



United States Department of the Interior



NATIONAL PARK SERVICE
Denali National Park & Preserve
Mile 237 Parks Highway
P.O. Box 9
Denali Park, AK 99755

IN REPLY REFER TO:

D30 (DENA)
Phoebe Gilbert
Cultural Resources Program Manager
Denali National Park
907-505-9540 (o)
phoebe_gilbert@nps.gov

Subject: National Historic Preservation Act Section 106 Consultation for the Polychrome Area Improvements Project

Denali National Park and Preserve (DENA) is planning a project to address geological hazards from Mile 44 to 46 of the Denali Park Road (Park Road). Please find below details of the proposed project and the National Historic Preservation Act (NHPA) Section 106 determination. Section 106 of the NHPA requires federal agencies to take into account the effects of their projects on historic properties. Based on our review, as designed this project would adversely affect historic properties. We have reached the NHPA, Section 106, determination of "Historic Properties Adversely Effected" (36 Code of Federal Regulations [CFR] Part 800.5).

PROJECT DESCRIPTION

The National Park Service (NPS) proposes to implement a series of engineered solutions to address eight identified unstable slopes from Mile 44 to 46 along the Denali Park Road (Figure 1)—including the hazard posed by the acceleration of the Pretty Rocks Landslide—in DENA. The Pretty Rocks Landslide (at approximately Mile 45.4 of the Park Road) is one of several known landslides in the area and is threatening the integrity, safety, and continued viability of approximately 300 linear feet of the Park Road as well as access to the 47 miles of road west of Pretty Rocks. Monitoring data indicate that the Pretty Rock Landslide's rate of movement has increased dramatically in recent years and current maintenance efforts are no longer sustainable in the face of continued and accelerating movement. This proposed undertaking requires review and consultation under the NHPA, and this letter is sent to you as a potential consulting party as defined in 36 CFR 800.2(c).

The proposed project is considered by the NPS to be undertaking pursuant to 36 CFR 800.3(a) that has the potential to affect historic properties and is subject to Section 106 of the NHPA of 1966 (54 United States Code 306108). The Federal Highway Administration is a cooperating agency for the undertaking and has designated the NPS as the lead federal agency for the purposes of Section 106.

This letter is organized to describe the two project alternatives that the NPS is currently considering, delineate the Area of Potential Effect (APE), identify and evaluates historic properties in the APE, assesses the effects to historic properties, and outline steps to resolve adverse effects to historic properties.

PROJECT ALTERNATIVES

ALTERNATIVE: 1 NO ACTION

Under Alternative 1, no bridge would be constructed, and the NPS would not maintain the current road alignment through the Pretty Rocks Landslide. The Polychrome section of road would be closed to all traffic indefinitely. Visitor traffic would turn around at the Toklat East Fork bridge at Mile 43 and there would be no road access to points west of Pretty Rocks Landslide (Mile 45.4) on the remaining 47 miles of the Park Road.

ALTERNATIVE 2: PRETTY ROCKS BRIDGE AND POLYCHROME ROAD IMPROVEMENTS (NPS PREFERRED ALTERNATIVE)

Alternative 2 would consist of two phases of development. Phase I would restore access across the Pretty Rocks Landslide by constructing a bridge spanning approximately 400 feet over the Pretty Rocks Landslide at approximately Mile 45.4. This phase includes excavation at the west and east ends of the bridge, material placement below the road, installation of a retaining wall at the east abutment, development of a temporary platform for bridge assembly, and geohazard mitigation at the Perlite site. Phase II would maintain the road in place by addressing several additional geologic hazards. This phase includes installation of a retaining wall at the Bear Cave slump below the road grade and addressing three additional rockfall sites with rock bolts, rock scaling, and/or rockfall ditches. Workers would be housed at the Toklat Road Camp (unless Toklat is not accessible to workers; then a location east of Mile 42 would be used).

Alternative 2: Phase I

Phase I would include excavation at the west and east ends of the bridge, material placement, installation of a retaining wall at the east abutment, geohazard mitigation at the Perlite site, and construction of a bridge. Staging and storage would occur in areas that are already used for these purposes and no vegetation clearing would be necessary. The Park Road would be used to transport materials and workers to work sites.

Excavation

Approximately 115,000 cubic yards of material would be excavated. Excavation would be accomplished by rock removal with heavy equipment and blasting. The rock knob to the east of the landslide would be excavated to provide space for the east abutment of the bridge and a temporary staging platform. The uphill slope above the east abutment would also be excavated to allow construction vehicles and traffic to use the existing roadway to access the west side during periods of construction. A cut side retaining wall would be permanently installed to allow access around the east abutment during construction and to reduce the risk of future failure from the cut slope above.

The slope above the west abutment would be excavated to provide space for construction of the bridge and to accommodate vehicles turning on and off the bridge. A portion of this excavation area (less than 1 acre) would be in designated wilderness. The excavation wall could include a bench cut into the rock partway down the rock wall to serve as a rockfall catchment area. The excavation could also include a road-level rockfall ditch. Periodic maintenance of the bench using heavy machinery would be needed, a small portion of which would be in wilderness. Excavation would also require some transport of heavy equipment on the west side of the slope, a portion of which would be through designated wilderness. Excavation areas would be contoured to match surroundings, and any vegetation damage from equipment access would be restored after use.

Material Placement

After swell of 20 percent for deposition is accounted for, excavated material would need to be disposed of. Much of the material would be of insufficient quality for use as aggregate or roadbed material; however, if appropriate, a portion of the material would be trucked off site and stored in DENA for use on future projects or to fill the slump in the existing road while maintaining limited access during construction. Storage would occur in existing storage locations. The majority of the excavated material would be placed in the area below the roadway above the toe of the landslide and approximately 10.25 acres of that area would be in wilderness. Mechanical tracked equipment would be used to move material off the roadway and into the material placement area, which would require temporary access in wilderness. Anticipated equipment to be used during material placement includes excavators, dump trucks, and bulldozers on the slope that would be placing and shaping the material into its final position. Some vegetation toward the toe of the landslide would be covered by excavated material. Excavated material would consist of rock and soil similar to what exists at the site and would be expected to look similar to existing rock/soil at the landslide.

Road Realignment

An approximately 250-foot section of the road on the west side of the bridge would be realigned slightly to create a turning radius for buses and other vehicles to navigate the road. The realignment would include a shift of 5 to 10 feet, which would be designed to avoid a geohazard in that area along the south side of the road.

Perlite Site

The Perlite site is near the east abutment and is a rockfall, debris slide, and slump that creates a geohazard along 170 feet of the Park Road. Rock scaling (i.e., the removal of loose or potentially unstable rocks) would be conducted at the site likely by workers on ropes using prybars and cranes; no blasting would be conducted. Rock scaling would be designed to match contours and existing surroundings. In addition, 1-inch diameter bolts would be drilled into the subsurface rock of the cliff face to secure hazardous rocks, some of which would occur in the wilderness area. Rock bolts would be designed to match surroundings by either staining the bolts or cutting them flush with the rock and grouting over them.

Pretty Rocks Bridge Construction

The NPS would construct a steel bridge spanning the Pretty Rocks Landslide site (Figure 2). The bridge would be approximately 400 feet long and have an overall width of 24 feet and would be attached to abutments at both ends. Abutments would be concrete and steel pilings drilled into the bedrock. The bridge would be one lane and traffic would stop at existing pullouts at either end, yielding to vehicles on the bridge.

A temporary platform would be constructed near the east abutment for use as a bridge assembly location. The platform would be approximately 150 feet long and extend 150 feet from the south side of the road. The bridge components would be trucked to the site and stored at the temporary platform until assembly. Bridge assembly is estimated to take 30 days. Bridge abutment and temporary platform construction would require some pile driving and concrete placement, with an estimated 16 piles needed. Equipment for bridge construction would include a vibrator hammer; generator; drill rig for ground anchor and micropile installation; large mobile cranes; excavators; and forklifts.

After bridge construction, the east and west abutment areas would be recontoured and revegetated as needed to match the surrounding areas and to restore the road width to the historic character. Bridge maintenance would occur at both abutments when needed and thus a

small amount of space, after the majority of the space was recontoured, would be preserved at both abutments for future maintenance needs. Visitor Traffic

During construction, the existing Park Road across the landslide would be minimally reconstructed for construction use. Regular visitor road traffic through the site would not be accommodated during most construction activities for safety reasons; however, limited traffic may be accommodated during some construction periods with the possibility for some visitor traffic in the later stages of Phase I. When the road is temporarily closed to through traffic, traffic would likely turn around at the East Fork Toklat River Bridge (Mile 43). Access to the Kantishna inholdings would be primarily by air; additional access would be via road when possible.

Alternative 2: Phase II

Phase II (Figure 1) would include installation of a retaining wall or earthwork at the Bear Cave slump and addressing three additional geohazard sites. Staging and storage would occur in areas that are already used for these purposes and no vegetation clearing would be necessary. The Park Road would be used to transport materials and workers to work sites.

Bear Cave Slump

At the Bear Cave area, Phase II would include excavation of materials and construction of a retaining wall on the south side of the Park Road. The retaining wall would be buried approximately 30 to 60 feet deep and run 1,000 feet along the road edge to stabilize the road edge. The north side of the Park Road would be temporarily widened in the Bear Cave area to allow traffic to pass around the construction site, and would be returned to the original width at the end of construction. After construction of the wall, the area on the north side of the road would be recovered and the road would be returned to the existing roadway centerline and width. Road work would also include drainage ditch improvements and excavation in this area. The retaining wall and road widening/improvements would not be within the wilderness area. The retaining wall would be made of steel, concrete, and wood and it would be minimally visible from the surrounding area, including from backcountry areas south of the road. Construction equipment necessary for wall construction and road widening would include excavators; graders; front end loaders; dump trucks; vibrator hammer; generator; drill rig for wall and anchor installation; and large mobile cranes. Equipment and materials for Bear Cave work would be stored at existing staging areas in DENA.

The disturbed areas of the road would be revegetated and recontoured to match the surrounding area after project completion and rehabilitation.

Other Sites

Three additional geohazard sites (Sites 863, 864, and 870) would be addressed during Phase II. At these sites, Phase II would include engineered solutions to mitigate rockfall hazards such as rock scaling, installation of rock bolts, and creation of rockfall ditches. Rock scaling would be repeated every 5 to 10 years or as needed to reduce rockfall hazards. Some of the activities related to rock bolting and rock scaling at these three additional sites could impact wilderness. Rock bolts would be designed to match surroundings by either staining the bolts or cutting them flush with the rock and grouting over them.

Visitor Traffic

Through traffic would be accommodated during Phase II. There may be some delays allowing only one-way traffic or for safety at certain times. There could also be scheduled closures during the day for periods of time. Rock scaling and bolting cannot occur in the dark for the safety of construction personnel. Therefore, traffic delays and holds during daylight hours would be needed. This is similar to current practices for road maintenance in DENA.

AREA OF POTENTIAL EFFECT (APE)

The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist (36 CFR Part 800.16[d]). For the proposed project, the APE is between approximately Mile 44 and 46 along the Park Road; it was developed to encompass the proposed project alternatives that include potential solutions to address ongoing geohazards, including the construction of a bridge to span the Pretty Rocks Landslide. The APE includes 70.16 acres where potential physical effects are likely to occur and encompasses excavation and/or filling activities, material placement, bridge construction areas, rockfall mitigation sites, drainage ditch improvements, retaining wall construction, revegetation and recontouring, as well as potential equipment staging and storing locations. The APE also includes a 1-mile perimeter that surrounds the boundary of the National Register of Historic Places (National Register)-listed Park Road Historic District (PRHD) (HEA-00517/MMK-00195)¹ from Mile 43 to 46 where visual, noise, and/or atmospheric effects from the proposed undertaking may potentially occur. This APE includes 5,562.90 acres (Figure 3).

RESULTS OF INVENTORY AND RECORDS CHECK

DENA cultural resource records and Geographic Information System (GIS) data were reviewed previous to this project and the physical APE was surveyed in August of 2021 (Anders 2021). Portions of PRHD and the East Fork Patrol Cabin Site and Cultural Landscape (CL) (HEA-00218) are in the physical APE. Contributing resources of the PRHD include the East Fork Patrol Cabin Site and the East Fork Toklat River Bridge. HEA-00323 (East Fork Can Dump), a historic archeology site, is also within the physical APE. There are no additional historic properties in the APE that includes the 1-mile perimeter around the PRHD (Figure 4).

PARK ROAD HISTORIC DISTRICT AND CULTURAL LANDSCAPE (HEA-00429/MMK-00171, HEA-00517/MMK-00195)

The 92-mile Park Road Historic District and Cultural Landscape (PRHD&CL) runs east to west in the foothills north of the Alaska Range in DENA. The road extends from Mile 237.3 of the George Parks Highway across several low passes and glacier-fed rivers to the historic mining district of Kantishna, which was incorporated into the park by the Alaska National Interest Lands Conservation Act in 1980. The road was originally constructed from 1922 to 1938 by the Alaska Road Commission (ARC). The ARC and the NPS collaborated on the road design. The road is historically significant for its association with the period of scenic road development in national parks in the 1920s and 1930s, as well as for its association with the Mission 66 park development program in the 1950s and 1960s (Criterion A). The road is also a rustic example of landscape engineering combining NPS aesthetic road design principles with the ARC's experience constructing roads in northern environments (Criterion C).

The areas of significance are Entertainment/Recreation and Transportation for its relation to automobile tourism and Landscape Architecture for its aesthetically oriented design. The period of significance begins in 1922 when the route was originally cleared. It extends to 1972, when the Park

¹ Note that the Park Road Historic District and Cultural Landscape was originally listed in the National Register under the historic name of "Mount McKinley National Park Road Historic District" (NRIS #100004070) and more recently referred to as "Denali Park Road Historic district." For the purposes of this letter, this resource is referred to as the "Park Road Historic District and Cultural Landscape" or PRHD&CL because a Cultural Landscape Report for the Park Road was completed in 2018 (MIG). Alaska AHRS numbers include the abbreviation of a USGS Quadrangle name followed by the resource number.

Road shuttle bus system was implemented. The PRHD&CL is significant at a national level because it serves as one of the most important corridors for tourism in a national park in Alaska.

The PRHD&CL retains integrity in the areas of significance of entertainment/recreation, transportation, and landscape architecture for the period of significance (1922 to 1972). Overall, the PRHD&CL conveys its historical significance through its location, setting, design, materials, workmanship, feeling, and association. Despite several minor realignments along the road, including a 0.2-mile reroute beginning at Mile 4, most of the alignment of the Park Road has not been altered by the NPS or ARC since the period of significance. Consequently, most of the road remains in its original location. Development in the PRHD&CL and its viewshed is minimal. The federally designated DENA wilderness that surrounds the district ensures the preservation of the biotic communities and undeveloped nature of the setting.

Overall, the material associated with the road structure reflects the conditions during the period of significance. Primarily native materials continue to be used, with an earthen roadbed and gravel surface material. Pavement is limited from Mile 1.8 to 15, which conveys the feeling and association with the mid-twentieth century use of the road and its association with the Mission 66 era.

The PRHD&CL retains integrity of design by exhibiting characteristics of a NPS scenic road with alignments associated with the Mission 66 era (particularly between Mile 1.8 to 30) that do not detract from the feeling of isolation and wilderness. The preservation of the road alignment, which provides views of the landscape and access to wilderness, and the control of expansion of the road footprint are the most significant elements of the district's integrity. Aspects that allow the road to convey the aesthetic and historic feeling of the historic period include the relatively low design speed, the curvilinear alignment of the road, the exposure of the landscape unprotected by guardrails on the slopes of Polychrome Mountain and between Stony Creek and Grassy Pass, and the panoramic views that result from minimal obstructions.

Prior to the opening of the Denali Highway (Alaska Route 8) in 1957, there were very few private vehicles anywhere on the Park Road, and traffic decreased farther west. Because most of the visitor and vehicular activity originates at the eastern end of the road (near the Alaska Railroad and the George Parks Highway) plans to improve the road have typically been based on a telescoping approach; the road becomes more primitive traveling west. The Mission 66 proposal of 1956-1966 to pave the road to Mile 31 and to make it a uniform width (and "oiled") from there to the Eielson Visitor Center at Mile 66 was halted due to a national outcry over excessive improvements to a wilderness road.

The area of the undertaking at Polychrome Pass provides one of the most stunning views along the entire road. This section of road is also one of the narrowest and is several hundred feet above the valley floor below. The road route was etched at Pretty Rocks in Polychrome Pass in August of 1930 with hand tools; the following summer it was established using steam shovels and dynamite. The Pretty Rocks road section has been slumping for decades and has undergone annual maintenance since at least the 1940s to address landslides and other geohazards, including widening and infilling. As early as 1943, the slumps have been large enough to close—or nearly close—the road. A January 1943 memo from Superintendent Frank Been to the NPS director stated the following:

Between 42 Mile and 52 Mile the roadbed has sunk in many places so that a large amount of hauling will be required to stabilize the roadbed . . . Sloughing from deep cuts on steep mountain sides between Mile 42 and Mile 47 and between Mile 66 and Mile 69 was so heavy last fall that the road was almost closed. It is expected that road widening and reducing the cut slope will be necessary this summer to prevent closing the road and to eliminate hazard from falling boulders (Been 1943).

In 1973, the road was closed for 8 hours due to slides on Polychrome Pass and Stoney Hill (NPS 1973); in 1990, torrential rains caused major rock and mud slides in Polychrome pass, which

resulted in road travel being prohibited or restricted over a 9-day period until conditions stabilized (NPS 1990). In 1987, drains and geotextile were placed at Pretty Rocks in an effort to mitigate the slumping (NPS 1986); these have failed in subsequent years.

In addition to the East Fork Patrol Cabin Site and Cultural Landscape (detailed below), the East Fork Toklat River Bridge is a contributing feature of the PRHD&CL and is located in the APE. This three-span, four-beam steel bridge is at Mile 43.5 and was constructed in 1956 with a cast-in-place concrete deck, concrete piers, and concrete abutments; it is 283 feet long and 28.5 feet wide. This bridge is a contributing feature of the PRHD&CL and is considered part of the Mission 66 program. Although the bridge replacement program began before Mission 66 in the park, the Mission 66 program addressed overall development in parks and often accelerated projects initiated prior to Mission 66 (Wackrow et al. 2020). Historic and existing condition photographs of the PRHD&CL are shown in Figure 5 through Figure 26.

EAST FORK PATROL CABIN SITE AND CULTURAL LANDSCAPE (HEA-00218) (EAST FORK CABIN & CL)

The East Fork Cabin & CL is a contributing feature of the PRHD&CL. Constructed between 1929 and 1930, this site is approximately 0.25-mile south of Mile 42.8 (Wackrow et al. 2020). The East Fork Cultural Landscape includes both the Cabin Site (HEA-00218) and the East Fork Coal Mine (HEA-00485). The Coal Mine site is outside the APE and will not be discussed in detail.

The ARC used the site as a base camp for road construction in the late 1920s and 1930s. The East Fork Cabin served as a cook house and food storage for ARC employees who lived in multiple canvas tents. The camp extended from the East Fork Cabin toward the East Fork of the Toklat River. Even before the Park Road was completed in 1938, the NPS used the ARC cabin for winter dogsled patrols. After the road was complete, the cabin served as a summer base camp for wildlife researchers (Welzenbach 2017).

The East Fork Cabin was the fourth ARC cabin to be built. This cabin served as the base for road construction crews working on the East Fork Bridge and Polychrome Pass. The crews positioned their white canvas tents in the area between the cabin, Coal Creek to the south, and the East Fork River to the west (Welzenbach 2017).

The East Fork ARC Camp likely operated from 1929 through 1938. By 1985 the cabin maintained its ongoing use as summer quarters for a backcountry ranger and during the winters by NPS dogsled patrols and the Denali Dog Tours concessioner (Evans 1985).

Wildlife biologist Adolph Murie and botanist Louise Murie lived in the East Fork Cabin for eight summers between 1939 and 1970, including consecutive summers from 1939 to 1941 (Evans 1985, 1986; Bryant 2011). From the East Fork and Igloo Cabin base camps, Adolph studied wolves, birds, grizzly bears, and other wildlife. Adolph's book *The Wolves of Mount McKinley* was published in 1944.

Adolph and Louise, along with Olaus and Margaret Murie, are renowned in the NPS and conservation communities for their scientific research and successful advocacy for wildlands. Based on his research in Yellowstone National Park and DENA, Adolph was an early advocate for the role of predators in an ecosystem and successfully promoted the elimination of wolf eradication. He also strongly opposed additional development of DENA and persuasively argued for the retention of the gravel surface on the western portions of the Park Road when paving was proposed in the 1950s. The Murie Science and Learning Center at Denali is dedicated to the Murie family's research and conservation efforts.

The East Fork site's scientific legacy was continued with the installation of the Dean Cabin. The cabin has provided a base for research operations since 1975. Housing in DENA's interior has

allowed scientists more direct and regular access to their research subjects. Ultimately, multi-year studies based out of the site—including those done by the Muries—provided a greater understanding of the park’s ecosystems.

The Dean Cabin is a noncontributing resource in the East Fork Patrol Cabin Cultural Landscape. A different wood building appears in some historic photographs west of the East Fork Cabin, but that building has a gable roof and is much closer to the East Fork Cabin. The Dean Cabin was built in 1975 and is not contributing to the East Fork Cabin Site or Cultural Landscape as it was constructed after the period of significance.

The East Fork Cabin is meaningful to the state of Alaska because of its association with two historical themes; the development of a transportation system in remote areas on interior Alaska, and the early efforts of the NPS to practice wildlife conservation in the first national park in Alaska. It is eligible under Criterion A for transportation and conservation.

EAST FORK CAN DUMP (HEA-00323)

Known as the East Fork can dump, HEA-00323 consists of seven cans situated in vegetation and was first recorded in 2000. Of the cans, three were CORONA brand, the standard #3 coffee can size, blue with light color lettering, and a solder dot on one end. One of these cans was modified with a twisted wire bale added. Two other cans were the same size but had plug-in lid openings and factory-made bales attached. The last two cans were the smallest, and neither had soldered closures.

During survey of the physical APE in 2021 surficial evidence of HEA-00323 was not identified, but subsequent review of archival photographs suggests that the reported ARC camp at this location was much larger than originally thought, and there is the potential for encountering unidentified historic material associated with the 1930s ARC camp at this location. Additional fieldwork specifically addressing this site would be necessary to determine if historic materials associated with this camp are in the project area, and to inform any necessary avoidance, minimization, or mitigation measures. For the purpose of this report, HEA-00323 is being treated as eligible for the National Register under Criterion A for its association with the 1930s ARC construction camp in the Bear Cave survey area, and as a contributing feature to the PRHD&CL (HEA-00517/MMK-00195).

RECOMMENDATIONS

This section provides recommendations concerning the project’s potential to affect historic properties. Due to the potential for adverse effects to historic properties, NPS considered two project alternatives consistent with the requirements of 36 CFR Part 800.6 to identify potential opportunities to avoid, minimize, or resolve adverse effects.

EAST FORK PATROL CABIN SITE AND CULTURAL LANDSCAPE

The proposed project is essential to keeping the road open as a viable travel route for park visitors and to continue the historic use of the road. None of the proposed alternatives would adversely affect the East Fork Patrol Cabin Site and Cultural Landscape because no ground disturbance would take place at that location and no physical installations from Alternative 2 (Phase I or Phase II) of the project will be visible from it.

PRHD&CL (ALTERNATIVE 1 NO ACTION)

Alternative 1 (No Action) would result in an *adverse effect* to the PRHD&CL because it would result in the closure and change in use of the PRHD. No vehicles would be able to drive past Mile 43 due to the existing geohazards thus diminishing the road’s historic associations with national park

access and publicly accessible viewsheds. Alternative 2 (NPS preferred alternative) of the proposed undertaking would also *adversely affect* the PRHD&CL pursuant to 36 CFR Part 800.5(d)(2).

Integrity of Location

The location of the PRHD&CL would largely remain the same under this alternative as no portion of the road would be rerouted. That portion of the road that has been damaged by the landslide would not be repaired and thus not returned to its original location.

Integrity of Design

The design of the PRHD&CL would be diminished by the lack of maintenance to that portion of the road subject to closure. That portion of the road damaged by the landslide would not be repaired and thus the road's design at that location would remain diminished.

Integrity of Setting

The setting of the PRHD&CL would be diminished by the lack of maintenance to that portion of the road subject to closure. While the natural setting of the PRHD&CL would remain intact, the manmade setting would be diminished by the lack of road maintenance to the PRHD&CL, the lack of road use by the public, and the visible damage to the PRHD&CL from the landslide.

Integrity of Materials and Workmanship

The materials and workmanship of the PRHD&CL would be diminished by the lack of maintenance to that portion of the road subject to closure. That portion of the road damaged by the landslide would not be repaired and thus the road's materials and workmanship at that location would remain diminished.

Integrity of Feeling

The integrity of feeling associated with the PRHD&CL would be diminished by the lack of maintenance to that portion of the road subject to closure as well as that portion of the road that would not be repaired as a result of the landslide.

Integrity of Association

The historical association of the PRHD&CL related to public access and the road's various viewing platforms would be diminished in that portion of the road subject to closure. Without access by the public, the original function of the road as a scenic route would not be readily evident.

PRHD&CL (ALTERNATIVE 2 PRETTY ROCKS BRIDGE AND POLYCHROME ROAD IMPROVEMENTS) (NPS PREFERRED ALTERNATIVE)

The following sections describe how each aspect of integrity of the PRHD&CL is affected by Alternative 2.

Integrity of Location

While minor alignment adjustments have been made at Savage River, Ghiglione Creek, North Face Corner, and a few other locations, much of the road route has not changed since the period of significance. The proposed undertaking would result in a small reroute on the west side of the Pretty Rocks Landslide; this is very near a known realignment that is just east of Polychrome Overlook (between Mile 45.5 and 45.6). The proposed realignment is small in length and is very close to the historic road alignment and is a minor adverse effect to this element of integrity. The three alternatives considered but dismissed from consideration consisted of a north reroute and two southern reroutes. These options would have resulted in miles of new road and the abandonment of

the original alignment for the majority of the current physical APE. Alternative 2 minimized the amount of reroute needed and retains almost all the historic location of the road in the project area.

Integrity of Design

The road retains integrity of design by exhibiting characteristics of an NPS scenic road and improved elements associated with the Mission 66 era to Teklanika. Sections of the road that have been significantly widened or raised after 1968 do not fully reflect the historic period. However, the alignment has been minimally altered since 1938. The preservation of the road's curvilinear alignment that responds to the landscape's topography and the control of expansion of the road footprint are the most critical factors in the retention of the road's historic integrity. The proposed reroute would be minimized by creating a sinuous curve emulating the undulating design ethos of the PRHD&CL. The design for this small realignment was specifically chosen in part to align with the curving nature of the park road. A straight cut through from the west end of the bridge to the Polychrome Overlook was discussed but dismissed from consideration in part due to the adverse effect it would have to the PRHD&CL. The proposed bridge width is 24 feet, which is the upper limit of the design standard for this section of road.

Integrity of Setting

The road retains integrity of setting and includes the physical environment within the boundary of the historic corridor and within the viewshed of the road outside of the historic district. It is anticipated that this element of integrity would be adversely affected by the proposed Phase I rock removal due to the large amount of material that would be removed from the western end of the bridge's location, the resulting scars on the mountain, and the removal of the rock feature on the eastern side of the bridge. Rock removal and rock bolting proposed in Phase II may also adversely affect the integrity of setting if they leave large scars on the hillsides or a visible from vehicles on the park road.

Integrity of Materials and Workmanship

The road retains integrity of materials and workmanship and it is anticipated that the undertaking would adversely impact these elements of integrity due to proposed bridge installation and other modern installations (rock bolts). Primarily native materials were used during the original construction of the road. In the late 1960s, the road was paved to the Savage River Bridge. Much of the road remains unpaved but has been surfaced with gravel. Overall, the material associated with the road structure reflect the conditions during the late period of significance. The installation of a steel bridge at this location on the Park Road is not in keeping with the integrity of materials and workmanship and would be an adverse effect. The retaining wall on the east end of the bridge may also adversely affect the park road depending on the materials and design of the wall.

Integrity of Feeling

The road retains integrity of feeling. Important aspects that allow the road to convey the aesthetic and historic sense of the period of significance include the relatively low design speed, the curvilinear alignment of the road, the minimal footprint, and the exposure unprotected by guardrails on the slopes of Polychrome Mountain and between Stony Creek and Grassy Pass. While the paving, modern signage, and increased traffic along the road does not reflect the early historic period, the road continues to provide access into the remote park and highlight the vast awe-inspiring landscape, which was the primary intention of the original design. The proposed installation of a bridge on Polychrome Mountain would affect the feeling of a small section of the project area (the necessary design of the bridges sides would provide a protected feel where it was once unprotected and would block the view and exposure at that location). The other proposed design elements of the undertaking (e.g., the s-shaped reroute, keeping to the road design standards) would help retain

integrity through the project area. The Bear Cave Slump improvements would result in retention of the feeling of the road at that location as well.

Integrity of Association

The Park Road retains integrity of association. The road corridor continues to convey the period of collaboration between the ARC and the NPS during the initial road construction process. In addition, the first 31 miles of the road in many ways convey the 1950s and 1960s road improvements associated with Mission 66 and the opening of the Denali Highway. The road also remains unpaved after the Savage River Bridge, reflecting the wilderness conservation movement at the end of the Mission 66 era. Therefore, the corridor retains integrity of association. The proposed undertaking would not adversely affect the road's integrity of association because the project would not impact the road corridor's conveyance of the period of collaboration between the ARC and NPS during the initial road construction process.

EAST FORK CAN DUMP (HEA-00323)

A proposed retaining wall that would be constructed during Phase II of Alternative 2 of the undertaking is at the location of HEA-00323 and would likely adversely impact the site. If Alternative 2 (Phase II) is not implemented for several years, additional survey and shovel testing is recommended at the location of HEA-00323 to see if the site still retains integrity. If that is not possible, the site should be treated as a contributing feature to the PRHD and its destruction from the proposed undertaking would be treated as an adverse effect. It is recommended that ground disturbance for the Bear Cave portion of Phase II be monitored by appropriate cultural resource staff. The East Fork Can Dump would not be affected by Alternative 1 (No Action).

OTHER EFFECT MINIMIZATION RECOMMENDATIONS

Ground disturbances for the remainder of the undertaking would be periodically monitored by appropriate cultural resource staff. If cultural resources or items protected by the Native American Graves Protection and Repatriation Act, Archeological Resources Protection Act, or the National Historic Preservation Act are discovered during project implementation, all project-related activities in the vicinity of the discovery would be stopped and the park archaeologist would be notified immediately. In consultation with the State Historic Preservation Officer and other consulting parties, DENA would determine a course of action per 36 CFR Part 800.13.

SUMMARY FINDING OF EFFECT

Access to rural viewsapes is the key historic association that conveys why the PRHD&CL is significant and eligible for the National Register under NRHP Criteria A and C. If Alternative 1 (No Action) were to be implemented, the road would no longer be maintained, and public access would no longer be possible. Over time, the characteristics of the PRHD&CL would be diminished if this alternative was implemented. Alternative 1, therefore, would result in an *adverse effect* consistent with 36 CFR 800.5(d)(2).

As designed, Alternative 2 would allow for continued access to those viewsapes but would result in a small reroute and the introduction of incompatible elements in the PRHD&CL. Due to these factors, as designed the project would result in an *adverse effect* to the Park Road's integrity, which qualifies this property for inclusion in the National Register. Therefore, the NPS finds that Alternative 2 (Phase I and II) would result in an *adverse effect* consistent with 36 CFR 800.5(d)(2).

While both alternatives would result in adverse effects to the PRHD&CL, Alternative 2 is currently preferred by NPS as it would serve to minimize long term effects to the historic property by keeping

the facility maintained and accessible to the public and thus limit effects to the historic characteristics that make the PRHD&CL eligible for the NRHP.

RESOLUTION OF ADVERSE EFFECTS

The NPS will consult with the Alaska State Historic Preservation Officer, Tribes, and other consulting parties to resolve adverse effects through an agreement document. This will likely occur through an amendment to the existing “Programmatic Agreement Between the National Park Service, Denali National Park and Preserve and the Alaska State Historic Preservation Officer Regarding Routine Maintenance, Repair, Operations, Bridge and Culvert Replacements, Geohazard Monitoring, and Emergency Maintenance on the Denali Park Road Corridor.”

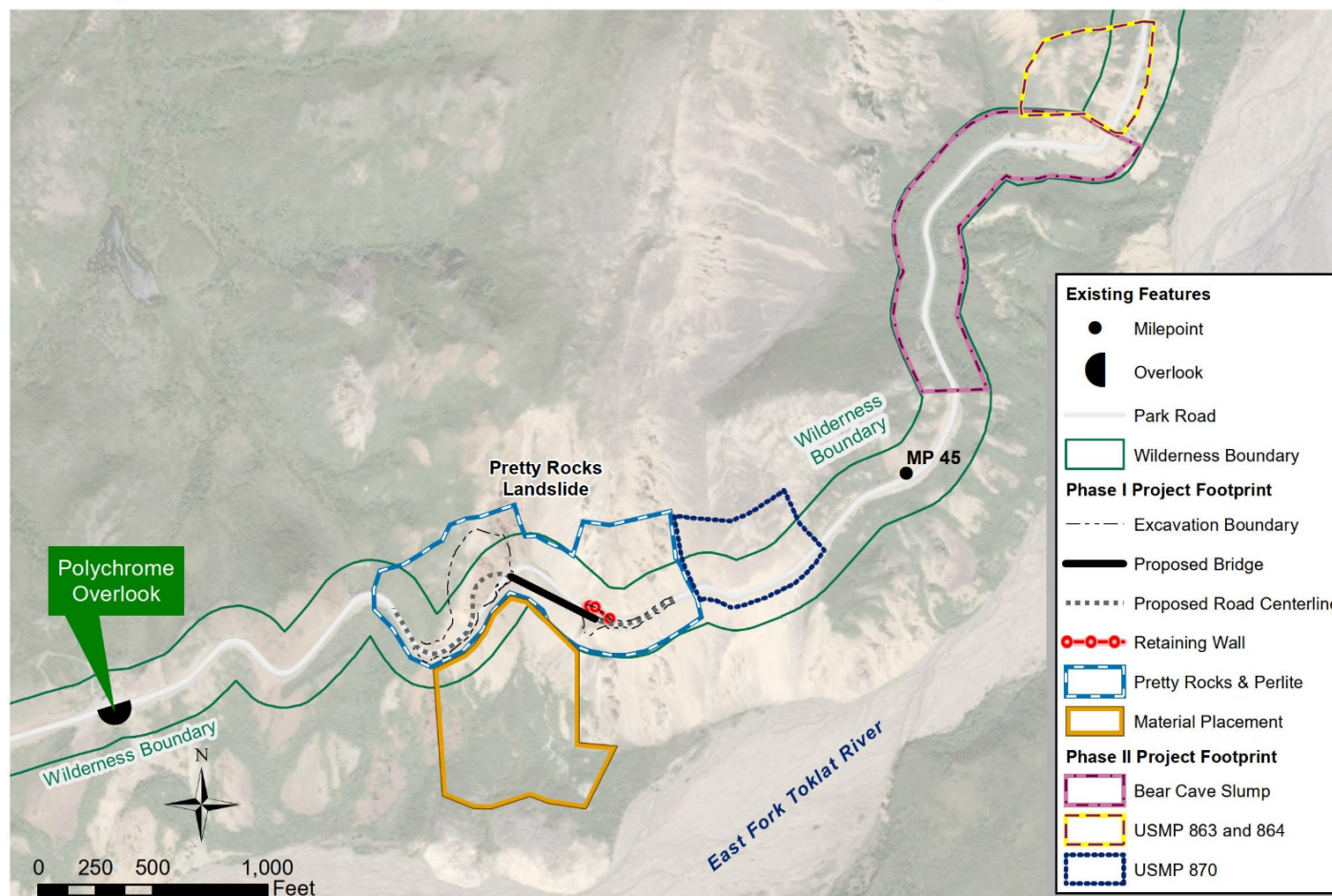
REFERENCES

- Anders, J. and Maughn, D. 2021. Phase I Archaeological Survey Summary Report, Polychrome Area Improvements. Prepared for the National Park Service, Denver Service Center.
- Been, Frank. 1943. Sup. Frank Been Memo to NPS Director, 1 January 1943. Bill Brown Collection, Box 30. Denali National Park & Preserve Museum Collection.
- Bryant, Jane. 2011. Snapshots from the Past: A Roadside History of Denali National Park and Preserve. Page 73. Center for Resources, Science, and Learning, Denali National Park and Preserve.
- Evans, Dave. 1985. Cabin Management Plan. Denali National Park and Preserve.
- Evans, Dave. 1986. Patrol Cabins, Mount McKinley National Park, Alaska: National Register of Historic Places Registration Form.
- MIG, Inc. 2018. Mount McKinley National Park Road Historic District Cultural Landscape Report. Report prepared by MIG, Inc. Portland Oregon
- National Park Service (NPS). 1973. Superintendent's Monthly Report, July, 1973 Archives: National Park Service, Denali National Park And Preserve.
- NPS. 1986. Superintendent's Monthly Report, July, 1986. Archives: National Park Service, Denali National Park And Preserve.
- NPS. 1990. Superintendent's Monthly Report, May 1990. Archives: National Park Service, Denali National Park And Preserve.
- Wackrow, K., Welzenbach, C., Owens, K., Feil, H.A., Johnson, E.K. 2020. Mount McKinley National Park Road Historic District National Register of Historic Places Registration Form. National Park Service Alaska Regional Office.
- Welzenbach, C. 2017. East Fork Patrol Cabin Site Cultural Landscape Treatment Plan. National Park Service Denali National Park and Preserve.

ATTACHMENT: ADDITIONAL FIGURES AND MAPS



Polychrome Area Improvements Project Location



Produced by Denver Service Center

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Image dated 7/30/2014.

November 2021

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FIGURE 1: MAP OF ALTERNATIVE 2, PHASE I AND PHASE II ACTIONS



Note: The darker areas on each side of the bridge show where excavation would take place. The dark area under the bridge depicts the shadow of the bridge.

FIGURE 2. DIGITAL REPRESENTATION OF THE PROPOSED PRETTY ROCKS BRIDGE (LOOKING EAST)



Area of Potential Effects

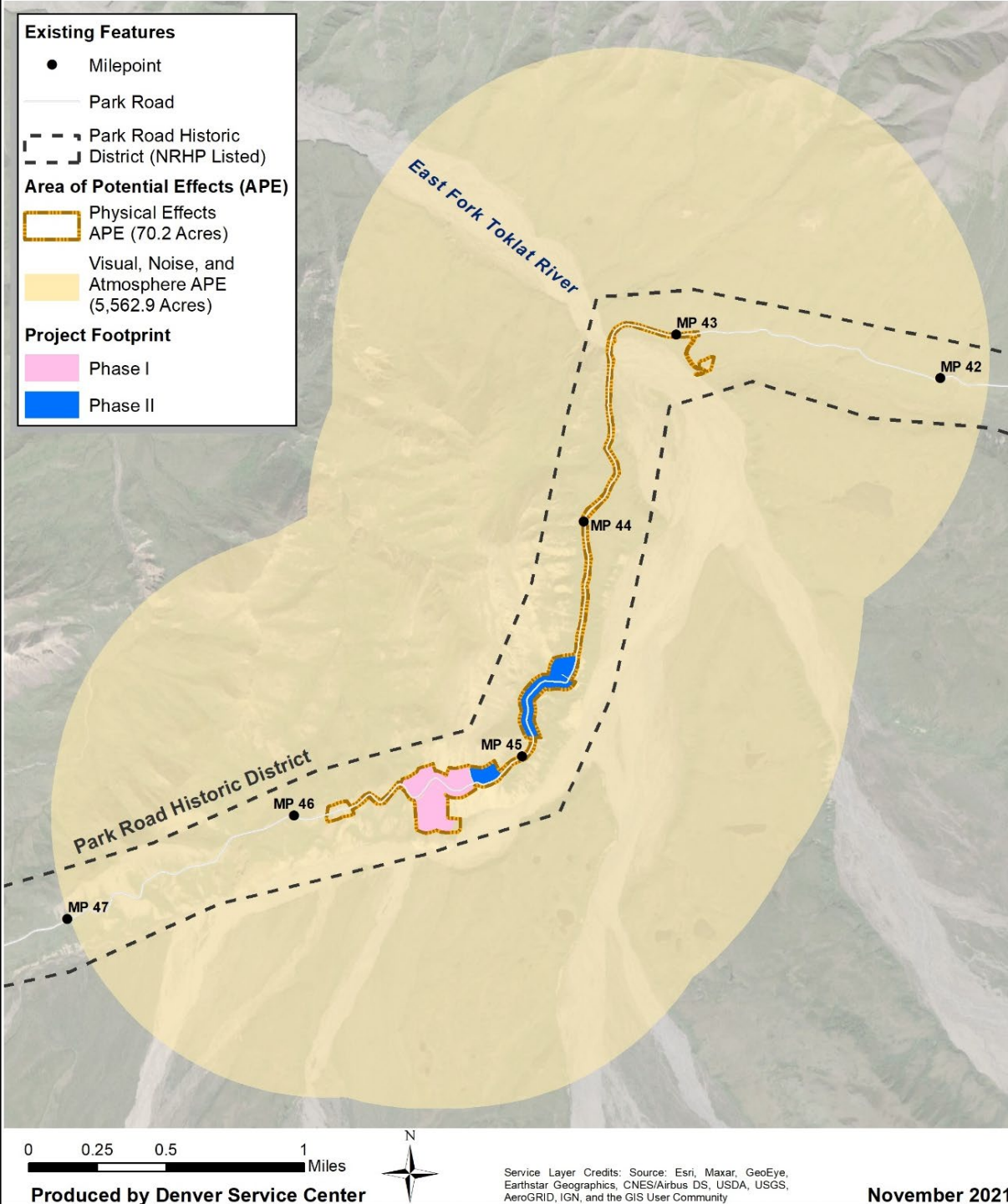


FIGURE 3. NHPA SECTION 106 AREA OF POTENTIAL EFFECTS

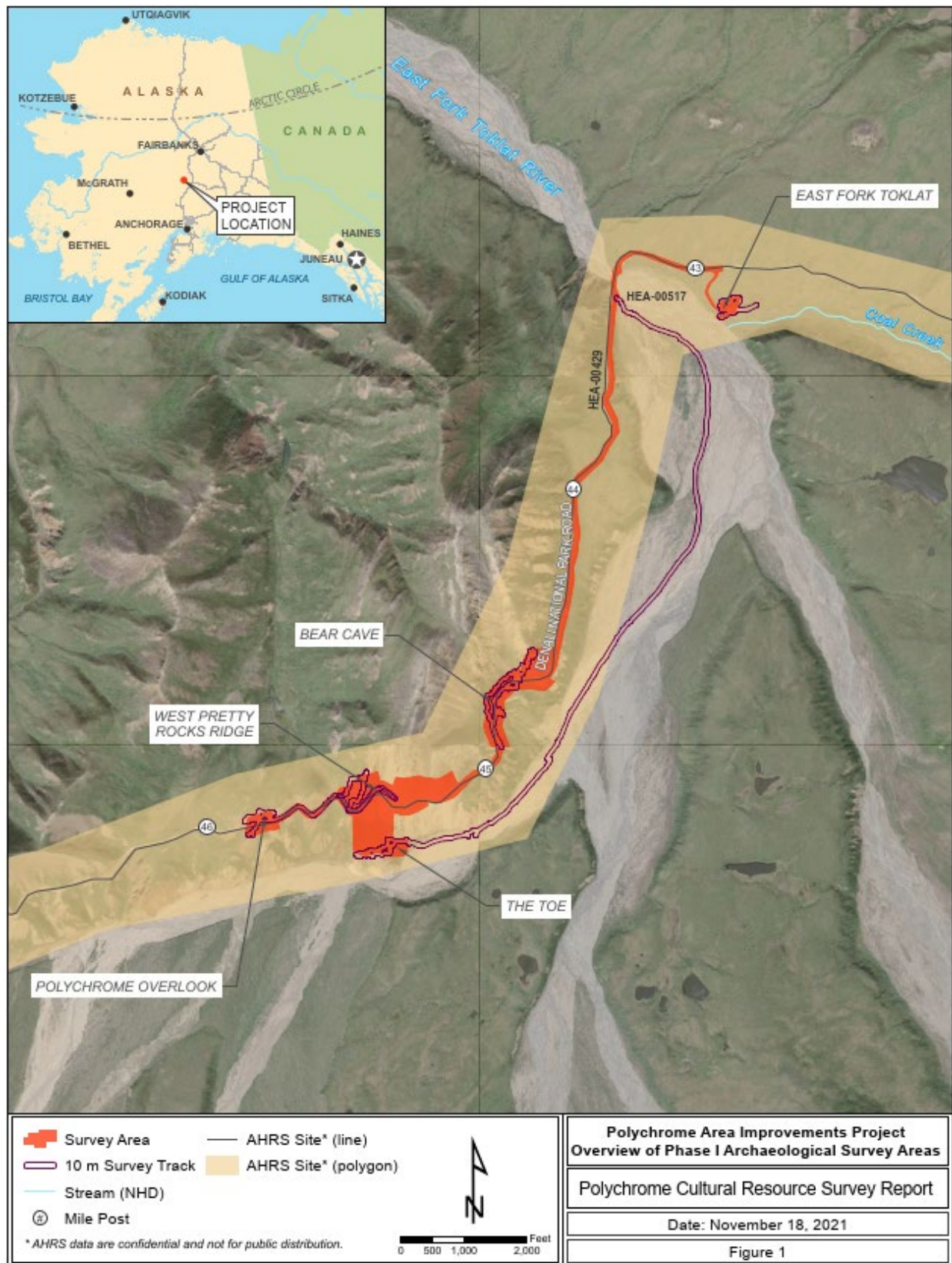


FIGURE 4. POLYCHROME AREA IMPROVEMENTS PROJECT OVERVIEW OF PHASE I ARCHAEOLOGICAL SURVEY AREAS



FIGURE 5. EAST FORK CABIN, MILE 43, 1928. (ALASKA STATE LIBRARY, ALASKA ROAD COMMISSION COLLECTION 61-2-278).



FIGURE 6. ETCHING THE ROAD IN AT PRETTY ROCKS (LOOKING EAST), AUGUST 1930 (ALASKA STATE LIBRARY, ALASKA ROAD COMMISSION COLLECTION, 61-2-230).



FIGURE 7. HIGH LINE ROAD BEING BUILT AT PRETTY ROCKS IN AUGUST OF 1931 (EDMUNDS COLLECTION, BOX 1, ANCHORAGE MUSEUM).



FIGURE 8. ARC CAMP, MILE 45 NEAR THE BEAR CAVE SLUMP, CA. 1930s (ALASKA STATE LIBRARY ALASKA ROAD COMMISSION COLLECTION, 61-2-237).



FIGURE 9. TOKLAT EAST FORK BRIDGE (TIMBER), SEPTEMBER 1949 (NPS PHOTO).



FIGURE 10. EAST FORK CABIN AND CAMP, AUGUST 1958 (NPS PHOTO).



FIGURE 11. ADOLPH AND LOUISE MURIE, 1965 (NPS PHOTO).



FIGURE 12. INSTALLING GEOSYNTHETIC LAYER REINFORCEMENT AT PRETTY ROCKS, 1987 (FEDERAL HIGHWAYS PHOTO).



FIGURE 13. INSTALLING SUBSURFACE DRAINAGE, PRETTY ROCKS, 1987 (FEDERAL HIGHWAYS PHOTO).

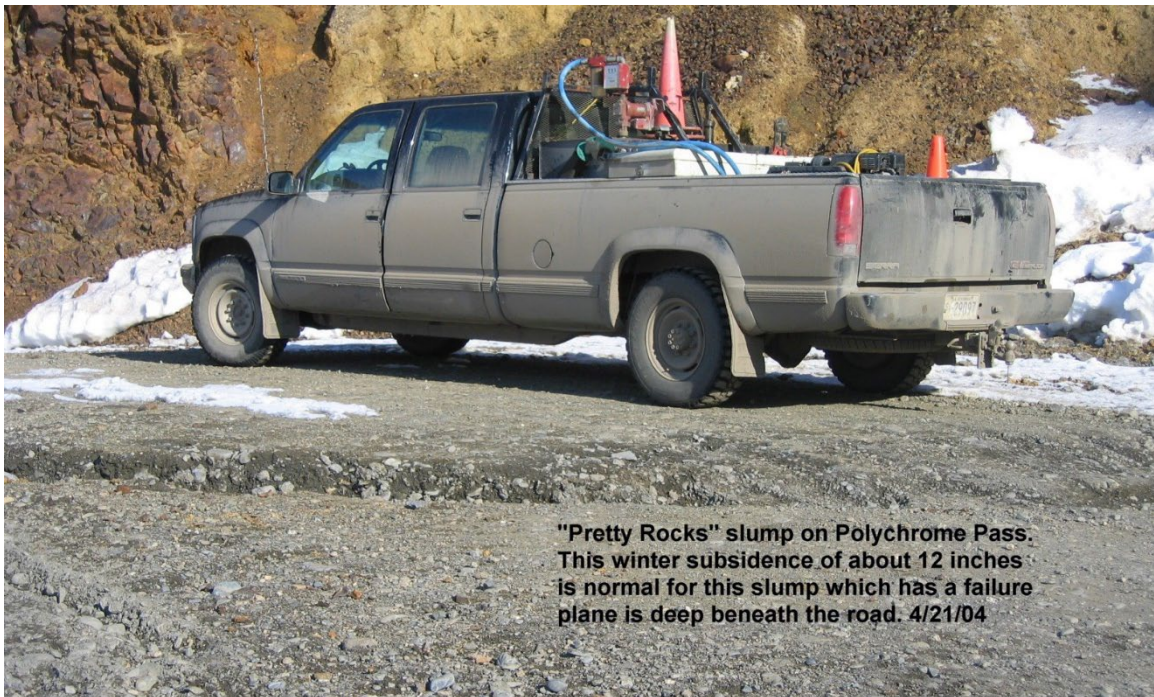


FIGURE 14. 2004 PHOTO FROM A FEDERAL HIGHWAYS PRESENTATION ON THE PRETTY ROCKS LANDSLIDE (FEDERAL HIGHWAYS PHOTO).



FIGURE 15. EAST FORK CABIN, AUGUST 2006 (NPS PHOTO).



FIGURE 16. PRETTY ROCKS LANDSLIDE LOOKING EAST, AUGUST 2014 (NPS PHOTO).



FIGURE 17. PRETTY ROCKS LANDSLIDE LOOKING EAST WITH SLUMPED/ CRACKED ROAD, APRIL 2015 (NPS PHOTO).



FIGURE 18. PRETTY ROCKS LANDSLIDE LOOKING EAST, OCTOBER 2016 (NPS PHOTO).



FIGURE 19. PRETTY ROCKS LANDSLIDE LOOKING NORTHEAST, OCTOBER 2016 WITH EVIDENCE OF ROCK SIDE ON MOUNTAIN FACE ABOVE THE ROAD (NPS PHOTO).



FIGURE 20. PRETTY ROCKS SLUMP LOOKING EAST WITH SLUMP, SPRING 2016 (NPS PHOTO)



FIGURE 21. PRETTY ROCKS LANDSLIDE LOOKING NORTH, FEBRUARY 2018 (NPS PHOTO)



FIGURE 22. PRETTY ROCKS LANDSLIDE, FEBRUARY 2018; PEOPLE ARE STANDING ON SLUMPED SECTION OF ROAD, GRAVEL IN FOREGROUND IS UNSLUMPED ROAD (NPS PHOTO).



FIGURE 23. THE EASTERN PRETTY ROCKS LANDSLIDE SCARP THROUGH THE ROAD ON 3/22/2019. THE ROAD HAD BEEN LAST GRADED ON 9/14/2018. SURVEY ROD HELD BY PARK EMPLOYEE IS 6.5 FEET (2.0 M) TALL AND IS PLACED NEAR CENTER-LINE OF THE ROAD (NPS PHOTO).



FIGURE 24. PANORAMIC VIEW OF EASTERN PRETTY ROCKS LANDSCAPE SCARP THROUGH THE ROAD ON 09/28/2021.



FIGURE 25. VIEW OF EASTERN PRETTY ROCKS LANDSCAPE SCARP THROUGH THE ROAD ON 09/07/2021, LOOKING EAST.



FIGURE 26. VIEW OF EASTERN PRETTY ROCKS LANDSCAPE SCARP THROUGH THE ROAD ON 09/13/2021, LOOKING WEST.