would not affect the efforts to control invasive species.

The U.S. Department of Agriculture (USDA) South Dakota state-listed noxious weeds list was consulted to identify potential noxious species in the project area. The SDDOT works with the Weed and Pest Board regarding roadside management actions that are appropriate for control of noxious weeds within highway ROWs. The management actions include installation of weed free and approved plant materials, chemical and biological control, and Extension Service education and coordination efforts. The Jewel Cave National Monument – National Park Service specific seed mix will be utilized with project. This park specific mixture consists of the following:

<u>Grass Species</u>	<u>Percentage</u>
Regreen 404	40%
Little Bluestem, Camper	20%
Western Wheatgrass, VNS	20%
Blue Grama, VNS	20%

The Preferred Alternative would not be detrimental to the control efforts and would not increase the spread of invasive species due to the management actions during construction and follow-up maintenance.

3.9 LAND USE

There would be no construction activities associated with the No-Build Alternative. Therefore, land use adjacent to the project area would not be affected, as no land would be converted from present uses to transportation ROW.

Land use along the route is evergreen forest land and park. These properties are managed as natural resource preservation areas as units of Jewel Cave National Monument and the Black Hills National Forest. Forest and park land will be converted into highway use in the two areas entailing flattening curves to address safety concerns. The existing highway template in these curve flattening areas is to be obliterated and restored back to forest land.

Preliminary design explored several alignment options with a goal of reducing encroachment of the Jewel Cave National Monument. The Preferred Alternative alignment was centered along present Highway 16 to minimize impacts. The encroachment calculated from preliminary design requires a permanent 10.32 acres (449,717 ft²) for the US16 ROW. This equates to 0.81% of the monument property that will be required for construction. The impact area also includes the preliminary temporary easement requirements where construction activities such as dirt grading, erosion control, and permanent seeding would occur. Preliminary design has identified approximately 4.66 acres (203,031 ft²) of temporary construction easement needed. Table 3-1 enumerates the impacts to Jewel Cave National Monument from the temporary ROW easements and the permanent ROW.

**Table 3-1: Temporary & Permanent ROW impacts
to Jewel Cave National Park**

Temporary Easement		Permanent ROW	
Parcel #	Ft ²	Parcel #	Ft ²
Parcel 4	5287	Parcel 4	12730
Parcel 5	2961	Parcel 5	3354
Parcel 8	38181	Parcel 7	10221
Parcel 7	1400	Parcel 8	13441
Parcel 7	1830	Parcel 7	2721
Parcel 7	12619	Parcel 7	20980
Parcel 7	4444	Parcel 10	14813
Parcel 10	214	Parcel 10	54530
Parcel 10	3632	Parcel 10	1739
Parcel 10	657	Parcel 10	23465
Parcel 10	1786	Parcel 10	7623
Parcel 10	8586	Parcel 10	17643
Parcel 10	10500	Parcel 12	11819
Parcel 12	1785	Parcel 12	12147
Parcel 12	413	Parcel 12	31139
Parcel 12	18246	Parcel 12	17848
Parcel 12	8432	Parcel 12	97171
Parcel 12	80755	Parcel 12	44065
Parcel 12	281	Parcel 12	2268
Parcel 12	1022	-	-
Total Ft² =	20,3031	Total Ft² =	44,9717
Total Acres =	4.66	Total Acres =	10.32

Overall, land use in the area will not change significantly because of the permanent encroachment of 10.32 acres and the temporary easement area of 4.66 acres.

3.10 NOISE

Per the requirements in 23 CFR 772, a noise analysis is required for federally funded transportation projects that include additional through lanes and/or new roadway alignment. The *South Dakota Noise Analysis and Abatement Guidance* (SDDOT 2011) require a noise analysis on highway projects that qualify as a Type I project.

A Type I project is defined as:

- 1) The construction of a highway on new location; or
- 2) The physical alteration of an existing highway where these is a either:
 - i. Substantial Horizontal Alteration: A project that halves the distance between the edge of the outermost through-traffic lane and the closest receptor between the existing condition and the future build condition; or,
 - ii. Substantial Vertical Alteration: A project that removes shielding thereby exposing the line-of-site between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the

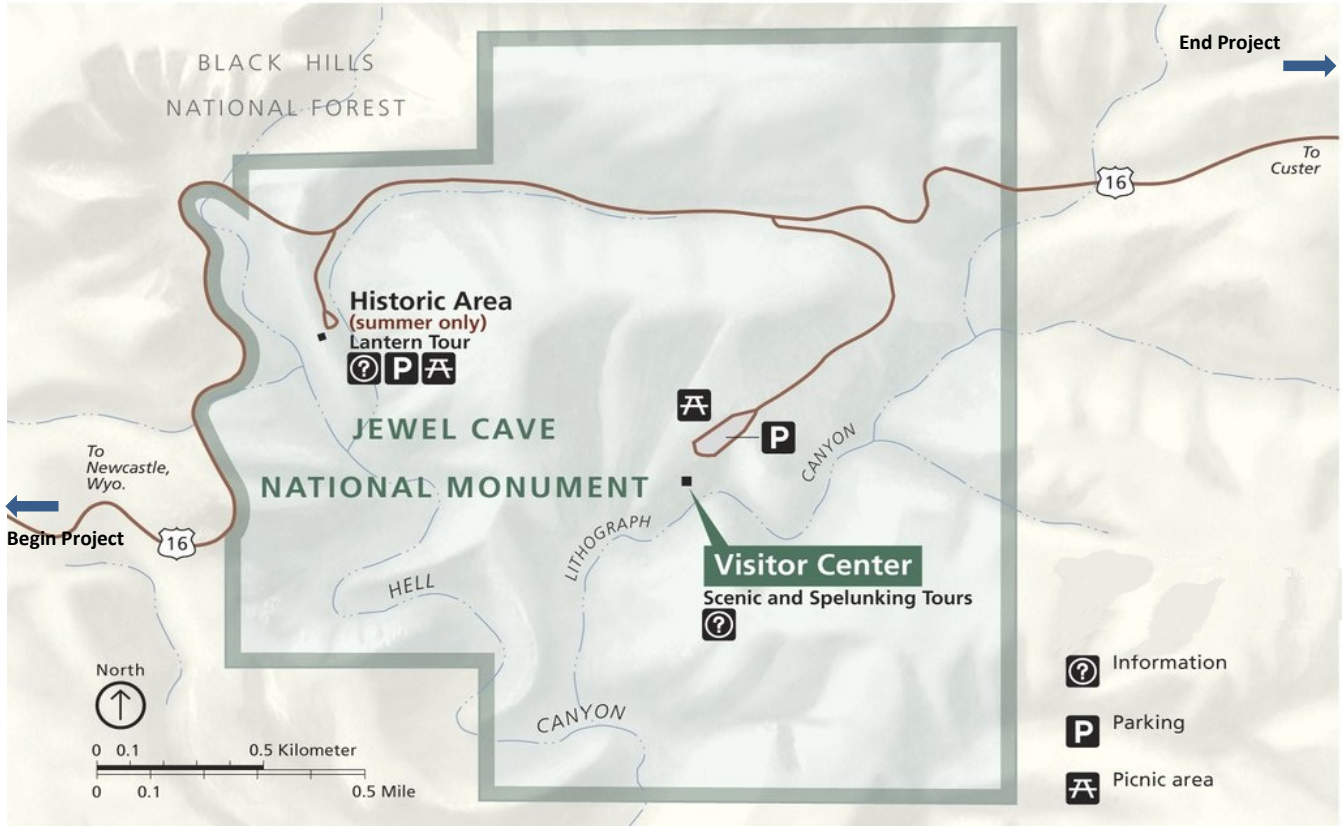
highway or by altering the topography between the highway traffic noise source and the receptor; or,

- 3) The addition of a through traffic lane;
- 4) The addition of an auxiliary lane except for when the auxiliary lane is a turn lane;
- 5) The addition of a new interchange or the relocation of interchange lanes, or when ramps are added to a quadrant to complete an existing partial interchange;
- 6) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,
- 7) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza.
- 8) If a portion of a project is determined to be a Type I project under this definition, then the entire project is defined as a Type I project.

No noise analysis was conducted as the Preferred Alternative does not meet the definition criteria for a Type I project.

3.11 PUBLIC FACILITIES, UTILITIES, AND SERVICES

Public facilities include the Jewel Cave National Monument. The Jewel Cave National Monument contains Jewel Cave, the third longest cave system in the world. Location contains a Visitor Center, surface trails, and cave tours open to the public. Figure 3-1 shows the location of Jewel Cave National Monument in relation to the Project limits.



Within the Project area, Black Hills Electric provides power, Golden West Communications provides telephone, and Southern Black Hills Rural Water provides water services.

The No-Build would not impact public facilities nor would utility involvement occur. The No-Build Alternative would potentially cause delays in emergency response time in and near the Study Area because of decreasing LOS as traffic increases along US Highway 16.

The Preferred Alternative would not impact public facilities. No utility involvement or relocation is anticipated to occur. Consequently, access along US Highway 16 to locations along the Study Area would improve for emergency response services.

3.12 REGULATED MATERIALS

The No-Build Alternative would not impact regulated material sites in the Project area. Visual observations did not identify any hazardous materials within the Project area for the Preferred Alternative. Facilities or areas where hazardous materials and waste were

manufactured, stored, used, or disposed of are not expected to be encountered with the Preferred Alternative. According to SDDENR correspondence there are no reported spills or tank releases in the Project area (SDDENR, 2010).

If any contamination is encountered during construction activities, the contractor must report the contamination to the SDDENR and the SDDOT for an appropriate course of action.

3.13 SECTION 4(F) AND 6(F) RESOURCES

Section 4(f) states, in part, that, "It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites" (49 USC 303). The law, now codified in 49 USC 138, is implemented by the Federal Highway Administration (FHWA) through the regulation 23 CFR 774.

Section 4(f) requires FHWA to avoid any use of Section 4(f) property unless there is no feasible and prudent alternative to using the land, or unless the impact will be *de minimis*. Where the use of property cannot be avoided, FHWA may approve, from the remaining alternatives that use Section 4(f) property, only the alternative that causes the least overall harm, as determined by balancing various factors set forth in 23 CFR 774.3(c).

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 provides matching grants to State and local governments for the acquisition and development of public outdoor recreation areas and facilities. The LWCF program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of recreation resources across the United States. Section 6(f)(3) states that no property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. No properties which utilized LWCF dollars are adjacent to the Project (Kittle, 2012). Because no Section 6(f) resources exist in the Project area, the Preferred Alternative would not impact Section 6(f) resources.

The Project area contains Jewel Cave National Monument which was created on February 7, 1908, by a proclamation made by President Theodore Roosevelt (Presidential Proclamation 799, 35 Stat. 2180) under the authority of the Antiquities Act (34 Stat. 225, June 8, 1906). The purpose of the Monument is to preserve the Jewel Cave ecosystem, especially significant caverns and other geological features, for its scientific interests and for public involvement. Additionally, the Monument is to preserve the cultural resources within its boundaries for public understanding and enjoyment.

The Department of the Interior – National Park Service *Handbook on Departmental Review of Section 4(f) Evaluations (February 2002)* lists "Lands of the National Park System" as being significant as a Section 4(f) resource. The use of Jewel Cave National Monument is recreational and contains historic and archaeological sites of significance, and therefore is considered to be protected as a Section 4(f) resource.

Section 3.8 – Historical and Archaeological Resources addressed potential sites of historic and archaeological significance that were documented in the Project area. Sites eligible for listing on the NRHP would be considered Section 4(f) resources except for archaeological sites important for preservation in place (with eligibility criteria including A, B, and/or C in addition to D). There are no impacts to archaeological sites or historic structures eligible for Section 4(f) protection occurring in the Project area.

The No-Build Alternative would not impact any Section 4(f) resources. Access to existing facilities would continue under the existing roadway system. The No-Build Alternative could potentially cause delays for access to Jewel Cave National Monument and the associated recreational facilities due to the deterioration of the roadway.

The Preferred Alternative includes a permanent acquisition of 10.32 acres be converted to transportation use by the Project. The Project’s preliminary engineering to date has been minimized to the extent practicable without compromising the Project’s ability to meet the purpose and need as well as safety standards. The Preferred Alternative will not adversely impact the activities, features, or attributes that qualify Jewel Cave National Monument for protection under Section 4(f).

Appendix A includes correspondence with the Jewel Cave National Monument Superintendent, official with jurisdiction, to the intent to make a *de minimis* finding for Jewel Cave National Monument (Jewel Cave National Monument, 2013).

A *de minimis* finding is a determination that the Project will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f) with concurrence from the official(s) with jurisdiction. This determination includes consideration of measures stated to avoid, minimize, mitigate, and enhance the Section 4(f) resources. In order to finalize the *de minimis* finding for this Project, FHWA’s determination is required, which is completed through signature of the Finding of No Significant Impact (FONSI).

3.14 THREATENED AND ENDANGERED SPECIES

The USFWS – South Dakota Ecological Services Field Office has determined that the following federally listed species occur in Custer County:

Table 3-2: South Dakota Species List of Endangered & Threatened in Custer County

Group	Species	Certainty of Occurrence	Status
Bird	Crane, Whooping	Possible	Endangered
Mammal	Ferret, Black-Footed	Known	Endangered

With the No-Build Alternative, no construction or other ground disturbing activities would occur. Therefore, this alternative would not result in conversion of land to highway and related uses for the Project and it would not impact any critical habitat or threatened and endangered species in the Study area.

In consultation with the USFWS, per 50 CFR 402.14(c), concurrence to a determination that this Project will not adversely affect listed species was received. Appendix A includes correspondence with the USFWS, dated 11/24/2010.

The U.S. Department of Agriculture – Forest Service (USDA-FS) has developed a list of Black Hills National Forest Species of Local Concern. A sensitive habitat survey was conducted during the Environmental Assessment process to provide information about potential environmental effects of this project undertaking on USDA-FS listed species. The report (See Appendix B) concluded that it is unlikely that federally-listed species for Custer County would be present within the Project area and impacts to these species due to the project undertaking would not be anticipated. Also determined were impacts to present or potential habitat for Black Hills National Forest Species of Local Concern from the project undertaking would be negligible or minimal.

3.15 VISUAL AND AESTHETICS

Visual impacts may be changes to visual resources, changes to the surrounding area that affect those resources, and/or viewer response(s) to perceived changes to those resources, caused by the development of a transportation project.

The No-Build Alternative would not involve Project construction and therefore would not directly alter visual impacts or aesthetics.

The new road will be constructed within the existing highway corridor with minor alignment changes in two locations. The paved surface will be two to four foot wider than the existing surface. Impacts on the visual resources during construction of the Project will be temporary.

Once vegetation is reestablished, impacts to potential viewers of and from the project area will not be perceivably different than the existing highway.

A Storm Water Pollution Prevention Plan (SWPPP) will be developed for Project that will aid in the prevention of unacceptable visual impacts during construction until vegetation is reestablished. For any construction areas that would remain un-vegetated for an extended period of time, such as over the winter, temporary seeding would be required in accordance with the SWPPP.

3.16 WATER QUALITY AND STORM WATER RUNOFF

No major streams or rivers are located within the Project area. Water resources within the Project area include unnamed ephemeral tributaries associated with the contributing drainage basins overlying limestone formations, which are known to infiltrate flows resulting in low runoff.

According to the SDDENR all unnamed tributaries within the Project area are assigned the beneficial uses for irrigation, fish and wildlife propagation, recreation, and stock watering (SDDENR 2010).

This proposed project undertaking is situated within the Hells Canyon District of the Black Hills National Forest extending through Jewel Cave National Monument (JCNM),

which is operated by the National Park Service (NPS). The NPS expressed concerns to sediment and certain pollutants infiltrating into Jewel Cave having a detrimental effect on the cave system (NPS Cave and Karst Management Plan and Environmental Assessment; August, 2007). Infiltration items of concerns include:

- Porous soils allow infiltration that could be detrimental to the cave.
- Herbicides and pesticides from runoff in the adjacent drainage areas.
- Leaching of hydrocarbons from the highway's pavement following paving and maintenance activities (including resurfacing, overlays, and chip seals).
- Infiltration of runoff into Jewel Cave that could contain chlorides from snow and ice removal operations.
- Chemical releases from crashes in certain locations could drain toward the cave.

Spills of hazardous materials, including oil and gasoline, into the subsurface could pose a potential threat to visitors of Jewel Cave. Such a danger could cause the cave to be closed to visitation until the danger was eliminated. The effects could also possibly lead to changes in the chemistry of the cave ecosystem, biota, and cause artificial deposition in the cave.

The No-Build Alternative would minimally impacts water quality in the Project Area. Runoff from the existing highway would continue to carry roadway pollutants into adjacent drainage basins. Water quality would not change from baseline conditions. The possibility of infiltration into the Jewel Cave system due to spills and runoff would exist.

Under the Storm Water Act, the National Pollutant Discharge Elimination System (NPDES) requires all construction activities that disturb more than one acre to receive a construction NPDES permit. The Preferred Alternative will be required to obtain a general permit for stormwater discharges associated with construction activities from the SDDENR. Best management practices and engineering controls would be used during construction and operation to ensure water quality levels would remain in compliance within the project area.

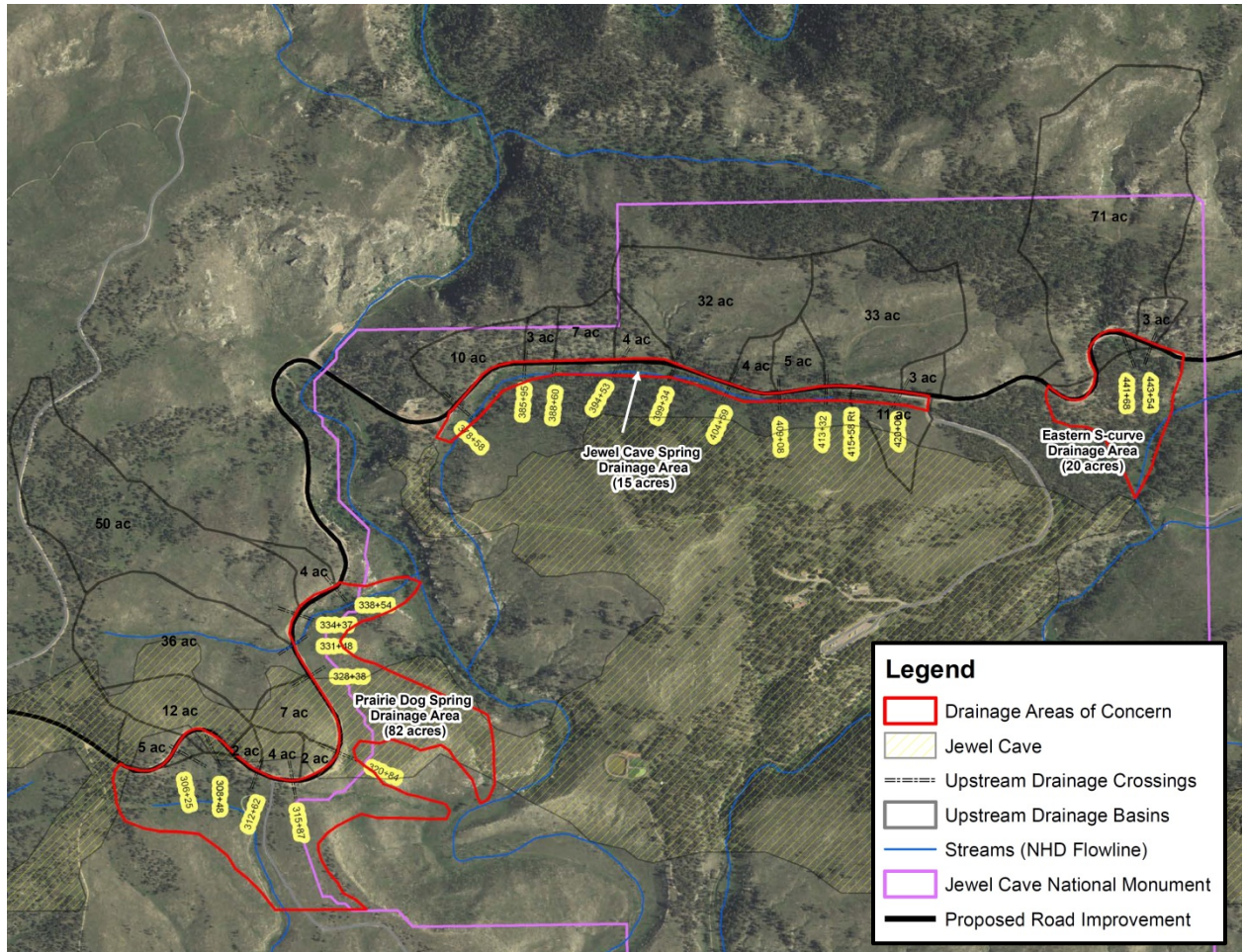
In cooperation with the NPS, the SDDOT developed permanent erosion control/pollution prevention measures to address sediment and pollutant containment concerns within or adjacent to the Project area. The creation of detention ponds paired with a catch basin filter system will be utilized at three drainage areas. The three drainage basins are: Prairie Dog Spring, Jewel Cave Spring, and unnamed drainage basin at S-curves at eastern end of Project. Figure 3-2 displays the drainage basins of concern. The purpose of this is to: 1) protect the groundwater and cave resources from contamination; 2) protect the cave system from potential contamination; and 3) protect visitors to Jewel Cave from potential hazardous conditions due to contamination.



Drainage Areas of Concern

US16 – From 1 mile West of Jewel Cave National Monument to 0.5 miles East of Jewel Cave National Monument

Figure 3-2



3.17 WETLANDS AND OTHER WATERS OF THE U.S.

The No-Build Alternative would not impact wetlands or Waters of the U.S.

Based on preliminary design, a review of the National Wetlands Inventory (NWI) database, plus onsite investigation has shown that the Preferred Alternative will have no impacts to wetlands or waters of the U.S. According to the U.S. Army Corps of Engineers (USACE) a Section 404 permit will not be needed with Project (USACE 2013).

COORDINATION AND COMMENTS

This chapter includes a summary of agency coordination and public involvement that has taken place during the development of this EA.

4.1 AGENCY COORDINATION

The Environmental Assessment for Project commenced with agency coordination letters to Federal, State, and local government agencies. The Federal and State agencies that were consulted with regarding this Environmental Assessment include:

- ✓ U.S. Department of Agriculture Natural Resources Conservation Service
- ✓ U.S. Fish & Wildlife Service – South Dakota Field Office
- ✓ U.S. Forest Service – Hell Canyon Ranger District
- ✓ National Park Service – Jewel Cave National Monument
- ✓ South Dakota Department of Environment and Natural Resources
- ✓ South Dakota State Historical Society
- ✓ South Dakota Department of Game, Fish, and Parks
- ✓ Corps of Engineers, Omaha District

Appendix A contains agency coordination efforts received through the development of this Environmental Assessment.

4.2 TRIBAL CONSULTATION

In coordination with the Tribal Consultation list maintained by the Forest Service, early consultation was conducted to nineteen American Indian Tribes that have a vested interest in highway projects occurring in Custer County and to those with expressed interest to highway projects occurring in the Blacks Hills National Forest.

The tribal parties that were consulted regarding the Project are:

- ✓ Cheyenne River Sioux Tribe
- ✓ Crow Creek Sioux Tribe
- ✓ Flandreau Santee Sioux Tribe
- ✓ Lower Brule Sioux Tribe
- ✓ Oglala Sioux Tribe
- ✓ Rosebud Sioux Tribe
- ✓ Sisseton-Wahpeton Oyate
- ✓ Standing Rock Sioux Tribe

- ✓ Yankton Sioux Tribe
- ✓ Iowa Tribe of Oklahoma
- ✓ Three Affiliated Tribes
- ✓ Cheyenne/Arapaho Tribes of Oklahoma
- ✓ Eastern Shoshone Tribe
- ✓ Kiowa Ethnographic Endeavor Foundation
- ✓ Northern Arapaho Tribe
- ✓ Northern Cheyenne Tribe
- ✓ Sicangu Treaty Council – Rosebud Sioux Tribe
- ✓ Santee Sioux Nation
- ✓ Spirit Lake Sioux Tribe

Appendix A contains the tribal consultation letters sent by SDDOT, on behalf of FHWA – SD Division, and the response received from Flandreau Santee Sioux Tribe and Three Affiliated Tribes with no objections to Project.

4.3 PUBLIC INVOLVEMENT

Public involvement occurred at the Custer County Annex on November 29, 2005 as part of the preliminary phase of project scoping. Details to project options were presented which aided in the development of alternatives and consideration of issues. The public had the opportunity to discuss improvement alternatives with SDDOT. Verbal and written comments were received at the meeting and via means of electronic and postal mail after the meeting.

A total of 10 comments were received from landowners and attendants of the public meeting. The majority of comments expressed concerns over project cost but were supportive of the Project. Comments and issues identified included:

Four letters in favor of a high speed alternative.

Two letters in favor of an alternative along existing alignment.

One letter expressing concerns with traffic safety in regards to amounts of truck traffic and ambulance transfers from Wyoming to Rapid City.

One letter in favor of an alternative that included a bridge.

Two letters asking consideration of an alternative that accommodates truck traffic, tourists, and recreational opportunities.

After receiving comments from the public, a project scope was able to be developed for alternatives that increased safety, reduced environmental impacts, and is cost effective. By seeking public involvement proactively, the scope team was able to take in consideration for better project decisions and positive community support was achieved.

4.4 FUTURE PUBLIC INVOLVEMENT

Following the 30 day comment period, SDDOT and FHWA will make the determination as to the adequacy of the environmental documentation. If further documentation is necessary, it could be accomplished by preparing an EIS or by revising the EA, if appropriate.

Following the 30 day comment period, FHWA will make a final determination as to whether the project will adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). If it is determined properties will be affected, an individual Section 4(f) evaluation would be completed to determine whether 1) there is no feasible and prudent avoidance alternative to the use of land and 2) the action includes all possible planning to minimize harm. The FHWA may not approve the property use unless 1) and 2) above are satisfied.

If the environmental review process finds the project will not result in any significant environmental impacts and the section 4(f) requirements are met, SDDOT will prepare a request for a Finding of No Significant Impact (FONSI) that will be submitted to the FHWA. If the FHWA agrees that the FONSI it will issue a FONSI.

DISPOSITION OF THE EA

This EA documents the analysis of the Project in accordance with NEPA. The full range of potential environmental impacts was studied and reported within this document. Overall, the implementation of the Preferred Alternative would not result in significant environmental impacts on environmental resources. This project will include measures to avoid, minimize, and mitigate impacts to water quality, Section 4(f) resources, and historical & historical resources. The following summarizes the environmental commitments to various agencies and the public made during the NEPA process.

5.1 MITIGATION EFFORTS

Construction of the proposed Project would not result in impacts to biological, physical, or socioeconomic resources or human health and safety in the Project area. Therefore, no long-term mitigation is required. Best management practices (BMPs) to address temporary and short-term construction related impacts consist of the following:

- Properly maintained construction equipment to minimize emissions and noise.
- Application of water or chemical stabilizer to reduce fugitive dust on exposed earth.
- Maintaining any construction entrances such that mud tracking and sediment flow would not enter the roadway, adjacent drainage areas, or the Jewel cave system.
- Preparation and implementation of a SWPPP that includes BMPs and an erosion and sediment control plan for construction storm water runoff.
- Methods shall be implemented to minimize the spillage of petroleum, oils, and lubricants used in vehicles during construction activities. A Spill Prevention Control and Countermeasures Plan for hazardous materials and waste storage, use, disposal, and spill control during construction shall be implemented.
- Removal of vegetation shall be confined to those areas absolutely necessary to construction.
- Application of indigenous grass seed species to disturbed areas to reduce sediment and erosion potential.
- Providing alternative travel patterns if detours are necessary.
- Construction would primarily occur during daylight hours.

5.2 REQUIRED PERMITS AND ACTIONS

Section 401, Water Quality Certification

Section 401, Water Quality Certification, must be obtained from SDDENR. This certifies that the project action will not violate State water quality standards (33 USC 1341). Any specific conditions required for compliance with the State's water quality standards would be specified in the Section 401 certification.

Section 402, National Pollutant Discharge Elimination System (NPDES)

SDDENR administers the Federal NPDES and issues general permits for stormwater discharges for construction activities (33 USC 1342). The purpose of the NPDES program is to improve water quality by reducing or eliminating contaminants in stormwater. Disturbances of more than 1 acre, SDDOT will submit a Notice of Intent prior to construction to SDDENR for coverage under the General Storm Water Permit for Construction Activities.

5.3 ENVIRONMENTAL COMMITMENTS

Mitigation and future actions were addressed by the specific resource sections of this EA document, but are summarized here in a consolidated format. The following summary is beneficial to assure that proper commitments are being planned and implemented.

Commitment A – Water Source and Surface Water Discharge

All unnamed tributaries within the Project area are classified as fish and wildlife propagation, recreation, irrigation and stock watering waters. Because of these beneficial uses, special construction measures may have to be taken to ensure that the unnamed tributaries within the Project area are not impacted. If water extraction or construction dewatering is necessary during construction of Project, the Contractor shall obtain the necessary permits from SDDENR.

Commitment B – Storm Water

Construction activities constitute 1 acre or more of earth disturbance. Project is regulated under the Phase II Storm Water Regulations and must receive coverage under the General Permit for Storm Water Discharges Associated with Construction Activities. Erosion control measures and best management practices will be implemented in accordance with a Storm Water Pollution Prevention Plan (SWPPP).

Commitment C – Waste Disposal Site

A site for the disposal of construction/demolition debris generated by this Project will be furnished and not be disposed of within the State, National Park Service, or Forest Service ROW.

Commitment D – Historical Preservation Office Clearances

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO) for all work included within the Project limits. If activities for the Project occur in areas not previously surveyed, additional documentation and coordination with SHPO is required. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites. If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and SHPO should be contacted immediately to determine an appropriate course of action.

Prior to construction, the Contractor will be required to contact the State Archaeological Research Center (SARC) at to coordinate the installation of orange plastic safety fence around the perimeter of site(s): 39CU843, 39CU844, & 39CU1173. The exact location of the safety fence shall be determined in the field by the SARC representative. Work within the vicinity of Site(s) 39CU843, 39CU844, & 39CU1173 shall not begin until the

safety fence is installed. A qualified archaeologist will monitor the road construction activities in the immediate vicinity of site 39CU844 in order to ensure that no contributing areas of the site will be disturbed and to mitigate any incidental discovery of cultural materials or features during road construction, and will submit a monitoring report to SHPO if any cultural materials are located.

Commitment E – Section 4(f) Resources

A Section 4(f) Evaluation has concluded that no feasible and prudent alternative to the use of Section 4(f) land, Jewel Cave National Monument, occurs with project. If additional easement is needed to complete the work adjacent to this Section 4(f) property than an appropriate course of action needs to be developed between the National Park Service, FHWA, and SDDOT before proceeding with construction activities that affect any Section 4(f) property.

Commitment F – Coordination with State Archaeological Research Center

The following archaeologically sensitive sites have been identified that require the following measures occur during any construction activities:

- Temporary fencing will be placed at Sites 39CU843 and 39CU1173 prior to commencement of construction activities to ensure site avoidance.
- Site 39CU1172, all construction impacts are restricted to the previously disturbed terrain from the current edge of US Highway 16 through the skidder trail, thereby avoiding impacts to the intact areas of the site.
- Site 39CU844 with the following provisos:
 - That all ground disturbing activities are restricted to the current fill limits area staked out by the SDDOT at 39CU844 and illustrated in Figure 3 of intensive cultural resources investigation report.
 - That the use of all heavy machinery is restricted to within the fill limits and that their use is prohibited on all portions of 39CU844 except within the impact area.
 - That the portions of 39CU844 that are not to be disturbed will be delineated in the field by temporary fencing.
 - That a qualified archaeologist will monitor the road construction activities in the immediate vicinity of site 39CU844 in order to ensure that no contributing areas of site will be disturbed and to mitigate any incidental discovery of cultural materials or features during the road construction.

Other Design Commitment – Permanent Erosion Control/Pollution Prevention Measures

Installation of detention ponds paired with a catch basin filter system (**Refer to Chapter 3.16 - Water Quality and Storm Water Runoff**).

CHAPTER 6

REFERENCES

Technical Reports completed for this Project that are available upon request.

Archaeological Research Center (ARC), August 2012. An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project NO. NH0016(72)11, PCN 022E.

ARC, December 2012. A Shovel Test Assessment of the APE in the Vicinity of Site 39CU843 and National Register Evaluation of Site 39CU1177 for SDDOT Project No. NH0016(72)11, PCN 022E, US Highway 16 within Jewel Cave National Park, Custer County, South Dakota.

ARC, March 2013. SDDOT Project PCN 022E Impact Area Testing and Assessment at 39CU844, the Jewel Cave Hotel Site.

References

23 CFR 771. Environmental Impact and Related Procedures

23 CFR 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

23 CFR 774. Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)).

36 CFR 800. Protection of Historic Properties.

40 CFR 1500-1508. Regulations for Implementing NEPA.

50 CFR 402. Interagency Cooperation – Endangered Species Act of 1973, As Amended.

Executive Order 11988 (18 CFR 725). Floodplain Management.

Jewel Cave National Monument website
<http://www.nps.gov/jeca/index.htm>

Presidential Proclamation 799, 35 Stat. 2180. Jewel Cave Enabling Legislation.

NPS, 2002. Handbook on Departmental Review of Section 4(f) Evaluations

NPS, 2011. Superintendent's Compendium.

NPS, 2007. Cave and Karst Management Plan and Environmental Assessment.

SDDOT, 2011. South Dakota Noise Analysis and Abatement Guidance.

SDDOT, 2012. Statewide Transportation Improvement Program (STIP) 2012-2016.

SDDOT, 2012. Highway Needs and Project Analysis Report.

APPENDIX A

Agency Coordination

- SDGFP response – 10/26/2010
- Forest Service – Black Hills National Forest response – 11/10/2010
- SDDENR response – 11/12/2010
- Forest Service – Black Hills National Forest additional comments – 11/15/2010
- USFWS project concurrence – 11/24/2010
- NRCS response – 5/18/2012
- SDGFP, Section 6(f) response – 7/9/2012
- Jewel Cave National Monument, Section 4(f) notification of intent – 6/27/2013
- SHPO concurrence – 4/2/2013
- FHWA Section 106 lead agency designation letter – 4/29/2013
- USACE response – 5/31/2013
- Custer Co. Floodplain Development coordination – 6/20/2013
- SDDOT tribal coordination letters – 11/21/2012
 - Cheyenne River Sioux Tribe
 - Crow Creek Sioux Tribe
 - Flandreau Santee Sioux Tribe
 - Lower Brule Sioux Tribe
 - Oglala Sioux Tribe
 - Rosebud Sioux Tribe
 - Sisseton-Wahpeton Oyate
 - Standing Rock Sioux Tribe
 - Yankton Sioux Tribe
 - Iowa Tribe of Oklahoma
 - Three Affiliated Tribes
 - Cheyenne/Arapaho Tribes of Oklahoma
 - Eastern Shoshone Tribe
 - Kiowa Ethnographic Endeavor Foundation
 - Northern Arapaho Tribe
 - Northern Cheyenne Tribe
 - Sicangu Treaty Council – Rosebud Sioux Tribe
 - Santee Sioux Nation
 - Spirit Lake Sioux Tribe
- Flandreau Santee Sioux Tribe response – 11/4/2010
- Three Affiliated Tribes response – 11/3/2010



DEPARTMENT OF GAME, FISH, AND PARKS

Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

October 26, 2010

Mr. Tom Lehmkuhl
South Dakota Department of Transportation
Office of Project Development- Environmental
700 East Broadway Avenue
Pierre, SD 57501

**RE: NH 0016(72)11 PCN 022E CUSTER COUNTY
US 16 from 1 mile west of Jewel Cave National Monument to 0.5 miles east of
Jewel Cave National Monument - Grading and AC Surfacing**

Dear Mr. Lehmkuhl:

This letter is in response to your request for environmental comments regarding the above referenced project involving grading and surfacing of US 16 near Jewel Cave National Monument in Custer County, South Dakota.

Based upon the information submitted with the preliminary coordination letter, we do not anticipate that the project will have any significant impacts to fish and wildlife resources if the following comments are considered and addressed during the balance of project planning and during construction.

1. Disturbance to riparian areas should be kept to an absolute minimum. We suggest that strict criteria be used to prevent the use of option borrow areas that result in impacts to riparian and wetland areas.
2. Riparian vegetation losses should be quantified and replaced on site. Seeding of indigenous species should be accomplished immediately after construction is complete to reduce sediment and erosion potential.
3. A site specific sediment and erosion control plan should be made part of the project plan and implemented at the direction of the DOT staff.
4. A post construction erosion control plan should also be implemented in order to provide interim control prior to re-establishment of permanent vegetative cover on the disturbed site.

Thank you for the opportunity to provide comments on this project. If you have any questions, or if the project design changes, please contact me at (605) 773-6208.

Sincerely,

Leslie Murphy
Aquatic Resource Coordinator



United States
Department of
Agriculture

Forest
Service

Black Hills
National
Forest

330 Mt Rushmore Road
Custer SD 57730
605-673-4853

Hell Canyon Ranger District
1225 Washington Blvd
Newcastle WY 82701
307-746-2782

File Code: 2360

Date: November 10, 2010

TOM LEHMKUHL
ENVIRONMENTAL ENGINEER
SD DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT
700 E. BROADWAY AVENUE
PIERRE, SD 57501-2586

RE: NH 0016(72)11, PCN 022E, Custer County
BKF Heritage #R2011020300107

Dear Mr. Lehmkuhl,

I received your request for review and comment with respect to an Environmental Assessment that the South Dakota Department of Transportation (SDDOT) is preparing for the above project. You indicated that the project includes mostly surfacing and grading within the current alignment of Highway 16 from one mile west of Jewel Cave National Monument to 0.5 miles east of the monument boundary. The east and west ends of the project are located on Black Hills National Forest, Hell Canyon Ranger District. It is my understanding that at least two segments within the project will involve flattening curves that are a safety concern.

The Hell Canyon heritage staff reviewed the general project area with respect to known archaeological sites and previous surveys. Two main cultural resource surveys were conducted along Highway 16 in the 1990s by the South Dakota State Archaeological Research Center for an earlier SDDOT Highway 16 project. One of those projects was the 1992 cultural resources survey of the road (BKF Heritage Project #1992020300092). The other was the 1993 National Register evaluation of potentially eligible sites identified by the survey (BKF Heritage Project #19930203000114).

Along the curves to be flattened on the west end of the project, one large, multi-component National Register eligible site was recorded adjacent to the highway. The site is largely intact and is on Forest property. The proposed project would likely have an adverse impact to this and possibly other eligible sites. The heritage staff will need additional information on the proposed SDDOT project activities to fully evaluate the adverse impacts. At a minimum, information would need to include a well defined area of potential effect and details on how the curves will be flattened.

Thank you for the opportunity to comment on this project.

Sincerely,


LYNN D. KOLUND
District Ranger

cc: Michael R Hilton, Renee M Boen





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

November 12, 2010

Tom Lehmkuhl
Department of Transportation
700 East Broadway Avenue
Pierre, South Dakota 57501

RE: SD DOT Project
NH 0016(72)11 PCN 022E
Custer County

Dear Mr. Lehmkuhl:

The South Dakota Department of Environment and Natural Resources (DENR), Division of Environmental Regulation, has reviewed the above referenced projects.

This office has no objections to the project, which should not result in any violations of applicable statutes or regulations provided the Department of Transportation and/or its contractor(s) comply with the following requirements.

SURFACE WATER QUALITY

1. All fill material shall be free of substances in quantities, concentrations, or combinations which are toxic to aquatic life.
2. Removal of vegetation shall be confined to those areas absolutely necessary to construction.
3. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the Department of Environment and Natural Resources for additional information or guidance at 1-800-SDSTORM (737-8676) or www.state.sd.us/denr/des/surfacewater/stormwater.htm.
4. All material identified in the application as removed waste material, material stockpiles, dredged or excavated material shall be placed for either temporary or permanent disposal

in an upland site that is not a wetland, and measures taken to ensure that the material cannot enter the watercourse through erosion or any other means.

5. Methods shall be implemented to minimize the spillage of petroleum, oils and lubricants used in vehicles during construction activities. If a discharge does occur, suitable containment procedures such as banking or diking shall be used to prevent entry of these materials into the waterway.
6. All newly created and disturbed areas above the ordinary high water mark which are not riprappd shall be seeded or otherwise revegetated to protect against erosion.
7. The tributaries in the area are classified by the South Dakota Water Quality Standards and Uses Assigned to Streams for the following beneficial uses:
 - (9) Fish and wildlife propagation, recreation, and stock watering waters; and
 - (10) Irrigation waters.

Because of these beneficial uses, special construction measures may have to be taken to ensure that these tributaries are not impacted.

HAZARDOUS WASTES

1. Should any hazardous waste be generated during the implementation of this project, the generator must abide by all applicable hazardous waste regulations found in ARSD 74:28 and 40 CFR Part 262.
2. If any contamination is encountered during construction activities, the contractor, owner, or party responsible for the release must report the contamination to the department at (605) 773-3296. Any contaminated soil encountered must be temporarily stockpiled and sampled to determine disposal requirements.
3. It is not expected that any hazardous wastes sites will be encountered during road construction in any rural area. However, if road construction is planned for areas within a city or town, the DOT or contractor should contact this Department prior to construction.

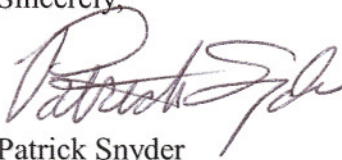
AIR QUALITY

1. It appears that Department of Transportation projects may have only a minor impact on the air quality in South Dakota. This impact would be through point source and fugitive emissions.
2. Equipment with point source emissions in many cases are required to have an air quality permit to operate. Permit applications can be obtained from the Air Quality or Minerals and Mining Programs.

3. Fugitive emissions, although not covered under State air quality regulations, are a common source of public concern and may be subject to local or county ordinances. Fugitive emissions add to the deterioration of the ambient air quality and should be controlled to protect the health of communities within the construction areas.
4. For further air quality information, please contact Brad Schultz, Air Quality Program, telephone number (605) 773-3151.

This office requests the opportunity to review and comment on any significant changes that may be proposed before the project is completed. Thank you for the opportunity to comment on the proposed project. If you have any questions, please contact this office.

Sincerely,

A handwritten signature in cursive script, appearing to read "Patrick Snyder".

Patrick Snyder
Environmental Senior Scientist
Surface Water Quality Program
Phone: (605) 773-3351

To: Lynn Kolund
From: Alberta Settle
Date: November 15, 2010
Subject: Scope Review -- SD DOT Project NH 0016(72)11, PCN022E, Custer County

I have reviewed the scope as presented by Tom Lehmkuhl in the DOT's October 21, 2010 letter.

I agree with the statements that there will be design exceptions and multiple design iterations. There are a number of specialties that will have concerns and the DOT designers will have to address those concerns.

I have also done a quick review of the "Preliminary Plans" from DOT (plotting date 31-Dec-2009). I don't know if the plan set has changed so I didn't spend a lot of time reviewing the plans.

All approaches and intersections will have to be designed and reconstructed to meet SD DOT, Forest Service and NPS standards. It looks like the new grade will be about 2 feet higher around STA 295 and 296; the intersecting roads will have to be regraded for a smooth transition. Because of the need for some grading work at these intersections, the proposed work limits may need to be larger from about STA 295+00 to 297+50.

The other intersections appear to have about 1 ft or less of change in grade. At all intersections, a smooth transition is required and work areas may need to be adjusted to accommodate this.

The western S-curve re-alignment (STA 300 to about STA 312) will have large cuts (up to about 6 ft) and substantial fill (up to 26 ft). The eastern S-curve re-alignment section (STA 430 to about STA 445) will have substantial cuts (up to about 35 ft) and fill (up to 55 ft). The Preliminary Plans do not show culverts or other drainage structures. Large culverts will be necessary in these areas. Compaction criteria will have to be strictly applied for stability.

The Preliminary Plans do not contain reclamation details for the areas where the road will be re-aligned. This will have to be provided and will have to address not only grading and seeding but also erosion control, existing culvert removal and drainage protection.

Thank you for continuing to involve Engineering in this project. It has great potential.

RECEIVED

OCT 25 2010



Department of Transportation
Office of Project Development
Environmental Office
 700 E Broadway Avenue
 Pierre, South Dakota 57501-2586
 605/773-3268 Fax: 605/773-6608

October 21, 2010

Scott Larson, Field Supervisor
 U.S. Fish & Wildlife Service
 420 Garfield - Suite 400
 Pierre, SD 57501-5408

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

11-24-10
Date

Scott Larson
SD Field Supervisor
USFWS

RE: NH 0016(72)11, PCN 022E, Custer County
 US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave National Monument
 Grading and AC Surfacing

Dear Mr. Larson:

Attached is information on the above project for your review and comment. This grading project will keep to the existing alignment but involves a few areas where curves will be flattened to address safety concerns. An Environmental Assessment is being prepared for this project.

A 6' x 6' RCBC (Str. No. 17-105-091) will have the inlet end extended with a cast-in-place barrel. No structure replacement is included with the project's scope of work.

According to the U.S. Fish & Wildlife Service (FWS) South Dakota Field Office's Endangered Species by County List (update 24 May 2010), the following species are known to occur in Custer County:

County	Group	Species	Certainty of Occurrence	Status	SDDOT Determination
CUSTER	BIRD	CRANE, WHOOPING	POSSIBLE	E	No Effect
	MAMMAL	FERRET, BLACK-FOOTED	KNOWN	E	No Effect

I am requesting FWS concurrence with the above determinations.

Please submit your concurrence with this determination and any additional comments regarding wetland easements, refuges, etc. as soon as possible for inclusion to the Environment Assessment. This will ensure that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,



Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Attachments

2012-01-10 10:00 AM
2012-01-10 10:00 AM

United States Department of Agriculture



Natural Resources Conservation Service
Federal Building, 200 Fourth St. SW
Huron, South Dakota 57350

Phone: (605) 352-1200
Fax: (605) 352-1261

May 18, 2012

Tom Lehmkuhl
Environmental Engineer
Department of Transportation
700 E Braodway Avenue
Pierre, SD 57501

RE: NH 0016(72)11, PCN 022E, Custer County – Hells Canyon Environmental Assessment
(Jewel Cave National Monument)

Dear Mr. Lehmkuhl:

We have reviewed the plan for the above project. There is no impact on the prime and important farmland in Custer County.

The status and impact of wetlands was not part of this review. Refer these questions to the Corp of Engineers, or the US Fish and Wildlife Service.

Sincerely,

A handwritten signature in black ink, appearing to read "Deanna M. Peterson".

DEANNA M. PETERSON
State Soil Scientist

Lehmkuhl, Tom

From: Kittle, Randy
Sent: Monday, July 09, 2012 1:09 PM
To: Lehmkuhl, Tom
Subject: RE: Project NH 0016(72)11, PCN 022E, Custer County

Tom,

There are no LWCF dollars invested in properties adjacent to the Custer County project referenced.

Randy Kittle
Grants Coordinator
SD Division of Parks & Recreation
Pierre SD
605.773.5490

-----Original Message-----

From: Lehmkuhl, Tom
Sent: Thursday, July 05, 2012 11:19 AM
To: Kittle, Randy
Subject: Project NH 0016(72)11, PCN 022E, Custer County

Hello Randy. I hope that you had yourself a pleasant Fourth of July.

I would like to request your determination on whether Land and Water Conservation Funds were utilized on any of the properties adjacent to the above project.

Thank you and please feel free to contact me at 773-3180 should you have any questions regarding this.

Tom Lehmkuhl
Environmental Engineer
SDDOT - Office of Project Development
700 E. Broadway Ave.
Pierre, SD 57501
Ph: (605) 773-3180

Lehmkuhl, Tom

From: Johnson, Lawrence <larry_johnson@nps.gov>
Sent: Thursday, June 27, 2013 2:16 PM
To: Lehmkuhl, Tom
Cc: Michael Wiles
Subject: Fwd: Section 4(f)
Attachments: 4(f) handbook.pdf

Tom,

This is the info received from our Midwest Regional Office NEPA coordinator. Please take a look and see if the language shown will be of help with the project EA.

I am very comfortable with stating the de minimis impact with this project.

Perhaps the DOI Sec. 4f Handbook will be of use to you, either in this project or with future projects involving DOI lands.

Please let me know if this meets your needs or not and we'll go from there.

Thanks

Larry Johnson
Superintendent
Jewel Cave National Monument
11149 U.S. Hwy 16, Bldg. B12
Custer, SD 57730
Tel. 605-673-8302
Cell: 605-517-1858
Fax: 605-673-8301

----- Forwarded message -----

From: Chevance, Nicholas <nicholas_chevance@nps.gov>
Date: Thu, Jun 27, 2013 at 1:04 PM
Subject: Section 4(f)
To: Larry_Johnson@nps.gov

Larry -

Significance - Attached please find the Departments Section 4(f) Handbook. Its a bit dated because of recent changes in the DOT Acts (SAFETEA-LU and the most recent Act), but it still sets the basics out well. DOI is working on an updated 4(f) Handbook.

First, page 7 identifies National Parks as 4(f) properties. That refer to the language found in the Secretary's letter to DOT in 1980 (appendix B of the Handbook - that's all the authority we need).

Multiple Use Lands - it seems almost nonsensical to think of National Parks as multiple use, similar to BLM or FS lands. The term multiple use comes from the Federal Land Policy and Management Act of 1976 (FLPMA) which doesn't apply to the NPS. The management of NPS lands comes from our Organic Act and here's the main argument:

"[The National Park Service] shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified... by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (16 USC 1)

That's our sole purpose - conservation. NPS lands have sometimes been referred to as highly restricted use lands, as compared to the multiple use (recreation, timbering, mining, and so on) on FS lands. I actually couldn't find an argument anywhere that NPS lands were anything but 4(f) lands. We asserted that in 1980 and DOT never questioned it.

Determination of *de minimis* use - just so you're aware, the use of the *de minimis* determination means (taken from FHWA's 4(f) Handbook dated 2012):

"An impact to a public park, recreation area, or wildlife and waterfowl refuge may be determined to be *de minimis* if the transportation use of the Section 4(f) property, including incorporation of any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures), does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f).

The impacts of a transportation project on a park, recreation area, or wildlife and waterfowl refuge that qualifies for Section 4(f) protection may be determined to be *de minimis* if:

1. The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f);
2. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, or attributes of the Section 4(f) property; and
3. The official(s) with jurisdiction over the property, after being informed of the public comments and FHWA's intent to make the *de minimis* impact finding, concur in writing that the project will not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

So, the park is significant, its a 4(f) resource (not multiple use), and if you agree to the *de minimis* determination for the taking on this project, then after they go through all their NEPA steps, you'll need to provide that concurrence in writing. We've always used the Superintendent as the official with jurisdiction, rather than the RD.

If after all this, you need me to talk with SDDOT, I'd be glad to.

Nick Chevance
Regional Environmental Coordinator

Midwest Regional Office
601 Riverfront Drive
Omaha, Nebraska 69102
402-661-1844
402-651-3921 (mobile)
402-661-1982 (fax)

--
"Anything that happens enough times to irritate you will happen at least once more."
Tom Parkin's Continuum



April 2, 2013

Tom Lehmkuhl
Department of Transportation
700 E Broadway Ave
Pierre SD 57501-2586

SECTION 106 PROJECT CONSULTATION - REVISION

Project: 121217003F – NH 0016(72)11 PCN 022E – US16 through Jewel Cave National Monument – Grading and AC Surfacing
Location: Custer County
(DOT)

Dear Mr. Lehmkuhl:

Thank you for the opportunity to comment on the above referenced project pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). The South Dakota Office of the State Historic Preservation Officer (SHPO) concurs with the following determination concerning the effect of your proposed undertaking on the non-renewable cultural resources of South Dakota.

SHPO has made this decision based on the information provided in your correspondence and the reports “An Assessment of Effect and Recommendation for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH 0016(72)11 PCN 022E” and “A Shovel Test Assessment of the APE in the Vicinity of Site 39CU843 and National Register Evaluation of Site 39CU1177 for SDDOT Project No. NH 0016(72)11 PCN 022E, US Highway 16 within Jewel Cave National Park, Custer County” by Sarah Laundry and James Donohue, received on December 17th, 2012 and the additional information provided in your correspondence and the report “SDDOT Project PCN 022E Impact Area Testing and Assessment at 39CU844, the Jewel Cave Hotel Site” by Sarah Laundry and James Donohue, received on April 2, 2013. Based on the information, site 39CU1177 should be considered not eligible for the National Register of Historic Places (NRHP). Site 39CU844 is eligible for listing on the NRHP under Criteria A and will **not** be impacted by the proposed project. Therefore, SHPO concurs with your determination of **No Adverse Effect** provided the following stipulations outlined in your correspondence and the report. Stipulation 1) all ground disturbing activities are restricted to the current fill limits area staked out by the SDDOT at 39CU844 and illustrated in

Figure 3 of the report. Stipulation 2) the use of all heavy machinery is restricted to within the fill limits and that their use is prohibited on all portions of 39CU844 except within the impact area, shown in Figure 3, which was tested during the March 13, 2013 investigation. Stipulation 3) the portions of 39CU844 that are not to be disturbed will be delineated in the field by temporary fencing **by a qualified archaeologist**. Stipulation 4) a qualified archaeologist will monitor the road construction activities in the immediate vicinity of site 39CU844 in order to ensure that no contributing areas of the site will be disturbed and to mitigate any incidental discovery of cultural materials or features during road construction, **and will submit a monitoring report to SHPO if any cultural materials are located**.

Pursuant to 36 CFR part 800.6, we look forward to continuing consultation with your agency. Please be sure to notify the Advisory Council on Historic Preservation of the adverse effect.

Should you require any additional information, please contact Amy Rubingh, Review & Compliance Archaeologist, at (605) 773-8370. We appreciate your concern for the non-renewable cultural heritage of our state.

Sincerely,

Jay D. Vogt
State Historic Preservation Officer

A handwritten signature in black ink, appearing to read "Amy Rubingh". The signature is fluid and cursive, with a large loop at the end of the last name.

Amy Rubingh
Review and Compliance Archaeologist

From: Marion.Barber@dot.gov [<mailto:Marion.Barber@dot.gov>]
Sent: Wednesday, July 18, 2012 11:42 AM
To: Hilton, Michael R -FS
Cc: Terry.Keller@state.sd.us; Ron.Mcmahon@dot.gov; Amy.Rubingh@state.sd.us; Kolund, Lynn -FS;
MEngelhardt@fs.fed.us
Subject: FW: NH 0016(72)11 CUST022E - US16 Hells Canyon - Lead Agency Designation

Michael,

The Federal Highway Administration (FHWA) is prepared to be the lead Federal Agency in the environmental review process for the US16 Hells Canyon, NH 0016(72)11 PCN 022E in Custer County. This proposed project is to improve approximately 4.3 miles of US16 from 1 mile west of Jewel Cave National Monument to 0.5 miles east of Jewell Cave National Monument of which portions are located within the Forest Service's jurisdiction. Planned improvements include grading and asphalt concrete surfacing with associated drainage work.

As FHWA's Environmental Specialist, I am responsible for NEPA compliance including Section 106 consultation in accordance with the FHWA/SDDOT Stewardship and Oversight agreement. While FHWA was informally designated as the 'Lead Agency' during early project meetings in 2010 and we recognize this project is well along in the preliminary design process, the purpose of this email is to document and formally request your concurrence in designating FHWA as lead Federal Agency.

If you have any comments or questions please feel free to call or email.

Thanks for your assistance!

Marion Barber, PE
Environmental Specialist
Federal Highway Administration
South Dakota Division
(605) 224-7326 X 3037

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.



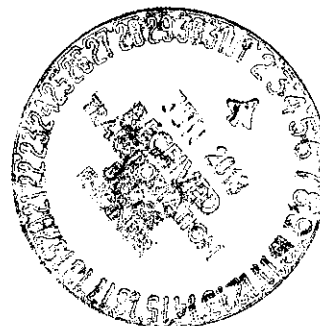
REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTH DAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE, SOUTH DAKOTA 57501-6174

May 31, 2013

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

South Dakota Department of Transportation
Attn: Kevin Marton
700 East Broadway Ave.
Pierre, SD 57501



Dear Mr. Marton:

Reference is made to the permit application received on May 20, 2013, concerning Section 404 of the Clean Water Act permit requirements. After reviewing your proposal to reconstruct a segment of United States Highway 16 in Jewel Cave Nation Monument including box culvert and pipe work, this office has determined that a Department of the Army permit will not be required. Hell Canyon was determined to be an upland drainage feature which rarely conveys surface flow apart from infrequent torrential events. The proposed project is located in Section 1 and 2, Township 4 South, Range 2 East, and Section 6, Township 4 South, Range 3 East, Custer County, South Dakota.

However, if in the future you anticipate doing work or placing material in any waters of the United States, please provide this office with an application for review for possible permit requirements.

Although a Department of the Army permit pursuant to Section 404 of the Clean Water Act is not required for the project, this does not eliminate the requirement that you obtain other applicable Federal, state, tribal and local permits as required.

If you have any questions or need any assistance, please feel free to contact this office at the above Regulatory Office address or telephone Nathan Morey at (605) 224-8531 and reference action ID NWO-2013-0894-PIE.

Sincerely,

Steven E. Naylor
Regulatory Program Manager,
South Dakota

Lehmkuhl, Tom

From: Marton, Kevin
Sent: Thursday, June 20, 2013 4:18 PM
To: 'dgreen@custercountysd.com'
Cc: Macy, Marc; Lehmkuhl, Tom
Subject: Custer County PCN 022E Floodplain Development Information
Attachments: Custer County Floodplain Development.pdf

Hi David,

The SD DOT is finishing up grading plans on US 16 from one mile west of Jewel Cave National Monument to 0.5 miles east of Jewel Cave National Monument. This will entail extending a drainage structure located in a FEMA Special Flood Hazard Area (SFHA) in your county. I'm providing the appropriate design and construction information for you records to document this development in your jurisdiction. The attached Custer County Floodplain Development PDF contains the title sheet, hydraulic data sheet documenting the hydrologic and hydraulic characteristics of the existing and proposed conditions, pertinent plan and profile sheets, and the general structure layout.

Sta. 364+18 over Hell Canyon is located in a FEMA SFHA but with no base flood elevations determined (Zone A) The existing 6' X6' RCBC will be extended approximately 30' on the inlet end. The existing 100-year WSE of 5280.2' was established with a survey of the area, determining the 100-year peak discharge of 506 cfs the USGS Regression Equations, and a HY-8 model of the existing drainage structure. A Hy-8 Model was also created for the 30' extension of the structure which yielded a 100-year WSE of 5280.1' resulting in a 0.1' decrease over the existing conditions and well within the 1.0' FEMA allowable rise in Zone A floodplains.

SD DOT's practices, policies, and procedures are consistent with those in the National Flood Insurance Program.

Let me know if you have any questions or if further information is needed.

Thanks,

Kevin P. Marton, PE
Bridge Hydraulics Engineer
Office of Bridge Design
Department of Transportation
Phone: (605) 773-4995 Fax: (605) 773-2614

STATE OF SOUTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0016(72)11	1	436

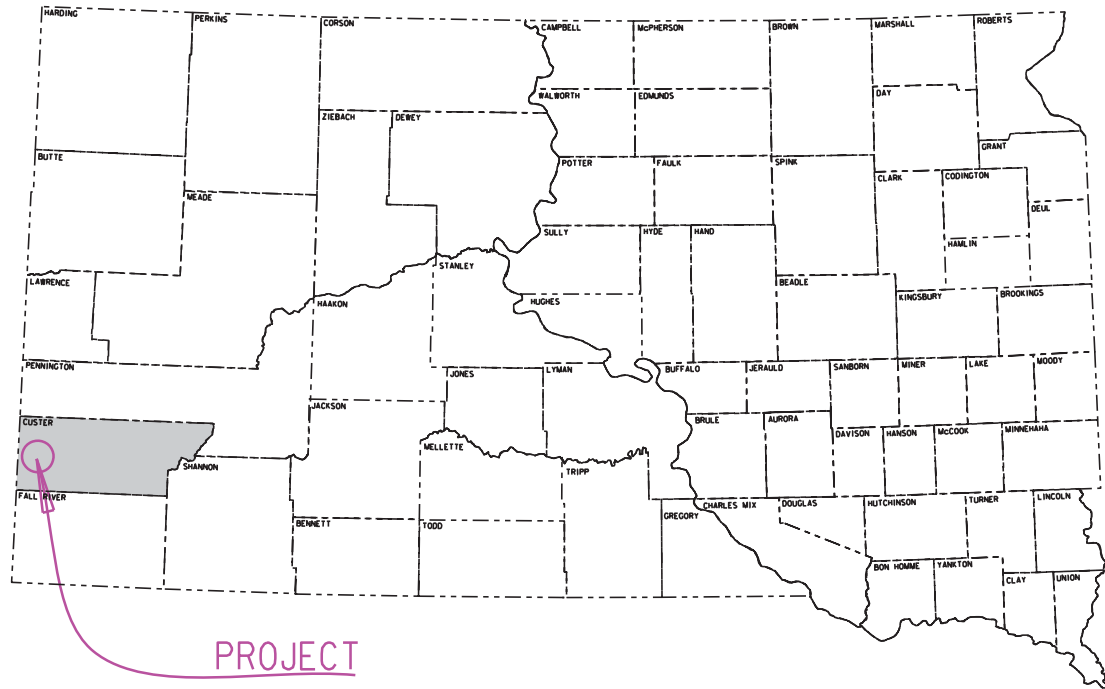
Plotting Date: 10/05/2012

PROJECT NH 0016(72)11
U.S. HIGHWAY 16
CUSTER COUNTY

GRADING, STRUCTURE, ASPHALT SURFACING & ROW
 PCN 022E

INDEX OF SECTIONS

- Section A: Estimate of Quantities
- Section B: Grading Plans
- Section C: Traffic Control Plans
- Section D: Erosion And Sediment Control Plans
- Section E: Structure Plans
- Section F: Surfacing Plans
- Section M: Pavement Marking Plans
- Section S: Permanent Signing Plans
- Section X: Cross Sections
- Section Z: Pipe Sections



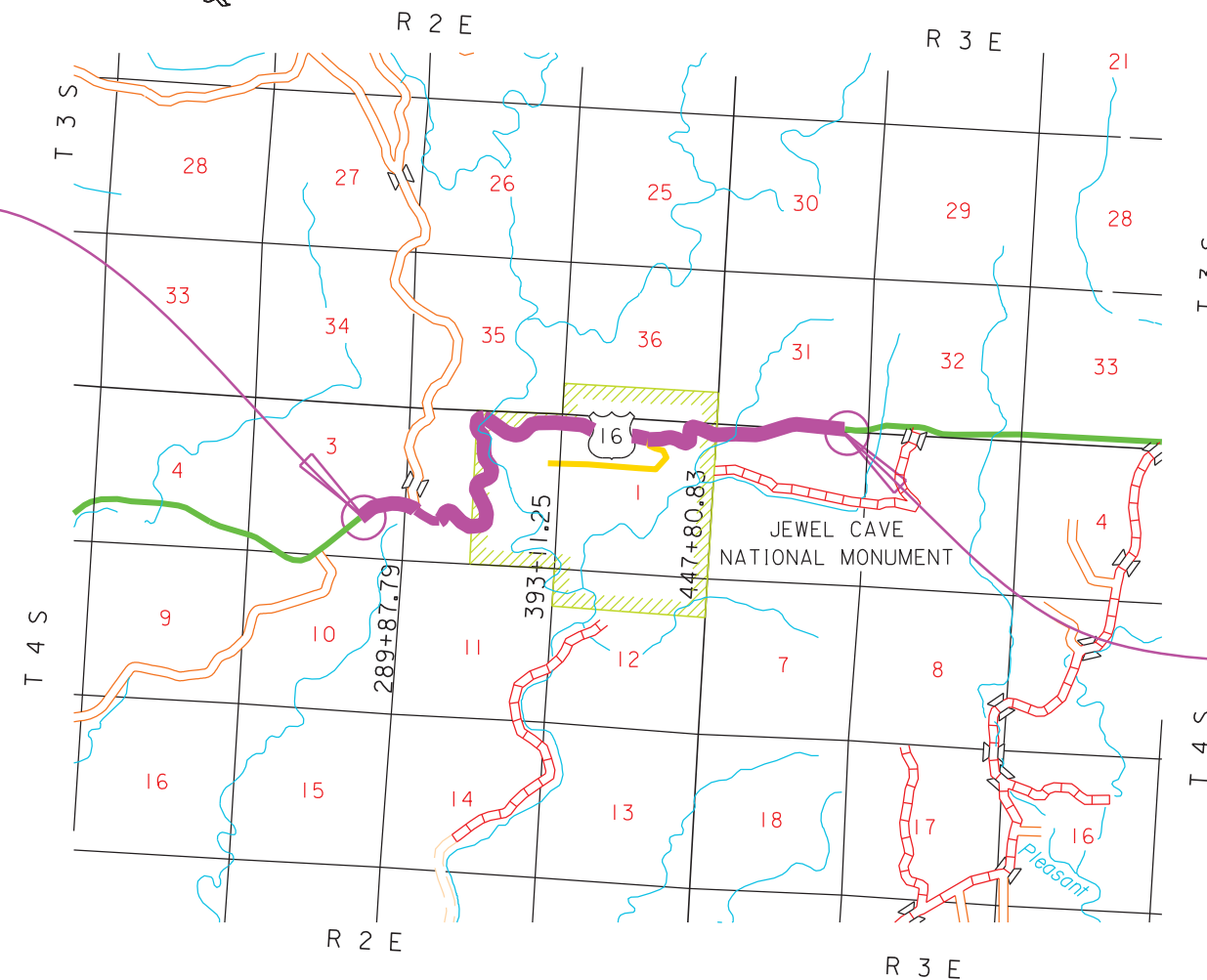
PLOT SCALE - 1"=200'

PLOT NAME - 1

FILE - U:\RD\PROJ\ACUST022E\TITLE.DGN

BEGIN NH 0016(72)11

Station 273+00.00 = Station 276+59.30
 Project R.T.E.C. "A". Approximately 1290.365 feet South and 1128.77 feet West of the East Quarter Line of Section 3- Township 4 South- Range 2 East.
 MRM 11.00+0.116



END NH 0016(72)11

Station 490+74.12
 122.31 feet North and 933 feet west of the Southeast Corner of Section 31- Township 3 South- Range 3 East.
 MRM 15.00+0.818

DESIGN DESIGNATION

ADT (2009)	1360
ADT (2029)	1785
DHV	270
D	50%
T DHV	3.8%
T ADT	8.4%
V	35 mph

STORM WATER PERMIT

Major Receiving
 Body of Water: Unknown Tributary
 Area Disturbed: 47 Acres
 Total Project Area: 94.5 Acres
 Approx. Begin Lat/Long 43.7263/-103.8635

SCALES

	RURAL	SUBURBAN	URBAN
PLAN	1"=200'	1"=100'	1"=40'
PROFILE	HORIZONTAL: 1"=200'	1"=100'	1"=40'
	VERTICAL: 1"=20'	1"=20'	1"=10'
CROSS SECTIONS	HORIZONTAL: 1"=40'	1"=20'	1"=20'
	VERTICAL: 1"=20'	1"=10'	1"=10'

GROSS LENGTH	21,772.34 FEET	4.1235 MILES
LENGTH OF EXCEPTIONS	0 FEET	0 MILES
NET LENGTH	21,772.34 FEET	4.1235 MILES

PLOTTED FROM - TRP817196

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION HYDRAULIC DATA SHEET

County Custer Project No. NH 0016(72)11 PCN 022E Sec. 2 Township 4S Range 2E
 Existing Station 364+18 Over Hell Canyon Drainage Area 50.5 sq. miles^A Direction of Flow (N S E W)
 Preliminary Final X Q-Design Yr. Frequency 25-yr Observed H.W. Elev. 5279.5 ft^B
 BRIDGE NO. 17-105-091 LOCATION US16, 0.25 miles W of Jewel Cave Entrance

Cross Section	Q _d cfs	W.W. Area sq. ft.	V fps	S _o ft./ft.	Bottom		H.W. ft.	d _n ft.	C.L. FL Elev.	D.H.W. Elev.		Ch. Ch.	Degree Skew
					Structure	Ch.				Culv. Inlet	Bridge		
Trapezoid S:S													
Rectangle	261	17	15.3	0.0112	1B = 6'		6.1	2.8	5267.8'	5275.1'		No ^C	10° ⁺ LHF
Round													
Arch													

Type: RCBC Inlet Extension with 30° FWWs, beveled ends, and debris fin^D at the inlet
 Size: 1-6'x6'
 Proposed Location: Sta. 364+18
 Notes or Remarks: Q₁₀₀ = 506 cfs; Q_{OT} > Q_{100-yr} Q_{OT ELEV.} = 5297.4'± at Sta. 360+00±
DHW Elev₁₀₀ = 5280.1 ft V₁₀₀ = V_{MAX} = 17.8 fps

^A The contributing drainage basin lies over the Limestone formation, which is known to infiltrate flows resulting in low runoff. SDDOT Personnel and the USGS staff from Rapid City confirm low runoffs in this area. Therefore, use of the 1998 USGS Subregion G Regression Equations were used for this site. Subregion G generally represents the central Black Hills where this limestone is prevalent.

^B SDDOT personnel observed high water at this site during the Spring of 2002 lasting for two to three days. The 2001 forest fire contributed to large amounts of log debris clogging part of the culvert inlet, raising water elevations above normal.

^C Remove heavy debris and sediment within 100-ft of the culvert outlet. No riprap is needed at the outlet.

Distribution

Hydraulics	<u>SVM</u>	^D The debris fin shall be designed according to the procedures in HEC-9 "Debris Control Structures."
Bridge	<u>X</u>	
Bridge Maint.		<u>Existing Culvert Inlet Elev. @ invert ≈ 5268.65 ft; Existing Culvert Outlet Elev. @ invert ≈ 5266.94 ft</u>
Rd. Design	<u>X</u>	
Foundations	<u>X</u>	^E Custer County is participating in the FEMA program.
Environmental	<u>X</u>	
Right-of-Way	<u>X</u>	^F This site is identified on the FIRM as Zone A, but no base flood elevations have been established.
PIC	<u>X</u>	
FHWA		For additional hydraulic design supporting information, contact the Bridge Hydraulic Engineer.
City		
County		Vertical Datum Used: NAVD 88: <u>X</u> NGVD 29: <u>Unknown</u>:
Region	<u>Rapid City</u>	Topeka Shiner Stream: Yes <u> </u> No <u>X</u> 404 Permit: Yes <u>X</u> No <u> </u>
Area Engineer	<u>Custer</u>	Community Participating in NFIP Program: Yes <u>X</u>^E No <u> </u>
Checked	<u>KJR</u>	Site in Identified NFIP Floodplain: Yes <u>X</u>^F No <u> </u>
Reviewed	<u>KPM</u>	In-Place Structure: <u>1-6'x6' (built in 1935)</u>
		100-Yr. DHW Elev. (existing): <u>5280.2' (11.5')</u> OHW elev.= <u>5270.5' (1.8')</u>

Revision No. Date: Signed By: Kevin Marton
 Supplement No. Date: Bridge Hydraulic Engineer
 Date: 10-06-2010

HYDRAULIC SUMMARY FOR PLAN SHEET

Q _d	261	cfs
A _d	17	sq. ft.
V _d	15.3	fps
Q _F	261	cfs
Q ₁₀₀	506	cfs
Q _{OT}	N/A	cfs
V _{max}	17.8	fps

Q_d = design discharge for the proposed culvert or bridge based on 25 year frequency. El. 5275.1'.

Q_{OT} = overtopping discharge and frequency ≥ 100 yr. recurrence interval. El. 5297.4'+/-.
Location Sta. 360+00+/-.

Q_F = designated peak discharge for the basin approaching proposed project based on 25 year frequency.

Q₁₀₀ = computed discharge for the basin approaching proposed project based on 100 year frequency. El. 5280.1'.

V_{max} = maximum computed outlet velocity for the proposed culvert or bridge, based on a 100 year frequency.

The hydraulic data contained in these plans is valid only if the overflow section is maintained. Alteration of the overflow section will require re-analysis of the hydraulics at this site to determine its effect on public safety.

Hydraulic Data to be Included on Roadway Profile Sheet

Flow			Elev.
Q _d =	261	cfs	5275.1'
Q ₁₀₀ =	506	cfs	5280.1'

331+48
Take Out 36"-51' CMP
(Incidental Work, Grading)

338+54
Take Out 24"-115' CMP
(Incidental Work, Grading)

346+98
Take Out 24"-88' CMP
(Incidental Work, Grading)

352+45
Take Out 36"-94' CMP
(Incidental Work, Grading)

356+48
Take Out 24"-112' CMP
(Incidental Work, Grading)

STATE OF SOUTH DAKOTA	PROJECT NH 0016(72)11	SHEET B22	TOTAL SHEETS B86
-----------------------	--------------------------	--------------	---------------------

Plotting Date: 10/05/2012

334+37
Take Out unknown"-78' CMP
(Incidental Work, Grading)

338+54 (4 Ac)
(Skew 5° LHF)
Install 24" - 38' RCP
Install 24" - 70' CMP (12' & 58')
And 2 - 35.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

346+98 (5 Ac)
(Skew 14° LHF)
Install 24" - 36' RCP
Install 24" - 46' CMP (10' & 36')
And 2 - 35.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

352+45 (43 Ac)
(Skew 22° LHF)
Install 30" - 66' RCP
Install 30" - 36' CMP (14' & 22')
And 2 - 35.0° Elbows
& 1 - 30" RCP to CMP Outlet Transition
& 1 RCP Sloped End
& 1 CMP Flared End

356+48 (3 Ac)
(Skew 6° LHF)
Install 24" - 44' RCP
Install 24" - 72' CMP (10' & 62')
And 2 - 25.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

338+54-31' L
Take Out Drop Inlet and
Frame & Grate

Install 3' X 4' Type C Drop Inlet
and Type C Frame & Grate
at the following locations:
338+56-26.4' L
347+05-25.6' L
356+51.8-36.8' L

331+48 (36 Ac)
(Skew 8° RHF)
Install 30" - 50' RCP
& 2 Sloped Ends

338+48.8-84' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

346+81.2-60' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

352+24.3-58.7' R
Install Bank and Channel
Protection Gabions
(6.0 CY)

356+38.8-85.3' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

334+37 (50 Ac)
(Skew 12° RHF)
Install 30" - 52' RCP
Install 30" - 90' CMP (14' & 76')
And 2 - 25.0° Elbows
& 1 - 30" RCP to CMP Outlet Transition
& 1 RCP Sloped End
& 1 CMP Flared End

334+45 to 359+25-14' R
Install Straight Class A W Beam
Guardrail with Wood Posts &
2 W Beam Guardrail Tangent
End Terminals

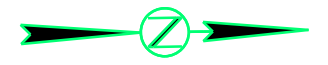
337+15.5-18.6' R to 349+16-18.3' R
Take Out W Beam Guardrail and
2 Breakaway Cable Terminals

350+87.4-17.3' R to 352+96.1-23.4' R
Take Out W Beam Guardrail and
2 Breakaway Cable Terminals

354+62.8-17.8' R to 357+73.3-24.8' R
Take Out W Beam Guardrail and 2
Breakaway Cable Terminals

360+50 to 360+87 R
Remove & Reset Guardrail
(See Guardrail Layouts)

334+66.6-102.4' R
Install Bank and Channel
Protection Gabions
(6.0 CY)



Gov't
Lot 3

United States of America (Forest Service)
Government Lot 3 and SE1/4 NW1/4 of
Section 2 - Township 4 South - Range 2 East
of the B.H.M.

Parcel 6
4.11 acres, 179129 sq. ft.
ROW Taking

United States of America (Forest Service)
SW1/4 NE1/4 of Section 2 - Township 4 South -
Range 2 East of the B.H.M.

Parcel 9
1.48 acres, 64524 sq. ft.
ROW Taking

PI 342+43.68
N 529554.19
E 1040851.18
Del 113°18'20" L
Dc 19°13'57" L
T 452.71
L 589.13
R 297.91

PI 347+08.95
N 530084.57
E 1040277.12
Del 51°51'11" R
Dc 11°41'49"
T 238.13
L 443.31
R 489.84

PI 334+35.52
N 529147.10
E 1039935.07
Del 95°43'54" R
Dc 15°55'13" R
T 397.82
L 601.32
R 359.89

PI 353+20.97
N 530727.48
E 1040328.71
Del 43°57'04" L
Dc 13°58'28" L
T 165.45
L 314.51
R 410.00

United States of America
(Jewel Cave National Monument)
SW1/4 of Section 2 - Township 4 South -
Range 2 East of the B.H.M.

Parcel 5
0.88 acre, 38401 sq. ft.
ROW Taking

Sec. 2 - T4S - R2E

United States of America
(Jewel Cave National Monument)
Government Lot 2 and SW1/4 NE1/4
of Section 2 - Township 4 South -
Range 2 East of the B.H.M.

Parcel 8
2.18 acres, 94843 sq. ft.
ROW Taking

United States of America
(Jewel Cave National Monument)
Government Lot 3 and SE1/4 NW1/4 of
Section 2 - Township 4 South - Range 2 East
of the B.H.M.

Parcel 7
3.45 acres, 150353 sq. ft.
ROW Taking

Parcel 7
334+80 to 336+21.89 R
Temporary Easement for
Detention Pond containing
0.1 ac (1969 sq ft),
more or less

Parcel 8
335+17 to 338+33 R
Temporary Easement for
Detention Pond containing
0.9 ac (38181 sq ft),
more or less

Parcel 9
339+21 to 341+19 L
Temporary Easement for
Cut and Fill containing
0.1 ac (2164 sq ft),
more or less

Parcel 6
349+57 to 350+88 L
Temporary Easement for
Cut and Fill containing
0.1 ac (1767 sq ft),
more or less

Parcel 6
353+54 to 355+48 L
Temporary Easement for
Cut and Fill containing
0.1 ac (2810 sq ft),
more or less

Parcel 7
358+52 to 363+00.24 R
Temporary Easement for
Fence containing
0.3 ac (12619 sq ft),
more or less

Parcel 5
330+32 to 331+17 R
Temporary Easement for
Cut and Fill containing
0.1 ac (2961 sq ft),
more or less

Parcel 2
332+11 to 333+01 L
Temporary Easement for
Cut and Fill containing
0.1 ac (2092 sq ft),
more or less

Parcel 6
332+97.26 to 333+67 L
Temporary Easement for
Cut and Fill containing
0.1 ac (988 sq ft),
more or less

Parcel 9
342+19 to 343+37 L
Temporary Easement for
Cut and Fill containing
0.1 ac (1277 sq ft),
more or less

Parcel 8
351+23 to 352+37 R
Temporary Easement for
Cut and Fill containing
0.1 ac (1400 sq ft),
more or less

Parcel 7
353+00 to 354+28 R
Temporary Easement for
Cut and Fill containing
0.1 ac (1830 sq ft),
more or less

Parcel 6
356+72 to 358+04 L
Temporary Easement for
Cut and Fill containing
0.1 ac (8174 sq ft),
more or less

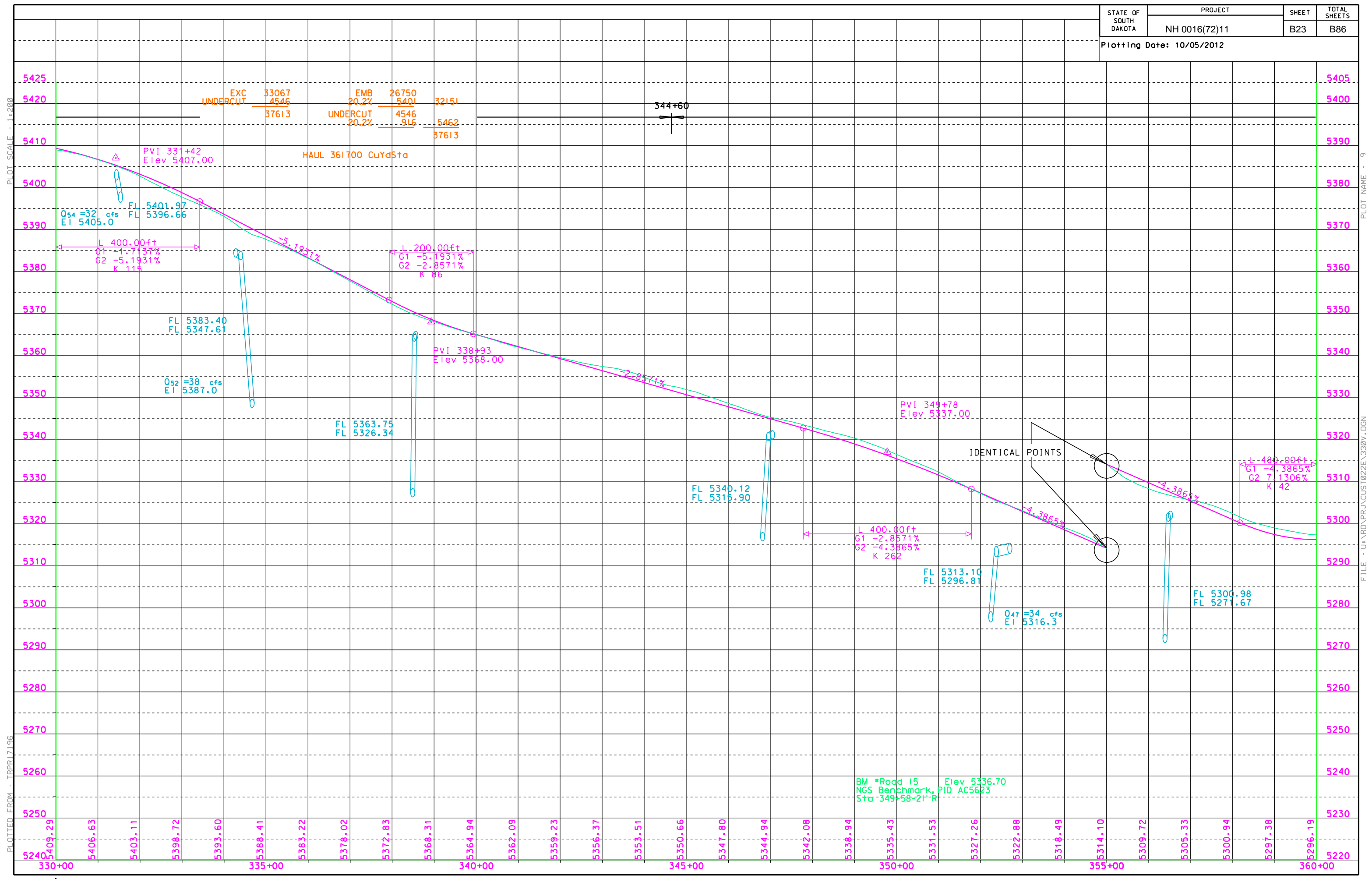
PLOT SCALE - 1:200

PLOTTED FROM - TRPB17196

PLOT NAME - 8

FILE - U:\RD\PR\ACUST02E\330.DGN

Plotting Date: 10/05/2012



PLOT SCALE - 1:200

PLOT NAME - 9

FILE - U:\RD\PROJ\ACUST02E\330V.DGN

PLOTTED FROM - TRP817196

364+17.41
Retain Box Culvert
Extended 30' L
(See Section E)

361+72 (39 Ac)
(Skew 3° LHF)
Retain Existing 18" - 110' CMP
& 2 Flared Ends

361+70.2-34.23' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

366+65 to 372+52.5-14' R
Install Straight Class A W Beam
Guardrail with Wood Posts &
2 W Beam Guardrail Tangent
End Terminals

368+18
Take Out 24"-132' CMP
(Incidental Work, Grading)

368+18 (7 Ac)
(Skew 13° LHF)
Install 24" - 38' RCP
Install 24" - 88' CMP (10' & 78')
And 2 - 30.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

367+94-101.3' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

363+65 to 365+84 L
Remove & Reset Guardrail
(See Guardrail Layouts)

378+56
Take Out 24"-129' CMP
(Incidental Work, Grading)

378+00 (10 Ac)
Install 24" - 38' RCP
Install 24" - 30' CMP (10' & 20')
And 2 - 30.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

378+00-58.3' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

364+95.5 to 365+89 R
Remove & Reset Guardrail
(See Guardrail Layouts)

382+50 to 385+50 R
Install Engineered Fill

387+00 to 390+00 R
Install Engineered Fill

360+72 to 364+96
Retain Existing
Kansas Corral
& Retaining Wall

Sec. 2 - T4S - R2E

385+92
Take Out 24"-41' CMP
(Incidental Work, Grading)

385+92 (6.5 Ac)
(Skew 5° LHF)
Install 24" - 22' RCP
Install 24" - 28' CMP (10' & 18')
And 2 - 25.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

385+87.9-42.5' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

366+98.5-17.1 R to 372+27.1-17.7' R
Take Out W Beam Guardrail and 2
Breakaway Cable Terminals

388+57
Take Out 24"-49' CMP
(Incidental Work, Grading)

390+55 (3.5 Ac)
(Skew 7° LHF)
Install 24" - 28' RCP
Install 24" - 14' CMP (10' & 4')
And 2 - 35.0° Elbows
& 1 - 24" RCP to CMP Outlet Transition
& 1 CMP Flared End

390+50.7-34.1' R
Install Bank and Channel
Protection Gabions
(4.5 CY)

382+09 to 395+57-14' R
Install Straight Class A W Beam
Guardrail with Wood Posts &
2 W Beam Guardrail Tangent
End Terminals

Take Out Drop Inlet and
Frame & Grate
at the following locations:
368+18-23' L
378+56-19' L
385+92-25' L
388+57-24' L

Install 3' X 4' Type C Drop Inlet
and Type C Frame & Grate
at the following locations:
368+24-26.3' L
378+00-20.9' L
385+94-20.9' L
390+57.6-20.9' L

STATE OF SOUTH DAKOTA	PROJECT NH 0016(72)11	SHEET B24	TOTAL SHEETS B86
Plotting Date: 03/18/2013		REV JWF 4/1/13	

Parcel 6
PI 378+32.76
N 532682.13
E 1038725.27
Del 166°09'44" R
Dc 21°48'07"
T 2165.67
L 262.14
R 262.80

Parcel 7
PI 375+90.16
N 530689.45
E 1041389.01
Del 80°55'11" L
Dc 12°25'43"
T 393.17
L 651.08
R 461.00

Parcel 10
PI 383+40.64
N 531306.08
E 1042024.87
Del 46°26'58" R
Dc 11°49'02"
T 208.05
L 393.07
R 484.85

United States of America
(Jewel Cave National Monument)
Government Lot 3 and SE1/4 NW1/4 of
Section 2 - Township 4 South - Range 2 East
of the B.H.M.

United States of America
(Jewel Cave National Monument)
Government Lots 1 and 2
of Section 2 - Township 4 South -
Range 2 East of the B.H.M.

Parcel 7
3.45 acres, 150353 sq. ft.
ROW Taking

Parcel 10
11.12 acres, 484524 sq. ft.
ROW Taking

Parcel 7
362+66 to 364+20.05 R
Temporary Easement for
Channel Cleanout containing
0.1 ac (4444 sq ft),
more or less

Parcel 10
364+01 to 364+28 R
Temporary Easement for
Cut and Fill containing
0.1 ac (214 sq ft),
more or less

Parcel 10
371+22 to 373+78 L
Temporary Easement for
Cut and Fill containing
0.1 ac (3632 sq ft),
more or less

Parcel 10
377+82 to 378+17.10 R
Temporary Easement for
Cut and Fill containing
0.1 ac (359 sq ft),
more or less

Parcel 10
380+31 to 381+96 L
Temporary Easement for
Cut and Fill containing
0.1 ac (1786 sq ft),
more or less

Parcel 10
382+00 to 386+00 R
Temporary Easement for
Fill containing
0.2 ac (8586 sq ft),
more or less

Parcel 10
387+00 to 390+50 R
Temporary Easement for
Fill containing
0.2 ac (10500 sq ft),
more or less

PLOT SCALE - 1:200

PLOTTED FROM - TRPB17196

PLOT NAME - 10

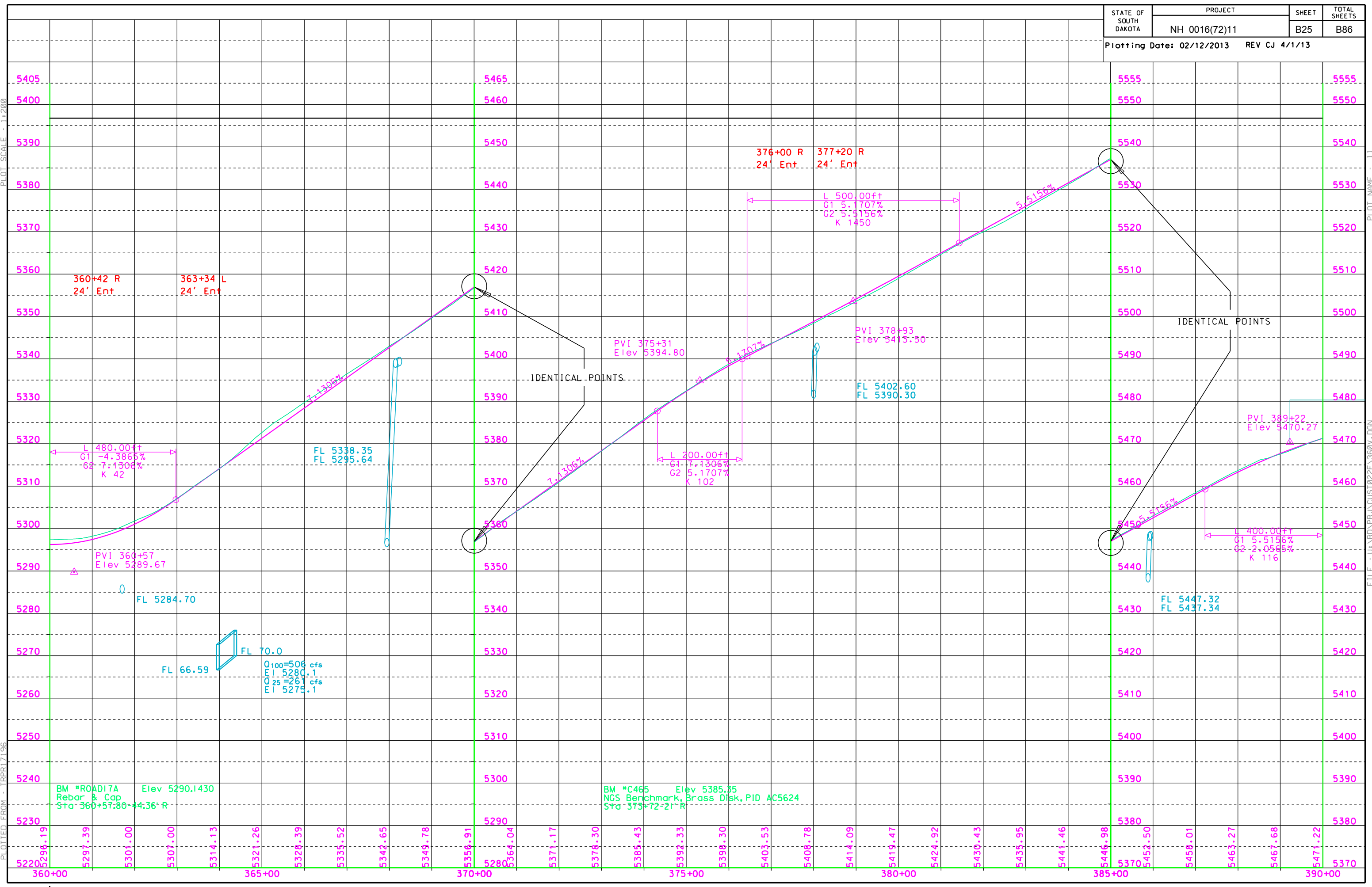
FILE - U:\RD\PR\ACUST\022E\360.DGN

PLOT SCALE - 1:200

PLOT NAME - 11

PLOTTED FROM - TRPB17196

FILE - U:\RD\PROJ\ACUST02E\360V.DGN



360+00 365+00 370+00 375+00 380+00 385+00 390+00



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Steve Vance, THPO
Cheyenne River Sioux Tribe
PO Box 590
Eagle Butte, SD 57625

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Vance:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Erick Voice, Sr., Cultural Resource Contact
Crow Creek Sioux Tribe
PO Box 50
Ft. Thompson, SD 57339

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Voice:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-73263.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl". The signature is written in a cursive, slightly slanted style.

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Ray Red Wing, THPO
Flandreau Santee Sioux Tribe
PO Box 283
Flandreau, SD 57028

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Red Wing:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Clair Green, Cultural Resources Contact
Lower Brule Sioux Tribe
187 Oyate Circle
Lower Brule, SD 57548

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Green:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Wilmer Mesteth, THPO
Oglala Sioux Tribe
PO Box 320
Pine Ridge, SD 57770

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Mesteth:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl". The signature is written in a cursive, slightly slanted style.

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Russell Eagle Bear, THPO
Rosebud Sioux Tribe
PO Box 809
Rosebud, SD 57570

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Eagle Bear:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Dianne Desrosiers, THPO
Sisseton-Wahpeton Oyate
PO Box 907
Agency Village, SD 57262

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Desrosiers:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Waste'Win Young, THPO
Standing Rock Sioux Tribe
PO Box D
Ft Yates, ND 58538

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Young:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Lana Gravatt, THPO
Yankton Sioux Tribe
PO Box 248
Marty, SD 57361

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Gravatt:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Historic Preservation Office
Iowa Tribe of Oklahoma
RR1 Box 721
Perkins, OK 74059

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Historic Preservation Office:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Perry Brady, THPO
Three Affiliated Tribes
404 Frontage Rd.
New Town, ND 58763

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Brady:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl". The signature is written in a cursive, slightly slanted style.

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Karen Little Coyote, Cultural Resource Contact
Cheyenne/Arapaho Tribes of Oklahoma
PO Box 145
Concho, OK 73022

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Little Coyote:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Wilfred Ferris, THPO
Eastern Shoshone Tribe
PO Box 538
Fort Washakie, WY 82514

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Ferris:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Dewey D. Tsonetokoy, Sr.
Kiowa Ethnographic Endeavor Foundation
Route #3, Box 700
Carnegie, OK 73015

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Tsonetokoy:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Darlene Conrad, THPO
Northern Arapaho Tribe
PO Box 396
Fort Washakie, WY 82514-0396

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Conrad:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Linwood Tallbull, THPO
Northern Cheyenne Tribe
PO Box 128
Lame Deer, MT 59043-0128

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Tallbull:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Sicangu Treaty Council
Rosebud Sioux Tribe
PO Box 430
Rosebud, SD 57570

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Council Members:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Roger Trudell, Chairman
Santee Sioux Nation
108 Spirit Lake Avenue
Niobrara, NE 68760

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Mr. Trudell:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Department of Transportation
Division of Planning/Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-3268 Fax: 605/773-6608

November 21, 2012

Myra Pearson, Tribal Chairperson
Spirit Lake Sioux Tribe
PO Box 359
Fort Totten, ND 58335-0359

RE: NH 0016(72)11, PCN 022E, Custer County
US16 - Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ms. Pearson:

An Environmental Assessment is being prepared for this project. This coordination is follow-up to the initial Section 106 consultation for this project that occurred on October 20, 2010.

Enclosed is CD copy of cultural resources survey report entitled, *An Assessment of Effects and Recommendations for Cultural Sites Located Along US Highway 16 within and in the Vicinity of Jewel Cave for SDDOT Project No. NH0016(72)11, PCN 022E*, by Sarah Laundry and James Donohue (CIS #2666). This report contains confidential information that I request be withheld from public disclosure.

Pursuant to Section 106 of the National Historic Preservation Act (36 CFR Part 800), the South Dakota Department of Transportation, on behalf of the Federal Highway Administration – SD Division, is sharing the findings of CIS #2666 to tribes expressing interest in project. Barbara Boeker, an enrolled member of the Cheyenne River Sioux Tribe and graduate of the Cheyenne River Cultural Resources Training Program, was participant to this investigation.

If you have any question or comment, please feel free to contact me or you may contact Marion Barber, FHWA Environmental Protection Specialist, at (605) 224-7326.

Sincerely,

A handwritten signature in black ink that reads "Tom Lehmkuhl".

Tom Lehmkuhl
Environmental Engineer
Office of Project Development
605.773.3180

Enclosure



Flandreau Santee Sioux Tribe

P.O. Box 283 Flandreau, SD 57028

Ph. 605-997-3891

Fax 605-997-3878

www.santeesioux.com

Flandreau Santee Sioux Tribe
Office of Cultural Preservation/Tribal NAGPRA Office

Reference Number: NH 0016(72)11, PCN 022E, Custer County
Project Number: _____

Date: 11-4-10, 2010

We have no interest in this area geographically

We have no comment on the proposed undertaking

No objections. However, if human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction, please stop immediately and notify the appropriate persons (state & tribal NAGPRA representatives)

We have an objection or require additional project information. Please send the following to Cultural Preservation Office, FSST, P.O. Box 283, Flandreau, SD, 57028

Signature:

Raymond Redwing
Raymond Redwing-Cultural Preservation Officer



TRIBAL HISTORIC PRESERVATION

Mandan Hidatsa Arikara

Perry 'No Tears' Brady, Director

404 Frontage Road,

New Town, North Dakota 58763

Ph/701-862-2474 fax/701-862-2490

pbrady@mhanation.com

November 3, 2010

Ginger Massie, FHWA
700 E. Broadway Avenue
Pierre, South Dakota 57501-2586

RE: NH 0016(72)11, PCN 022E, Custer County
US16-Fm 1 mi W of Jewel Cave National Monument to 0.5 mi E of Jewel Cave
National Monument
Grading and AC Surfacing

Dear Ginger Massie

As Director of the Tribal Historic Preservation Office appreciates this opportunity to comment On the Jewel Cave National Monument at this time, we are unaware of any type of Native American cultural resources that may exist in the area where the proposed Jewel Cave National Monument is to be constructed.

However, should you make a discovery of Native American cultural resources during construction, please contact our Tribal Historic Preservation Office at (701)862-2474 At any time or if you have any questions or need additional information.

Good luck with your project, and feel free to contact us for further information.

Sincerely,

A handwritten signature in black ink, which appears to read "Perry Brady", is written over the typed name.

Perry 'No Tears' Brady

Cc. file
mc

APPENDIX B

Wildlife, Fish, and Plant Sensitive Habitat Report

**Wildlife, Fish and Plant Sensitive Habitat Report
for Grading and AC Surfacing of
US 16 Near Jewel Cave National Monument
Custer County, South Dakota**




Prepared by
HDR | ONE COMPANY
Many Solutions®

August 2011

**Wildlife, Fish, and Plant Sensitive Habitat Report
for Grading and AC Surfacing of
US 16 Near Jewel Cave National Monument
Custer County, South Dakota**

**Prepared for
South Dakota Department of Transportation
Office of Road Design
700 E. Broadway Avenue
Pierre, South Dakota 57501-2586**

Prepared by
 **ONE COMPANY**
Many Solutions®

August 2011

TABLE OF CONTENTS

	Page
Section 1 General Information	1-1
1.1 Project Description	1-1
1.2 Purpose of this Document	1-1
1.3 Introduction to Organization of this Document	1-10
Section 2 Purpose and Need and Project Description	2-1
2.1 Habitat in Project Area	2-1
2.2 Known Occurrences of Species of Local Concern	2-3
2.2.1 SDDGFP Natural Heritage Database.....	2-3
2.2.2 Jewel Cave National Monument	2-7
2.2.3 Breeding Bird Surveys.....	2-7
Section 3 Species Habitat Requirements and Potential Impacts	3-1
3.1 Plants	3-1
3.2 Invertebrates.....	3-1
3.3 Birds	3-2
3.4 Mammals.....	3-4
Section 4 Conclusions and Recommendations	3-1
Section 5 References	4-1
Appendices	
A: Site Reconnaissance Photos	
B: Element Occurrence Records – South Dakota Natural Heritage Program	

FIGURES

	Page
Figure 1 Proposed Project Area Map	1-2
Figure 2 Topographic Map	2-2
Figure 3 Element Occurrence Records	2-6
Figure 4 Location of Site Photos	4-8

TABLES

Table 1 USDA-FS Exhibit 03 - Black Hills National Forest Species of Local Concern ¹	1-3
Table 2 Element Occurrence Records for Study Area and Vicinity ¹	2-4
Table 3 BBS Routes and Black Hills National Forest Species of Local Concern Observed	2-7

ACRONYMS AND ABBREVIATIONS

asl	Above sea level
BBS	Breeding Bird Survey
BHNF	Black Hills National Forest
GIS	Geographic Information System
HDR	HDR Engineering, Inc.
JCNM	Jewel Cave National Monument
NEPA	National Environmental Policy Act
NPS	National Park Service
NWI	National Wetland Inventory
ROW	Right-of-Way
SDDOT	South Dakota Department of Transportation
SDGFP	South Dakota Game, Fish & Parks Commission
USDA-FS	U.S. Department of Agriculture – Forest Service
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

SECTION 1

GENERAL INFORMATION

1.1 PROJECT DESCRIPTION

The South Dakota Department of Transportation (SDDOT) is planning to improve a 4.3 mile segment of U.S. Highway 16 from 0.8 miles east of Jewel Cave National Monument (the Monument) to approximately 1.7 miles west of the Monument, in Custer County, South Dakota. Proposed improvements include grading and asphalt/concrete resurfacing of the facility. Grading, and cut and fill would be done to improve safety along the roadway as the existing facility is on a steep grade, contains several sharp turns, and commonly experiences rock falls from associated steep roadway cuts. Figure 1 shows the proposed project area on an aerial photograph. Although the majority of impacts from the proposed improvements would occur within the existing right-of-way (ROW) for Highway 16, two roadway sections which include three sharp turns would also be straightened. The proposed grading of existing hillsides as planned would reduce rock falls and allow for more sun exposure on the roadway. These safety improvements are proposed to reduce the chances of loss of life or property, in addition to the risk of a catastrophic spill of hazardous materials or petroleum products from large trailer/trucks. New ROW lines would be established for the improved facility. The proposed project area currently experiences disturbances such as noise and vehicle emissions resulting from existing roadway activities.

The proposed project area is situated within the Hells Canyon District of the Black Hills National Forest extending through Jewel Cave National Monument, which is operated by the National Park Service. The Black Hills National Forest includes approximately 1.5 million acres located within southwestern South Dakota and northeastern Wyoming.

1.2 PURPOSE OF THIS DOCUMENT

The U.S. Department of Agriculture – Forest Service (USDA-FS) manages the lands included within the Black Hills National Forest in order to improve forest health, range conditions and wildlife habitats within the forest. The USDA-FS has developed a list of Black Hills National Forest Species of Local Concern (see Table 1). This list can include both species with declining trends in a portion of the region or those that are important components of diversity in the local area. The local area is defined as USDA-FS lands within the Black Hills National Forest.

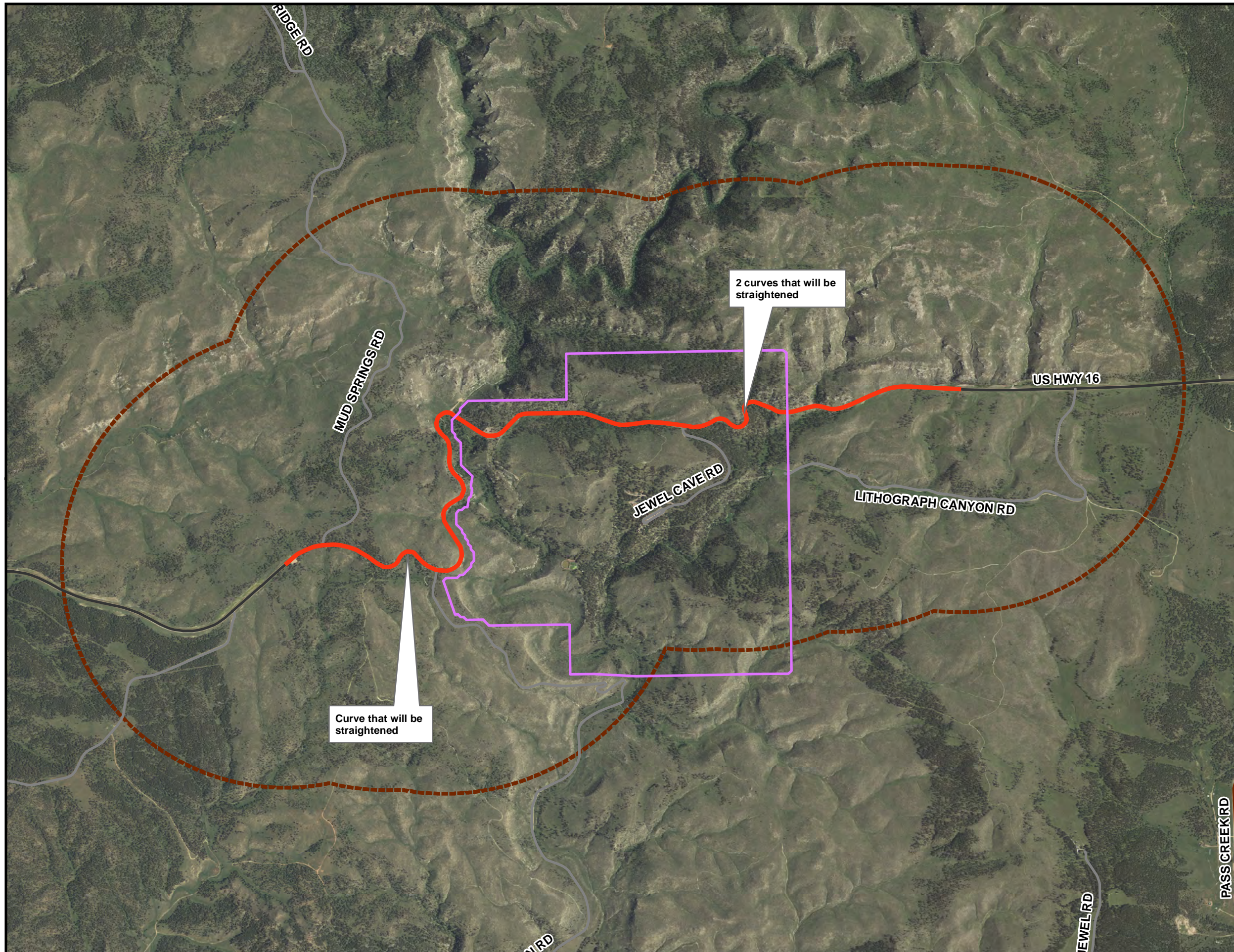
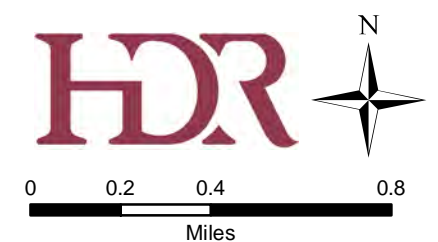


Figure 1
Proposed Project Area Map



Legend

- Proposed Improvement Area
- Jewel Cave Nat'l Monument
- 1 Mile Buffer



Date : August 2011

The purpose of this report is to provide information about potential environmental effects of the proposed project on Black Hills National Forest Species of Local Concern (USDA-FS listed species). Information, such as species distributions, known presence data, field reconnaissance and habitat requirements for each of the USDA-FS listed species, was examined to determine whether impacts to any species would be anticipated due to the proposed project.

Designated Species of Local Concern must be considered during the project design, and effects to the species from the proposed project must be evaluated through the National Environmental Policy Act (NEPA) process (USDA-FS, 2005). Table 1 includes USDA-FS Exhibit 03 which must be placed in the project record. This exhibit documents which species occur in the proposed project area, if appropriate habitat is present for the species, and if impacts to the species will be analyzed.

Table 1 USDA-FS Exhibit 03 - Black Hills National Forest Species of Local Concern¹

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
Plants				
<i>Adiantum capillus-veneris</i> Maidenhair fern	N	N	N	Habitat for maidenhair fern includes moist calcareous cliffs, banks, and ledges along streams and rivers, walls of lime sinks, and canyon walls. In South Dakota, maidenhair fern is known from a single occurrence on Cascade Creek in the southern Black Hills (SDGFP, 2010). This species is one of several rare plants found only at Cascade Springs due to the availability of year-round open water (USFS, 2010). Due to the lack of required habitat it is not likely that maidenhair fern would be present in the project area therefore no effects to this species would be anticipated.
<i>Carex bella</i> Southwestern showy sedge	N	N	N	This species occurs in wet meadows, along streams, and in moist woods usually in the higher mountains (USGS, 2006). There have been a few occurrences of southwestern showy sedge in the Harney Peak area, approximately 16 miles northeast of project area (SDGFP, 2010). This species is unlikely to occur in the project

August 2011

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
				area due to the lack of suitable habitat and the restricted range of the species. No effects to this species would be anticipated.
<i>Eleocharis rostellata</i> Beaked spikerush	N	N	N	Beaked spikerush is a grasslike perennial that is found in wet, often alkaline soils associated with warm springs or fens in the valley and foothills zones (MT, 2011). According to the South Dakota Natural Heritage Program, this species has only been found on Cascade Creek, which is approximately 30 miles southeast of the project area (SDGFP, 2009). This species is one of several rare plants found only at Cascade Springs due to the availability of year-round open water (USFS, 2010). No habitat for beaked spikerush exists in the proposed project area. No effects to this species would be anticipated.
<i>Gentiana affinis</i> Pleated gentian	N	N	N	Pleated gentian is found in montane meadows of the Black Hills and northeast South Dakota (SDGFP, 2010). It is known to occur in Pennington and Harding counties, north of the proposed project area (USDA, 2011). The species requires moist meadow habitat which is not present in the proposed project area. No effects to this species would be anticipated.
<i>Listera convallarioides</i> Broadlipped twayblade	N	N	N	Broadlipped twayblade is a plant of cool, moist, dim habitats, such as woods and forest, as well as swamps and stream banks (Naturalist, 2011). A few occurrences have been reported in springhead wetlands of the northern Black Hills. (SDGFP, 2009), however the species is only known from Lawrence County in South Dakota (USDA, 2011). This species is not known in Custer County. Preferred habitat is not present within the project area and the

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
				species is unlikely to occur. No effects to this species would be anticipated.
<i>Lycopodium annotinum</i> Stiff clubmoss	N	N	N	Stiff clubmoss is found in moist forests, thickets, and heathland. There have been few occurrences reported in the northern Black Hills (SDGFP, 2009). No habitat for stiff clubmoss is present in the proposed project area. No effects to this species would be anticipated.
<i>Oxyria digyna</i> Alpine mountainsorrel	N	Y	Y	Potential effects included in Section 3.
<i>Petasites sagittatus</i> Narrowleaf sweet coltsfoot	N	N	N	Found in cold marshes and swamp openings, this species often forms large colonies. Narrowleaf sweet coltsfoot is localized in the streamside wetland habitats of the northern Black Hills (SDGFP, 2009). No streamside wetlands are present in the proposed project area. No effects to this species would be anticipated.
<i>Polystichum lonchitis</i> Northern hollyfern	N	N	N	This fern is found in rock crevices or at the base of boulders in boreal and subalpine coniferous forests or alpine regions (Rook, E.J.S., 2004). It has been found in the moist forested habitats of the northern Black Hills (SDGFP, 2009). Because the project area has been largely deforested due to the Jasper Fire, this species would not be expected to be present in the project area. No effects to this species would be anticipated from the proposed project.
<i>Salix lucida caudata</i> Shining willow	N	N	N	This species is a wetland-riparian species that is known only from a single recent collection from the central Black Hills (SDGFP, 2009). No wetland-riparian habitat would be impacted by the proposed project; furthermore, adverse impacts to water quality would

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
				not be anticipated with the proposed project due to the use of best management practices during construction and engineering controls to handle roadway runoff. No effects to this species would be anticipated.
Invertebrates				
<i>Speyeria atlantis pahasapa</i> Atlantis fritillary	N	Y	Y	Potential effects included in Section 3.
<i>Phycoides batesii</i> Tawny crescent	Y		Y	Potential effects included in Section 3.
<i>Vertigo arthuri</i> Callused vertigo	N	N	N	The callused vertigo snail is found in moist, undisturbed forested areas. It prefers a habitat comprised of diverse flora with a varied understory and deep litter positioned on shaded north-facing slopes, which are normally located at the base or extending slightly onto the adjacent floodplain. The callused vertigo is generally found on limestone or schist substrate. (USGS, 2006a). Habitat of this type is not present in the project area therefore this species would not be impacted by the proposed project.
<i>Vertigo paradoxa</i> Mystery vertigo	N	N	N	This snail species is generally found in sites described as, wet, relatively undisturbed forests with deep litter, on north facing slopes, slope bases, and adjacent floodplains in areas with limestone or schist substrates. The Mystery Vertigo Snail has only been found in closed canopy Ponderosa Pine or White Spruce forests. (WGFD, 2011) Habitat of this type is not present in the project area therefore this species would not be impacted by the proposed project.
<i>Catinella gelida</i> Frigid ambersnail	N	N	N	This species relies on cold, undisturbed, well-forested, Algific slopes (Iowa DNR, 2011). Habitat of this type is not present in the project area therefore this species would not

August 2011

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
				be impacted by the proposed project.
<i>Discus shimekii</i> Striate disc	N	N	N	The striate disc is a land snail most often found in litter in lowland forests. This species is often found on shaded, north-facing slopes, and tends to be associated with coniferous or deciduous forests. Foods utilized by this species are mostly unknown, but the striate disc appears to subsist largely on decaying deciduous leaves. Fire constitutes a major threat to populations of this species as stand-replacement fires can eliminate whole populations (MT, 2011). Habitat required for this species is not present in the project area and no effect due to the proposed project would be anticipated.
Birds				
<i>Accipiter striatus</i> Sharp-shinned hawk	Y		Y	Potential effects included in Section 3.
<i>Accipiter cooperii</i> Cooper's hawk	Y		Y	Potential effects included in Section 3.
<i>Buteo platypterus</i> Broad-winged hawk	N	N	N	The proposed project area is west of the main breeding population this species (Cornell, 2010). During migration, this species may be present in a variety of habitats but generally roosts in a forest at night (SDBB, 2011), and breeds in continuous deciduous or mixed-deciduous forest. Impacts to this species would not be anticipated as the species has not been documented near the project area and would likely be present only as a migrant. Roosting and breeding in the project area would not be anticipated.
<i>Aegolius acadicus</i> Northern Saw-whet owl	Y		Y	Potential effects included in Section 3.
<i>Sitta pygmaea</i> Pygmy nuthatch	Y		Y	Potential effects included in Section 3.

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
<i>Cinclus mexicanus</i> American dipper	N	N	N	The American dipper historically occurred on several permanent fast-flowing streams in the Black Hills; however its range is now restricted to Spearfish Creek (BCA, 2011). An aquatic songbird, this species requires fast-moving, clear, unpolluted streams with cascades, riffles and waterfalls (Cornell, 2010). No streams of this type would be impacted by the proposed project and adverse impacts to water quality that could affect American dipper habitat would not be anticipated as best management practices and engineering controls would be used to ensure water quality is maintained.
<i>Mniotilta varia</i> Black and white warbler	N	N	N	This species is a common migrant throughout the state and an uncommon and local summer resident in portions of the western part of the state (SDBB, 2011). The black-and-white warbler breeds in mature and second-growth deciduous and mixed forests (Cornell, 2010). This species has not been documented on the Monument or any breeding bird surveys within 25 miles of the proposed project area. The species may be present as a migrant in the proposed project area but no breeding habitat would be impacted by the proposed project.
Mammals				
<i>Myotis septentrionalis</i> Northern Long-eared myotis	Y		Y	Potential effects included in Section 3.
<i>Myotis ciliolabrum</i> Small-footed myotis	Y		Y	Potential effects included in Section 3.
<i>Myotis evotis</i> Long-eared myotis	N	Y	Y	Potential effects included in Section 3.
<i>Myotis volans</i> Long-legged myotis	Y		Y	Potential effects included in Section 3.

Species	Species Present? ² (Y/N)	Habitat Present? ³ (Y/N)	Include in NEPA document? ⁴ (Y/N)	Rationale for not carrying species forward into the NEPA document
<i>Glaucomys sabrinus</i> Northern flying squirrel	Y		Y	Potential effects included in Section 3.
<i>Zapus hudsonius campestris</i> Meadow jumping mouse	N	N	N	The meadow jumping mouse occurs mostly in low undergrowth consisting of grasses and forbs, in open wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover. It prefers lowlands with medium to high moisture over drier uplands. Overgrazing of riparian areas by domestic stock has resulted in the loss of much suitable habitat for this subspecies and has been indicated as its main threat (IUCN, 2011). Wet meadows and riparian corridors are not present in the proposed project area; this species is not expected to occur in the proposed project area therefore no effects are anticipated.
<i>Oreamnos americanus</i> Mountain goat	N	Y	Y	Potential effects included in Section 3.
<i>Ovis canadensis</i> Bighorn sheep	N	Y	Y	Potential effects included in Section 3.
<p>¹ This table is completed Exhibit 03 (USFS, 2005) as required to be completed and maintained in the project record.</p> <p>² Identify whether each species is known to be present within the Project Area.</p> <p>³ If the species is not known to be present, identify whether habitat is present such that the species is likely to occur in the project area.</p> <p>⁴ If the species is known to be present and/or there is habitat present such that the species is likely to occur in the project area, and these are likely to be affected by the project, the species should be carried forward in the NEPA document.</p>				

1.3 INTRODUCTION TO ORGANIZATION OF THIS DOCUMENT

Section 1 provides a brief discussion of the proposed project and introduces the species listed on the BBNF Species of Local Concern list; additionally Table 1 identifies species that may be present or have habitat in the project area. Species from this table which may possibly be affected by the proposed project are discussed in more detail in Section 3.

Section 2 describes habitat found within the project area and provides presence data for species on the USFS Species of Local Concern list. Section 3 provides a summary of habitat requirements and potential impacts to USDA-FS listed species that are known to occur within the proposed project area or have potential habitat within the proposed project area. Additionally in Section 3, there will be a discussion of the U.S. Fish and Wildlife Service (USFWS) listed species that potentially occur in Custer County, South Dakota. The USFWS-listed species for Custer County include: Whooping Crane (*Grus americana*; listed endangered; possibly occurring in the county), black-footed ferret (*Mustela nigripes*; listed endangered; known to occur in the county), and Sprague's Pipit (*Anthus spragueii*; candidate species; possible migrant in county). No species specific surveys were completed as a part of this scope. Section 4 provides conclusions, and Section 5 contains the document references.

SECTION 2

PURPOSE AND NEED AND PROJECT DESCRIPTION

2.1 HABITAT IN PROJECT AREA

The project area lies within the Black Hills Plateau ecoregion of South Dakota (USGS, 2010). The Black Hills Plateau ecoregion is a relatively flat, elevated expanse covering the mid-elevation slopes and grasslands of the Black Hills. It includes areas of sharply tilted metamorphic rock and lower elevation granite outcrops. The area contains steep slopes, caves and springs (USGS, 2006b). The largest cave in the area is Jewel Cave. At over 150 miles in length, Jewel Cave is the second largest cave in the world. Areas near the cave entrances provide habitat for several species of bats, small mammals and some insects.

According to U.S. Geological Survey (USGS) geographic information system (GIS) land use layers, the project area supports an evergreen forest dominated by ponderosa pines. However, in August 2000 the Jasper Fire burned over 83,000 acres including much of the forest surrounding the project alignment. Over half of the pine trees on Jewel Cave National Monument were consumed by the fire and as a result additional meadow habitat was opened up. Additional results of the fire include a change in the soil chemistry, and the proliferation of noxious weeds as a result of fire-related disturbances (NPS, 2007).

The USGS 7.5-minute topographic map produced for the Jewel Cave quad shows elevations along the proposed improvement area range from approximately 5,400 feet above sea level (asl) to 5,650 feet asl. Peaks located to the north of the roadway rise to approximately 6,000 feet asl and the lower elevations in Lithograph and Hells canyons are approximately 5,100 feet asl.

A number of ephemeral drainages cross under Highway 16, and three springs including Prairie Dog Spring, Jewel Cave Spring and Lithograph Spring are present near the proposed project area (as shown on Figure 2). These springs would not be directly impacted as a result of the proposed project. Best management practices and engineering controls would be used during construction and operation to ensure water quality levels would remain high within the project area. Although Jewel Cave Spring has a known connection to Jewel Cave (NPS, 2010), no permanent open water sources are present within the project area, and there are no permanent surface expressions of the springs (Wiles, 2010).

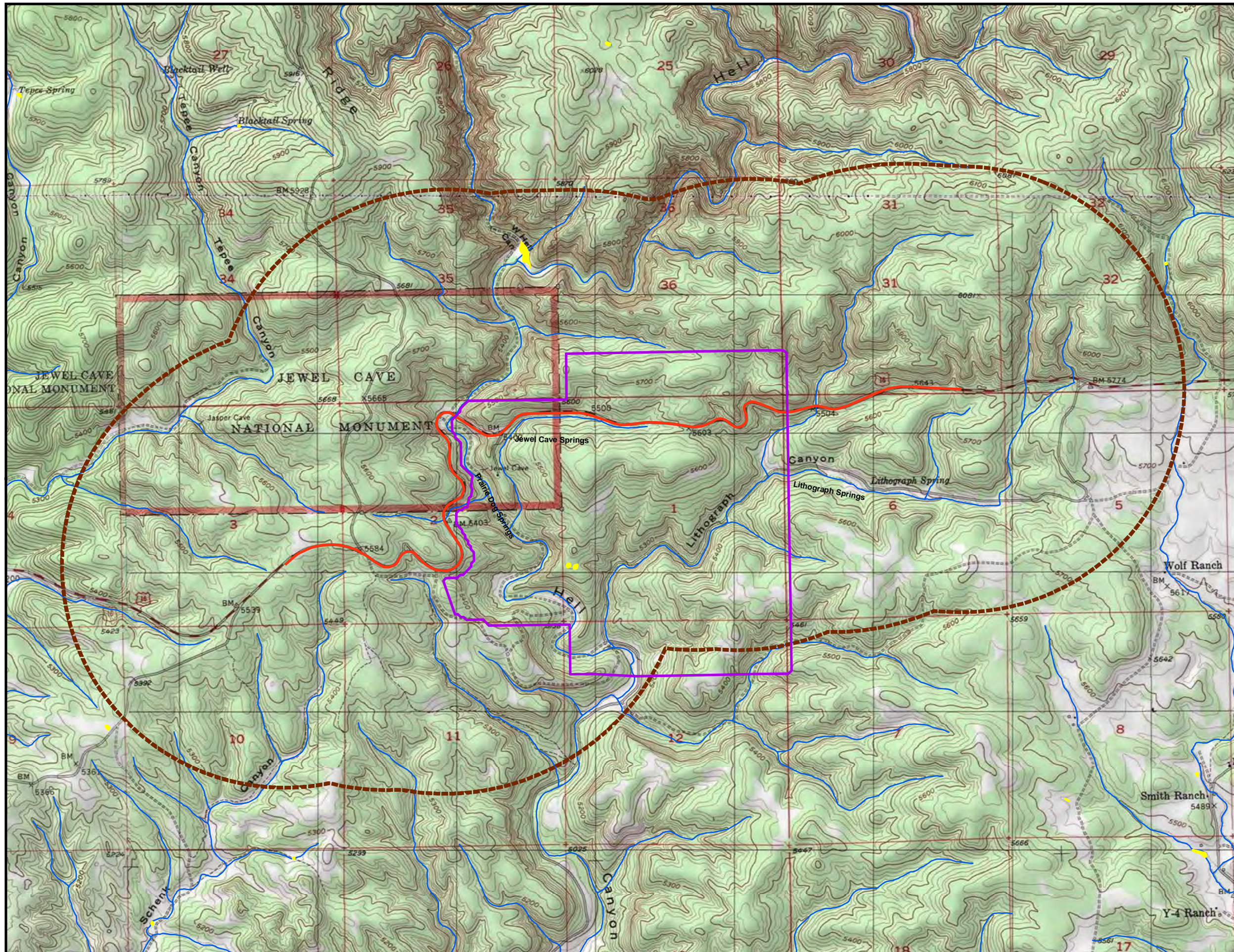





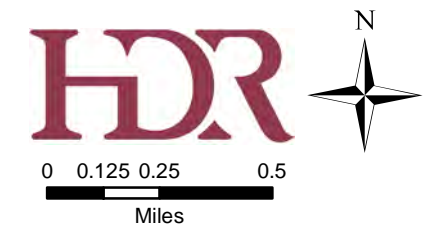


Figure 2
Topographic Map



Legend

-  National Park Service
-  Proposed Project Area
-  1 Mile Buffer
-  National Wetland Inventory
-  Streams (NHD Flowline)



Source :
USGS National Hydrography
Dataset, 2011
NWI, 2011

Date : August 2011

According to the National Wetland Inventory (NWI) maps prepared by the U.S. Fish and Wildlife Service, there are three wetland areas within one mile of the project alignment as shown on the Figure 2 Topographic Map. One wetland, in West Hell Canyon, is identified as a 1.79 acre freshwater emergent, seasonally flooded wetland. The other two wetlands are on Jewel Cave National Monument on the south side of Highway 16. These wetlands, just of 0.25 acres each, are identified as palustrine emergent, artificially flooded and excavated wetlands (NWI, 2011).

Soils in the proposed project area are primarily composed of Sawdust-Vanocker-Paunsaugunt complex (10 to 40 percent slopes) (SrE) with smaller areas of Vanocker-Sawdust-Rock outcrop complex (40 to 80 percent slopes) (VoG), Rock outcrop – Sawdust complex (40 to 80 percent slopes) (RnG), and Vanocker – Paunsaugunt complex (2 to 15 percent slopes) (VnC). The Sawdust series consist of deep to very deep well-drained soils formed from calcareous sandstone and limestone found on mountain slopes. Vanocker series soils are deep to very deep well-drained soils formed from sedimentary rocks located on gently sloping to very steep hillsides. The Paunsaugunt complex consists of well-drained soils that are present in shallow depths to limestone. These soils formed from calcareous sandstone and limestone and are found on mesas, hillsides and mountains. (NRCS, 2011)

A site reconnaissance of the project area was conducted on December 6, 2010. At the time of the site visit, the western portion of the improvement area contained substantial amounts of new growth ponderosa pine. Meadows which have been opened up as a result of fire occur primarily within the central portion of the proposed project area and contain numerous downed trees and snags. Remaining forested areas are present primarily within Lithograph Canyon. Cut and fill impacts and grading activities associated with the project would primarily affect south and east facing slopes. Photos from the site reconnaissance and a map showing the photo locations (Figure 4) are included in Appendix A. No species specific surveys were completed as part of this survey of the project area.

2.2 KNOWN OCCURRENCES OF SPECIES OF LOCAL CONCERN

2.2.1 SDDGFP Natural Heritage Database

The South Dakota Game, Fish and Parks (SDGFP) department maintains the Natural Heritage database for the state. This database documents the known occurrence of threatened, endangered or rare species within the state. Natural Heritage database files were requested for approximately 30 square miles surrounding the study area in December 2010 and subsequently reviewed to identify every documented occurrence of any of the USDA-FS Black Hills National Forest Species of Local Concern. Six USDA-FS listed species were documented within 2.25-miles of the project alignment. These species include the sharp-shinned hawk, northern saw-whet owl, northern flying squirrel, northern myotis, tawny crescent, and pygmy nuthatch. Additionally, one historical occurrence of the USFWS-listed black-footed ferret was documented. No other federal or state listed species were identified on the Natural Heritage database near the project alignment. Table 2 below describes the documented occurrences of these species obtained from the element occurrence records provided by the SDGFP Natural Heritage

Program (Natural Heritage, 2010). The specific locations of these observations are shown on Figure 3. Appendix B contains the complete Element Occurrence Report obtained for the study area.

Table 2 Element Occurrence Records for Study Area and Vicinity¹

Name	Observation #	First Observation	Last Observation	Comments
Sharp-shinned hawk <i>Accipiter striatus</i>	5	1900	06/08/1899	Last observation and first observation are reversed because information for the last observation is more accurate. Reported as abundant, with nest with two fresh eggs. Eggs and adults collected. On June 11, 1900 found another pair had occupied the nest with five eggs, which were collected.
Northern saw-whet owl <i>Aegolius acadicus</i>	13	05/03/1997	05/03/1997	Found in a pine forest with juniper shrubs, and a large meadow. One saw-whet owl responded to taped calls.
Pygmy nuthatch <i>Sitta pygmaea</i>	1	1958	08/24/1958	Three carefully identified by Carter.
Northern flying squirrel <i>Glaucomys sabrinus</i>	16	05/23/2000	05/23/2000	Squirrel in a nest box. Found in moderately dense young pines which were thinned 15 or more years ago.
Northern myotis (bat) <i>Myotis septentrionalis</i>	3	1968	08/05/1993	Eight males collected July 24, 1968. Taken in a mist net set within the entrance to Jewel Cave. Winter 1989-1990 – three hibernating individuals, also reports species was the least abundant bat in the cave in the summer of 1989. Summer mist netting at Jewel Cave entrance caught three in 1993.
Northern myotis (bat) <i>Myotis septentrionalis</i>	16	06/19/1993	09/05/1993	Four males and one female netted June and one female in August. Near a spring.
Northern myotis (bat) <i>Myotis septentrionalis</i>	17	06/22/1993	06/22/1993	Two males netted in a pine forest near a spring.
Black-footed ferret <i>Mustela nigripes</i>	93	1903	1904	Black-footed ferret observed in a prairie dog town in Gillette Canyon northeast of Elk Mountain.

Name	Observation #	First Observation	Last Observation	Comments
Tawny crescent (butterfly) <i>Phyciodes batesii</i>	8	1991	06/28/1991	Six males collected in a ponderosa pine and rangeland area. Noted as uncommon in the area.
	9			Two males collected in ponderosa pine and rangeland area. Noted as rare in the area.
Source: Natural Heritage, 2010. ¹ Table includes only those species that are on the USFS Black Hills National Forest Species of Local Concern list.				

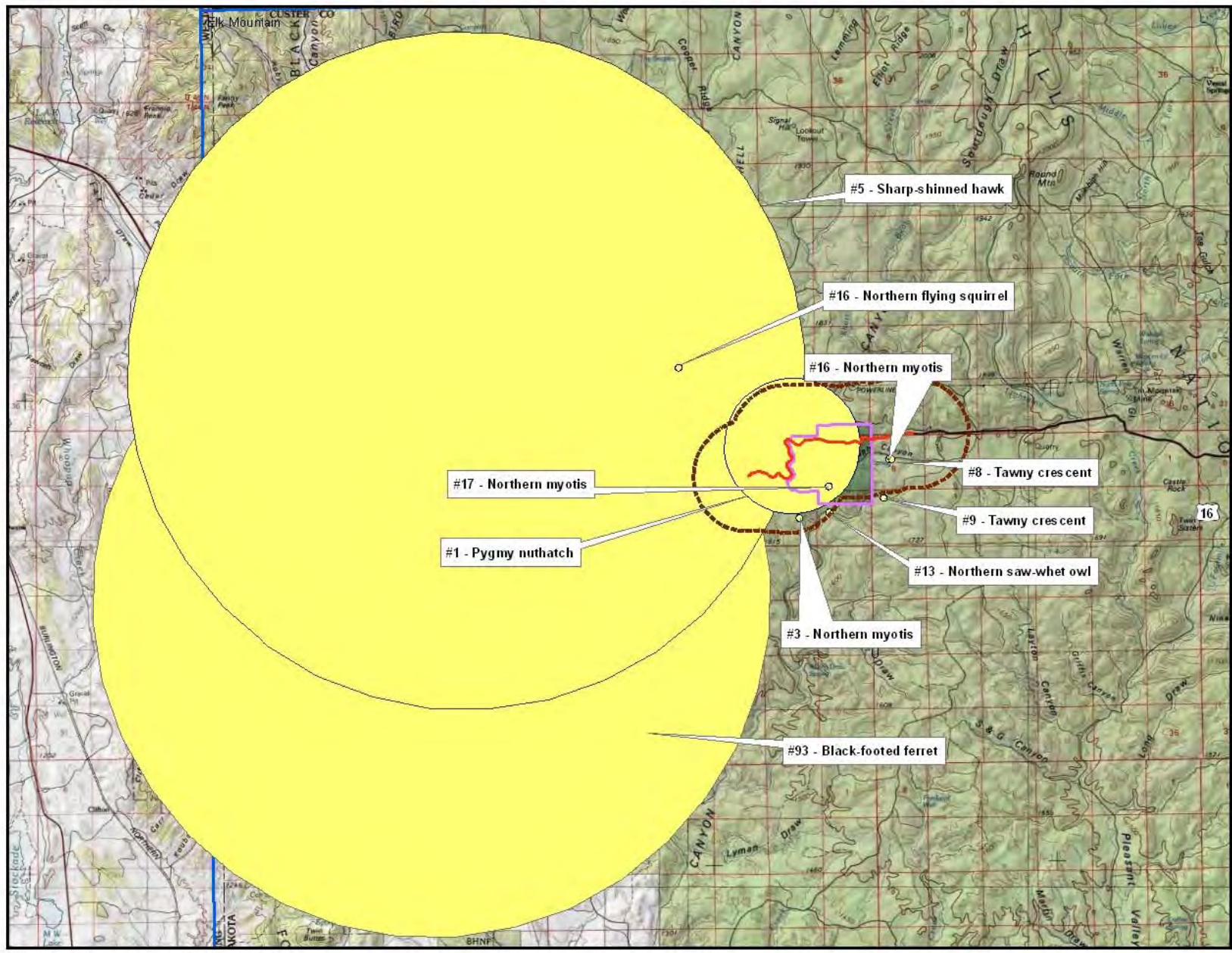


Figure 3
Element Occurrence Records



- Legend**
- Proposed Improvement Area
 - Jewel Cave Nat'l Monument
 - 1 Mile Buffer
 - Element Occurrence Records



Source : Natural Heritage, 2010
Date : July 2011

2.2.2 Jewel Cave National Monument

Jewel Cave National Monument maintains a list of birds that may be seen at the monument including abundant, common, uncommon and rare species (JCNM, 2008). According to this list, the sharp-shinned hawk, Cooper’s hawk, and northern saw-whet owl are uncommon summer residents at the Monument. These species may be seen regularly when present within their appropriate habitat. The other four USDA-FS listed bird species; the broad-winged hawk, pygmy nuthatch, American dipper and black-and-white warbler, were not included on the Monument’s list of birds. None of the USFWS-listed species were included on the Monument’s list of birds.

Bats are one of the most common mammals found at Jewel Cave National Monument. Thousands of bats, of nine different species, utilize the Monument’s existing cave habitat (JCNM, 2010). Three bat species included on the Monument’s bat list are also listed on the Black Hills National Forest Species of Local Concern list: the long-legged myotis, small-footed myotis and northern myotis (JCNM, 2010). Two other species of myotis bat, the little brown myotis (*M. lucifugus*) and the Black Hills fringed-tail myotis (*M. thysanodes pahasapensis*) also inhabit the area. During the most recent annual hibernating bat count conducted at Jewel Cave (2009), 460 *Myotis* sp. were observed; however the individual bats were not identified to the species level (NPS, 2009).

2.2.3 Breeding Bird Surveys

The North American Breeding Bird Survey (BBS), formally launched in 1966, is a continental monitoring program for all breeding birds. Each BBS route is 24.5 miles long and consists of 50 observation stops placed at 0.5 mile intervals. The observer listens for three minutes at each station and records their results. These results are used to provide a continent wide perspective of avian population change (Sauer et. al, 1997). Thirteen BBS routes are located within approximately 25 miles of the proposed project area. Table 3 lists all survey routes found within 25 miles of the project area in addition to any species observed that occurs on the Black Hills National Forest Species of Local Concern list. USFWS listed species were not recorded on any of the BBS routes.

Table 3 BBS Routes and Black Hills National Forest Species of Local Concern Observed

BBS Route	County, State	Distance / Direction ¹	Black Hills National Forest Species of Local Concern Observed on Route 1966-2007 ³
Lightning CR	Custer, SD	>0.5 miles / S, E and NE	Sharp-shinned hawk
			Cooper’s hawk
Pleasant Val	Custer, SD	4 miles / SSW	Sharp-shinned hawk
Elk Mountain	Pennington and Custer,	8 miles / NNW	None

August 2011

BBS Route	County, State	Distance / Direction ¹	Black Hills National Forest Species of Local Concern Observed on Route 1966- 2007 ³
	SD		
Custer	Custer, SD	9.5 miles / NE	Sharp-shinned hawk
			Cooper's hawk
Norbeck	Pennington and Custer, SD	12 miles / NE	Sharp-shinned hawk
Hill City	Pennington, SD	12 miles / NNE	None
Hazelrodt	Custer, SD	14 miles / SE	Sharp-shinned hawk
			Pygmy nuthatch
Wind Cave NP	Custer, SD	17 miles / SE	Sharp-shinned hawk
			Cooper's hawk
Rochford	Pennington, SD	19 miles / NNE	None
Newcastle	Weston, WY	19 miles / W	Sharp-shinned hawk
Silver City	Pennington and Lawrence, SD	23 miles / NE	Sharp-shinned hawk
			Cooper's hawk
Cottonwood	Fall River, SD	24.5 miles / SSW	None
Riverview	Niobrara, WY	25 miles / SW	None
¹ Approximate distance (at nearest point) and direction from proposed project area. ² Sauer et. al. 2008.			

As shown in Table 3, the sharp-shinned hawk, Cooper's hawk and pygmy nuthatch are the only USDA-FS listed species that were documented on any BBS found within 25 miles of the proposed project area.

SECTION 3

SPECIES HABITAT REQUIREMENTS AND POTENTIAL IMPACTS

The following discussion is an evaluation of the potential environmental effects to Black Hills National Forest Species of Local Concern identified as potentially occurring or having potential habitat near the proposed project area. Preferred habitat descriptions for USDA-FS listed species which may occur or have habitat near the project area are provided below. Additionally, a discussion of the three USFWS-listed species for Custer County will occur. The presence or absence of potential habitat does not confirm the presence or absence of a species. No species specific surveys were conducted in the proposed project area.

3.1 PLANTS

Alpine mountain sorrel occurs in early melting snowbeds and zones of snow accumulation, gravel bars, mudflats, tundra, scree slopes, crevices in rock outcrops, and talus slopes. According to SDGFP (2010), this species is localized in the Harney Peak region of the Black Hills which is approximately 16 miles northeast of the project area. Small acreages of rock outcrop would be impacted by cut and fill activities adjacent to the existing facility that could affect alpine mountain sorrel; however, this species has not been documented in the project area and is unlikely to occur. Direct impacts to alpine mountain sorrel due to proposed construction activities would not be likely as the species is localized in the Harney Peak area and acreages affected would be small and adjacent to the existing facility.

3.2 INVERTEBRATES

The Atlantis fritillary is found most often in forest openings, bogs, moist meadows, and along streams. Caterpillars feed on the leaves of several species of violets (*Viola* spp.) and butterflies drink nectar from a variety of flowers. Additional moisture and nutrients are also obtained from mud and dung (Butterflies and Moths, 2011). The proposed project area and vicinity supports a variety of wildflowers that may provide food for adults and juveniles of this species; however, the area is well drained and does not provide a mesic habitat. Some meadow habitat potentially containing food for this species exists along the proposed project area; small portions of these areas could be impacted by proposed construction activities. Given that this species has not been observed in the proposed project area, and the marginal habitats available impacts to the Atlantis fritillary would not be anticipated.

Element occurrence records indicate the tawny crescent has been observed near the proposed project area (Natural Heritage, 2010). Two documented occurrences of several

individuals of this species were recorded in 1991; however the collector's notes indicate this species is uncommon within the project area. The tawny crescent is a localized species that has been recorded from Custer, Pennington, Meade and Lawrence counties in the Black Hills. In South Dakota, this species occurs in moist meadows and stream bottoms near forest openings, and is associated with areas that contain big and little bluestem grasses (Marrone, G., 1992). Caterpillars of this species feed on asters and butterflies are known to drink nectar from composites and dogbane. While not high quality habitat for this species, some meadow habitat which could potentially support this species exists along the proposed project area; small areas of meadow habitat could be impacted by the proposed construction activities. The tawny crescent is uncommon in the project area with only two documented historical records. Potential marginal habitat for this species is available, but impacts would be expected to be small due to the minor acreages affected. The loss of a small acreage of potential habitat due to proposed roadway construction activities would not be expected to negatively affect this species' survival.

3.3 BIRDS

The sharp-shinned hawk nests in forested areas, usually in conifers, but may winter in a variety of habitats including urban and suburban areas (Cornell, 2010). Not typically found in open areas, sharp-shinned hawks prefer perches with good visibility to locate prey (small birds and mammals). The proposed project is located in Custer County which is at the edge of the species' year-around range (Cornell, 2010). Much of the forest habitat that may have supported nesting for this species was impacted by the Jasper Fire; however, remnant forested areas do remain along and adjacent to the proposed project area. The sharp-shinned hawk has historically been uncommon within the proposed project area. Direct impacts to the sharp-shinned hawk could be avoided by surveying for active nests prior to grading and construction and taking precautions to set up temporal and spatial buffers around any identified sharp-shinned hawk nests. Active bird nests should not be removed during the breeding season. The loss of a small acreage of potential habitat due to proposed roadway construction activities would not be expected to negatively affect this species' survival.

The Cooper's hawk is a year-around resident in South Dakota. This species prefers forests and woodlands but may also be found in suburban areas (Cornell, 2010). This species is listed as uncommon in the area according to the Monuments bird list (JCNM, 2008). This species prefers to breed in dense woods and usually places its nest 25-50 feet above the ground (Cornell, 2010). Dense contiguous stands of forest have been disturbed by the Jasper Fire; however remnant forested areas do remain within the proposed project area. While the Cooper's Hawk is not likely to breed in the project area due to lack of preferred nesting habitat, direct impacts could be avoided by surveying for active Cooper's hawk nests prior to construction activities. Precautions should be taken to set up temporal and spatial buffers around any identified Cooper's hawk nests. Active bird nests should not be removed during the breeding season. The loss of a small acreage of potential habitat due to proposed roadway construction activities would not be expected to negatively affect this species' survival.

The proposed project area lies within the year-around range of the northern saw-whet owl. In winter, this species is found in a variety of habitats which contain dense vegetation for roosting. These owls breed in forests and use tree cavities and nest boxes. (Cornell, 2010) According to the South Dakota Natural Heritage Program (Natural Heritage, 2010), one northern saw-whet owl was documented in 1997, about one mile south of the proposed project area in an opening within the pine forest. This species is listed on the Monument's bird list as an uncommon summer resident (JCNM, 2008). Direct impacts due to the proposed grading and resurfacing project would be confined to the area immediately adjacent to the existing roadway. Given the lack of dense shrubby vegetation and forest habitat adjacent to the proposed project area, and the scarcity of past observations, impacts to the northern saw-whet owl would not be likely. However, direct impacts to this species could be avoided by completing a tree cavity search, in areas where trees or snags would be removed, for active northern saw-whet owls prior to construction activities. Precautions should be taken to set up temporal and spatial buffers around any identified northern saw-whet owl nests. Active bird nests should not be removed during the breeding season. The loss of a small acreage of potential habitat due to proposed roadway construction activities would not be expected to negatively affect this species' survival.

A small portion of southwestern South Dakota, near the proposed project area, is identified as part of the year around range of the pygmy nuthatch (Cornell, 2010). This species requires mature forests, especially those which include ponderosa or similar long-needled pines in addition to dead trees and snags (Cornell, 2010). This bird nests in tree cavities or nest boxes. The pygmy nuthatch is not included on the bird list for Jewel Cave National Monument (JCNM, 2008), but three individuals were documented near the western portion of the alignment in 1958 (Natural Heritage, 2010). This species has also been infrequently documented along the Hazelrodt BBS route, which at its closest point is 14 miles from the proposed project area. Given that there have been no recent observations of this species and only one historical record, it does not appear that the pygmy nuthatch inhabits the proposed project area. Furthermore, large undisturbed tracts of mature forest are not present along the project alignment due to the Jasper Fire. Impacts to the pygmy nuthatch would not be anticipated to result from the proposed project.

The proposed project area lies within migratory route for whooping cranes migrating between Wood Buffalo National Park in Canada and Aransas National Wildlife Refuge in Texas (ICF, 2011) in the spring and fall. During migration, these birds utilize grain fields, shallow lakes and lagoons, and saltwater marshes as stopover points (Cornell, 2010). This species has not been documented on SDGFP Natural Heritage database, on JCNM's bird list, or on any of the surrounding BBS routes. Terrain within the project area is steep no preferred habitat to be used as a stopover area during migration was available. No impacts to the whooping crane would be anticipated due to the proposed project.

Sprague's pipit is most often found in fields with short grass and open grasslands; this species is a possible migrant in Custer County (Cornell, 2010). This species has been described as a rare migrant in western and central South Dakota (SDBB, 2011) that

strongly prefers native prairie; much of which has been converted to agricultural land. As this species is not likely to utilize the project area during migration, impacts to this species due to the proposed project would not be expected.

3.4 MAMMALS

Three of the bats listed on the Black Hills National Forest Species of Local Concern, the northern myotis, small-footed myotis, and long-legged myotis, are known to occur at Jewel Cave National Monument (JCNM, 2010). These species inhabit Jewel Cave utilizing it as a hibernacula and also for summer roosting. These bats may also be found roosting in other caves in the area, hollow trees, rock crevices, in buildings, and behind tree bark. The long-eared myotis has not been documented in the area, but prefers roosting in rock outcroppings and dead trees, and foraging in dense vegetation or over small bodies of water. Cave habitat would not be directly impacted by the proposed project and indirect impacts to the cave would be avoided by using best management practices during construction and installing engineering controls to maintain water quality. Direct impacts to these bat species could occur from proposed construction activities such as the modification of rock outcrops to enhance the facility's safety and removal of trees and snags, which would affect only a small amount of potential roosting habitat available in the area. These bats are often found foraging over streams and woodlands; the reduction in available foraging habitat would be minor and would not be expected to affect these species survival.

The northern flying squirrel is almost entirely nocturnal. The species is found in dense coniferous or mixed forests in isolated populations within the Black Hills. Northern flying squirrels do not travel far from trees and will use the cover of conifer branches and fallen logs to forage or bury food in the ground. This species uses tree cavities and nest boxes (Stukel, E.D., 2011). A northern flying squirrel was observed in a nest box in the spring of 2000 in an area that had been thinned more than 15 years ago (Natural Diversity, 2010). Lithograph Canyon which is located south of the proposed project area, and W. Hell Canyon situated on the north side of the project area, still contain forested habitat that may support northern flying squirrels. Minor impacts to forested habitat along the ROW would be expected from the proposed project. These impacts would occur along the existing facility which already creates an edge in this habitat. Removal of any trees which include northern flying squirrel nests could impact the reproductive success of individuals of this species. Overall, disturbance to potential northern flying squirrel habitat would be minimal. This species is known to occur in all Black Hills counties in South Dakota (Stukel, E.D., 2011). Impacts due to the proposed project would be small and would not cause a trend to federal listing or loss of reproductive viability of this species in the region.

Mountain goats were introduced to South Dakota in the 1920's (SDGFP, 2010). They are found on steep craggy cliffs in high altitude areas and migrate to lower elevations in winter. The population of mountain goats in the Black Hills is currently estimated to include over 200 individuals (NPS, 2010a). The hunting season for mountain goats in South Dakota has been closed since 2007, as biologists work to strengthen the herd in the Black Hills. The distribution of mountain goats in the Black Hills indicates

that most of the herd is present around Mount Rushmore National Park, Harney Peak and the Needles locality northeast of the project area. Mountain goats do not appear to inhabit the proposed project area. However, impacts to this species if present would not be anticipated due to their size and mobility. If they were present in the proposed project area they could leave construction areas and disperse to other nearby suitable habitat.

A herd of Rocky Mountain bighorn sheep was reintroduced in 1959 from Colorado to the Custer State Park area; they have also been released in the Badlands (SDGFP, 2010). Bighorn sheep require the presence of open grassy meadows adjacent to steep slopes and cliffs. Only three herds of bighorn sheep occur in South Dakota; one in Custer State Park, one in Badlands National Park, and one in Spring Creek Canyon in the Black Hills (Benzon, 1995). Bighorn sheep do not appear to inhabit the proposed project area. However, impacts to this species if present would not be anticipated due to their size and mobility. If they were present in the proposed project area they could leave construction areas and disperse to other nearby suitable habitat. Any loss of foraging area would not be expected to impact this species or its reproductive success.

The USFWS-listed black-footed ferret is associated with prairie dogs and prairie dog towns; black-footed ferret rely on prairie dogs for food and shelter (USFWS, 2011). Prairie dogs are generally found in shortgrass prairie or grassland habitat; often within the Great Plains region prairie dogs are found near rivers and streams. Habitat preferred by prairie dogs, and therefore, the black-footed ferret, is not likely to be present within the project area and impacts to the black-footed ferret due to the proposed project would not be anticipated.

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

Alpine mountain sorrel, Atlantis fritillary, tawny crescent, sharp-shinned hawk, Cooper's hawk, northern saw-whet owl, pygmy nuthatch, northern myotis, small-footed myotis, long-legged myotis, long-eared myotis, northern flying squirrel, mountain goat and bighorn sheep, which are listed as Black Hills National Forest Species of Local Concern are all present, have historical occurrences, or potential habitat within the proposed project area.

Construction activities associated with the proposed project such as grading, asphalt surfacing, and cut and fill techniques have the potential to impact some of these species by directly removing or modifying rock outcrops and crevices, meadows, trees and snags which may provide habitat components for the species. After reviewing historical occurrences, habitat present in the proposed project area, and USDA-FS listed species habitat requirements it was determined that impacts from the proposed project to these species would be negligible or minimal. Furthermore, it is unlikely that the federally-listed species for Custer County, whooping crane, Sprague's pipit and the black-footed ferret, would be present within the project area and impacts to these species due to the proposed project would not be anticipated.

Surveying areas within the construction limits for active sharp-shinned hawk, Cooper's hawk and northern saw-whet owl nests prior to construction is recommended to avoid impacts to these species during the breeding season.

SECTION 5

REFERENCES

- BCA, 2011. Biodiversity Conservation Alliance. *The American Dipper in the Black Hills*. Accessed online http://www.voiceforthewild.org/bhnf/pubs/final_dipper_fact_sheet.pdf January 20, 2011.
- Benzon, Ted, 1995. *Bighorn Sheep Factsheet*. Funded by South Dakota Game, Fish and Parks, Pierre, SD.
- Butterflies and Moths, 2011. Attributes of *Speyeria atlantis*. Accessed online <http://www.butterfliesandmoths.org/species/Speyeria-atlantis> January 20, 2011.
- Cornell, 2010. The Cornell Lab of Ornithology. All About Birds – Bird Guide. Accessed online at <http://www.allaboutbirds.org/NetCommunity/Page.aspx?pid=1189> December 29, 2010 and July 23, 2011.
- efloras, 2011. Flora of North America. Accessed online http://www.efloras.org/flora_page.aspx?flora_id=1 January 20, 2011.
- ICF, 2011. International Crane Foundation. Map on Whooping Crane. Accessed online <http://www.savingcranes.org/map-on-whooping-crane.html> July 23, 2011.
- Iowa DNR, 2011. Iowa Department of Natural Resources. *Frigid Ambersnail (Catinella gelida)*. Developed in partnership with the USFWS. Accessed online <http://www.iowadnr.gov/wildlife/files/species/snail/frigidambersnail.pdf> January 20, 2011.
- IUCN, 2011. International Union for Conservation of Nature. *The IUCN Red List of Threatened Species – Zapus hudsonius*. Accessed online <http://www.iucnredlist.org/apps/redlist/details/42613/0> January 18, 2011.
- JCNM, 2008. Jewel Cave National Monument – Birds. Last updated March 24, 2008. Accessed online <http://www.nps.gov/jeca/naturescience/birds.htm> December 4, 2010.
- _____. 2010. Jewel Cave National Monument – Bats. Last updated November 28, 2010. Accessed online <http://www.nps.gov/jeca/naturescience/bats.htm> December 4, 2010.
- Marrone, G., 1992. Tawny Crescent. Available online <http://www3.northern.edu/natsource/ENDANG1/Tawnyc1.htm> Accessed January 24, 2011.

- MT, 2011. Montana Natural Heritage Program. *Montana Field Guide*. Accessed online <http://fieldguide.mt.gov/default.aspx> January 20, 2011.
- Natural Heritage, 2010. SDGFP Natural Heritage Database files – GIS and Element of Occurrence Records. Received December 15, 2010.
- Naturalist, 2011. Broadlipped Twayblade (*Listera convallarioides*). Accessed online http://www.inaturalist.org/taxa/broadlipped_twayblade January 24, 2011.
- NPS, 2007. National Park Service. *Cave and Karst Management Plan – Jewel Cave National Monument, Custer County, South Dakota - Environmental Assessment*. August 2007.
- _____.2009. National Park Service. Jewel Cave Winter Bat Survey Memorandum. Dated January 23, 2009.
- _____.2010. National Park Service. Inside Earth – Volume 13, Number 1. Summer 2010. Accessed at <http://www.nature.nps.gov/geology/caves/newsletters/INSIDE%20EARTH%20SUMMER%202010%20v.%2013%20n.%201%20Final.pdf> January 6, 2011.
- _____.2010a. National Park Service. *Mount Rushmore – Animals*. Accessed online <http://www.nps.gov/moru/naturescience/animals.htm> January 24, 2011.
- NRCS, 2011. Natural Resources Conservation Service – United States Department of Agriculture. Official Soil Series Descriptions. Available online <http://soils.usda.gov/technical/classification/osd/index.html> Accessed January 25, 2011.
- NWI, 2011. National Wetland Inventory. *Wetlands Mapper*. Access online <http://www.fws.gov/wetlands/Data/Mapper.html> January 18, 2011.
- Rook, E.J.S., 2004. *Polystichum lonchitis – Northern hollyfern – Flora, Fauna, Earth and Sky. The Natural History of the Northwoods*. Accessed online <http://www.rook.org/earl/bwca/nature/ferns/polystichumlon.html> January 24, 2011.
- Sauer, J. R., J. E. Hines, G. Gough, I. Thomas, and B. G. Peterjohn. 1997. *The North American Breeding Bird Survey Results and Analysis. Version 96.4*. Patuxent Wildlife Research Center, Laurel, MD.
- Sauer, J.R., J.E. Hines, and J. Fallon. 2008. *The North American Breeding Bird Survey, Results and Analysis 1966-2007. Version 5.15.2008*. USGS Patuxent Wildlife Research Center, Laurel, MD.
- SDBB, 2011. South Dakota Birds and Birding. *South Dakota Species Information and Photos*. Accessed online <http://sdakotabirds.com/index.html> January 20, 2011 and July 23, 2011.
- SDGFP, 2009. South Dakota Game, Fish and Parks. *Rare, Threatened or Endangered Plants – Tracked by the South Dakota Natural Heritage Program*. November, 2009.

- _____. 2010. South Dakota Game, Fish and Parks. Threatened & Endangered or Rare Species. Accessed online <http://gfp.sd.gov/wildlife/threatened-endangered/default.aspx> December 29, 2010.
- Stukel, E.D., 2011. Northern Flying Squirrel. Accessed on South Dakota Game, Fish and Parks website <http://gfp.sd.gov/wildlife/critters/mammals/flyingsqrl.aspx> January 24, 2011.
- UMMZ, 2010. University of Michigan Museum of Zoology. Animal Diversity Web. Accessed online <http://animaldiversity.ummz.umich.edu/site/index.html> December 29, 2010.
- USDA, 2011. U.S. Department of Agriculture – Plants Profile. Accessed online <http://plants.usda.gov/java/> January 24, 2011.
- USFS, 2005. U.S. Forest Service. FSM 2600 – Wildlife, Fish, and Sensitive Plant Habitat Management. November 7, 2005.
- _____.2010. U.S. Forest Service. Cascade Creek, Springs and Falls. Accessed online <http://www.fs.fed.us/wildflowers/regions/rockymountain/CascadeSprings/index.shtml> online January 24, 2011.
- USFWS, 2011. U.S. Fish and Wildlife Service. Black-Footed Ferret (*Mustela nigripes*). Accessed online <http://www.fws.gov/southdakotafieldoffice/b-fferret.htm> July 23, 2011.
- USGS, 2006a. U.S. Geological Survey. Callused Vertigo (*Vertigo arthuri*). Accessed online <http://www.npwrc.usgs.gov/resource/wildlife/nddanger/species/vertarth.htm> January 20, 2011.
- _____.2006b. U.S. Geological Survey. Ecoregions of North Dakota and South Dakota. Accessed online <http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/sodak.htm> December 29, 2010.
- _____.2006b. U.S. Geological Survey. Western Wetland Flora. Accessed online <http://www.npwrc.usgs.gov/resource/plants/florawe/species/3/carebell.htm> January 24, 2011.
- WDNR, 2011. Wisconsin Department of Natural Resources. Arrow-leaved Sweet-coltsfoot (*Petasites sagittatus*). Accessed online <http://www.dnr.state.wi.us/org/land/er/biodiversity/index.asp?mode=info&Grp=20&SpecCode=PDAST71040> January 20, 2011.
- WGFD, 2011. Wyoming Game and Fish Department. *Vertigo Snails*. Accessed online <http://gf.state.wy.us/wildlife/CompConvStrategy/Species/MollusksCrustaceans/PDFS/Vertigo%20Snails.pdf> January 20, 2011.
- Wiles, Mike, 2010. Personal communication with Mike Wiles

Appendix A: Site Reconnaissance Photos
and Map Showing Photo Locations (Figure 4)



Photo 1: Photo taken facing northeast from south side of Highway 16.



Photo 2: Photo taken on north side of the road facing northwest. Area opened up by Jasper Fire.



Photo 3: Photograph taken facing southeast.



Photo 4: Photograph taken facing southwest.



Photo 5: Photograph taken facing northeast.



Photo 6: Photograph taken facing southeast.



Photo 7: Photo taken facing east, old entrance to Jewel Cave is visible in this picture.



Photo 8: Photograph taken facing east on south side of Highway 16.



Photo 9: Picture taken facing north.



Photo 10: Photograph taken facing south.



Photo 11: Photo taken facing east.



Photo 12: Photograph taken facing northeast.

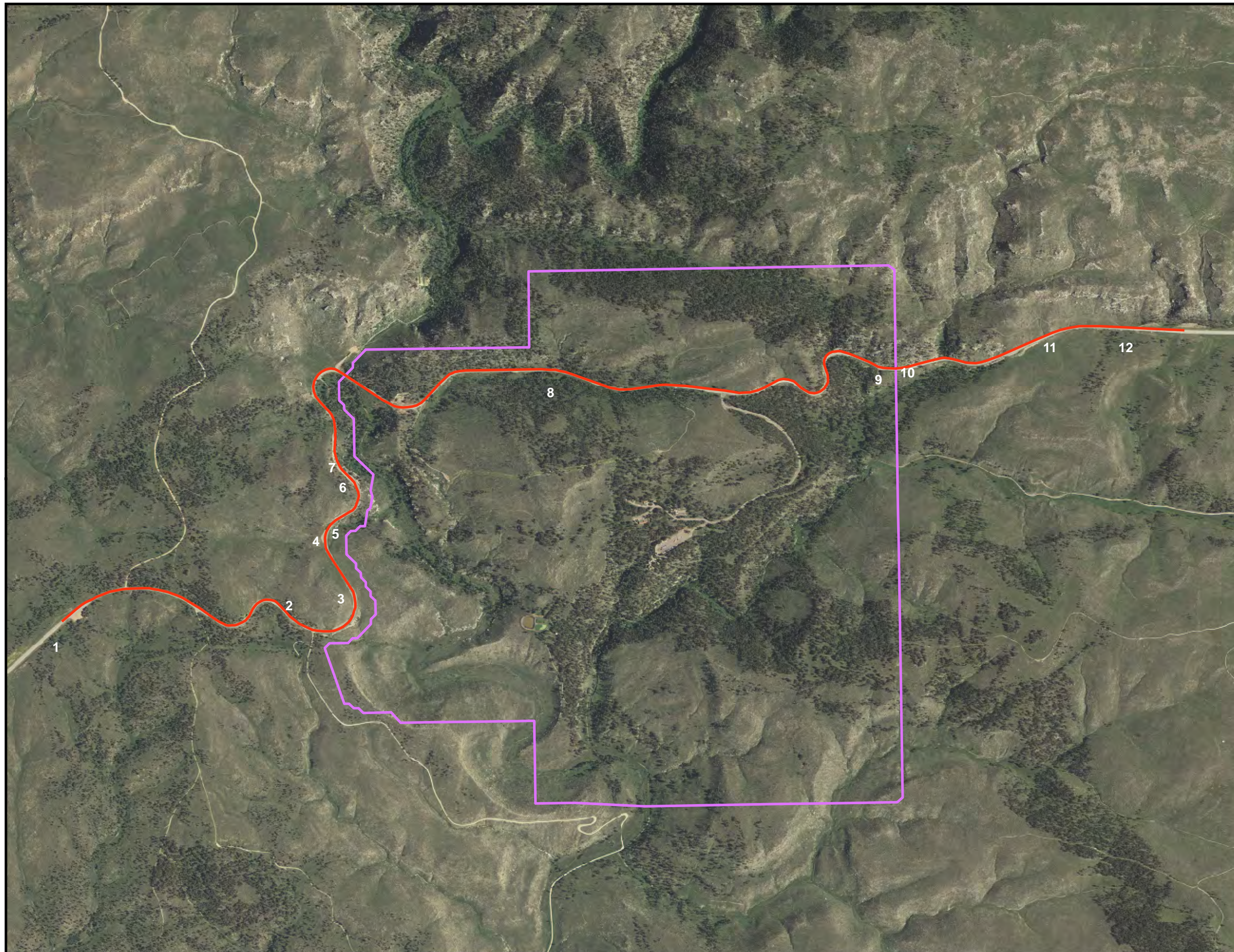
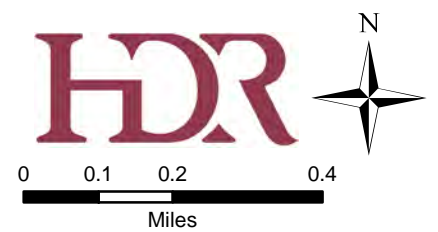


Figure 4
Photo Location Map



Legend

- Proposed Project Area
- Jewel Cave Nat'l Monument



Date : January 2011

Appendix B: Element Occurrence Records

Scientific Name: *Accipiter gentilis*

Occurrence #: 3

Common Name: Northern Goshawk

SD Protection Status:

Location Information: **Latitude:** 434237N **Longitude:** 1034710W

Watershed Code **Watershed**
10120106 Angostura Reservoir

Township
Range **Section** **Meridian** **TRS Note**
004S003E 8 BH SW4SW4SE4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

APPROX. 3 MI E, 1.5 MI S OF JEWEL CAVE.

Survey Information:

First Observation: 1973
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1976
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments: LOCATION REPORTED BY KRAGER TAKEN FROM BARTELT'S GOSHAWK NEST STUDY.

Protection
Comments:

Management
Comments:

Data: GOSHAWK TREE NEST ACTIVE IN 1973. REPORTED BY RON KRAGER, USDAFS-ELK MT. RANGER DISTRICT, NEWCASTLE, WY. ALSO ACTIVE NESTS IN 1975 AND 1976. NESTS 1,2,AND 3 ON SHARP'S FIELD FORM.

Scientific Name: *Accipiter gentilis*

Occurrence #: 22

Common Name: Northern Goshawk

SD Protection Status:

Location Information: **Latitude:** 434250N **Longitude:** 1034908W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S002E 12 BH NW4NE4SE4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ONE MILE SSE OF JEWEL CAVE VISITOR CENTER

Survey Information:

First Observation: 1989-06-22 **Survey Date:** **Last Observation:** 1989-06-22
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General NORTH FACING SLOPE, PINE FOREST WITH MIXED AGE TREES, GOOD NUMBERS OF MATURE TREES.

Description:

Comments:

Protection
Comments:

Management
Comments:

Data: AGGRESSIVE ADULTS AT NEST

Scientific Name: *Accipiter gentilis*

Occurrence #: 23

Common Name: Northern Goshawk

SD Protection Status:

Location Information: **Latitude:** 434340N **Longitude:** 1034738W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S003E 5 BH SW4NW4SW4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

TWO MILES ESE OF JEWEL CAVE VISITOR CENTER

Survey Information:

First Observation: 1988 **Survey Date:** **Last Observation:** 1992-05-29
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General MIXED STAND OF PINE, POCKET OF 14-18" DBH TREES WITH DENSE STANDS OF 3-7"
DBH TREES IN THE AREA.

Description:

Comments: TIMBER SALE HALTED MAY 1, 1992 TO PROTECT NEST, LOGGING RESUMED AUG 1.

Protection
Comments:

Management
Comments:

Data: ACTIVE NEST LOCATED IN 1988. INACTIVE IN 1991. IN 1992, TWO ADULTS AND THREE NESTLINGS AT NEST,

ONE DEAD NESTLING ON GROUND.

Scientific Name: *Accipiter gentilis*

Occurrence #: 57

Common Name: Northern Goshawk

SD Protection Status:

Location Information: **Latitude:** 434530N **Longitude:** 1035201W

Watershed Code **Watershed**

10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
003S002E 27 BH

County Name **State**

Custer SD

Quadrangle **State**
Signal Hill SD

Directions:

ABOUT 3.5 AIR MILES NW OF JEWEL CAVE HEADQUARTERS\VISITOR CENTER; TEEPEE CANYON-
BLACKTAIL SPRINGS
AREA.

Survey Information:

First Observation: 1989
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1997
Eo Rank Date:

Observed Area:

Comments:

General PONDEROSA PINE FOREST
Description:

Comments:

Protection
Comments:

Management
Comments:

Data: NEST ACTIVE IN 1989, 1990, 1995, 1996, AND 1997. AREA LOGGED IN 1991, 18 ACRE BUFFER ESTABLISHED AROUND NEST.

Scientific Name: *Accipiter gentilis*

Occurrence #: 58

Common Name: Northern Goshawk

SD Protection Status:

Location Information: **Latitude:** 434255N **Longitude:** 1035310W

Watershed Code **Watershed**

10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S002E 9 BH

County Name **State**

Custer SD

Quadrangle **State**
Jewel Cave NW SD

Directions:

ABOUT TWO MILES ESE OF TEEPEE RANGER STATION

Survey Information:

First Observation: 1995
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1995-07-20
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments:

Protection
Comments:

Management
Comments:

Data: NEST WITH YOUNG IN 1995. ADULTS MOVED YOUNG TO OLD GROWTH AREA ADJACENT TO NEST ON JULY 20.

Scientific Name: *Accipiter striatus*

Occurrence #: 5

Common Name: Sharp-shinned Hawk

SD Protection Status:

Location Information: **Latitude:** 434525N **Longitude:** 1035750W

Watershed Code **Watershed**

10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
003S001E 26 BH

County Name **State**

Custer SD

Quadrangle **State**
Dead Horse Flats SD

Directions:

14 MILES SE OF NEWCASTLE WY. IN GILLETTE CANYON.

Survey Information:

First Observation: 1900
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1899-06-08
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments: LAST OBS AND FIRST OBS ARE SWITCHED ONLY BECAUSE INFORMATION AVAILABLE IS MORE ACCURATE FOR LAST OBS.

Protection
Comments:

Management
Comments:

Data: REPORTED AS ABUNDANT. NEST WITH 2 FRESH EGGS. EGGS AND ADULTS COLLECTED. ON JUNE 11, 1900
CAREY VISITED SITE AGAIN AND FOUND ANOTHER PAIR HAD OCCUPIED THE NEST WITH 5 EGGS, WHICH WERE COLLECTED.

Scientific Name: *Adoxa moschatellina*

Occurrence #: 10

Common Name: Musk-root

SD Protection Status:

Location Information: **Latitude:** 434440N **Longitude:** 1035035W

Watershed Code **Watershed**
10120107 Beaver

Township Range **Section** **Meridian** **TRS Note**
003S002E 35 BH NW4SE4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT ONE MILE NNW OF JEWEL CAVE VISITOR CENTER; IN HELL CANYON

Survey Information:

First Observation: 1994-SU **Survey Date:** **Last Observation:** 1994-SU
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General LIMESTONE CANYON WITH OLD GROWTH PINE FOREST AND HARDWOOD RIPARIAN ZONE.

Description:

Comments:

Protection
Comments:

Management

Comments:

Data: ABOUT 30 PLANTS CLUSTERED AT BASE OF SLOPE UNDER DENSE CANOPY OF ACER
NEGUNDO

Scientific Name: *Aegolius acadicus*

Occurrence #: 13

Common Name: Northern Saw-whet Owl

SD Protection Status:

Location Information: **Latitude:** 434305N **Longitude:** 1034955W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
004S002E	12	BH	NW4

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave	SD

Directions:

AT SOUTH BOUNDARY OF JEWEL CAVE NP, IN HELL CANYON.

Survey Information:

First Observation: 1997-05-03
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1997-05-03
Eo Rank Date:

Observed Area:

Comments:

General Description: PINE FOREST WITH JUNIPER SHRUBS, LARGE MEADOW

Comments:

Protection Comments:

Management

Comments:

Data: PONDEROSA PINE FOREST ON NE-FACING SLOPE.

Scientific Name: *Carex richardsonii*

Occurrence #: 7

Common Name: Richardson's Sedge

SD Protection Status:

Location Information: **Latitude:** 434407N **Longitude:** 1035031W

Watershed Code **Watershed**

10120107 Beaver

Township
Range

004S002E

Section

2

Meridian

BH

TRS Note

NE4

County Name

Custer

State

SD

Quadrangle

Jewel Cave

State

SD

Directions:

JEWEL CAVE NATIONAL MONUMENT, 13 MI W OF CUSTER ON US HWY 16.

Survey Information:

First Observation: 1985

Eo Type:

Survey Date:

Eo Rank:

Last Observation: 1985-06-22

Eo Rank Date:

Observed Area:

Comments:

General OLD FOREST SE OF RESIDENCE.

Description:

Comments:

Protection

Comments:

**Management
Comments:**

Data: PONDEROSA PINE FOREST.

Scientific Name: *Carpodacus cassinii*

Occurrence #: 1

Common Name: Cassin's Finch

SD Protection Status:

Location Information: **Latitude:** 434409N **Longitude:** 1035042W

Watershed Code **Watershed**
10120107 Beaver

**Township
Range** **Section** **Meridian** **TRS Note**
003S002E 35 BH S34 T4N S02,03

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

JEWEL CAVE NATIONAL PARK.

Survey Information:

First Observation: 1958
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1960-05-30
Eo Rank Date:

Observed Area:

Comments:

**General
Description:**

Comments:

**Protection
Comments:**

Management

Comments:

Data: 2 MALES AND 2 FEMALES OBSERVED 2-4 JULY 1958 AND A FEMALE 22 AUGUST 1958 BY CARTER; UNKNOWN NUMBER 30 MAY 1960 BY CARTER AND HOLDEN.

Scientific Name: *Ceanothus fendleri*

Occurrence #: 1

Common Name: Fendler's Whitethorn

SD Protection Status:

Location Information: **Latitude:** 434858N **Longitude:** 1034854W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
003S003E		BH	T3SR2E

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Signal Hill	SD
Berne	SD
Dead Horse Flats	SD

Directions:

ABOUT 20 MI W OF CUSTER.

Survey Information:

First Observation: 1892
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1929-07-19
Eo Rank Date:

Observed Area:

Comments:

General Description: LIMESTONE RIDGES.

Comments: NOTE SAME COLL.# BETWEEN RM & SD OVER SPECIMENS.

Protection Comments:

**Management
Comments:**

Data: A96RYD01 STATES "COMMON IN THE LIMESTONE DISTRICT WEST OF CUSTER."

Scientific Name: *Corynorhinus townsendii*

Occurrence #: 3

Common Name: Townsend's Big-eared Bat

SD Protection Status:

Location Information:

Latitude: 434360N **Longitude:** 1035035W

Watershed Code

Watershed

10120107

Beaver

**Township
Range**

004S002E

Section

2

Meridian

BH

TRS Note

County Name

State

Custer

SD

Quadrangle

Jewel Cave

State

SD

Directions:

JEWEL CAVE, 2.5 MI S, 12 MI W OF CUSTER.

Survey Information:

First Observation: 1959

Survey Date:

Last Observation: 1992-12-16

Eo Type: HIBERNACULUM - bats

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General

Description:

Comments: POPULATION SURVEYED BY FIELD PARTY FROM MUSEUM OF NATURAL HISTORY 20 NOV 1967.

Protection

Comments:

Management

Comments:

Data: APPROX. 600 INDIVIDUALS WINTERING IN CAVE: TEMP=5.0-6.4 C. REL HUM.=64-70 PERCENT:
MOST BATS WERE WITHIN 150 FT OF CAVE ENTRANCE. 3 MALES (KU#116320), 2 BANDED, 1 HAD BEEN BANDED
31 DEC 1959.

1989- DR. JERRY CHOATE (REPORT IN EMF) REPORTED A GRADUATE STUDENT HAD
BANDED 27 AT JEWEL CAVE IN 3 NIGHTS DURING THE SUMMER, ALSO 831 HIBERNATED IN THE CAVE 1989-90 WINTER, 1000
IN 1969-70, 728 IN 1989-87, AND 614 IN 1988-89. WORTHINGTON AND TIGNER COUNTED 1,187 ON DEC. 16, 1992,
SOME IN

CLUSTERS CONTAINING UP TO 94 INDIVIDUALS.

Scientific Name: *Erigeron ochroleucus*

Occurrence #: 2

Common Name: Buff Fleabane

SD Protection Status:

Location Information: **Latitude:** 434425N **Longitude:** 1035024W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
003S002E 35 BH NW4SE4SE4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT .75 MILES NNW OF JEWEL CAVE VISITOR CENTER; IN HELL CANYON

Survey Information:

First Observation: 1994-SU **Survey Date:** **Last Observation:** 1994-SU
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General Description: OLD GROWTH PINE FOREST IN LIMESTONE CANYON, HARDWOOD RIPARIAN ZONE

Comments:

Protection

Comments:

**Management
Comments:**

Data: SPARSE AND SCATTERED IN AREA

Scientific Name: *Euphorbia fendleri*

Occurrence #: 4

Common Name: Fendler's Spurge

SD Protection Status:

Location Information: **Latitude:** 434227N **Longitude:** 1035353W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
004S002E	17	BH	

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave NW	SD

Directions:

18 MI NE OF DEWEY.

Survey Information:

First Observation: 1967
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1967-08-13
Eo Rank Date:

Observed Area:

Comments:

**General
Description:** PRAIRIE-PINE HILLSIDE.

Comments:

Protection
Comments:

Management
Comments:

Data: DRY, ROCKY SOIL.

Scientific Name: *Festuca idahoensis*

Occurrence #: 3

Common Name: Idaho Fescue

SD Protection Status:

Location Information: **Latitude:** 434330N **Longitude:** 1035111W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
<u>Range</u> 004S002E	2	BH	SW4

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave	SD

Directions:

HOFFMAN'S STAND #57, 1 AIR MILE SW OF JEWEL CAVE.

Survey Information:

<u>First Observation:</u>	<u>Survey Date:</u>	<u>Last Observation:</u> 1987
<u>Eo Type:</u>	<u>Eo Rank:</u>	<u>Eo Rank Date:</u>

Observed Area:

Comments:

General STAND OF PINUS PONDEROSA/PHYSOCARPOS MONOGYNUS H.T. ON 33% NW-FACING SLOPE.

Description:

Comments: PAGE 36

Protection

Comments:

**Management
Comments:**

Data: BARELY PRESENT

Scientific Name: *Glaucomys sabrinus*

Occurrence #: 16

Common Name: Northern Flying Squirrel

SD Protection Status:

Location Information: **Latitude:** 434525N **Longitude:** 1035310W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
003S002E	28	BH	NE4SW4

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Dead Horse Flats	SD

Directions:

TEEPEE SPRING, ABOUT 4 WEST AND 2 NORTH OF JEWEL CAVE NM HEADQUARTERS

Survey Information:

First Observation: 2000-05-23

Survey Date:

Last Observation: 2000-05-23

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

**General
Description:** MODERATELY DENSE YOUNG PINE, THINNED 15+ YEARS AGO

Comments:

Protection
Comments:

Management
Comments:

Data: SQUIRREL IN NEST BOX

Scientific Name: *Lasionycteris noctivagans*

Occurrence #: 12

Common Name: Silver-haired Bat

SD Protection Status:

Location Information: **Latitude:** 434355N **Longitude:** 1034836W

Watershed Code **Watershed**

10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S003E 6 BH SE4NW4

County Name **State**

Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT ONE MILE EAST OF JEWEL CAVE VISITOR CENTER; LITHOGRAPH SPRING

Survey Information:

First Observation: 1993-06-19

Survey Date:

Last Observation: 1993-09-09

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General PINE FOREST, LIMESTONE SUBSTRATE, NEAR SPRING.

Description:

Comments:

Protection
Comments:

Management
Comments:

Data: TWO MALES NETTED ON 6-19; NONE CAUGHT ON 8-5; 2 MALES AND 8 FEMALES ON 9-9.

Scientific Name: *Lasionycteris noctivagans*

Occurrence #: 14

Common Name: Silver-haired Bat

SD Protection Status:

Location Information: **Latitude:** 434330N **Longitude:** 1034955W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S002E 1 BH SW4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT .5 MILES SOUTH OF THE JEWEL CAVE VISITOR CENTER: SEWAGE LAGOONS

Survey Information:

First Observation: 1993-07-07 **Survey Date:** **Last Observation:** 1993-08-04
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General PINE FOREST, LIMESTONE SUBSTRATE
Description:

Comments:

**Protection
Comments:**

**Management
Comments:**

Data: 16 MALES NETTED OVER SEWAGE PONDS ON 7-7; FIVE MALES AND ONE FEMALE ON 8-4.

Scientific Name: *Lasionycteris noctivagans*

Occurrence #: 18

Common Name: Silver-haired Bat

SD Protection Status:

Location Information: **Latitude:** 434315N **Longitude:** 1034955W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
004S002E	12	BH	NW4

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave	SD

Directions:

JUNCTION SPRING; ABOUT ONE MILE SOUTH OF JEWEL CAVE VISITOR CENTER.

Survey Information:

First Observation: 1993-08-01
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1993-08-01
Eo Rank Date:

Observed Area:

Comments:

**General
Description:** PINE FOREST, LIMESTONE SUBSTRATE, DEEP CANYON

Comments:

Protection
Comments:

Management
Comments:

Data: NINE MALES NETTED ON 8-1 NEAR JUNCTION SPRING.

Scientific Name: *Liochlorophis vernalis*

Occurrence #: 29

Common Name: Smooth Green Snake

SD Protection Status:

Location Information: **Latitude:** 434518N **Longitude:** 1035129W

Watershed Code **Watershed**

10120107 Beaver

<u>Township</u> <u>Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
003S002E	27	BH	SE4SE4
004S002E	3	BH	NE4NW4

County Name **State**

Custer SD

<u>Quadrangle</u>	<u>State</u>
Signal Hill	SD

Directions:

1.5 MILES NORTH AND 1 MILE WEST OF JEWEL CAVE NM HEADQUARTERS.

Survey Information:

First Observation: 1972

Survey Date:

Last Observation: 1994-SU

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General PONDEROSA PINE FOREST WITH GROUND JUNIPER AND BEARBERRY UNDERSTORY.
Description:

Comments: SEE PAGE 83 IN B94HIL01SDUS

**Protection
Comments:**

**Management
Comments:**

Data: SNAKES SEEN ALMOST EVERY YEAR IN EARLY MAY, AND AT OTHER TIMES DURING
SUMMER. SEVERAL
CAPTURED, EXAMINED AND RELEASED.

Scientific Name: *Microtus longicaudus*

Occurrence #: 9

Common Name: Long-tailed Vole

SD Protection Status:

Location Information: **Latitude:** 433924N **Longitude:** 1034728W

Watershed Code **Watershed**

10120107 Beaver

**Township
Range**
004S003E

Section **Meridian** **TRS Note**
BH

County Name **State**

Custer SD

Quadrangle
Jewel Cave

State
SD

Directions:

18 MI SW OF CUSTER.

Survey Information:

First Observation: 1901
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1901-11-26
Eo Rank Date:

Observed Area:

Comments:

**General
Description:**

Comments: USNM#116293,116295,116296,116294 (MALES), 116297 (FEMALE).

Protection
Comments:

Management
Comments:

Data: 5 INDIVIDUALS (4 MALE, 1 FEMALE) COLLECTED BY M.CARY.

Scientific Name: *Mustela nigripes*

Occurrence #: 93

Common Name: Black-footed Ferret

SD Protection Status: SE

Location Information: **Latitude:** 434148N **Longitude:** 1035837W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township</u>	<u>Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
	004S003E	3	BH	

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave NW	SD

Directions:

GILLETTE CANYON, NE OF ELK MOUNTAIN, CUSTER CO

Survey Information:

First Observation: 1903
Eo Type:

Survey Date:
Eo Rank: X

Last Observation: 1904
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments:

**Protection
Comments:**

**Management
Comments:**

Data: FERRET OBSERVED IN PRAIRIE DOG TOWN BY JAMES P. CAMPBELL 1903-1904

Scientific Name: *Myotis septentrionalis*

Occurrence #: 3

Common Name: Northern Myotis

SD Protection Status:

Location Information: **Latitude:** 434300N **Longitude:** 1035035W

Watershed Code **Watershed**

10120107 Beaver

**Township
Range**

004S002E

Section
2

Meridian
BH

TRS Note
NE4SW4SE4

County Name

Custer

State

SD

Quadrangle
Jewel Cave

State
SD

Directions:

JEWEL CAVE, 2.5 MI S, 12 MI W CUSTER.

Survey Information:

First Observation: 1968

Survey Date:

Last Observation: 1993-08-05

Eo Type: HIBERNACULUM - bats

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

**General
Description:**

Comments: EIGHT MALES COLLECTED BY RON W.TURNER 24 JULY 1968. CAVE IS STILL BEING EXPLORED AT THIS TIME.

SEE LETTER OF 19 DEC 1990 IN CORRESPONDENCE FILE (CHOATE, J.R.).

Protection

Comments:

**Management
Comments:**

Data: TAKEN IN A MIST NET SET WITHIN THE ENTRANCE TO JEWEL CAVE. MUS#UK4797-4808. J.R. CHOATE
REPORTS 3 HIBERNATING, WINTER OF 1989-90, ALSO REPORTS IS WAS THE LEAST ABUNDANT BAT IN THE CAVE IN THE SUMMER OF 1989. SUMMER NETTING AT ENTRANCE CAUGHT ONE ON 25 JULY AND 4 ON 5 AUG, 1993 (U93MAT01SDUS).

Scientific Name: *Myotis septentrionalis*

Occurrence #: 16

Common Name: Northern Myotis

SD Protection Status:

Location Information: **Latitude:** 434355N **Longitude:** 1034836W

Watershed Code **Watershed**

10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S003E 6 BH SE4NW4

County Name **State**

Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT ONE MILE EAST OF JEWEL CAVE VISITOR CENTER; LITHOGRAPH SPRING

Survey Information:

First Observation: 1993-06-19

Survey Date:

Last Observation: 1993-09-05

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General Description: PINE FOREST ON LIMESTONE SUBSTRATE NEAR SPRING

Comments:

Protection
Comments:

Management
Comments:

Data: 4 MALES AND ONE FEMALE NETTED ON 6-19 AND ONE FEMALE ON 8-5.

Scientific Name: *Myotis septentrionalis*

Occurrence #: 17

Common Name: Northern Myotis

SD Protection Status:

Location Information: **Latitude:** 434330N **Longitude:** 1034955W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S002E 1 BH SW4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

ABOUT .5 MILES SOUTH OF JEWEL CAVE VISITOR CENTER; CHOKECHERRY SPRING

Survey Information:

First Observation: 1993-06-22 **Survey Date:** **Last Observation:** 1993-06-22
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General PINE FOREST, LIMESTONE SUBSTRATE, NEAR SPRING
Description:

Comments:

**Protection
Comments:**

**Management
Comments:**

Data: 2 MALES NETTED

Scientific Name: *Myotis thysanodes pahasapensis*

Occurrence #: 5

Common Name: Fringe-tailed Myotis

SD Protection Status:

Location Information:

Latitude: 434360N

Longitude: 1035035W

Watershed Code

Watershed

10120107

Beaver

Township

Range

004S002E

Section

2

Meridian

BH

TRS Note

NE4SW4SE4

County Name

State

Custer

SD

Quadrangle

Jewel Cave

State

SD

Directions:

JEWEL CAVE, 2.5 MI S, 12 MI W CUSTER.

Survey Information:

First Observation: 1929

Survey Date:

Last Observation: 1993-08-05

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

**General
Description:**

Comments: ONE FEMALE AND FIVE MALES (JULY AND AUGUST 1965-1966) AND ONE MALE (17 FEBRUARY 1970)
COLLECTED BY RON W.TURNER.

**Protection
Comments:**

**Management
Comments:**

Data: COLLECTED AT ENTRANCE OF JEWEL CAVE. MUS#106026(MALE) COLLECTED BY CLEV.MUS.NAT.HIST. J.R.
CHOATE REPORTED FOUR HIBERNATING BETWEEN 26 DEC 1989 AND 4 JAN 1990 COMPARED WITH 10 AND 9 IN
SIMILAR SURVEYS CONDUCTED IN 1969-79? AND 1986-87. ALSO PRESENT IN SUMMER OF 1989.
WORTHINGTON TIGNER COUNTED 2 ON DECEMBER 16, 1992. SUMMER NETTING AT ENTRANCE CAUGHT 7 ON
AUG 5, 1993 (U93MAT01SDUS).

Scientific Name: *Phyciodes batesii*

Occurrence #: 8

Common Name: Tawny Crescent

SD Protection Status:

Location Information: **Latitude:** 434355N **Longitude:** 1034832W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S003E 6 BH SE4NW4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

.5 MILES EAST OF JEWEL CAVE NM EAST BOUNDARY ON FOREST SERVICE ROAD #278.
LITHOGRAPH SPRING.

Survey Information:

First Observation: 1991 **Survey Date:** **Last Observation:** 1991-06-28
Eo Type: **Eo Rank:** **Eo Rank Date:**

Observed Area:

Comments:

General PONDEROSA PINE AND RANGELAND

General Description: PONDEROSA PINE FOREST AND RANGELAND

Comments:

Protection Comments:

Management Comments:

Data: TWO MALES COLLECTED BY D. WEBER, RARE IN THE AREA

Scientific Name: *Picoides arcticus*

Occurrence #: 1

Common Name: Black-backed Woodpecker

SD Protection Status:

Location Information: **Latitude:** 434335N **Longitude:** 1035006W

Watershed Code **Watershed**
10120107 Beaver

Township
Range **Section** **Meridian** **TRS Note**
004S002E 1 BH SW4

County Name **State**
Custer SD

Quadrangle **State**
Jewel Cave SD

Directions:

JEWEL CAVE NM

Survey Information:

First Observation: 1958
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1958-07-07
Eo Rank Date:

Observed Area:

Comments:

**General
Description:**

Comments:

**Protection
Comments:**

**Management
Comments:**

Data: ADULT MALE FEEDING FLEDGLING

Scientific Name: *Pinus ponderosa/juniperus communis* wo **Occurrence #:** 2

Common Name: Ponderosa Pine/common Juniper Woodland **SD Protection Status:**

Location Information: **Latitude:** 434430N **Longitude:** 1034959W

Watershed Code **Watershed**

10120107 Beaver

**Township
Range**
003S002E

Section
36

Meridian
BH

TRS Note
SECTIONS 26
AND 35

County Name

State

Custer

SD

Quadrangle
Jewel Cave
Signal Hill

State
SD
SD

Directions:

HELL CANYON NORTH, IMMEDIATELY NORTH OF JEWEL CAVE N.M. 11 AIR MILES WSW OF CUSTER. TAKE FS TRAIL UP BOTTOM OF HELL CANYON, FIRST TURNOFF W OF JEWEL CAVE ENTRANCE.

Survey Information:

First Observation: 1996-04-28

Survey Date: 1996-05-13

Last Observation: 1996-07-12

Eo Type:

Eo Rank: B

Eo Rank Date:

Observed Area: 200.00

Comments:

General MAJOR COMMUNITY OF SITE LOCATED ON N-FACING SLOPES MOSTLY EAST OF HELL CANYON AND NORTH OF HIGHWAY 16, IN POLYGONS 4,5,8,10,13,17,18. POLYGON 18 IS ON SLOPES OF WEST HELL CANYON IN SECTION 26.

Description:

Comments: SOME FRAGMENTATION DUE TO ROADS, NO FIRE EVIDENT IN LAST 50 YEARS, SOME DOGHAIR STANDS. SURROUNDING AREA RECENTLY LOGGED, THINNED.

Protection PART OF JEWEL CAVE NATIONAL MONUMENT AND FS NOMINATED "LATE SUCCESSIONAL LANDSCAPE"

Comments:

Management

Comments:

Data: 25-50% PIPO CANOPY (10-15M TALL), 20-80% PIPO SUBCANOPY (3-9 M TALL), 5-20% JUNCOM, <5% HERB COVER. POLYGON 18 WITH SOME 150-250 YEAR OLD PINE.

Scientific Name: *Pinus ponderosa/juniperus occidentalis* w **Occurrence #:** 1

Common Name: Ponderosa Pine/rocky Mountain Juniper **SD Protection Status:**
Woodland

Location Information: **Latitude:** 434430N **Longitude:** 1034959W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township Range</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
-----------------------	----------------	-----------------	-----------------

<u>County Name</u>	<u>State</u>
Custer	SD

<u>Quadrangle</u>	<u>State</u>
Jewel Cave	SD
Signal Hill	SD

Directions:

HELL CANYON NORTH, IMMEDIATELY NORTH OF JEWEL CAVE N.M., 11 AIR MILES WSW OF CUSTER. TAKE FS TRAIL UP BOTTOM OF HELL CANYON, FIRST TURN-OFF W OF JEWEL CAVE ENTRANCE.

Survey Information:

First Observation: 1996-04-28 **Survey Date:** 1996-05-13 **Last Observation:** 1996-07-12
Eo Type: **Eo Rank:** A **Eo Rank Date:**

Observed Area: 40.00

Comments:

General FOUND ON VERY STEEP (>40%), VERY ROCKY, SLOPES WITHIN HELL CANYON IN
POLYGONS LABELED
#19.

Description:

Comments: FIRE SCARS PRESENT

Protection OCCURS WITHIN NOMINATED LATE SUCCESSION LANDSCAPE

Comments:

Management

Comments:

Data: 10-25% PIPO CANOPY (9 M TALL), 5-10% JUNSCO SUBCANOPY (4.5 M TALL) WITH <5%
JUNCOM LOW SHRUB
COVER AND >50% BARE ROCK.

Scientific Name: *Pinus ponderosa/physocarpus monogynus* **Occurrence #:** 1

Common Name: Ponderosa Pine/ninebark Forest

SD Protection Status:

Location Information: **Latitude:** 434425N **Longitude:** 1034930W

Watershed Code **Watershed**

10120107 Beaver

Township
Range

003S002E

Section

36

Meridian

BH

TRS Note

W2SE4

County Name

Custer

State

SD

Quadrangle

Jewel Cave

Signal Hill

State

SD

SD

Directions:

HELL CANYON NORTH, IMMEDIATELY NORTH OF JEWEL CAVE N.M. 11 AIR MILES WSW OF
CUSTER. TAKE FS TRAIL
UP BOTTOM OF HELL CANYON, FIRST TURN-OFF W OF JEWEL CAVE ENTRANCE

Survey Information:

First Observation: 1996-04-28 **Survey Date:** 1996-05-13 **Last Observation:** 1996-07-12

Survey Information:

First Observation: 1996-04-28

Survey Date:

Last Observation: 1996-07-12

Eo Type:

Eo Rank: B

Eo Rank Date:

Observed Area: 290.00

Comments:

General PREDOMINATE COMMUNITY OF THIS SITE FOUND ON S-FACING SLOPES IN
POLYGONS 1,6,11,12,16,
NORTH OF HIGHWAY 16.

Description:

Comments: MANY PIPO > 200 YEARS OLD (BASED ON SIZE)

Protection FS PORTION PROPOSED AS PART OF LATE SUCCESSIONAL LANDSCAPE

Comments:

Management NO RECENT FIRE. LOGGING ROADS DISSECT PORTIONS OF AREA

Comments:

Data: 25-50% PIPO CANOPY (10-15 M TALL), 10-40% PIPO SUBCANOPY (3-9 M TALL), <5% JUNCOM,
30% SCHSCO.

Scientific Name: *Ponderosa pine forest*

Occurrence #: 2

Common Name: Ponderosa Pine/bearberry Woodland

SD Protection Status:

Location Information:

Latitude: 434530N **Longitude:** 1034901W

Watershed Code

Watershed

10120107

Beaver

Township

Range

003S002E

Section

36

Meridian

BH

TRS Note

T3S R3E SEC.
30

County Name

State

Custer

SD

Quadrangle

Jewel Cave

Signal Hill

State

SD

SD

Directions:

Quadrangle
Jewel Cave

State
SD

Directions:

LITHOGRAPH CANYON, CA. 0.4 AIR MI E OF JEWEL CAVE VISITOR CENTER.

Survey Information:

First Observation: 1985
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1985-05
Eo Rank Date:

Observed Area:

Comments:

General Description: FOUND IN LIMESTONE OUTCROP AT BASE OF NW SIDE OF CANYON.

Comments: SEE PHOTO IN EL FILE.

Protection Comments:

Management Comments:

Data:

Scientific Name: *Sitta pygmaea*

Occurrence #: 1

Common Name: Pygmy Nuthatch

SD Protection Status:

Location Information: Latitude: 434409N Longitude: 1035042W

Watershed Code Watershed
10120107 Beaver

Township Range Section Meridian TRS Note
003S002E 35 BH S34 T4N S02,03

County Name State
Custer SD

Quadrangle
Jewel Cave

State
SD

Directions:

SOUTH HELL CANYON, JEWEL CAVE NATIONAL MONUMENT.

Survey Information:

First Observation: 1958
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1958-08-24
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments:

Protection
Comments:

Management
Comments:

Data: THREE CAREFULLY IDENTIFIED BY CARTER.

Scientific Name: *Stipa robusta*

Occurrence #: 4

Common Name: Sleepy Grass

SD Protection Status:

Location Information: Latitude: 434420N Longitude: 1035122W

Watershed Code Watershed

10120107 Beaver

Township
Range Section Meridian TRS Note
003S002E 34 BH S35 T4SR2E
S02 S03

County Name

State

Custer

SD

Quadrangle
Jewel Cave

State
SD

Directions:

JEWEL CAVE NATIONAL MONUMENT.

Survey Information:

First Observation: 1961
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1961-08
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments: ANNOTATED AS SUCH BY J.R.THOMASSON,1980-05.

Protection
Comments:

Management
Comments:

Data:

Scientific Name: *Thamnophis elegans*

Occurrence #: 34

Common Name: Western Terrestrial Garter Snake

SD Protection Status:

Location Information: Latitude: 434645N Longitude: 1034738W

Watershed Code Watershed

10120107 Beaver

Township
Range
003S003E

Section
20

Meridian
BH

TRS Note

County Name

State

Custer

SD

Quadrangle

State

Signal Hill

SD

Directions:

3.5 MILES NORTH AND 1.3 MILES EAST OF JEWEL CAVE NM HEADQUARTERS

Survey Information:

First Observation: 1973
Eo Type:

Survey Date:
Eo Rank:

Last Observation: 1973-09-14
Eo Rank Date:

Observed Area:

Comments:

General
Description:

Comments:

Protection
Comments:

Management
Comments:

Data: SPECIMEN #961-63 AT USD, VERMILLION

Scientific Name: *Townsendia hookeri*

Occurrence #: 4

Common Name: Hooker's Townsend-daisy

SD Protection Status:

Location Information: **Latitude:** 434407N **Longitude:** 1035031W

<u>Watershed Code</u>	<u>Watershed</u>
10120107	Beaver

<u>Township</u>	<u>Section</u>	<u>Meridian</u>	<u>TRS Note</u>
<u>Range</u> 004S002E	2	BH	N2NE4

<u>County Name</u>	<u>State</u>
Custer	SD

Quadrangle
Jewel Cave

State
SD

Directions:

JEWEL CAVE NATIONAL MONUMENT, 13 MI W OF CUSTER ON US HWY 16.

Survey Information:

First Observation: 1986
Eo Type:

Survey Date: 1986-05-08
Eo Rank: B

Last Observation: 1986-05-08
Eo Rank Date:

Observed Area: 1,280.00

Comments:

General ROAD CUT ON S SIDE OF US HWY 16 JUST W OF PAVED ROAD TO HISTORIC AREA AND CAVE.

Description:

Comments: SPECIMENS: MARRIOTT #9503 (RM); ODE #86-2(SDC).

Protection

Comments:

Management SITE IS UNDERGOING SUCCESSION TO PINE FOREST.

Comments:

Data: OVER 50 PLANTS COUNTED ON STEEP N-FACING SLOPE OF MOSTLY BARREN SPEARFISH FORMATION. ASSOC.

WITH MUSINEON TENUIFOLIUM, ANEMONE PATENS, JUNIPERUS COMMUNIS, & LOTS OF PINE SEEDLINGS.