APPENDIX L PROJECT VISUAL RESOURCES STUDY

ALASKA LNG

TECHNICAL REPORT:
VISUAL AESTHETICS ANALYSIS

DOCUMENT NUMBER: USAI-P2-SRZZZ-00-000004-000

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1.0 INTRODUCTION

Visual impacts are considered as part of the National Environmental Policy Act (NEPA) review. The Federal Energy Regulatory Commission (FERC) will be the Lead Federal Agency responsible for NEPA compliance and Alaska LNG Project (Project) certification under Section 3 of the National Gas Act (NGA). Stakeholders with an interest in preserving the existing visual landscape and mitigating Project-related visual impacts include the following agencies: National Park Service (NPS), Bureau of Land Management (BLM), Alaska Department of Natural Resources (ADNR), and the Alaska State Historic Preservation Office (SHPO). Consultation occurred with these agencies on August 7, 2015, to identify sensitive areas and visual resource management (VRM) goals for the areas managed by these entities. At that time these agencies also reviewed and provided no objection to the planned evaluations and reporting methodologies proposed for this study.

For the purposes of this analysis, the Project Planning Area includes the locations of all Project facilities as well as locations off the right-of-way (ROW) where material storage or construction access is required. An area of 15 miles was selected for the study area boundary as it is the endpoint of the background zone established in the VRM methodology.

The Project Planning Area is located within a variety of landscapes, including the Beaufort Coastal Plain Ecoregion, the Brooks and Alaska mountain ranges, the Brooks Foothills, the Tanana Flats, the Nenana River Valley, the Susitna River Valley, and the Cook Inlet Basin. A variety of vegetation types constitute the landscape including tundra, wetlands, waterways, dwarf scrub/shrub vegetation, and boreal forest.

Much of the Project Planning Area is undeveloped, with a small number of communities. These communities are connected by major transportation networks that are immediately adjacent to Project facilities including the George Parks Highway and the Dalton Highway. Portions of the Project Planning Area are located near recreation areas including Denali National Park and Preserve (DNPP), the Arctic National Wildlife Refuge, the Yukon Flats National Wildlife Refuge, and the Kenai National Wildlife Refuge. These are among 76 sensitive visual resource locations analyzed.

Viewer sensitivity varies throughout the Project Planning Area. Some portions of the Project Planning Area (particularly near Prudhoe Bay, Deadhorse, and Nikiski) are industrialized. Most residents in the area are engaged in oil and gas–related work and are sensitized to the types of facilities proposed for this Project. However, large portions of the Project Planning Area pass through undeveloped areas, where the numbers of visitors are relatively low, but visitor sensitivity to the visual environment is typically moderate to high; individuals come to those areas for recreational use and to appreciate the scenic qualities of the area.

Fieldwork was conducted in two sessions: during the months of August and September in 2015 and in July of 2016. The 2015 fieldwork session assessed 54 sensitive visual resource locations and were included in the technical report submitted with Draft 2 as appendix M of Resource Report No. 8. The 2016 fieldwork session assessed an additional 22 sensitive visual resource locations, which are described in Section 5.0 and in Tables 4b and 5b of this appendix. There were a total of 76 locations considered during both field surveys.

1.1 TYPES OF VISUAL IMPACTS

Visual impacts can result from both short-term and/or long-term activities associated with a project. For aesthetic resources, impacts are measured by the amount of contrast from the baseline condition created by these short-term and long-term activities. For instance, the presence of construction equipment or workers may cause temporary changes by introducing

brighter colors in a landscape defined by snow, or long-term changes as a result of introduction of regular geometric forms, such as a pipeline, into an area known for various vegetation types and natural landscape features. Long-term changes can be created by the construction of facilities with strong verticals in an area known for sweeping horizontals or by the containment of once-free-flowing water. For this analysis, contrast was analyzed at key observation points (KOPs) for both the construction and operations phases of the Project.

2.0 METHODS

This visual assessment was prepared using a variety of methods including background research, desktop analysis, and field study as described by the BLM in Manual H-8400 – Visual Resource Management (BLM 1984). The BLM VRM methodology, used for the Project in consultation with ADNR, was designed for lands managed by BLM, so the methodology was modified to adjust for the range or lack of visual management objectives on non-BLM lands in the Project Planning Area. The process was also modified to account for the geographic scope of the Project and provide representative information on visual quality rather than a milepost-by-milepost inventory.

KOPs were identified and evaluated within the Project Planning Area because they represent the basic building block of the BLM's VRM methodology (Figure 1). A total of 76 KOP locations have been selected, of which 70 have been visited and assessed for potential contrast created by the Project. Locations were selected based on proximity to areas with higher levels of visitation and where Project features would be more noticeable. At each KOP, the current scenic quality and viewer sensitivity rating were identified and are detailed below. Of the 76 KOP locations, simulations were created for the 16 KOP locations with the greatest anticipated Project-related visual contrast.

The VRM system uses the concept of contrast for establishing visual impacts. Contrast from a project's activities can be created by the removal of vegetation or the construction of elements that produce strong vertical lines in an area dominated by horizontal lines. The permissible level of contrast is established by the VRM classification or comparable management objective assigned in the area.

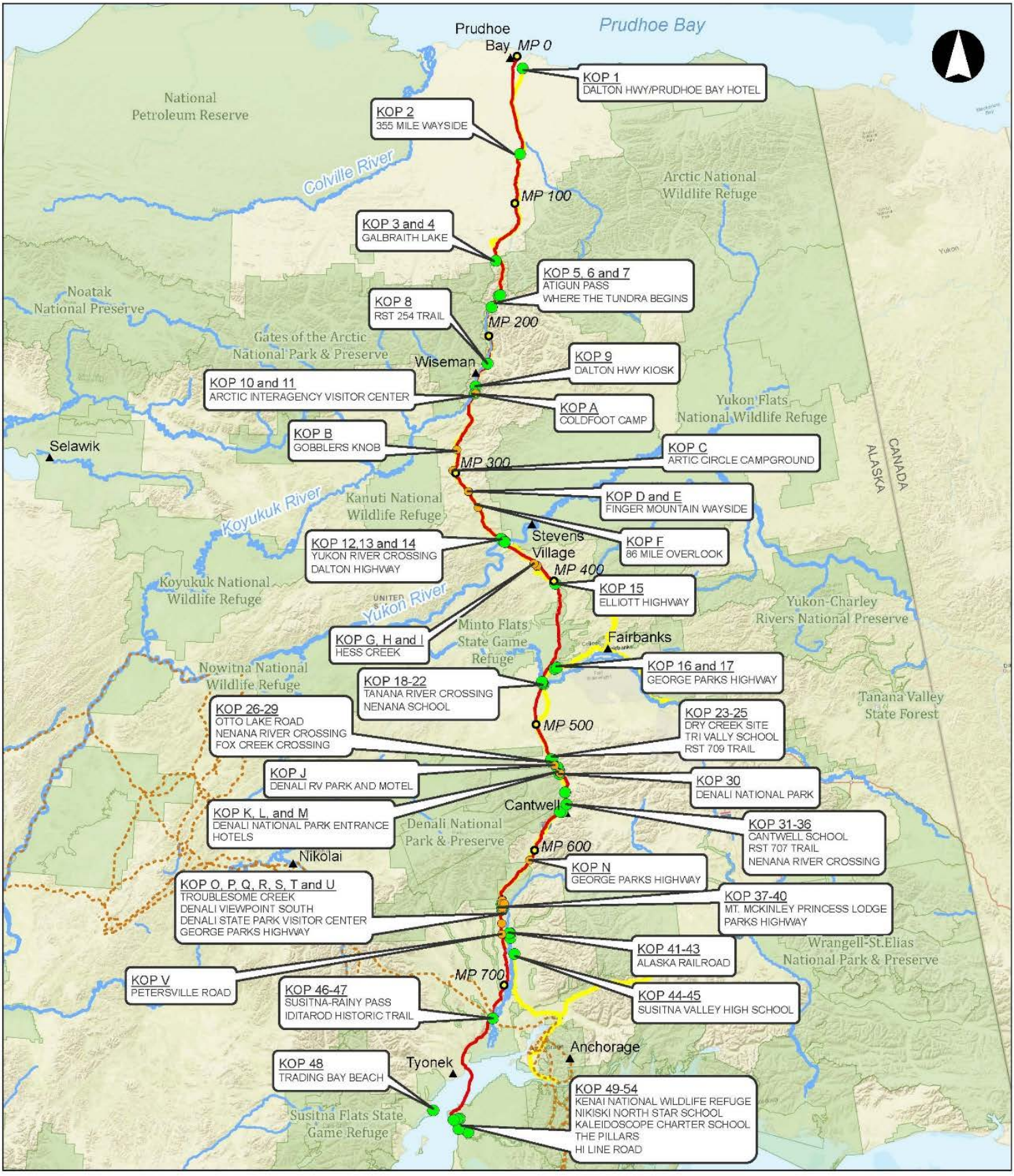
Methods in this study included:

1. Background research, which consisted of:
   A. Identification of potentially visually sensitive areas through desktop analysis to develop a study area from which simulations would be completed.
   B. Identification of ecoregions to aid in analysis of the Project within the context of the natural landscape. The ecoregions delineated by Nowacki et al. in 2001 were used for the Project, due to their incorporation of biological, geological, and climatological features.
   C. Identification of existing cultural modifications to aid in analysis of the Project within the context of the developed landscape.
   D. Identification of sensitive areas to identify locations where sensitivity to visual impacts may be identified as greater than in adjacent areas.
   E. Identification of locations previously recorded by the BLM. To establish consistency, potential new KOPs were not eliminated based on previous studies.
   F. Identification of KOPs based upon the information obtained as a result of analyzing the research outlined above.
2. Visual resource inventory, which consisted of:
   A. Rating of scenic quality (alphanumeric rating based on the properties of color, texture, for landform/water, vegetation, and structure in the Project Planning Area).
   B. Sensitivity level (numeric rating based on the sensitivity of users of the area, management objectives, and other factors).
   C. Visual resource classification (a classification assigned based on the agency-specific management intent for that area, scenic quality, and sensitivity level).
3. Visual contrast rating, which was assigned based on:
   A. Description of existing landscape.

B. Description of proposed activity.

C. Visual simulations from select KOPs. 3D models will be created in CADD and Autodesk 3dsMax Design 3D for each location. Visual simulations will be created using the 3D model and Adobe Photoshop to show the existing and proposed conditions. The most current information on the dimensions, materials, and colors of the proposed facilities will be available in CADD, 3dsMax design or Google SketchUp files. As the design for the facilities is not final, simulations will be based upon the scenario most likely to result in visual impacts in the currently proposed design.

D. Contrast rating (i.e., degree of contrast between existing conditions and proposed conditions).



LEGEND

- Mile Post
- Key Observation Points 2016
- Key Observation Points 2015
- City
- Iditarod Historic Trail
- Rivers
- Preferred Route (Rev C)
- Scenic Byway
- Park/Refuge

0 30 60 120 Miles

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SCALE:	1 in = 83 miles		
DATE:	2016-07-26	SHEET:	1 of 1

VISUAL RESOURCE KOP LOCATIONS

KEY OBSERVATION POINTS

3.0 BACKGROUND RESEARCH/DESKTOP ANALYSIS

3.1 DEFINING THE STUDY AREA

The Project Planning Area is defined as the entire Project and off-right-of-way (ROW) locations where material storage or construction access is required. The study area for the visual analysis consisted of visual resources within 15 miles of the Project Planning Area. An area of 15 miles was selected for the study area boundary as it is the endpoint of the background zone established in the VRM methodology.

As described in Section 2.0, the permissible level of contrast is established by the VRM classification or comparable management objective assigned in the area. As outlined in Section 4.5, for areas with an existing VRM classification, these classifications were used for this study. For areas with no classification, the applicable land management plan goals for that area and the current scenic quality/sensitivity level were used to develop a management class recommendation.

3.2 ECOREGIONS

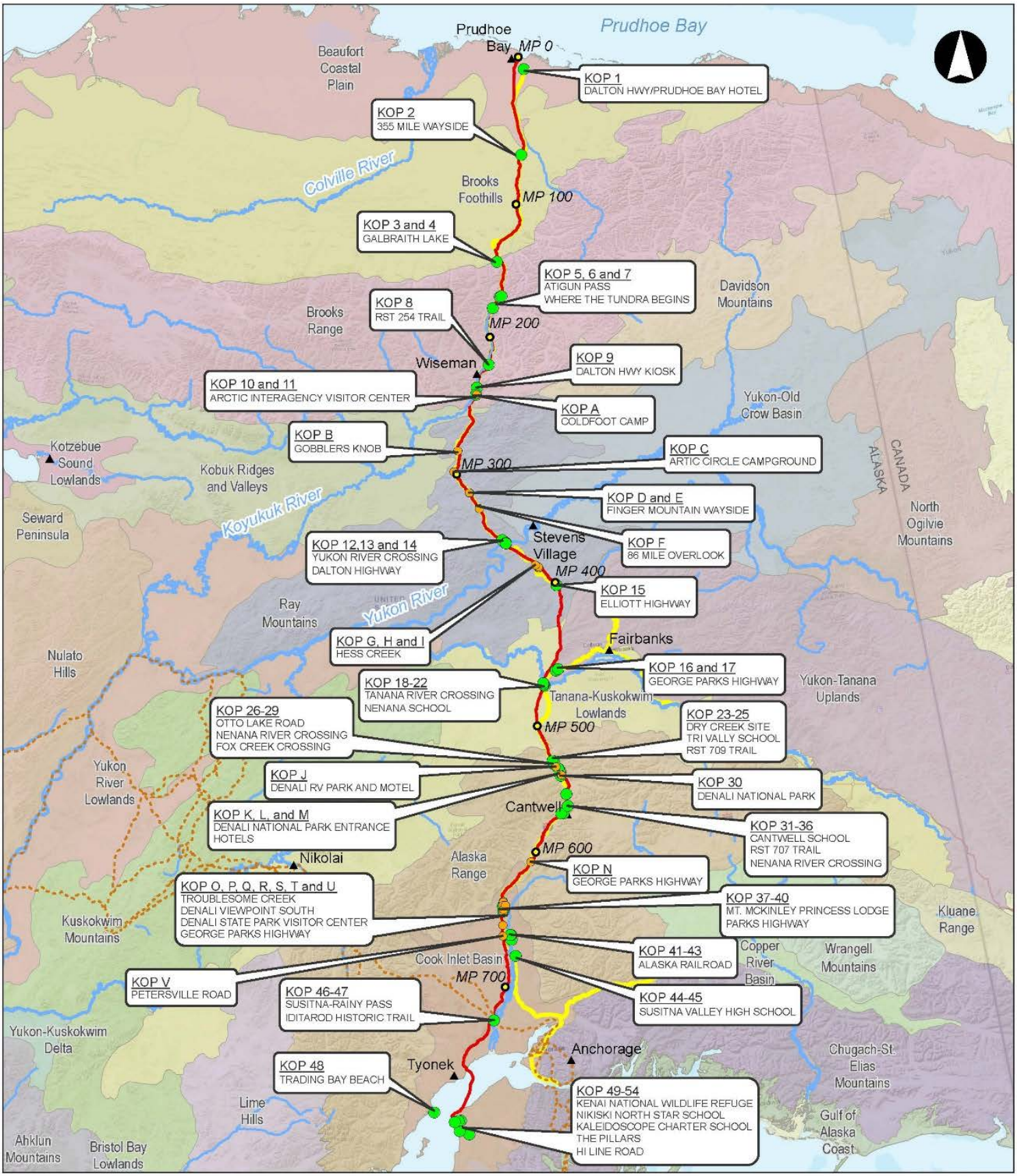
Ecoregions are useful in visual analysis because they provide a basis for comparison of a given area to the broader landscape. Alaska has been divided into 32 ecoregions based on shared characteristics including the climate, landscape, flora and fauna, and patterns of human use. The Project Planning Area occurs within nine of these ecoregions (Figure 2).

This study uses the ecoregions delineated by Nowacki et al. in 2001, which is also used in Resource Report Nos. 2 (wetlands), 3 (biology), 6 (geology), 7 (soils), and 8 (land use/recreation). These ecoregions are described in the "Narrative Descriptions for the Ecoregions of Alaska and Neighboring Territories" by the same authors and elaborated on by the Alaska Department of Fish and Game (ADF&G) in the "Wildlife Action Plan Section IIIB: Alaska's 32 Ecoregions" (ADF&G 2006). These ecoregions share environmental conditions and ecological dynamics; they share not just biological, but also geological and climatological features.

The BLM uses the physiographic divisions as defined by Clyde Wahrhaftig in the U.S. Geological Survey paper "Physiographic Divisions of Alaska," for the Central Yukon Resource Management Plan. However, because physiographic divisions are limited to consideration of geography, ecoregions were determined to be a more informative basis for visual analysis in this report. Moreover, the physiographic regions as defined by Wahrhaftig were created in 1965; just 25 years earlier, the majority of Alaska was still unmapped, topographically and geologically (Wahrhaftig 1965:2). The ecoregions, outlined by Nowacki et al. in 2001, have the advantage of being based on 36 additional years of maps and publications in not just geology, but also biology, climate, and other features.

Because the 1965 physiographic divisions are still referenced in this report, Table 1 shows both the ecoregions and physiographic regions of each KOP. It should be noted that, due to major landforms and other clear divisions in the state of Alaska, many of the ecoregions and physiographic regions are closely aligned.

It should also be noted that, while major recreational areas and opportunities are mentioned in this section, more detailed information on land use and recreation can be found in Resource Report No. 8, the discussion of sensitive areas in this report (Section 4.4), the maps of sensitive resources (Attachment B), and the basic information section associated with each individual KOP (Section 6).



LEGEND

- Mile Post
- Key Observation Points 2016
- Key Observation Points 2015
- City
- Iditarod Historic Trail
- Rivers
- Preferred Route (Rev C)
- Scenic Byway
- Ecoregions

0 30 60 120 Miles

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VISUAL RESOURCE ECOREGIONS

KEY OBSERVATION POINTS

3.2.1 Beaufort Coastal Plain

3.2.1.1 Summary

The Beaufort Coastal Plain is located between the Brooks Range and the Beaufort Sea. It is a windswept, treeless plain with a dry polar climate that supports a variety of wildlife (BLM 2015). The ecoregion consists of a gradually ascending plain that rises to the south toward the Brooks Range. Large, braided rivers run northward down the plain. The climate is dry and polar, with long, cold winters and short, cool summers. The average annual precipitation is 4 to 6 inches and occurs mostly as snowfall during the winter season (ADF&G 2006:28).

3.2.1.2 Landscape

As suggested by its name, the Beaufort Coastal Plain consists largely of a plain that slopes downward from the Brooks Range to the Beaufort Sea on Alaska's northern coast. The region is nearly 50 percent thaw lakes, and has numerous large, braided rivers. In all, over 82 percent of the region is wetland (ADF&G 2006:28).

3.2.1.3 Flora and Fauna

Vegetation in the Beaufort Coastal Plain is primarily wet sedge tundra, tussock tundra, and sedge-Dryas tundra. Well-drained river banks feature low willow. This ecoregion is important to a number of waterfowl, seabirds, and shorebirds. The Beaufort Coastal Plain is a breeding area for two dozen shorebird species, and serves as a staging area for many migratory species. The area is also used by four caribou herds, three of which calve on the coastal plain. Muskoxen, polar bears, gray wolves, and brown bears occur in the region, and the coastal waters off the shore have walruses, beluga and other whales, and several types of seals (ADF&G 2006:29).

3.2.1.4 Human Use

The Beaufort Coastal Plain has communities along the coast and on rivers. The largest communities are Barrow, Wainwright, and Nuiqsut, whose estimated 2013 populations are 4,373, 579, and 415, respectively (U.S. Census Bureau 2015). A majority of residents are Inupiaq. The region also has a large number of temporary residents based in Prudhoe Bay who work in the oil fields. The oil fields drive much of the development in the region. Despite the relatively larger population and presence of oil fields, an estimated 90 percent of wildlife and plant habitat in the ecoregion is intact. Land is primarily federally owned, with 18.3 percent owned by the state and 8.7 percent privately owned (ADF&G 2006:29). Due to its far north location, recreation in this region is far more limited than, for example, the southern regions including portions of the DNPP. Recreation includes the northernmost portion of the Dalton Highway. The Dalton Highway offers opportunities for camping, hiking, fishing, hunting, and boating (BLM 2014).

3.2.2 Brooks Foothills

3.2.2.1 Summary

The Brooks Foothills stretch from Point Hope in the northwest to the east, almost to the Canadian border. As suggested by its name, this ecoregion is composed of the northern foothills of the Brooks Range and features broad ridges and gently rolling hills. The region is dry and polar, with an average annual precipitation of 6 to 10 inches and average annual temperature ranges of 9 to 20 degrees Fahrenheit (°F) (ADF&G 2006:31).

3.2.2.2 Landscape

The Brooks Foothills ecoregion consists of glacial moraines, alluvial valleys, and linear ridges and mesas. Water is found primarily in braided streams and rivers; in some places the streams freeze solid during the winter months. Lakes are uncommon and permafrost in the region is thick and continuous. Many of the rivers and streams, which are swift and include braided rivers across gravel flats, originate in the Brooks Range and cross through the foothills (Nowacki et al. 2001:6).

3.2.2.3 Flora and Fauna

Willow is common along the rivers and creeks of the Brooks Foothills. Much of the ecoregion is mixed shrub-sedge tussock tundra. Dryas tundra is found on ridges, and sedge-Dryas tundra in calcareous areas. The Brooks Foothills are habitat for wide-ranging mammals, including three caribou herds (the Western Arctic, Porcupine, and Central Arctic herds). Other wildlife includes bears, wolves, muskoxen, and Arctic ground squirrels. Birds include peregrine falcons and sandpipers. Char, lake trout, whitefish, Dolly Varden, Arctic grayling, and five species of Pacific salmon are among the fish found in the region (Nowacki et al. 2001:6).

3.2.2.4 Human Use

The Brooks Foothills ecoregion is home to few people but is an important part of subsistence living for Alaskans along the Arctic coast (ADF&G 2006:31). Point Hope and Kivalina are the largest communities, with estimated 2013 populations of 699 and 382, respectively (U.S. Census Bureau 2015). The Brooks Foothills are bisected by the Dalton Highway, which provides access for tourists (Nowacki et al. 2001:6). The Dalton Highway offers opportunities for camping, hiking, fishing, hunting, and boating (BLM 2014).

3.2.3 Brooks Range

3.2.3.1 Summary

The Brooks Range extends east-west across northern Alaska, and is the main divide between Interior Alaska and the Arctic. The central portion of the range is the highest, with elevations reaching 8,530 feet. Topography is less rugged to the east and west, with the lowest elevation at 1,640 feet. The region has a dry, polar climate with long, cold winters and short, cool summers. The average annual precipitation is 6 to 13 inches (ADF&G 2006:31).

3.2.3.2 Landscape

The landscape of the Brooks Range ecoregion is rugged at the center, with steep mountains of uplifted sedimentary and metamorphic rock, and becomes less rugged at the eastern and western ends. Scattered glaciers are found above 5,940 feet. Permafrost is consistently found except on a few south-facing slopes. Wildfire is common in the region (ADF&G 2006:31).

3.2.3.3 Flora and Fauna

As the separation between Interior Alaska and the Arctic, the Brooks Range represents much of the flora and fauna of both regions. Lower elevations on the north side of the Brooks Range have willow along rivers and streams and mixed shrub-sedge tussock tundra similar to the Brooks Foothills ecoregion. The high, central ridges and steep slopes are barren or ice-covered due to their steep angles and elevation. Lower mountains and valleys on the south side of the Brooks Range feature sedge tussocks, shrubs, and sparse conifer-birch forests. The fauna in the mountains of the Brooks Range ecoregion includes Dall sheep, gray wolves, caribou, and brown bears. The valleys are home to Smith's longspurs, horned larks, golden eagles, and small

mammals. Arctic char, lake trout, white fish, and Arctic grayling can be found in the region's lakes, while spawning Dolly Varden and chum salmon can be found in local groundwater springs (ADF&G 2006:32).

3.2.3.4 Human Use

The primary reason for development in the Brooks Range is oil exploration and extraction; the region is sparsely populated. The largest community is Anaktuvuk Pass, with an estimated 2013 population of approximately 330 (U.S. Census Bureau 2015). The eastern part of the ecoregion is historically home to the Gwichin Athabascans, while the Inupiat lived in the west. Development in the region is minimal, consisting of Red Dog Mine, the Dalton Highway, and the Trans-Alaska Pipeline System (TAPS). Today the Brooks Range ecoregion is primarily federally owned land, with 13.4 percent being state owned and just 2 percent being privately owned (ADF&G 2006:32–33).

3.2.4 Kobuk Ridges and Valleys

3.2.4.1 Summary

The Kobuk Ridges and Valleys ecoregion is located south of the Brooks Range, spanning from near Kotzebue Sound east to the Dalton Highway near the town of Wiseman in north-central Alaska. The ecoregion's cold winters are deepened by cold air channeled down the valleys from the Brooks Range in the winter season. The climate is dry, with long winters and short summers.

3.2.4.2 Landscape

The Kobuk Ridges and Valleys ecoregion is characterized by broad river valleys and a number of small mountain ranges. The region's large rivers include the Kobuk, Noatak, Huslia, and Selawik. Large U-shaped valleys were carved by past glaciers from the Brooks Range (ADF&G 2006:48).

3.2.4.3 Flora and Fauna

Flora differs in the region, depending on conditions. Bogs are predominantly black spruce, while better-drained soils near the rivers commonly feature white spruce and balsam poplar. The uplands have trembling aspen, white spruce, and paper birch. Due to the elevations of the western part of the ecoregion, trees in this portion are smaller and restricted to lower areas (ADF&G 2006:48). The region's rivers and lakes are the northernmost reaches of Chinook, sockeye, and coho salmon. The area also features: sheefish; least cisco, broad, and humpback whitefish; Dolly Varden; and northern pike. The boreal forest is home to many birds, including gray jays, boreal chickadees, boreal owls, and great gray owls (ADF&G 2006:48). The region is the northern extent of American beaver and muskrat in Alaska. The high mountainous areas feature Arctic ground squirrels.

3.2.4.4 Human Use

The Inupiaq people are native to the Kobuk Ridges and Valleys ecoregion, and historically the Koyukon Athabascans used resources at the eastern end of the region. Today the largest communities are Kiana, Ambler, and Noatak, with estimated 2013 populations of 369, 264, and 514, respectively (U.S. Census Bureau 2015). The Kobuk Ridges and Valleys ecoregion remains almost entirely intact, with development only occurring near small villages and for limited mining and prospecting endeavors. Subsistence living is integral to the culture and economy of those living in this region (ADF&G 2006:49). Almost 13 percent of this ecoregion is privately owned; the majority of land in the region is federally or state owned. The Dalton Highway passes through the northeastern edge of the Kobuk Ridges and Valleys ecoregion. The highway is one of the main

access points to the region for tourists and offers opportunities for camping, hiking, fishing, hunting, and boating (BLM 2014).

3.2.5 Ray Mountains

3.2.5.1 Summary

The Ray Mountains are located between the Brooks Range, which is to their north, and the Yukon River valley, which is to the south and east (ADF&G 2006:50). Unlike many other Alaska ecoregions, the Ray Mountains have no glaciers and had very few during the Pleistocene ice age. Due to the lack of glaciers, streams and rivers in the ecoregion are very clear. The region has cold, dry winters and warm, relatively moist summers (ADF&G 2006:50).

3.2.5.2 Landscape

The Ray Mountains ecoregion is mountainous, with meandering streams and small ponds but few lakes. Permafrost is discontinuous in the area and is thin to moderate in thickness (ADF&G 2006:50). The mountains make up an east-west-trending range of metamorphic rock (Nowacki et al. 2001:12). The climate is warm and moist in the summer, and cold and dry in the winter (ADF&G 2006:50).

3.2.5.3 Flora and Fauna

Flora in the Ray Mountains is predominately black spruce forests in the mountains and black spruce bogs near the Yukon River lowlands. Well-drained, south-facing slopes have white spruce, birch, and aspen. Shrub birch and Dryas-lichen tundra are found in the alpine areas. Mammals in the Ray Mountains include small caribou herds, lynx, marten, red fox, wolves, brown bears, and moose. Fish found in the region include Arctic grayling, Dolly Varden, and Chinook, chum, and coho salmon (ADF&G 2006:50).

3.2.5.4 Human Use

There are few communities in the Ray Mountains ecoregion. The largest communities are Manley Hot Springs and Rampart, with 2010 populations of 89 and 24, respectively (U.S. Census Bureau 2015). There is little development in the area besides that directly associated with the Dalton and Elliott highways. The majority of the land is managed by federal entities, with the BLM managing 43 percent and the U.S. Fish and Wildlife Service (USFWS) managing 17.5 percent. The state owns 32 percent of the ecoregion (ADF&G 2006:50). As with the other central and northern ecoregions, the Dalton Highway is a main access point for tourists in the Ray Mountain ecoregion. The Dalton Highway offers opportunities for camping, hiking, fishing, hunting, and boating (BLM 2014).

3.2.6 Tanana-Kuskokwim Lowlands

3.2.6.1 Summary

The Tanana-Kuskokwim Lowlands form a swath of land that reaches north of the Alaska Range and Lime Hills. The ecoregion is a generally sloping plain with large, meandering rivers. The region has a dry, continental climate, with warm, dry summers. Flooding is common in the spring (ADF&G 2006:51).

3.2.6.2 Landscape

The Tanana-Kuskokwim Lowlands consist of an alluvial plain that slopes downward to the north. Radiating rivers drain into the Tanana or Kuskokwim rivers. The rivers are a major feature of the

ecoregion, with numerous oxbow lakes and side sloughs. Permafrost is discontinuous and thin, and continues to retreat due to climate change (ADF&G 2006:51).

3.2.6.3 Flora and Fauna

The flora of the ecoregion is predominately boreal forest, featuring black spruce in bogs, and white spruce and balsam along rivers. Shrubs are found throughout the ecoregion. South-facing, warm slopes have stands of trembling aspen, white birch, and white spruce (ADF&G 2006:51). A variety of birds are native to the Tanana-Kuskokwim Lowlands, including common loons, trumpeter swans, and red-necked grebes near the numerous lakes and wetlands. The region is ideal habitat for river otters, moose, mink, muskrat, and marten. Caribou herds and black bear are also found in the area. Fish include pike, whitefish, sheefish, and chum and Chinook salmon (ADF&G 2006:51).

3.2.6.4 Human Use

The Tanana-Kuskokwim Lowlands ecoregion has long had a human presence, drawing people to food sources and transportation routes via the rivers. The Alaska Highway passes through the eastern half of the ecoregion and much of the development is in that area. The largest communities are Fairbanks, which is the second-largest city in Alaska, North Pole, Tok, and Delta Junction. The State of Alaska owns 45 percent of the ecoregion, the federal government owns 40 percent, and 15 percent is privately owned. This ecoregion contains part of DNPP (ADF&G 2006:52).

3.2.7 Yukon-Tanana Uplands

3.2.7.1 Summary

The Yukon-Tanana Uplands ecoregion consists of a series of rounded mountains and hills between the Yukon and Tanana rivers. The region spans the Alaska-Yukon Territory border and has elevations from 1,650 feet to over 4,950 feet. Small lakes and discontinuous permafrost are found in the region. The area has a continental climate, with long, cold winters, and warm, dry summers (ADF&G 2006:52–53).

3.2.7.2 Landscape

The landscape of the Yukon-Tanana Uplands is marked by exposed bedrock, coarse rubble on ridges, and colluvium on lower slopes. Rivers in the region have created deep, V-shaped valleys. Blocked drainages have created small lakes in some valleys. The permafrost is discontinuous and thin, and is found solely on north-facing slopes and in valley bottoms (ADF&G 2006:52).

3.2.7.3 Flora and Fauna

Floodplains and well-drained areas in the region feature white spruce, balsam poplar, alder, and willow. Shrubs and Dryas-lichen tundra dominate the vegetation above the tree line. The high, mountainous areas are home to Dall sheep and Arctic ground squirrels. Black and brown bears, gray wolves, and wolverines are found in the region, along with caribou and moose. The streams, lakes, and rivers feature northern pike, Arctic grayling, and Chinook, chum, and coho salmon (ADF&G 2006:53).

3.2.7.4 Human Use

The region has historically been used for mining and timber harvest. Major transportation routes pass through the region and promote recreation and tourism through the west and east ends of the ecoregion. The largest communities in the area are Fox, Ester, and Eagle, with respective

2010 populations of 417; 1,978; and 86 (U.S. Census Bureau 2015). Today 37.8 percent of the ecoregion lies within Canada; half of the portion within Alaska is owned by the State of Alaska. The federal government manages 24.4 percent and 6.8 percent is privately owned (ADF&G 2006:53–54). Tourism and recreation in this region are promoted by its proximity to major transportation routes to the south, west, and east (ADF&G 2006:53).

3.2.8 Alaska Range

3.2.8.1 Summary

The Alaska Range extends in a 600-mile-long arc from the Alaska Peninsula to the Canadian border. At the center of the Alaska Range is the DNPP. Not only is Denali the highest peak in North America at 20,320 feet, the distance from its base to top is greater than that of Mt. Everest (NPS 2015). The Alaska Range has a cold, continental climate, with a mean annual precipitation of 15 inches in the lower elevations and 41 inches in the high peaks (including an estimated annual snowfall of 40 inches) (ADF&G 2006:62).

3.2.8.2 Landscape

Due to extensive glaciation in the region, cirques and U-shaped valleys are common. Glaciers can still be found in some parts of the ecoregion. Braided rivers and swift mountain streams are dense with sediment. Landslides and avalanches are common on the steep slopes (ADF&G 2006:61). While the Alaska Range itself does not have any active volcanos, the Alaska Range ecoregion includes the northeastern edge of the Aleutian Range, where active volcanos are common (Alaska Volcano Observatory 2014).

3.2.8.3 Flora and Fauna

Due to the elevation and climate of the Alaska Range, vegetation in the ecoregion is sparse. Windswept areas are home to dwarf scrub communities, and willow, birch, spruce, and alder can be found in the valley bottoms and on lower slopes. The Alaska Range is also home to brown bears, gray wolves, wolverines, migrating caribou, and Dall sheep. Lake trout are found in deep lakes. Dolly Varden, Arctic grayling, and migrating salmon are found in the streams (ADF&G 2006:62).

3.2.8.4 Human Use

Historically this region was inhabited by seminomadic Athabascan groups. Due to the harsh climate and landscape, the ecoregion today has a very small population and thus little development. The George Parks Highway, which connects Alaska's largest cities of Anchorage and Fairbanks while providing access to the DNPP, bisects the region into eastern and western portions. The ecoregion is approximately 50 percent state-owned land, 5.5 percent privately owned, and approximately 44 percent federally owned. The NPS manages most of the federally owned land due to the location of the DNPP and Lake Clark National Park and Preserve in the region. Recreation in the Alaska Range ecoregion is predominately related to the DNPP (ADF&G 2006:62). The ecoregion also includes the George Parks Highway Scenic Byway, which is the only road that provides access to the DNPP's entrance road (NPS 2016).

3.2.9 Cook Inlet Basin

3.2.9.1 Summary

Cook Inlet extends northeast from Alaska's southern coast, with the Aleutian Range to the west and the Kenai Peninsula to the east. Cook Inlet is named for Captain James Cook, one of many

explorers who navigated Alaskan waters in the 18th and 19th centuries, looking for fur-trading opportunities and the fabled Northwest Passage. Prior to Euro-American exploration, the area was occupied by Tanaina Indians; today, it is the most populated region in the state (ADNR 2014). The average temperature ranges from 5 °F in the winter to 64 °F in the summer, and the average precipitation is 15 to 27 inches, including an average of 63 to 100 inches of snow (ADF&G 2006:59).

3.2.9.2 Landscape

The landscape of Cook Inlet includes gently sloping lowlands, hundreds of lakes, and several large, glacial rivers. The area was extensively glaciated during the Pleistocene epoch and flooded by proglacial lakes several times during this period. Due to its glacial history, the valley has fine, lacustrine deposits on the basin floor ringed by coarse glacial till and outwash. Lakes, ponds, rivers, and wetlands are numerous (Nowacki et al. 2001:7).

3.2.9.3 Flora and Fauna

Mammals of the Cook Inlet Basin include moose, brown and black bears, beavers, muskrats, and caribou. The caribou were reintroduced in the 1960s following their eradication from the Kenai Peninsula in the early 20th century. Fish in the region include Dolly Varden, Arctic char, rainbow trout, whitefish, and five species of salmon. Cook Inlet has a population of beluga whales that lives entirely within the ecoregion. Flora of the region consists primarily of hardwood forests. Lowlands have stands of black spruce and ericaceous shrubs, while uplands have white and Sitka spruce, aspen, and birch. Bluejoint grass is dominant in the wetlands (ADF&G 2006:60).

3.2.9.4 Human Use

Cook Inlet was originally home to the Tanaina Indians, who harvested salmon from the seasonal salmon runs in the region. As stated in 3.2.9.1, the Cook Inlet Basin is the most populated region in Alaska (ADNR 2014). Most of the residents live in Alaska's most populous city of Anchorage, which had a 2013 population of approximately 300,000 (U.S. Census Bureau 2015). Despite its higher population, it is estimated that only 10 percent of the ecoregion has been heavily altered by development. At 24.6 percent, a larger percentage of land is privately owned than in other regions. Most of the land is still publically managed, however; 49.1 percent is state owned, 11.3 percent is owned by local government, and approximately 15 percent is federally owned. Due to the location of Anchorage and surrounding communities, the Cook Inlet Basin is frequently used by tourists. The tourism and recreation industries support a large portion of the residents, next to the oil and gas industry, limited agriculture, and government jobs. The largest local recreation area is the Kenai National Wildlife Refuge (ADF&G 2006:61).

Table 1. Ecoregion and Physiographic Region Comparison

Key Observation Point	Ecoregion	Physiographic Region
KOP 54	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 53	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 52	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 51	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 50	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 49	Cook Inlet Basin	Cook Inlet-Susitna Lowland

Table 1. Ecoregion and Physiographic Region Comparison		
Key Observation Point	Ecoregion	Physiographic Region
KOP 45	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 44	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 43	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 42	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 41	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP V	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP U	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP T	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 40	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 39	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP S	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 37	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP R	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP 38	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP Q	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP P	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP O	Cook Inlet Basin	Cook Inlet-Susitna Lowland
KOP N	Alaska Range	Cook Inlet-Susitna Lowland
KOP 36	Alaska Range	Broad Pass Depression
KOP 35	Alaska Range	Broad Pass Depression
KOP 34	Alaska Range	Broad Pass Depression
KOP 33	Alaska Range	Alaska Range
KOP 32	Alaska Range	Alaska Range
KOP 31	Alaska Range	Alaska Range
KOP 30	Alaska Range	Alaska Range
KOP M	Alaska Range	Alaska Range
KOP L	Alaska Range	Alaska Range
KOP K	Alaska Range	Alaska Range
KOP 29	Alaska Range	Alaska Range
KOP 28	Alaska Range	Alaska Range
KOP J	Alaska Range	Alaska Range
KOP 27	Alaska Range	Northern Foothills
KOP 26	Alaska Range	Northern Foothills

Table 1. Ecoregion and Physiographic Region Comparison

Key Observation Point	Ecoregion	Physiographic Region
KOP 25	Alaska Range	Northern Foothills
KOP 24	Alaska Range	Northern Foothills
KOP 23	Alaska Range	Alaska Range
KOP 22	Tanana-Kuskokwim Lowlands	Tanana-Kuskokwim Lowland
KOP 21	Tanana-Kuskokwim Lowlands	Tanana-Kuskokwim Lowland
KOP 20	Tanana-Kuskokwim Lowlands	Tanana-Kuskokwim Lowland
KOP 19	Tanana-Kuskokwim Lowlands	Tanana-Kuskokwim Lowland
KOP 18	Tanana-Kuskokwim Lowlands	Tanana-Kuskokwim Lowland
KOP 17	Yukon-Tanana Uplands	Yukon-Tanana Upland
KOP 16	Yukon-Tanana Uplands	Yukon-Tanana Upland
KOP 15	Ray Mountains	Yukon-Tanana Upland
KOP I	Ray Mountains	Kokrine-Hodzana Highlands
KOP H	Ray Mountains	Kokrine-Hodzana Highlands
KOP G	Ray Mountains	Kokrine-Hodzana Highlands
KOP 12	Ray Mountains	Kokrine-Hodzana Highlands
KOP 13	Ray Mountains	Kokrine-Hodzana Highlands
KOP 14	Ray Mountains	Kokrine-Hodzana Highlands
KOP F	Ray Mountains	Kokrine-Hodzana Highlands
KOP E	Ray Mountains	Kokrine-Hodzana Highlands
KOP D	Ray Mountains	Kokrine-Hodzana Highlands
KOP C	Ray Mountains	Kokrine-Hodzana Highlands
KOP B	Ray Mountains	Kokrine-Hodzana Highlands
KOP A	Brooks Range	Central and Eastern Brooks Range
KOP 11	Brooks Range	Central and Eastern Brooks Range
KOP 10	Brooks Range	Central and Eastern Brooks Range
KOP 9	Brooks Range	Central and Eastern Brooks Range
KOP 8	Brooks Range	Central and Eastern Brooks Range
KOP 7	Brooks Range	Central and Eastern Brooks Range
KOP 6	Brooks Range	Central and Eastern Brooks Range
KOP 5	Brooks Range	Central and Eastern Brooks Range
KOP 4	Brooks Range	Arctic Foothills
KOP 3	Brooks Range	Arctic Foothills
KOP 2	Brooks Foothills	Arctic Foothills

Table 1. Ecoregion and Physiographic Region Comparison		
Key Observation Point	Ecoregion	Physiographic Region
KOP 1	Beaufort Coastal Plain	Arctic Coastal Plain

3.3 CULTURAL MODIFICATIONS TO THE LANDSCAPE

Much of the land in the Project Planning Area is untouched by cultural modification (i.e., changes made by humans); however, some more urbanized areas, industrial areas, tourist areas, and transportation corridors occur within the Project Planning Area. Small towns near the Project Planning Area include Deadhorse, Healy, Cantwell, Nenana, and Nikiski. Small residential and industrial structures dot the landscape. Infrastructure created for tourist access and utilization also creates impacts, such as at the DNPP and Kahiltna Glacier. While some structures use a palette that blends harmoniously with the landscape, the majority create contrast due to their geometric prefabricated forms.

Major industrial areas are located at the north and south extents of the Project Planning Area. These industrial areas include oil and gas development facilities near the proposed Gas Treatment Plant (GTP) and industrial facilities and human development around the Liquefaction Facility. In these areas, the smooth geometric forms and monochrome color palette of large existing industrial facilities contrast with the rougher textures and more vivid colors of the existing vegetation. In some cases, the Project facilities would be identical in size and shape to the surrounding industrial development resulting in no discernable changes in the visual landscape to the casual viewer.

Major transportation corridors are located throughout the Project Planning Area, and in some cases directly adjacent to the Project. From Deadhorse to Fairbanks, the Mainline parallels the existing Dalton Highway and portions of TAPS. West of Fairbanks and in the areas near the DNPP and Denali State Park, the proposed Mainline route is largely adjacent to the George Parks Highway. The linear form and smooth road surface contrasts with the roughness of vegetation and irregularity of the surrounding landforms and vegetation. These features are noticeable but not visually dominant.

3.4 SENSITIVE AREAS

Sensitive areas are defined by the BLM in the Visual Resource Inventory Manual H-8410-1 as areas that require special consideration for the protection of visual values, including Natural Areas, Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, Scenic Areas, Scenic Roads or Trails, and Areas of Critical Environmental Concern (ACECs). These areas may not be scenic but may have management objects that include preservation of the natural landscape setting (BLM 1986d:4). The list of sensitive areas for the Project was created by listing all areas with special designations or management plans related to the natural landscape setting that are within 15 miles of the Project Planning Area.

Due to the geographic scope of the Project, the visual analysis focused on the areas identified in state and federal plans such as state-designated Game Refuges, state-designated Recreational Rivers, state-designated Forest, Alaska State Parks, state-designated Scenic Byways, National Game Refuges, National Forest, National Parks, National Scenic Byways, National Historic Trails, towns, and cities. Each of these resources, either informally or by formal state or national legislation, exhibits a greater level of visual sensitivity compared to adjacent areas lacking prescribed national, state, or local visual management objectives. Some of the resources

identified include the Minto Flats State Game Refuge, Susitna State Recreational River, Tanana Valley State Forest (TVSF), and Denali State Park. The Project Planning Area includes two designated scenic byways: the state and federally designated George Parks Highway Scenic Byway (also known as the Parks Highway) and the state-designated Dalton Highway Scenic Byway (Federal Highway Administration 2011). The Iditarod National Historic Trail also crosses the Project Planning Area. Towns and cities within 15 miles of the Project facilities include Healy, Nenana, Cantwell, Nikiski, and Kenai (see Table 2 for the full list of towns and cities within 15 miles). Attachment A contains a table listing sensitive resources within 15 miles of the Project Planning Area.

Table 2. Places Identified Within 15 Miles of Project Facilities*

Place Name	Latitude	Longitude	Near Milepost (MP)
Salamatof	60.6154	-151.3396	MP 804
Kenai	60.5539	-151.2606	MP 804
Ridgeway	60.5315	-151.0874	MP 804
Nikiski	60.7247	-151.3850	MP 799
Tyonek	61.0691	-151.1551	MP 762
Susitna	61.5431	-150.5204	MP 724
Willow	61.7403	-150.0586	MP 709
Trapper Creek	62.2409	-150.4179	MP 670
Talkeetna	62.3131	-150.1073	MP 668
Chase	62.4534	-150.1050	MP 649
Cantwell	63.3889	-148.9522	MP 569
McKinley Park	63.6962	-148.9571	MP 537
Suntrana	63.8522	-148.8502	MP 534
Healy	63.8499	-148.9782	MP 530
Lignite	63.9054	-149.0340	MP 522
Ferry	63.9274	-149.1326	MP 519
Anderson	64.3437	-149.1893	MP 486
Nenana	64.5634	-149.0955	MP 474
Livengood	65.5234	-148.5541	MP 403
Wiseman	67.4149	-150.1081	MP 231
Deadhorse	70.2053	-148.5147	MP 3
Prudhoe Bay	70.2838	-148.3792	MP 0

* Includes place names on maps, but not necessarily occupied by any residents and with no infrastructure.

3.5 MANAGEMENT PLANS

Most of the land in the Project Planning Area is under federal or state management. Management plans have been prepared for many of these areas. Some of these plans, such the George Parks Highway Scenic Byway Corridor Partnership Plan (ADNR 2008) and the Iditarod National Historic Trail Comprehensive Management Plan (BLM 1986b), include a scenic

inventory and specific goals for management of aesthetic resources. Other plans have guidelines for the management of recreation, cultural, and habitat areas that include goals of maintaining visual quality of defined sensitive areas. Table 3 summarizes existing plans for resources in the Project Planning Area.

Table 3. Management Plans

Plan	Agency	Visual Resource Guidelines Summary
Utility Corridor Resource Management Plan (RMP) (BLM 1991) (additional Central Yukon Plan {TBD} is under development and will be added when available)	BLM	Dalton Highway Corridor/Dalton Highway Recreation Management Area (RMA)
East Alaska RMP (BLM 2006)	BLM	VRM Classes II-IV
Iditarod National Historic Trail Comprehensive Management Plan (BLM 1986b)	BLM	Lands in Project Planning Area identified as scenic quality A
Consolidated General Management Plan for Denali National Park and Preserve (NPS 2011)	NPS	No inventory or specific guidelines
General Management Plan/Land Protection Plan/Wilderness Suitability Review (NPS 1986)	NPS	No inventory – goal to maintain the wild and undeveloped character of the area
Revised Comprehensive Conservation Plan for the Arctic National Wildlife Refuge (USFWS 2015)	USFWS	No inventory – goal to maintain scenic values
Revised Comprehensive Conservation Plan for the Kanuti National Wildlife Refuge (USFWS 2008)	USFWS	No inventory – goal to maintain scenic values
Revised Comprehensive Conservation Plan for the Kenai National Wildlife Refuge (USFWS 2010)	USFWS	No inventory – goal to maintain scenic values
Comprehensive Conservation Plan for the Yukon Flats National Wildlife Refuge (USFWS 1987)	USFWS	No inventory – goal to maintain scenic values.
Dalton Highway Scenic Byway Corridor Partnership Plan (ADNR 2010)	ADNR/Alaska Department of Transportation and Public Facilities (ADOT&PF)	No viewshed recommendations
George Parks Highway Scenic Byway Corridor Partnership Plan (ADNR 2008)	ADNR/ADOT&PF	Inventory with scenic areas identified and management goals
Denali State Park Management Plan (ADNR 2006)	ADNR	No inventory – scenic quality goals
Tanana Valley State Forest Management Plan (ADNR 2001a)	ADNR	No inventory – scenic quality goals
Kenai River Comprehensive Management Plan (ADNR 1998)	ADNR	No inventory – scenic quality goals
Petersville Recreational Mining Area Management Plan (ADNR 2014a)	ADNR	No inventory – scenic quality goals
Nancy Lake State Recreation Management Area Management Plan (ADNR 2013)	ADNR	No inventory – scenic quality goals
Master Plan for Willow Creek State Recreation Area (ADNR 1990)	ADNR	No inventory – scenic quality goals
Susitna Matanuska Area Plan (ADNR 2001)	ADNR	No inventory – scenic quality goals
Yukon Tanana Area Plan (ADNR 2014b)	ADNR	No inventory – scenic quality goals

Table 3. Management Plans

Plan	Agency	Visual Resource Guidelines Summary
Kenai Area Management Plan (ADNR 2001b)	ADNR	No inventory – scenic quality goals
North Slope Management Plan (ADNR n.d.)	ADNR	Under development
Minto Flats State Game Refuge Management Plan (ADF&G 1992)	ADF&G	No inventory – no specific scenic quality goals
Redoubt Bay Critical Habitat Area	ADF&G	No inventory – no specific scenic quality goals
Susitna Flats State Game Refuge Management Plan (ADF&G 1998)	ADF&G	No inventory – no specific scenic quality goals
Trading Bay State Game Refuge and Redoubt Bay Critical Habitat Area Management Plan (ADF&G 1994)	ADF&G	No inventory – no specific scenic quality goals

4.0 VISUAL RESOURCE INVENTORY

A visual resource inventory establishes the known conditions from which impacts to the visual environment can be assessed. Background information based on the ecoregions, cultural modifications, sensitive areas, and management plans was used to describe visual characteristics of the Project Planning Area plus the 15-mile study area and provide a baseline for inventory of specific visual resource locations. This detailed visual resource inventory identifies these visual resource locations within the study area and describes them in objective terms based on landform, water, vegetation, and existing structures. The visual resource inventory process provides BLM land managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, a delineation of distance zones, and identification of KOPs, and is followed by resource classification and an identification of objectives. Based on these factors, lands are placed into one of four BLM-specific visual resource inventory classes that represent the relative value of the visual resources. Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of the least value.

4.1 SCENIC QUALITY RATING

Land within the Project Planning Area was assigned a scenic quality rating using the BLM's scenic quality rating system. The scenic quality evaluation is a measure of the visual appeal of a tract of land. Consistent with BLM Manual 8410-1, public lands are given an A, B, or C rating based on the apparent scenic quality determined by seven visual qualities: landform, vegetation, water, color, influence of adjacent scenery, scarcity (common vs. rare), and cultural modifications (BLM 1986d). All but the cultural modifications are scored on a scale of 0 to 5, with 5 representing the most dramatic visual presence and 0 the least, or absent altogether. Cultural modifications are scored on a scale of -4 to 2 based on their ability to harmonize or detract from the surrounding natural landscape. Cultural modifications that harmonize well can get a high rating of a 2, which detracting cultural modifications can get as low a score as a -4. Those areas with the most overall variety and most harmonious composition have the greatest scenic value. Scores given to each visual quality reflect the evaluator's overall impression of the area and range from a high of more than 19 (an A rating) to a mid-range of 12 to 19 (B rating), or low values of 11 and under (C rating).

Due to the geographic scope of the Project, the entire Project Planning Area was not inventoried but instead, viewpoints or KOPs within the study area were selected to establish a baseline for current scenic quality. Figure 1 shows the location of each KOP. These same KOPs were used to evaluate potential contrast/impacts from the Project (Section 5.0). The following discussion summarizes the scenic quality of the KOPs in the Project Planning Area for each of the criteria in the BLM scenic quality rating.

4.1.1 Landform

Landform varies throughout the Project Planning Area but is typically flat to rolling in the areas immediately adjacent to the KOPs and the proposed Project features. In the areas near Galbraith, Coldfoot, and the DNPP, the KOPs often have a flat foreground with more rugged, jagged landforms in the middle to background. At Atigun Pass the landforms in both the foreground and background are rugged and jagged. Using the BLM methodology, landform was described in terms of form, line, color, and texture. At times, landscapes have distinctly different foregrounds, middle-grounds, and/or backgrounds. In these cases, each is described separately. Landform can contribute 1 to 5 points to the overall scenic quality classification. Landforms that are highly scenic, Denali and adjacent jagged peaks, would receive a landform score of 5.

4.1.2 Vegetation

Vegetation varies throughout the Project Planning Area in accordance with vegetation typical for each ecoregion, but it is typically characterized by low grasses, shrubs, and deciduous trees, with some conifers in the lowland areas. The lower slopes of the distant peaks are often blanketed with the rougher textures and dark greens of dense stands of conifers. Using the BLM methodology, vegetation was described in terms of form, line, color, and texture. At times, landscapes have distinctly different foregrounds, middle-grounds, and/or backgrounds. Vegetation can contribute 1 to 5 points to the overall scenic quality classification.

4.1.3 Water

Several rivers cross the Project Planning Area. These include the Yukon, Nenana, Talkeetna, Susitna, and Kenai. The rivers contribute to scenic quality of the area with their undulating, ribbon-like forms. There are also several small lakes including Colleen Lake, Galbraith Lake, and Otto Lake. The general smoothness of the water bodies contrasts with the rougher textures found in the vegetation. Using the BLM methodology, water was described in terms of form, line, color, and texture. The presence of water in a landscape can contribute 1 to 5 points to the scenic quality classification. If no water is present, the water score is 0.

4.1.4 Color

Color is primarily introduced by the vegetation (typically light to dark greens) and landform (typically gray to brown). The color varies with the season, level of lighting, and weather. Seasonal red, yellow, and gold are present in the fall. More vivid purples and blues are found seasonally in areas with wildflowers. Locations with water have additional white, browns, blues, and greens. Many of the colors in the landscape, particularly the water, shift with the color of the sky and the angle of the sun. Using the BLM methodology, landform, water, vegetation, and structure are all described in terms of color. Color can also contribute 1 to 5 points to the overall scenic quality classification. Locations that have particularly unique, strong, or varied colors would get 5 points. Locations that have little color and little variation in color would get 1 point.

4.1.5 Adjacent Scenery

In many portions of the Project Planning Area, the scenic quality is greatly enhanced by the influence of adjacent scenery. The mountain peaks of the Coastal, Brooks, and Alaska ranges contrast with the flat to rolling topography adjacent to the proposed pipeline. In many areas, the peaks are covered with snow or darker vegetation, adding variety to the colors and textures in the viewshed. Adjacent scenery can contribute 0 to 5 points to the scenic quality classification. A KOP with adjacent views that are of lesser scenic quality would be assigned 0 points. When the adjacent view includes something of high scenic quality, for example, views of Denali, the adjacent scenery would contribute 5 points to the overall scenic quality classification.

4.1.6 Scarcity

Many of the viewsheds in the Project Planning Area have a high level of scenic quality but because most of these viewsheds are characteristic of the surrounding region, scarcity was not an influential factor in the scenic quality rating for most KOPs. Scarcity can contribute 1 to 5+ points to the scenic quality classification. If the viewshed includes rare or unique features, it would get a high number of points.

4.1.7 Cultural Modifications

Cultural modifications in the Project Planning Area consist primarily of transportation corridors, transmission lines, and oil and gas infrastructure. The oil and gas infrastructure is concentrated

near the towns of Deadhorse and Nikiski, but is present throughout the Project Planning Area. Near the towns of Healy, Cantwell, Talkeetna, and Kenai there are a greater number of residences and commercial buildings. While the modifications are typically utilitarian and do not harmonize with the existing landscape, most are small in scale and do not significantly detract from the scenic quality. Cultural modifications can contribute −4 to 2 points to the scenic quality classification. In locations were cultural modifications detract from the view, for example if a large building is blocking the view of a scenic mountain range, the score can be as low as −4. Cultural modifications that enhance the view, such as bridges or pathways that highlight the landscape around them and afford views to visitors, can contribute as many as 2 points to the overall scenic quality classification.

4.2 SENSITIVITY LEVEL ANALYSIS

The sensitivity of a specific tract of land is another element considered in establishing the types of impacts that would be created by the Project. The BLM uses sensitivity level to evaluate public concern for scenic quality in an area. Impacts to visual quality would be greater for an area with a higher sensitivity level even if the scenic quality rating were the same as for other areas. The BLM manual provides five factors to consider—type of user, amount of use, public interest, adjacent land use, and special areas. These five factors are weighted to establish a high, medium, or low sensitivity level. The following discussion summarizes the sensitivity level found in the Project Planning Area and factors that influenced the rating. Table 5 provides the sensitivity level assigned for each KOP.

4.2.1 Types of Users

Of the variety of user types in the Project Planning Area, there are four predominant user types in proximity to the proposed Project facilities, which include tourists, travelers, workers, and residents. The most sensitive group consists of tourists camping, hunting, fishing, or observing wildlife at formal and informal recreation sites throughout the Project Planning Area. As much of the proposed pipeline route parallels transportation corridors, travelers, in particular motorists, are also a prevalent group. Many of the travelers are also tourists moving on the ground, by water, or by air to recreation areas, but travelers also include workers. Recreational travelers are highly sensitive to changes in the visual environment while workers such as truck drivers on the Dalton Highway would be less sensitive to these changes. The industrial facilities near Deadhorse and Nikiski also have large numbers of workers who are generally less concerned about visual quality due to their familiarity with the area and engagement with industrial activities including oil and gas development. The residents of the small communities of Cantwell, Healy, Nikiski, and other towns would also be sensitive to changes in the environment. However, industrial structures associated with oil and gas development are present in these areas, and are therefore a familiar part of the landscape to the residents.

4.2.2 Amount of Use

The level of use in the Project Planning Area is low compared to designated public recreation land in many other parts of the United States. However, areas in the Kenai River Special Management Area and Denali National Park draw significant numbers of tourists. The majority of tourists are found in southern and central Alaska, but recreation areas from Kenai River to north of the Arctic Circle welcome visitors.

The Kenai River area has had an increase in tourism in recent years. The local tourism council estimated that there were 400,000 visitors in 2013 and anticipated 500,000 visitors to the Kenai Peninsula in 2014. The Kenai River is a world-famous destination for fishing (Balmer 2014).

The DNPP consists of 4,740,911 acres and had approximately 530,000 visits in both 2013 and 2014. The park has two visitor centers, three campgrounds, and 35.5 miles of constructed trails.

The George Parks Highway at its junction with Denali National Park Road had an annual average daily traffic number of 2,980 in 2011; 3,045 in 2012; and 3,080 in 2013 (Alaska Department of Transportation and Public Facilities [ADOT&PF] 2013:210).

The James W. Dalton Highway (known as the Dalton Highway or Alaska Route 11) stretches from just north of Fairbanks to just south of the Arctic Ocean, approximately 415 miles in total. It is relatively less-traveled, but is a truck route and a destination for more adventurous tourists. The highway has primarily truck traffic traveling from Fairbanks to the Prudhoe Bay oil fields. In 2013, the percentage of vehicles on the road that were trucks ranged from 52 to 80 percent at different locations on the highway (ADOT&PF 2013:IV-2). The Dalton Highway had annual average daily traffic numbers of 190 in 2012 and 180 in 2013, up from 150 in 2011 (ADOT&PF 2013:203).

4.2.3 Public Interest

Many portions of the Project Planning Area have been legislatively designated as important for scenic characteristics; however, in other portions of the Project Planning Area, the industrial features of the proposed Project are expected elements of the landscape. Public management plans relate to some of the Project Planning Area. These are outlined in Table 3.

4.2.4 Adjacent Land Uses

The sensitivity level of some of the KOPs is affected by the current use of nearby land. For example, land along the George Parks Highway near the DNPP may not be under a special designation but its proximity to and use by tourists traveling to the DNPP increases the sensitivity of that area. Conversely, while the Beaufort Coastal Plain Ecoregion draws visitors to Deadhorse, the nearby industrial features are an expected element in the area.

4.2.5 Special Areas

Special areas are defined as areas with special designations such as Natural Areas, Wilderness or Wilderness Study Areas, or Wild and Scenic Rivers. In addition to these federal designations, many state and local land management agencies have designations relating to the protection of scenic areas. Many of these areas have management plans to protect the resources and viewsheds that qualified them for special designation. The relevant plans were considered in the sensitivity level rating and the relevant plan(s) for each KOP is included in Tables 4a and 4b. Special areas are also included in the in the sensitive areas table (Appendix A).

4.3 DISTANCE ZONES

The delineation of a distance zone involves identifying the Project Planning Area's relative visibility from travel routes or observation points. These distance zones are "foreground-middle ground," "background," and "seldom seen." As defined by BLM criteria, the foreground-middle ground zone is an area that is less than 3 and up to 5 miles away from viewers and the background zone is an area between 5 to 15 miles away. Areas that are not in the foreground-middle ground or background zones are in the seldom seen zone.

4.4 KEY OBSERVATION POINTS

KOPs were selected based on the presence of more visually intrusive Project features in sensitive areas identified throughout the background research process and through agency and stakeholder consultation. Regulatory agencies reviewed a list of potential KOPs in August 2015, and July 2016 and provided input including suggesting several additional locations. Local communities provided input during public meetings and open houses in the fall of 2015.

Additional KOPs were added as a result of these consultations and the visual analysis at these KOPs was completed in July 2016.

The KOPs were located on major access roads and publically accessible routes and pull-outs with views of the Project Planning Area. Each selected KOP was reviewed, modifications were recommended by regulatory agencies, and the KOPs were approved by the contributing agencies prior to and during the KOP identification and evaluation process.

KOPs were used to illustrate the characteristic landscape types found at significant viewpoints of the Project Planning Area. The VRM process of scenic quality evaluation was used to describe the visual attributes of the areas and assign a visual resource class to lands visible from KOPs. To reduce repetition, the photograph and the descriptive information for each KOP is provided in Section 6. Figure 1 shows the location of the 76 KOPs.

4.5 VISUAL RESOURCE CLASSES AND OBJECTIVES

Through the inventory process, landscape units are assigned one of four visual resource inventory classes. Class I is assigned to all special areas where the current management situation requires maintaining a natural environment essentially unaltered by humans. Classes II, III, and IV are assigned based upon a combination of factors that include scenic quality, sensitivity level, and distance zones. These classes and their associated BLM management objectives are as follows:

- Class I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Class IV: The objective of this class is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of basic elements.

For areas with an existing VRM classification, these classifications were used for this study. For areas with no classification, the applicable land management plan goals for that area and the current scenic quality/sensitivity level were used to develop a management class recommendation.

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 54	Mt. Redoubt Church - Kenai, AK	804	View of Liquefaction Facility to the north	ADNR Kenai – waterfront development	60.651229	-151.357654
KOP 53	The Pillars Boat Launch – Kenai River Special Management Area (KRSMA) – Soldotna, AK	N/A	View of the Liquefaction Facility approximately 10 miles to the northwest of the Pillars Boat Launch	Kenai River Special Management Area, ADNR Kenai	60.53398	-151.098624
KOP 52	Kaleidoscope Charter School – Kenai, AK	N/A	View of the Liquefaction Facility approximately 6.1 miles to the north of the school	ADNR Kenai covers the general area – identifies as private	60.568516	-151.278095
KOP 51	View from Escape Route Road and Holt Lamplight Road near the Kenai National Wildlife Refuge – Nikiski, AK	N/A	View of Liquefaction Facility approximately 3.8 miles to the west of the Kenai National Wildlife Refuge	Kenai National Wildlife Refuge, ADNR Kenai covers the general area – settlement	60.661929	-151.247098
KOP 50	Nikiski/North Star Elementary School – Nikiski, AK	N/A	View of the liquefaction facility approximately 1.6 miles to the west of the school	Not applicable; ADNR Kenai covers the general area – private	60.661104	-151.292914
KOP 49	Nikiski/North Star Elementary School – Nikiski, AK	N/A	View of Mainline approximately 5.2 miles to the north of the school	Not applicable; ADNR Kenai covers the general area – private	60.661052	-151.291979
KOP 48	Trading Bay Beach within the Trading Bay Scenic Game Refuge – West side of Cook Inlet	N/A	View of Liquefaction Facility (view from the west approximately 13.6 miles across Cook Inlet)	Trading Bay State Game Refuge, ADNR Kenai	60.748294	-151.734028
KOP 47	Iditarod National Historic Trail – Susitna Valley	724	View of Mainline immediately adjacent to the trail to the southeast	Iditarod National Historic Trails Comprehensive Management Plan, ADNR Susitna Matanuska – notes as borough land	61.557541	-150.531772
KOP 46	Rainy Pass/RST 199 – Alaska Range	723	View of pipe storage yard approximately 2.0 miles to the north of the trail. The Mainline would be immediately adjacent to the Mainline to the north.	ADNR Susitna Matanuska – notes as borough land	61.557541	-150.531772

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 45	Susitna Valley High School – Talkeetna, AK	677	View of Mainline approximately 5.5 miles to the west of the school	ADNR Southeast Susitna (border with Susitna Matanuska and Southeast Susitna, notes this as private land), Parks Highway – 10 High Scenic for this unit but this area is lower (Parks Highway adjacent)	62.131444	-150.045282
KOP 44	Susitna Valley High School – Talkeetna, AK	677	View of the Sunshine Railroad Spur and work pad approximately 2.1 miles to the north of the school	ADNR Southeast Susitna (border with Susitna Matanuska and Southeast Susitna notes this as private land, Parks Highway – 10 High Scenic for this unit, but this area is lower)	62.131463	-150.04522
KOP 43	Alaska Railroad near Talkeetna, AK	665	View of Mainline approximately 4.8 miles to the west (near intersection of railroad with Woodpecker Avenue south of Talkeetna)	ADNR Susitna Matanuska – notes this as borough land	62.278338	-150.107461
KOP 42	Susitna and Talkeetna Rivers – Talkeetna, AK	665	View of Mainline approximately 4.8 miles to the west	ADNR Susitna Matanuska	62.322852	-150.121866
KOP 41	Talkeetna Railroad Depot – Talkeetna, AK	665	View of Mainline approximately 5.3 miles to the west from Talkeetna Depot	ADNR Susitna Matanuska – notes this as private land	62.32381	-150.11189
KOP 40	MP 131 George Parks Highway	648	View of the adjacent Mainline, camp, and pipe storage yard	Parks Highway – 12, ADNR Susitna Matanuska – Denali – State Park Management Plan L-04 (managed under Denali State Park Plan)	62.54202	-150.235816
KOP 39	MP 131.2 George Parks Highway	648	View of Mainline, camp, and pipe storage yard approximately 0.3 mile to the north	Parks Highway – PH 12 – Moderate Scenic, Denali State Park, ADNR Susitna Matanuska – Denali – State Park Management Plan L-04 (managed under Denali State Park Plan)	62.539131	-150.237067

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 37	Mt. McKinley Princess Wilderness Lodge – MP 133 Parks Hwy, Trapper Creek, AK	647	View toward Chulitna Camp and Pipe Storage Yard approximately 0.6 mile to the southwest	Parks Highway – 13 Exceptional High Scenic Value, ADNR Susitna Matanuska, Denali – State Park Management Plan L-04 (managed under Denali State Park Plan)	62.592814	-150.240726
KOP 38	Denali Viewpoint South - Rest Area/Observation Deck – MP 134.8 Parks Hwy, Trapper Creek, AK	643	View of Mainline approximately 1.3 miles away	Parks Highway, State Park Management Plan L-04 (managed under Denali State Park Plan)	62.557637	-150.230637
KOP 36	RST 707 Windy Creek Trails/RST 707 – Cantwell, AK	569	View of the camp/pipe storage yard approximately 0.1 mile to the south of the trail	PH – 17 (17 is High Scenic but this portion is noted as lower in scenic quality), ADNR Yukon Tanana – identifies land as native	63.392761	-148.952367
KOP 35	Cantwell School – Cantwell, AK MP 210.1 George Parks Highway	568	View of the camp/pipe storage yard approximately 1.7 miles to the southwest of the school	Parks Highway – PH 17 High Scenic but lower in this area, ADNR Yukon Tanana – P-64 Ha, Rd (managed for scenic, habitat and recreational area) are adjacent	63.392134	-148.89564
KOP 34	Cantwell School – Cantwell, AK	568	View of the Mainline approximately 0.5 miles to the east of the school	Parks Highway – PH 17 High Scenic but lower in this area, ADNR Yukon Tanana – native land may be in the viewshed	63.392283	-148.894103
KOP 33	Nenana River – MP 215.7 George Parks Highway	561.3	View at Nenana River second view added to the southwest to show more of the river	Parks Highway 17 High Scenic, ADNR Yukon Tanana – PA 64, HA, RD – maintain scenic views	63.456061	-148.805292
KOP 32	Nenana River – MP 215.7 George Parks Highway	561.3	View of Nenana River toward pipeline crossing approximately 1.0 mile south	Parks Highway 17 High Scenic, ADNR Yukon Tanana – PA 64, HA, RD – maintain scenic views	63.456007	-148.805388

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 31	Parks Highway MP 224	553	View of Mainline and pipe storage yard approximately 0.5 miles to the north	East Alaska RMP, Parks Highway – 18-Moderate, ADNR Yukon Tanana – P-64 HA, RD – maintain scenic values	63.566101	-148.816431
KOP 30	Denali National Park Wilderness Access Center MP 237.9 George Parks Highway	538	View of Mainline approximately 0.7 miles to the east	Denali National Park, land where KOP looks into is in Parks Highway 18 – Moderate Scenic value, ADNR Yukon Tanana P - 98b Ha, RD – Managed for scenic value, land use temporary and screened from view	63.736485	-148.896983
KOP 29	Fox Creek Crossing – MP 241.0 Parks Hwy	534	View of Fox Creek Bridge crossing approximately 0.1 mile to east	Denali National Park, Parks Highway 19 – High Scenic, ADNR Yukon Tanana – P-56-HA, RD – managed for habitat and recreation values	63.780174	-148.909715
KOP 28	Nenana River Crossing – MP 242.8 Parks Hwy	532.6	View of Nenana River pipeline aerial crossing adjacent	Parks Highway 19 – High Scenic, Denali National Park, ADNR, Yukon Tanana –P95 RD – managed for habitat and recreation values	63.802809	-148.933507
KOP 27	Otto Lake Road/RST 709 – Healy, AK	538	View of pipe storage yard approximately 0.7 mile to the east	Parks Highway Unit 20 in the area – High Scenic, ADNR Yukon Tanana identifies as private land	63.848614	-149.036219
KOP 26	Otto Lake Road/RST 709 – Healy, AK	528	View of Mainline approximately 1.2 mile to the south	Parks Highway Unit 20 in the area – High Scenic, ADNR Yukon Tanana identifies as private land	63.848033	-149.03633
KOP 25	Tri-Valley School – Healy, AK	525	View of the Healy Pipe Storage Yard approximately 1.3 miles to the south of the school	Parks Highway Unit 20 in the area – Less Scenic, ADNR Yukon Tanana identifies area as private and municipal	63.872077	-149.014258

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 24	Tri-Valley School – Healy, AK	525	View of the Mainline approximately 2.0 miles to the west of the school	Parks Highway Unit 20 in the area – Less Scenic, ADNR Yukon Tanana identifies as private and municipal	63.872135	-149.014373
KOP 23	Dry Creek Site – MP 249.2 George Parks Highway	525	View of the Mainline approximately 0.9 mile to the west	Parks Highway Unit 20 in the area – Less Scenic, ADNR Yukon Tanana (P-90 Heritage Resource – manage for cultural and archaeology values)	63.875128	-149.048483
KOP 22	Nenana City School – Nenana, AK	474	View of the Nenana Pipe Storage Yard approximately 0.5 mile to the southwest of the school	Parks Highway Unit 21 in the area – High Scenic, ADNR Yukon Tanana Plan covers this area but no planning unit identified	64.562315	-149.089771
KOP 21	Nenana City School – Nenana, AK	474	View of the Mainline to approximately 0.9 mile to the northwest of the school	Parks Highway Unit 21 in the area but not this specific location – High Scenic, ADNR Yukon Tanana Plan covers this area but no specific plan unit identified	64.5623	-149.089797
KOP 20	Tanana River – MP 305.9 George Parks Highway	473	View at Nenana River adjacent to belowground pipeline crossing	Parks Highway – PH 24 – Low Scenic Area, ADNR Yukon Tanana (P-07 – MA (managed for resource extraction)	64.57339	-149.118418
KOP 19	Tanana River – MP 305.8 George Parks Highway	473.5	View of Nenana Pipe Storage Yard approximately 0.85 mile to the southwest	Parks Highway – PH 24 – Low Scenic Area, ADNR Yukon Tanana (P-07 – MA (managed for resource extraction)	64.571287	-149.11621
KOP 18	MP 306.7 George Parks Highway	472	View of Mainline and Nenana Railroad Spur approximately 0.3 mile to the southeast	Parks Highway Unit 24 – Low Scenic Area, ADNR Yukon Tanana covers this area, management unit P-07 – MA (managed for resource extraction)	64.584932	-149.118892

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 17	MP 320.5 George Parks Highway Tanana Valley State Forest (TVSF)	457	View of Mainline to the northwest in Minto Flats State Game Refuge/View of Pipe Storage Yard, Camp, Railroad Work Pad approximately 3.6 miles to the north	Parks Highway Unit 25 – High Scenic Area, TVSF, ADNR Yukon Tanana plan covers this general area but this land has no planning unit or VRM planning identified	64.702294	-148.778513
KOP 16	MP 318.8 George Parks Highway (TVSF)	461	View of Mainline approximately 3.0 miles to the northwest in Minto Flats State Game Refuge	Parks Highway Unit 25 – high scenic area, TVSF, ADNR Yukon Tanana plan covers this general area, ADNR identifies land adjacent to the KOP as TVSF	64.693433	-148.831549
KOP 15	MP 75, Elliott Highway	401.5	View from Elliott Highway of Camp 008 and pipe storage yard approximately 0.2 miles to the north	Steese Highway	65.46765	-148.667603
KOP 12	Yukon River Camp – MP 56 Dalton Hwy	357	View toward pipe storage yard approximately 3.0 miles north	Utility Corridor RMP/Dalton Highway Corridor RMA current VRM III, ADNR Yukon Tanana plan identifies area in L-3 (land to be managed consistent with Dalton Highway Master Plan)	65.912974	-149.796721
KOP 13	Crossing at Yukon River – MP 56 Dalton Hwy	357	View of crossing at the river 0.50 mile to the west	Utility Corridor RMP/Dalton Highway Corridor RMA current VRM III, ADNR Yukon Tanana plan identifies area in L-3 (land to be managed consistent with Dalton Highway Master Plan)	65.878918	-149.721083
KOP 14	Dalton Highway North of Yukon River Camp – MP 60 Dalton Hwy	355	View of Five Mile Camp and pipe storage yard 0.11 mile to the northwest	Utility Corridor RMP/Dalton Highway Corridor RMA current VRM III, ADNR Yukon Tanana plan identifies area in L-3 (land to be managed consistent with Dalton Highway Master Plan)	65.882201	-149.715819

Table 4a. Key Observation Points 2015						
KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 11	Arctic Interagency Visitor Center, Facing Northeast – MP 175 Dalton Hwy	242	View of Mainline and Compressor Station 6 approximately 0.8 mile to the northeast	Dalton Highway Corridor RMA (BLM) current VRM III, no ADNR Area Plan	67.252555	-150.186482
KOP 10	Arctic Interagency Visitor Center, Facing Southeast – MP 175 Dalton Hwy	242	View of Coldfoot Camp and Pipe Storage Yard approximately 0.4 mile to the east	Dalton Highway Corridor RMA (BLM) current VRM III, no ADNR Area Plan	67.252513	-150.186577
KOP 9	Marion Creek Campground – MP 179.7 Dalton Hwy	237	View of Mainline approximately 0.1 mile to the west	Dalton Highway Corridor RMA (BLM) current VRM III, no ADNR Area Plan	67.317407	-150.162634
KOP 8	MP 197.3 Dalton Highway near Revised Statute 2477 Trail (RST) 254/Wiseman-Chandalar	179	View toward pipe storage yard 0.33 mile southeast and pipeline 0.1 mile east	Utility Corridor RMP/Dalton Highway Corridor RMA, ADNR North Slope (under development – no current visual resources management information)	67.516377	-149.849159
KOP 7	Pullout Below Atigun Pass near MP 235.3 Dalton Highway	219	View from the trail looking southwest to the Mainline and pipe storage yard 0.3 mile to southwest	Utility Corridor RMP/Dalton Highway Corridor RMA, No ADNR Area Plan	68.033922	-149.662833
KOP 6	Base of Atigun Pass – MP 245.8 Dalton Highway	169	View of adjacent Mainline	Utility Corridor RMP/Dalton Highway Corridor RMA, ADNR North Slope (under development – no current visual resources management information)	68.136546	-149.443477
KOP 5	Atigun Pass – MP 244.7 Dalton Highway	170	View of Mainline 0.05 mile to the north	Utility Corridor RMP/Dalton Highway Corridor RMA, ADNR North Slope (under development – no current visual resources management information)	68.130018	-149.480329

Table 4a. Key Observation Points 2015

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP 4	Galbraith Lake Campground View to the South – MP 274.7 Dalton Highway	144	View of Mainline/ compressor station approximately 3.5 miles to the southeast	Utility Corridor RMP/Dalton Highway Corridor RMA current VRM III, ADNR North Slope (under development – no current visual resources management information)	68.454957	-149.493129
KOP 3	Galbraith Lake Campground View to the North – MP 274.7 Dalton Highway	144	View of Galbraith Lake Camp and Pipe Storage Yard 0.4 mile to the north	Utility Corridor RMP/Dalton Highway Corridor RMA current VRM III, ADNR North Slope (under development – no current visual resources management information)	68.45501	-149.49316
KOP 2	355 Mile Wayside on the Dalton Highway	65	View of the Mainline approximately 0.7 mile to the east	Utility Corridor RMP/Dalton Highway Corridor current VRM III, ADNR North Slope (under development)	69.42163	-148.690251
KOP 1	Terminus of Dalton Highway at Deadhorse – MP 415 Dalton Highway	10	View of GTP and Prudhoe Camp approximately 7.5 miles to the northwest	Dalton Highway Corridor Recreation Management Area (RMA) (BLM) current VRM III, ADNR North Slope (under development)	70.206234	-148.441557

Table 4b. Key Observation Points 2016

KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP V	Petersville Road - Trapper Creek, AK	665	View of Mainline approximately 0.0 mile	ADNR Susitna Matanuska	62.316318	-150.271601
KOP U	MP 121.7 George Parks Highway	658	View of Mainline approximately 0.0 mile	ADNR Susitna Matanuska	62.414143	-150.259792
KOP T	MP 130.6 George Parks Highway	649	View of Mainline approximately 0.0 mile	ADNR Susitna Matanuska – notes this as borough land	62.536111	-150.235279
KOP S	Mt. McKinley Princess Wilderness Lodge – MP 133 Parks Hwy, Trapper Creek, AK		View of the Mainline, approximately 4.32 miles to the north	Parks Highway – 13 Exceptional High Scenic Value, ADNR Susitna, Denali – State Park Management Plan L-04 (managed under Denali State Park Plan)	62.558408	-150.229979
KOP R	Denali State Park Visitor Center – MP 135.4 Parks Hwy, Trapper Creek, AK	647	View of Mainline, approximately 2.8 miles northwest	ADNR Susitna Matanuska, Denali – State Park Management Plan L-04 (managed under Denali State Park Plan)	62.593443	-150.18347
KOP Q	Denali Viewpoint South – MP 134.8 Parks Hwy, Trapper Creek, AK	644	View of Mainline, approximately 1.71 miles north	Parks Highway, State Park Management Plan L-04 (managed under Denali State Park Plan)	62.595249	-150.240821
KOP P	Lower Troublesome Creek Campground – MP 137.2 Parks Hwy	641	View of access road, approximately 0.0 miles west, and the Mainline, approximately 0.08 mile west	Parks Highway, State Park Management Plan L-04 (managed under Denali State Park Plan)	62.625179	-150.227684
KOP O	Upper Troublesome Creek Trailhead – MP 137.7 Parks Hwy	641	View of Mainline, approximately 0.08 miles north	Parks Highway, State Park Management Plan L-04 (managed under Denali State Park Plan)	62.630671	-150.226002
KOP N	MP 170.8 George Parks Highway	607	View of material sites approximately 0.01 mile west, 0.03 mile northwest, and 0.06 mile east	Parks Highway, State Park Management Plan L-04 (managed under Denali State Park Plan)	62.975201	-149.631275
KOP M	Grande Denali Lodge – MP 238.1 Parks Hwy	537	View of Mainline, approximately 0.17 mile north	Parks Highway, ADNR Yukon Tanana – P-56-HA, RD – managed for habitat and recreation values	63.743055	-148.886102

Table 4b. Key Observation Points 2016						
KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP L	Denali Princess Wilderness Lodge – MP 238.6 Parks Hwy	537	View of Mainline, approximately 0.18 mile east	Parks Highway, ADNR Yukon Tanana – P-56-HA, RD – managed for habitat and recreation values	63.746649	-148.900124
KOP K	McKinley Chalet Resort – MP 238.9 Parks Hwy	536	View of Mainline, approximately 0.03 mile northeast	Parks Highway, ADNR Yukon Tanana – P-56-HA, RD – managed for habitat and recreation values	63.750238	-148.899839
KOP J	Denali RV Park and Motel – MP 245.1 Parks Hwy, Healy, AK	530	View of material site, approximately 0.01 mile east, and Mainline, 0.19 mile east.	Parks Highway, ADNR Yukon Tanana – P-56-HA, RD – managed for habitat and recreation values	63.821123	-148.986511
KOP I	MP 20.6 Dalton Highway - Hess Creek Overlook	385	View of Mainline, approximately 0.75 mile north	Dalton Highway, ADNR Yukon Tanana plan, Unit T-61 Se	65.634794	-149.033837
KOP H	MP 21.3 Dalton Highway - Hess Creek Pull-Out	384	View of Mainline, approximately 0.14 mile east	Dalton Highway, ADNR Yukon Tanana plan, Unit T-61 Se	65.646026	-149.033686
KOP G	Hess Creek Bridge – MP 23.7 Dalton Hwy	382	View of material site, approximately 0.25 mile east, material site approximately 0.25 mile	Dalton Highway, ADNR Yukon Tanana plan, Unit T-61 SE	65.665465	-149.096686
KOP F	86 Mile Overlook – MP 86 Dalton Hwy	327	View of Mainline, approximately 0.59 mile east	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	66.208092	-150.264785
KOP E	Finger Mountain Wayside – MP 98.1 Dalton Hwy	315	View of Mainline, approximately 0.08 mile south	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	66.357155	-150.462582
KOP D	Finger Mountain Wayside – MP 98.1 Dalton Hwy	315	View of Mainline, approximately 0.14 mile west	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	66.35918	-150.463661
KOP C	Arctic Circle Campground – MP 115.6 Dalton Hwy	298	View of Mainline approximately 1.58 miles east	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	66.558719	-150.790214
KOP B	Gobblers Knob – MP 132.1 Dalton Hwy	283	View of Mainline approximately 0.72 mile east	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	66.747807	-150.683513

Table 4b. Key Observation Points 2016						
KOP	Location	Approximate Pipeline MP	Description of View	Plan/Associated Visual Resource Management Goal	Latitude	Longitude
KOP A	Coldfoot Camp – MP 175 Dalton Hwy	241	View of camp approximately 0.06 mile east and pipe storage yard approximately 0.1 mile east	Dalton Highway Corridor RMA (BLM), no ADNR Area Plan	67.251533	-150.176277

5.0 VISUAL RESOURCE CONTRAST RATINGS/IMPACTS ANALYSIS

An analysis of the potential impacts to aesthetic resources was conducted in the field and using desktop techniques. During the field visits, it was apparent that Project features would not be visible at many of the KOPs due to the topography and significant vegetation, and as a result these KOPs may have been removed from analysis in this report. Details specific to the decision to include or remove KOPs from analysis in this report are proved in Table 5. Engineering plans for construction and typical construction features for resources such as camps, pipe storage yards, and compressor stations were reviewed. To assist with the analysis, simulations were prepared for 16 KOPs. The simulated locations were selected based on the high sensitivity of the area and potential for significant changes in the viewshed. For KOPs where no simulations were completed, an explanation for this decision is included in Table 5.

The analysis stage determined whether the potential for visual effects from proposed surface-disturbing activities or developments would meet the management objectives established for the area, or whether design techniques would be applied to ensure that surface-disturbing activities are in harmony with their surroundings. The principal measure used for assessing Project construction and operation effects to visual resources lies in the BLM's use of a "contrast rating." A visual contrast rating entails comparing Project features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The steps in the contrast rating process are outlined in the BLM Manual H-8431 – Visual Resources Contrast Rating (BLM 1986c). The analysis stage is described in more detail below.

5.1 KEY OBSERVATION POINTS CONTRAST RATINGS

To evaluate potential visual effects, contrast ratings were assigned to the view from each KOP by considering the following factors: distance, angle of observation, length of time Project would be in view, relativity to size or scale, season of use, light conditions, recovery time, spatial relationship, and atmospheric conditions. The degree of visual change is measured through a contrast rating established in the BLM VRM Manual 8431. Contrast ratings are noted as being strong, moderate, weak, and none depending on the degree of change. Contrast created by the Project is rated as follows:

- Strong: The contrast demands attention and would not be overlooked by the average observer, and is dominant in the landscape.
- Moderate: The contrast begins to attract attention and begins to dominate the characteristic landscape.
- Weak: The contrast can be seen but does not attract attention.
- None: The contrast is not visible or not perceived.

5.2 COMPARISON WITH VISUAL RESOURCE CLASS OBJECTIVES

A contrast rating is provided for each of the KOPs to assist in determining whether Project features meet the VRM objectives. The projected level of contrast is compared to acceptable levels of contrast for the visual resource class as described in the existing conditions. The four levels of contrast are established in BLM Manual 8431 Appendix 2 and roughly correspond to the visual resource class objective (I, II, III, and IV). This means that a strong contrast rating may be acceptable in a Class IV area and probably would be acceptable in a Class III area.

Class I: Acceptable contrasts are primarily natural ecological changes.

Class II: Contrasts may be seen but should not attract the attention of the casual observer.

Class III: Contrasts may attract attention but should not dominate the view of the casual observer.

Class IV: Contrast may dominate the view and be the major focus of viewer attention.

As previously noted, the BLM visual resource class objectives would not apply to visual resources located on private land that are affected by the Project; however, the BLM methodology was used for all areas of the Project to consistently address visual effects for the entire Project Planning Area.

5.3 EFFECT LEVELS

Effect classifications are based on BLM Manual 8431 and are high, moderate, or low based on the degree of contrast of the Project compared to the acceptable level of contrast for that visual resource class. The following effect levels are used:

High: Contrast from the Project is substantially greater than acceptable.

Moderate: Contrast is somewhat greater than acceptable for the visual resource class.

Low: Contrast is acceptable for the visual resource class.

No effect: Visual contrast is imperceptible.

5.3.1 Summary of Impact Analysis

A summary of impact analysis by KOP is detailed below in Table 5. Impact analysis was based upon the review of simulated Project-related impacts for KOPs and the evaluation of the existing visual resources in the immediate vicinity of the individual KOPs. This analysis combines the results of: the scenic quality analysis as described in BLM Manual H-8410-1 (BLM 1986d); sensitivity rating analysis as described in BLM Manual H-8410-1 (BLM 1986d); (visual) management class in the immediate vicinity of the KOPs as prescribed in existing management plans (Table 3); and contrast rating evaluation results as described in BLM Manual 8431 (BLM 1986c). Results of the scenic quality, sensitivity, management class, and contrast analysis specific to each KOP were evaluated, and in some cases simulated, and a final impact analysis proposed.

Table 5a. Summary of Impact Analysis by Key Observation Point 2015

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP 54	C	M	IV*	W-M	L	N (pipeline/facilities not visible)
KOP 53	A	H	I*	N	N	N (pipeline/facilities not visible)
KOP 52	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 51	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 50	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 49	C	M	III*	N	N	N (pipeline/facilities not visible)

Table 5a. Summary of Impact Analysis by Key Observation Point 2015

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP 48	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues
KOP 47	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues
KOP 46	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues
KOP 45	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 44	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 43	C	H	III*	N	N	N (pipeline/facilities not visible)
KOP 42	A	H	I*	N	N	N (pipeline/facilities not visible)
KOP 41	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 40	B	M	III*	W	N	Y (construction)
KOP 39	B	M	III*	N	N	N (pipeline/facilities not visible)
KOP 37	B	H	I*	N-W	L	N (pipeline/facilities not visible)
KOP 38	A	H	I*	N	N	N (pipeline/facilities not visible)
KOP 36	B	M	III*	W	L	N (area heavily modified already)
KOP 35	B	M	II*	N	N	N (pipeline/facilities not visible)
KOP 34	B	M	II*	N	N	N (pipeline/facilities not visible)
KOP 33	A	H	I*	M-S	H (assuming worst-case, visible bridge)	N (pipeline/facilities not visible
KOP 32	A	H	I*	M	M-H (assuming worst-case, visible bridge)	N (pipeline/facilities not visible)
KOP 31	B	H	II*	W-M	M (Short term)	Y (construction view)

Table 5a. Summary of Impact Analysis by Key Observation Point 2015

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP 30	B	H	I*	N	N	N (pipeline/facilities not visible)
KOP 29	A	H	I*	M-S	M-H (assuming visible bridge)	Y (operation view)
KOP 28	A	H	I*	M-S	H (Assuming worst-case scenario of separate, aboveground bridge)	Y (operation view)
KOP 27	B	M	II*	N	N	N (pipeline/facilities not visible)
KOP 26	A	M	II*	W-N	L	Y (construction/operation view)
KOP 25	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 24	C	M	III*	N	N	N (pipeline/facilities not visible)
KOP 23	Not included in survey due to access issues	Not included in survey due to access issues	II*	Not included in survey due to access issues	Not included in survey due to access issues	Not included in survey due to access issues
KOP 22	C	M	IV*	N	N	N (pipeline/facilities not visible)
KOP 21	C	M	IV*	N	N	N (pipeline/facilities not visible)
KOP 20	A	H	IV*	W-N	L	N (no location with good visibility)
KOP 19	A	H	IV*	N	N	N (pipeline/facilities not/minimally visible during construction, not visible during operation)
KOP 18	B	H	IV*	W-M	L	N (pipeline/facilities not/minimally visible)
KOP 17	B	H	II	N	N	N (pipeline/facilities not visible)
KOP 16	A	H	II*	W	L	N (pipeline/facilities not visible)

Table 5a. Summary of Impact Analysis by Key Observation Point 2015

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP 15	B	L	III*	N	N	N (pipeline/facilities not visible)
KOP 12	B	M	III	W-M	M (Short term)	N (pipeline/facilities not visible)
KOP 13	A	H	III	N-W	L (Belowground)	N (pipeline/facilities not visible)
KOP 14	B	M	III	W-M	L	Y (construction view)
KOP 11	A	H	III	N	N	N (pipeline/facilities not visible)
KOP 10	B	H	III	N	N	N (pipeline/facilities not visible)
KOP 9	A	M	III	W-M	M	Y (construction view)
KOP 8	B	M	III	W	L	N (pipeline/facilities not visible)
KOP 7	A	M	III	W	L	Y (Construction view)
KOP 6	A	H	III	W-M (construction)	L	N (pipeline/facilities not visible)
KOP 5	A	H	III	W	L	N (pipeline/facilities not visible)
KOP 4	A	H	III	W-N	L	N (pipeline/facilities not visible)
KOP 3	A	H	III	W-N	L	Y (construction view)
KOP 2	C	M	III	W-N	L	Y (construction view)
KOP 1	C	L	III	W-N	L	Y (operation/long-term impacts)

*Determined using the applicable land management plan goals for that area and the current scenic quality/sensitivity level.

Table 5b. Summary of Impact Analysis by Key Observation Point 2016

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP V	C	M	III	M-W	L	N (similar to KOP U)
KOP U	C	M	III	M-W	L	Y
KOP T	C	M	III	M-W	L	N (similar to KOP U)
KOP S	A	H	II	N	N	N (pipeline/facilities not visible)
KOP R	Not included in survey due to access issues	Not included in survey due to access issues	II	Not included in survey due to access issues	Not included in survey due to access issues	N
KOP Q	A	H	II	N	N	N (pipeline/facilities not visible)
KOP P	B	H	II	M	M	N
KOP O	C	M	II	N	N	N (pipeline/facilities not visible)
KOP N	C	M	II	W-M	M	N
KOP M	B	H	II	N	N	N (pipeline/facilities not visible)
KOP L	B	H	II	N	N	N (pipeline/facilities not visible)
KOP K	B	H	II	W-M	L-M	Y
KOP J	B	M	III	M	M	Y
KOP I	B	M	III	N	N	N (pipeline/facilities not visible)
KOP H	C	L	IV	N	N	N (pipeline/facilities not visible)
KOP G	A	M	III	N	N	N (pipeline/facilities not visible)
KOP F	Not included in survey due to access issues	Not included in survey due to access issues	III	Not included in survey due to access issues	Not included in survey due to access issues	N
KOP E	B	H	III	W-M	L (Short term)	N
KOP D	A	H	III	W	L (Short term)	N

Table 5b. Summary of Impact Analysis by Key Observation Point 2016

KOP	Scenic Quality	Sensitivity	Management Class	Contrast	Effect Level	Simulation Prepared? (rationale for inclusion/exclusion)
KOP C	C	M	III	N	N	N (pipeline/facilities not visible)
KOP B	B	M	III	W	L-N	N
KOP A	C	M	IV	M	M	Y

A comprehensive analysis at each KOP is included as Appendix N of Resource Report No. 8.

5.4 KOP 54 MT. REDOUBT CHURCH – NIKISKI, AK

5.4.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 6725062.299, Easting 589792.132

Distance from proposed activity: adjacent to the Liquefaction Facility

5.4.2 Narrative

KOP 54 is located at the corner of Kenai Spur Highway and Lovers Loop in Nikiski, in front of the Mt. Redoubt Baptist Church, looking north toward proposed structures in the adjacent lot (Figure 3). The landform is horizontal, regular, brown, and medium-coarse. Vegetation is smooth, solid, and continuous, primarily light green, and dense. Structures present in the viewshed include the dirt road Lovers Lane and transmission poles/lines.

Figure 3. KOP 54, Mt. Redoubt Church.

KOP: 54		Date: 9/2/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal, flat, regular	Form: smooth, solid	Form: vertical (transmission poles), horizontal, flat (road)
Line: horizontal, regular	Line: continuous, regular, vertical	Line: horizontal, vertical
Color: brown, tan	Color: light green, gray, some dark green, seasonal yellow	Color: brown, tan, gray
Texture: medium-coarse	Texture: dense, smooth	Texture: smooth, medium-rough (transmission poles)

5.4.2.1 Proposed Activity Description

The proposed Liquefaction Facility would be located approximately 0.12 mile north of this location. Construction of the Liquefaction Facility is scheduled from 2019 through 2024. Due to

the dense vegetation, the facility would not be visible. No short-term or long-term contrast is anticipated to landform, water, vegetation, or structure in this viewshed.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* None	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigation measures recommended: Minimize vegetation cutting and maintain vegetation screen. Employ best management practices (BMPs) to revegetate area. If lights are employed during operation, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

5.4.3 Conclusions

The view from KOP 54 is from the current location of the Mt. Redoubt Baptist Church. The view would be experienced by residents of Nikiski and other local communities, as well as employees of the existing facilties. No contrast is anticipated because the Liquefaction Facility would not be visible from this location. Contrast might be created by large amounts of vegetation clearing but is not anticipated due to the distance between this location and the facility. Due to the proximity to the Project Planning Area, however, mitigation is recommended to minimize contrast to the view. Mitigation would include minimizing vegetation cutting, maintainence of a vegetation screen, employing BMPs to revegetate the area, and minimizing lighting when possible.

5.5 KOP 53 PILLARS BOAT LAUNCH, KENAI RIVERS SPECIAL MANAGEMENT AREA – SOLDOTNA, AK

5.5.1 Basic Information

Visual Resource Inventory Class: V

Location: Northing 6712388.883, Easting 604329.343

Distance from proposed activity: approximately 10 miles from the Liquefaction Facility

5.5.2 Narrative

KOP 53 is located at the Pillars Boat Launch on the Kenai River, just north of Soldotna (Figure 4). The KOP looks northwest down the river. The foreground is flat and regular, tan, and of medium texture. It has solid, continuous trees that create horizontal and vertical lines. The Kenai River, which flows through the foreground, is flat, linear, glossy, and quick-flowing. A few low boat docks are visible along the shoreline. The background features distant, jagged, snowy mountains.

Figure 4. KOP 53, existing view from the Pillars Boat Launch, Kenai River Special Management Area, looking north.

KOP: 53		Date: 9/1/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; jagged background; linear, flat water	Form: solid, rough, strip	Form: vertical, horizontal, diagonal; few, low (docks)
Line: regular, continuous, horizontal foreground; jagged, angular background; flowing, smooth water	Line: continuous, horizontal, vertical	Line: geometric, horizontal, vertical, diagonal
Color: tan, gray, white (snow), milky green/blue (water)	Color: light to dark green; brown, yellow seasonally	Color: gray, brown
Texture: medium foreground, smooth background, glossy water	Texture: medium to rough	Texture: smooth to medium

5.5.2.1 Proposed Activity Description

The proposed Liquefaction Facility would be located approximately 10 miles to the northwest of the Pillars Boat Launch. Construction of the Liquefaction Facility is scheduled from 2019 through 2024. Due to the distance, as well as intervening vegetation, topography, and buildings, the Liquefaction Facility would not be visible from this location. No short-term or long-term contrast is anticipated to landform, water, vegetation, or structure in this viewshed.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.5.3 Conclusions

Proposed Project features would not be visible from this location.

5.6 KOP 52 KALEIDOSCOPE CHARTER SCHOOL – KENAI, AK

5.6.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6715963.431, Easting 594382.513

Distance from proposed activity: approximately 6.1 miles from the Liquefaction Facility

5.6.2 Narrative

The view from KOP 52 faces northwest at Kaleidoscope Charter School (Figure 5). The view is dominated by the flat, dark gray asphalt and geometric structures of the school. A dense stand of vegetation (green conifers and birches) surrounds the north and west sides of the school.

Figure 5. KOP 52, existing view from Kaleidoscope Charter School, facing west.

KOP: 52		Date: 9/1/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal	Form: solid, regular, vertical	Form: flat, horizontal, vertical, geometric
Line: horizontal, regular	Line: vertical, broken, non-linear	Line: geometric, curving, vertical, horizontal
Color: brown, tan	Color: light to dark green, seasonal yellow	Color: black, gray, tan, brown
Texture: smooth	Texture: medium	Texture: smooth to rough

5.6.2.1 Proposed Activity Description

The proposed Liquefaction Facility would be 6.1 miles to the north of the school. Construction of the Liquefaction Facility is scheduled from 2019 through 2024. Due to the distance, as well as intervening vegetation and buildings, the Liquefaction Facility would not be visible from this

location either during construction or operations. No contrasts are anticipated in the short or long term.

Contrast Rating: Construction and Operation

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.6.3 Conclusions

This view is seen by residents of Kenai, including employees and students at the Kaleidoscope Charter School. Intervening vegetation and buildings would block views of the Project from this location. No contrasts are anticipated in the short or long term.

5.7 KOP 51 VIEW FROM ESCAPE ROUTE ROAD AND HOLT LAMPLIGHT ROAD NEAR THE KENAI NATIONAL WILDLIFE REFUGE – NIKISKI, AK

5.7.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6726409.927, Easting 595803.93

Distance from proposed activity: approximately 3.8 miles from the Liquefaction Facility

5.7.2 Narrative

KOP 51 is located at the corners of Escape Route Road and Holt Lamplight Road, looking west along Holt Lamplight Road (Figure 6). The landform is flat, horizontal, slightly curving/sloping, and smooth to medium in texture. The vegetation is in a continuous, regular strip consisting of parallel verticals and primarily light greens. Vegetation is smooth to medium-rough. The road curves to the right and is almost immediately completely obscured by the vegetation.

Figure 6. KOP 51, view from Escape Route Road and Holt Lamplight Road near the Kenai National Wildlife Refuge.

KOP: 51		Date: 9/1/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, slight slope	Form: strip, regular	Form: vertical (transmission poles), horizontal (road and lines)
Line: curving, horizontal, smooth	Line: continuous, parallel verticals	Line: horizontal, curving, vertical, straight
Color: brown, tan, gray	Color: mostly light green; dark green, seasonal pinks and yellows	Color: brown, gray
Texture: smooth to medium	Texture: smooth to medium-rough	Texture: smooth, medium-rough (poles)

5.7.2.1 Proposed Activity Description

The proposed Liquefaction Facility would be approximately 3.8 miles to the west. Construction of the Liquefaction Facility is scheduled from 2019 through 2024. Due to the distance and

intervening dense vegetation, the facility would not be visible from this location either during construction or in the long term. No contrasts are anticipated in the short or long term.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.7.3 Conclusions

The view from KOP 51 is experienced by residents in the Nikiski area and would be the closest viewpoint from the Kenai National Wildlife Refuge to the Liquefaction Facility. The Project features would be blocked by the topography and vegetation in the area.

5.8 KOP 50 NIKISKI/NORTH STAR ELEMENTARY SCHOOL – NIKISKI, AK

5.8.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6726252.083, Easting 593302.636

Distance from proposed activity: The Liquefaction Facility is 1.5 miles west

5.8.2 Narrative

KOP 50 is located in front of Nikiski North Star Elementary School, looking west along Holt Lamplight Road (on which the school is located) (Figure 7). The landform is flat, horizontal, and smooth. Rugged mountains are visible in the far background through the gap in the trees created by the road to the west. Vegetation is regular and continuous, consisting primarily of parallel verticals and light green color. Structures include the road and transmission lines, and light poles.

Figure 7. KOP 50, existing view looking west from Nikiski/North Star Elementary School along Holt Lamplight Road.

KOP: 50		Date: 9/1/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal; rugged far background	Form: strip, regular	Form: vertical (transmission, light pole), horizontal
Line: horizontal, smooth; rugged/jagged far background	Line: continuous, parallel, verticals	Line: horizontal, vertical, straight
Color: brown/tan, gray	Color: light green mostly, come dark green; yellow and pink seasonally	Color: brown, gray
Texture: smooth to medium	Texture: smooth to medium-rough	Texture: smooth, medium-rough

5.8.2.1 Proposed Activity Description

Due to the distance and dense vegetation, the Liquefaction Facility would not be visible from this location either during construction or in the long term. Construction of the Liquefaction Facility is scheduled from 2019 through 2024. No contrasts are anticipated in the short or long term.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.8.3 Conclusions

This view is seen by residents of Nikiski and the local region, including employees and students at the Nikiski North Star Elementary School. The trees and topography would block views of the Project from this location. Thus, no contrasts are anticipated in the short or long term.

5.9 KOP 49 NIKISKI/NORTH STAR ELEMENTARY SCHOOL – NIKISKI, AK

5.9.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6726247.646, Easting 593353.842

Distance from proposed activity: approximately 5.5 miles from the Mainline; approximately 5.5 miles from the Liquefaction Facility

5.9.2 Narrative

KOP 49 is located in front of Nikiski North Star Elementary, looking north on Emerald Street (the school is located on Holt Lamplight Road, which is perpendicular to Emerald Street) (Figure 8). The landform is flat, horizontal, and smooth, with medium-coarse to smooth texture. The vegetation is primarily light green. Structures include street signs, transmission poles, and transmission lines, as well as roads. Emerald Street is dirt; Holt Lamplight Road is paved.

Figure 8. KOP 49, existing view at Nikiski/North Star Elementary School.

KOP: 49		Date: 9/1/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, smooth	Form: regular, solid, vertical	Form: horizontal, vertical, linear, geometric, angular
Line: horizontal, straight, continuous	Line: parallel, vertical	Line: horizontal, straight
Color: brown, gray	Color: light green; yellow, pink seasonal	Color: gray, silver, brown
Texture: medium-coarse to smooth	Texture: soft, glossy	Texture: medium-rough, coarse

5.9.2.1 Proposed Activity Description

The Mainline would be constructed 5.2 miles north of Nikiski/North Star Elementary School. Due to the distance and dense vegetation, the pipeline would not be visible from this KOP. No

contrasts are anticipated in the short or long term. Construction in the vicinity of this KOP is scheduled for summer of 2023.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.9.3 Conclusions

This view is seen by residents of Nikiski and employees and students at the Nikiski North Star Elementary School. The trees and topography would block views of the Project from this location. No constrast is anticipated in the short or long term.

5.10 KOP 48 – TRADING BAY BEACH (WEST SIDE OF COOK INLET)

5.10.1 Basic Information

Visual Resource Inventory Class: Undetermined

Location: Northing 6715961.8, Easting 594383.7

Distance from proposed activity: approximately 13.6 miles from the Liquefaction Facility (across Cook Inlet)

5.10.2 Narrative

KOP 48 is located at Trading Bay Beach within the Trading Bay Scenic Game Refuge. This KOP was not surveyed during the field visits for this report due to current accessibility and may be visited at a later date based on future Project decisions.

5.11 KOP 47 – SUSITNA VALLEY

5.11.1 Basic Information

Visual Resource Inventory Class: Undetermined

Location: Northing 6726406.9, Easting 595805.3

Distance from proposed activity: adjacent to the Mainline on the southeast

5.11.2 Narrative

KOP 47 is located at the Iditarod National Historic Trail. This KOP was not surveyed during the field visits for this report due to current accessibility and may be visited at a later date based on future Project decisions.

5.12 KOP 46 – ALASKA RANGE

5.12.1 Basic Information

Visual Resource Inventory Class: Undetermined

Location: Northing 6726251.9, Easting 593304.8

Distance from proposed activity: approximately 2.0 miles south of the Mainline

5.12.2 Narrative

KOP 46 is located at Rainy Pass This KOP was not surveyed during the field visits for this report due to current accessibility and may be visited at a later date based on future Project decisions.

5.13 KOP 45 SUSITNA VALLEY HIGH SCHOOL – TALKEETNA, AK

5.13.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6892338.042, Easting 654056.248

Distance from proposed activity: approximately 5.5 miles from the Mainline

5.13.2 Narrative

KOP 45 is at the Susitna Valley High School, looking west (Figure 9). The parking surface is smooth with a screen of deciduous trees. The screen of trees is similar to what is found in the surrounding area. The scenery is modified and dominated by the existing school structures and parking facility.

Figure 9. KOP 45, Susitna Valley High School.

KOP: 45		Date: 8/24/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, graded, rectangular	Form: simple forms created by trees, circles	Form: flat, graded, cleared, rectangles
Line: horizontal lines	Line: verticals from trees are unified	Line: strong horizontals
Color: brown	Color: greens	Color: black, tan, gray
Texture: even	Texture: medium grain, even in both foreground grass and background trees	Texture: smooth

5.13.2.1 Proposed Activity Description

The Mainline would be located 5.5 miles to the west of the school. Due to the distance and the intervening vegetation and topography, the pipeline would not be visible from this location. No

contrasts are anticipated in the short or long term. Mainline construction is scheduled to occur in the vicinity of this KOP during the winter of 2021–2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.13.3 Conclusions

Project features would not be visible from this location due to the vegetation and topography. No constrast is anticipated in the short or long term.

5.14 KOP 44 SUSITNA VALLEY HIGH SCHOOL – TALKEETNA, AK

5.14.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6892335.692, Easting 654053.125

Distance from proposed activity: approximately 2.1 miles from Sunshine Railroad Spur and work pad

5.14.2 Narrative

Located at the back of Susitna Valley High School, KOP 44 looks largely out on the artificial turf field behind the school (Figure 10). Beyond the grass to the west is a dense but low forest of conifers and deciduous trees. In the foreground is a paved road, small parking area, and partially finished chain-link fence. A shipping container and metal shed make up the human-made structures in this direction (the schools is behind and to the east). The scenery is largely modified by the school and related structures.

Figure 10. KOP 44, Susitna Valley High School.

KOP: 44		Date: 8/24/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, cleared field	Form: verticals	Form: flat, graded, cleared rectangles
Line: horizontal lines	Line: regular (field), distinct edges	Line: horizontal, vertical
Color: gray, tan	Color: greens	Color: tan, gray
Texture: smooth	Texture: smooth	Texture: even

5.14.2.1 Proposed Activity Description

The Sunshine Railroad Spur and work pad are proposed to be constructed approximately 2.1 miles to the north of the school. Due to the distance and dense vegetation, neither the construction nor the operations phases would be visible from this location. No contrasts are

anticipated in the short or long term. Project construction is scheduled to occur in the vicinity of this KOP during the winter of 2021–2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.14.3 Conclusions

The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.15 KOP 43 ALASKA RAILROAD NEAR TALKEETNA, AK

5.15.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6908542.248, Easting 650081.818

Distance from proposed activity: approximately 4.6 miles from the Mainline

5.15.2 Narrative

KOP 43 is located in the town of Talkeetna off of Woodpecker Road (Figure 11). It includes the view from the railroad, looking west toward the Susitna River. A band of deciduous trees blocks the view to the river. The flat topography and vegetation is common in the region. A view of the mountain peak to the north is visible but would not be seen from the train. The gravel along the railroad and access road are minor visual intrusions as are the transmission poles. Colors would be more vivid in the fall.

Figure 11. KOP 43, Alaska Railroad near Talkeetna.

KOP: 43		Date: 8/24/15
Scenic Quality Classification: C		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat terrain, no water	Form: tall, solid strip	Form: flat, linear, narrow (road to railroad), vertical (transmission poles)
Line: straight, regular, geometric, horizontal	Line: soft, vertical, somewhat broken	Line: straight, regular, geometric, horizontal
Color: brown, tan, muted	Color: light to dark green, harmonious	Color: gray, brown, muted
Texture: fine, smooth, uniform	Texture: glossy, smooth, continuous	Texture: coarse (gravel), smooth (tracks), continuous

5.15.2.1 Proposed Activity Description

The proposed pipeline would be approximately 4.6 miles to the west of this location. Due to the distance, as well as intervening vegetation and photography, the pipeline would not be visible.

No contrast is anticipated to landform, water, vegetation, or structure, either in the short or long term. Project construction in the vicinity of this KOP is scheduled for the winter of 2021–2022.

Contrast Rating: Construction and Operation/Short-Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.15.3 Conclusions

The Alaska Railroad is frequented by tourists who ride the train to the DNPP. This KOP is adjacent to the railroad, approximately 3 miles south of the town of Talkeetna. Because the distance between the KOP and the proposed Project location is approximately 4.6 miles, topography and vegetation would block views of Project features.

5.16 KOP 42 SUSITNA AND TALKEETNA RIVERS – TALKEETNA, AK

5.16.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6913464.552, Easting 649114.154

Distance from proposed activity: approximately 4.8 miles from the pipeline corridor

5.16.2 Narrative

KOP 42 is located at the west end of the town of Talkeetna, just south of the junction of the Talkeetna and Susitna rivers (Figure 12). The Talkeetna River, an east-west-trending river, joins the north-to-south-flowing Susitna River just north of this river bank. The Susitna River sweeps past the rough, gravel bank, roughly north-south. Vegetation on both shores is thick but there are low conifers and deciduous trees with gravel banks on all river edges. The river is fast-flowing and cloudy gray/blue/tan. Denali and accompanying mountain ranges are in clear view to the north. This stretch of the river is frequented by tourists.

Figure 12. KOP 42, Susitna River looking west.

KOP: 42		Date: 8/24/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; distant view of rugged peaks and Denali, angular	Form: gnarled, linear trees	Form: NA
Line: curving, irregular, bold, hard, diagonal foreground; jagged, irregular, bold, hard, diagonal background	Line: vertical, soft, horizontal, broken	Line: NA
Color: gray, blue, tan water; green, yellow, brown; harmonious; blue, white, cream background	Color: dark and light green	Color: NA
Texture: fine grain, glossy, contrasting	Texture: medium, clumped	Texture: NA

5.16.2.1 Proposed Activity Description

This KOP is located on the west side of Talkeetna, approximately 4.8 miles east of the proposed corridor. Due to the distance, as well as intervening topography, vegetation, and buildings, the pipeline would not be visible from this location in the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated. Project construction in the vicinity of this KOP is scheduled for the winter of 2021–2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.16.3 Conclusions

Talkeetna is a popular tourist stop on the George Parks Highway. Views of the Project from this KOP would be blocked by the vegetation and intervening topography.

5.17 KOP 41 TALKEETNA RAILROAD DEPOT – TALKEETNA, AK

5.17.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6913594.158, Easting 649626.004

Distance from proposed activity: approximately 5.3 miles from the Mainline

5.17.2 Narrative

KOP 41 is located near the Susitna River, in the town of Talkeetna (Figure 13). The KOP is near the old railroad depot, looking southwest/west into the grassy park that functions as the town square. The structures adjacent to the park provide verticals and horizontals that contrast with the flat plane of the park. Colors are lively, ranging from the brightly colored buildings to the greens of the foliage. Strong verticals are created by the vegetation and the structures.

Figure 13. KOP 41, existing view from the Talkeetna Depot looking west.

KOP: 41		Date: 8/24/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat	Form: patchy, compatible	Form: square, rectangular, numerous
Line: straight, horizontal	Line: soft, irregular, broken	Line: bold, horizontal, vertical, geometric
Color: green, brown	Color: light to dark green, gray	Color: blue, yellow, brown, gray (gravel)
Texture: smooth	Texture: smooth to coarse	Texture: smooth to rough

5.17.2.1 Proposed Activity Description

This KOP is located at the Talkeetna Depot, 5.3 miles east of the Mainline. Due to the distance, as well as intervening topography, vegetation, and buildings, the pipeline would not be visible from this location in the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrasts are anticipated. Additional mitigating measures recommended: None		

5.17.3 Conclusions

Talkeetna is a popular tourist stop. It is located on the railroad, which takes visitors to Denali, and is just north of the George Parks Highway. Because the Project is distant from this location, views would be blocked by intervening topography, vegetation, and buildings.

5.18 KOP V PETERSVILLE ROAD – TALKEETNA, AK

5.18.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6912400.8, Easting 641392

Distance from proposed activity: 0.00 mile from the Mainline

5.18.2 Narrative

KOP V is located where the proposed pipeline would cross Petersville Road (Figure 14). The KOP, which is near the community of Trapper Creek, is approximately 1 mile from the intersection of the George Parks Highway and Petersville Road. There are two layers of foreground: the lower vegetation close to the road and the higher vegetation approximately 12 feet back. This is particularly the case on the south side of the road, where a transmission line runs parallel to the road but with an intervening screen of lower vegetation approximately 10 meters wide. The transmission line is mostly obscured from view by the vegetation. Due to the flat topography and dense vegetation, no middle-ground is visible. A small portion of background is visible to the east due to the road, but there is no visible background in the direction of the KOP.

Figure 14. KOP V, view from Petersville Road, facing north.

KOP: V		Date: 6/27/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat to gently rolling foreground, obscured by vegetation	Form: complex, repetitive, regular, continuous, soft	Form: flat to rolling/curving, continuous, straight
Line: horizontal to curving	Line: mottled, vertical and horizontal, linear	Line: horizontal, vertical linear
Color: gray, tan	Color: light to dark green	Color: gray, black, yellow, white, brown
Texture: smooth	Texture: soft, complex	Texture: smooth

5.18.2.1 Proposed Activity Description

This KOP is located within the proposed mainline corridor. The Mainline would cross Petersville Road below ground at this location. The greatest contrast would be introduced by machinery and equipment present during construction. Weak contrast to landform would be created by grading, and moderate to weak contrast to vegetation would be created by clearing. As the pipeline would be below ground, no long-term contrast created by the structure is anticipated. Mainline construction in the vicinity of this KOP is expected in the winter of 2021–2022.

Landform/Water

Due to the already flat and horizontal landform, no contrast is anticipated in the form or line of landform either in the short or long term. Grading may introduce weak contrast in color and texture in the short term. This contrast would be weak to nonexistent in the long term.

Vegetation

The Mainline would introduce moderate contrast in form and line in the short term due to clearing. Weak contrast would be introduced to color and texture by vegetation regrowth. Contrasts in form and line would be moderate to weak in the long term and contrasts to color and texture would be weak to nonexistent as new vegetation matures.

Structure

Machinery and equipment would introduce moderate to weak contrast in structure during the construction phase. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* none	Line: irregular line from clearing *Contrast:* moderate	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* moderate to weak
Contrast summary: Moderate to no contrast is anticipated in the short term, with weak contrast introduced to landform and moderate contrast introduced to structure and vegetation. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed, and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate to weak	Form: NA *Contrast:* none
Line: horizontal *Contrast:* none	Line: irregular line from clearing *Contrast:* moderate to weak	Line: NA *Contrast:* none
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak to none	Color: NA *Contrast:* none
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Weak long-term contrast is anticipated to landform, and moderate to weak contrast is anticipated to vegetation. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.18.3 Conclusion

This view is primarily experienced by truck drivers and tourists driving on Petersville Road. The Mainline would cross Petersville Road at this location. Because the Mainline would be below ground, the contrast in structure would be limited to the short term. Due to the high use of the George Parks Highway, the Project would impact a large number of people. Because the Mainline would be approximately perpendicular to the road at this location and there is no pullout for vehicles to park, the average viewer would see this view for a brief period. Overall contrast would be moderate to weak. Recommended mitigation includes minimizing vegetation cutting and employing BMPs to revegetate the area.

5.19 KOP U GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.19.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6923318.1, Easting 641541.4

Distance from proposed activity: 0.00 mile from the Mainline

5.19.2 Narrative

This KOP is located on the George Parks Highway approximately 0.5 mile north of a public parking area (Figure 15). The proposed pipeline would cross the George Parks Highway at this location. Low vegetation is found directly adjacent to the highway and forms a 10- to 15-meter-wide stripe. This low vegetation is primarily grasses, brush, and wildflowers (including dense fireweed). Beyond the row of low vegetation is a wall of dense, tall vegetation that includes both trees and underbrush. The vegetation hides both the middle-ground and the background. Some background is visible to the north along the highway but no background is visible in the direction of the KOP.

Figure 15. KOP U, view from George Parks Highway, facing east.

KOP: U		Date: 6/27/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, gentle slope at sides of road, regular	Form: regular, continuous, dense	Form: flat
Line: horizontal, linear	Line: vertical, horizontal	Line: horizontal
Color: gray, tan	Color: light to dark green, seasonal pink (fireweed)	Color: gray, black, yellow, white
Texture: flat and smooth	Texture: complex, smooth	Texture: smooth

5.19.2.1 Proposed Activity Description

This KOP is located within the proposed Mainline corridor. The Mainline would cross the George Parks Highway below ground at this location. The greatest contrast would be introduced by machinery and equipment present during construction. Weak contrast to landform would be created by grading, and moderate to weak contrast to vegetation would be created by clearing. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated. Mainline construction in the vicinity of this KOP is expected in the winter of 2021–2022.

Landform/Water

As the landform is naturally flat in this location, the contrast anticipated in landform would be weak to none. Grading may introduce weak contrast particularly along the small slope at the edges of the road. Grading may also introduce a weak contrast in color and texture in the short term. This contrast would be weak to nonexistent in the long term.

Vegetation

The Mainline would introduce moderate contrast in form and line in the short term due to clearing. Weak contrast would be introduced to color and texture by vegetation regrowth. Contrasts in form and line would be moderate to weak in the long term, and contrasts to color and texture would be weak to nonexistent as new vegetation matures.

Structure

Machinery and equipment would introduce moderate to weak contrast in structure during the construction phase. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated.

5.19.3 Simulation

The simulation for KOP U (Figure 16) depicts the view along the proposed pipeline from the shoulder of George Parks Highway. There may be moderate contrasts introduced to vegetation in the short and long term, but structure contrasts, while moderate, are anticipated to be short-term as they would be related to construction but not operation.

Figure 16. Simulation of view from KOP U after construction.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear forms from clearing *Contrast:* moderate	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* moderate to weak
Contrast summary: Moderate to no contrast is anticipated, with weak contrast introduced to landform and moderate contrast introduced to structure and vegetation in the short term. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate to weak	Form: NA *Contrast:* none
Line: horizontal *Contrast:* none	Line: irregular line from clearing *Contrast:* moderate to weak	Line: NA *Contrast:* none
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak to none	Color: NA *Contrast:* none
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Weak long-term contrast is anticipated to landform and moderate to weak contrast is anticipated to vegetation. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.19.4 Conclusion

This view is primarily experienced by truck drivers and tourists traveling on the George Parks Highway. The Mainline would cross the George Parks Highway at this location. Because the Mainline would be below ground, the contrast in structure would be limited to the short term. Due to the high use of the George Parks Highway, the Project would impact a large number of people. As the Mainline would be approximately perpendicular to the highway at this location and there is no pullout for vehicles to park, the average viewer would see this view for a brief period. Overall contrast would be moderate to weak. Recommended mitigation includes minimizing vegetation cutting and employing BMPs to revegetate the area.

5.20 KOP T GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.20.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6936951.2, Easting 642224.9

Distance from proposed activity: 0.00 mile from the Mainline

5.20.2 Narrative

This KOP is located on the George Parks Highway where the proposed pipeline would cross the road (Figure 17). There is no public pullout or parking area near this location. The road is lined by vegetation. There is dense underbrush immediately adjacent to the road and dense trees and underbrush 10 to 15 meters from the road on both sides. The edges of mountains are visible to the north behind the tree tops; other than that, no middle-ground or background is visible.

Figure 17. KOP T, view from George Parks Highway, facing northeast.

KOP: T		Date: 6/27/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, moderate slope at sides of road, regular	Form: regular, continuous, dense	Form: flat, curving/turning
Line: horizontal, rolling, linear	Line: vertical, horizontal	Line: horizontal
Color: gray	Color: light to dark green	Color: gray, black, yellow, white
Texture: flat, smooth	Texture: complex, smooth	Texture: smooth

5.20.2.1 Proposed Activity Description

This KOP is located within the proposed Mainline corridor. The Mainline would cross the George Parks Highway below ground at this location. The greatest contrast would be introduced by machinery and equipment present during construction. Weak contrast to landform would be created by grading, and moderate to weak contrast to vegetation would be created by clearing. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated. Mainline construction in the vicinity of this KOP is expected in the winter of 2021–2022.

Landform/Water

Due to the already flat and horizontal landform, no contrast is anticipated in the form or line of landform in either the short or long term. Grading may introduce weak contrast in color and texture in the short term. This contrast would be weak to nonexistent in the long term.

Vegetation

The Mainline would introduce moderate contrast in form and line in the short term due to clearing. Weak contrast would be introduced to color and texture by vegetation regrowth. Contrasts in form and line would be moderate to weak in the long term, and contrasts to color and texture would be weak to nonexistent as new vegetation matures.

Structure

Machinery and equipment would introduce moderate to weak contrast in structure during the construction phase. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* none	Line: irregular line from clearing *Contrast:* moderate	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* moderate to weak
Contrast summary: Moderate to no contrast is anticipated in the short term, with weak contrast introduced to landform and moderate contrast introduced to structure and vegetation. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate to weak	Form: NA *Contrast:* none
Line: horizontal *Contrast:* none	Line: irregular line from clearing *Contrast:* moderate to weak	Line: NA *Contrast:* none
Color: brown, gray	Color: light greens	Color: NA

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Contrast: weak to none	*Contrast:* weak to none	*Contrast:* none
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Weak long-term contrast is anticipated to landform, and moderate to weak contrast is anticipated to vegetation. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.20.3 Conclusion

This view is primarily experienced by truck drivers and tourists traveling on the George Parks Highway. The Mainline would cross the George Parks Highway at this location. Because the Mainline would be below ground, the contrast in structure would be limited to the short term. Due to the high use of the George Parks Highway, the Project would impact a large number of people. Because the Mainline would be approximately perpendicular to the highway at this location and there is no pullout for vehicles to park, the average viewer would see this view for a brief period. Overall contrast would be moderate to weak. Recommended mitigation includes minimizing vegetation cutting and employing BMPs to revegetate the area.

5.21 KOP 40 GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.21.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6937607.855, Easting 642168.722

Distance from proposed activity: adjacent to materials site; approximately 0.1 mile from the Chulitna Camp and pipe storage yard

5.21.2 Narrative

KOP 40 contains the view of a current structure storage area facing west (Figure 18). A flat, horizontal road divides the dense vegetation. The smoother road contrasts with the roughness of the adjacent vegetation and creates a harder edge. The browns and gray of the road create additional contrast with the brighter colors of the vegetation.

Figure 18. KOP 40, View from George Parks Highway looking west.

KOP: 40		Date: 8/24/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal	Form: dense, vertical	Form: flat, horizontal
Line: flat, horizontal	Line: vertical, continuous	Line: flat, horizontal, straight
Color: brown, gray	Color: light to dark green	Color: brown, gray
Texture: smooth	Texture: glossy, dense	Texture: medium-smooth

5.21.2.1 Proposed Activity Description

The proposed materials site is 0.19 mile northwest of the KOP and the Mainline, Chulitna Camp, and pipe storage yard are 0.24 mile to the west of the KOP. Due to the distance and dense foliage, the Mainline, Chulitna Camp, and pipe storage yard would not be visible from the KOP. The materials site, however, would be visible, particularly at the location of the entrance road off

George Parks Highway. Because the materials site may be in use beyond the pipeline construction phase, associated contrasts are anticipated to be both short and long term. Construction of the pipeline would occur below ground using conventional grading. Project construction in the vicinity of this KOP is scheduled for summer of 2019 through the summer of 2022.

Landform/Water

The construction of a materials site would introduce horizontal and irregular forms and lines, brown to tan colors, and smooth textures to the current landform. The contrast in form and line would be moderate to strong. Because the colors and textures would be similar to what is currently visible, the contrast in these areas would be weak. As the materials site may be in use beyond the pipeline construction phase, these contrasts would be both short and long term.

Vegetation

Clearing would create geometric and linear forms, irregular lines, light greens, and patchy textures in the vegetation. The contrast would be moderate to strong in form and line. There would be a moderate contrast in color due to the clearing and regrowth. A moderate contrast would also be created in texture, which would be patchy, in contrast to the current dense vegetation. Because the materials site may be in use beyond the pipeline construction phase, these contrasts would be both short and long term.

Structure

Machinery and equipment would introduce geometric and linear forms, vertical and horizontal lines, smooth textures, and yellow, brown, and gray colors. These elements would create weak to moderate contrast in the viewshed, depending on the location of the equipment and materials in association with the entry road.

5.21.3 Simulation

The simulation for KOP 40 depicts the proposed materials site (Figure 19). As shown, the site may introduce moderate to strong contrasts in landform and vegetation, which would be short term. Some of these contrasts would be long-term contrasts if the materials site's use continued after the construction phase.

Figure 19. Simulation of view from KOP 40 during construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: horizontal, irregular forms *Contrast:* moderate to strong	Form: geometric and linear, forms created by clearing *Contrast:* moderate to strong	Form: geometric and linear *Contrast:* weak to moderate
Line: horizontal, irregular lines *Contrast:* moderate to strong	Line: irregular, lines added by clearing *Contrast:* moderate to strong	Line: vertical and horizontal *Contrast:* weak to moderate
Color: brown to tan *Contrast:* weak	Color: light green *Contrast:* moderate	Color: yellow, brown, gray *Contrast:* weak to moderate
Texture: fine to smooth *Contrast:* weak to moderate	Texture: patchy *Contrast:* moderate	Texture: smooth *Contrast:* weak to moderate
Contrast summary: Strong to weak contrast is anticipated in the short term, including weak to moderate contrast in structure, moderate to strong contrast in vegetation, and weak to strong contrast in landform. Additional mitigating measures recommended: Minimize vegetation cutting and maintain vegetation screen at the intersection with the George Parks Highway. Locate structures at an angle to road opening. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: additional flattening *Contrast:* weak to moderate	Form: geometric and linear, forms created by clearing *Contrast:* moderate	Form: NA *Contrast:* None
Line: horizontal, angular *Contrast:* weak to moderate	Line: irregular, lines added by clearing *Contrast:* moderate	Line: NA *Contrast:* None
Color: brown to tan *Contrast:* Weak	Color: light green *Contrast:* weak to moderate	Color: NA *Contrast:* None
Texture: fine to smooth *Contrast:* Weak	Texture: patchy *Contrast:* weak to moderate	Texture: NA *Contrast:* None
Contrast summary: Long-term contrasts at this location depend on whether the materials site is used after the construction phase. In this case, long-term contrasts would be similar to short-term contrasts. Contrast is anticipated to be weak to moderate for landform and vegetation. Additional mitigating measures recommended: Minimize vegetation cutting and maintain vegetation screen at the intersection with the George Parks Highway. Employ BMPs to revegetate area. Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

5.21.4 Conclusions

This view contains a current storage and work area visible from the George Parks Highway in an area identified in the George Parks Highway Scenic Byway Corridor Partnership Plan as having moderate scenic value (ADNR 2008). Moderate to strong contrast in landform, vegetation, and structure would be created by the construction of a materials site. Mitigation measures would include minimizing vegation removal, maintaining the existing screen at the intersection with George Parks Highway, and locating equipment and structures at an angle to the road opening to minimize visibility. The belowground pipeline, camp, and pipe storage yard would not be visible at this location because the view is largely blocked by existing vegetation but some of the clearing from construction would remain visible during operation. Use of BMPs is recommended for any areas used just for the short term. Restoring vegetation would minimize the long-term impacts.

5.22 KOP 39 GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.22.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 6937283.39, Easting 642118.225

Distance from proposed activity: approximately 0.3 mile from the corridor, Chulitna Camp, and pipe storage yard

5.22.2 Narrative

KOP 39 is a view from the George Parks Highway facing north (Figure 20). The road curves but is otherwise flat and horizontal. Dense rows of conifers line the road providing a strong contrast with the road. There are rolling, moderately sloped mountains in the background. Views of Denali are present in the vicinity but not at this location.

Figure 20. KOP 39, existing view of the George Parks Highway looking north.

KOP: 39		Date: 8/24/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; rolling, smooth hills background	Form: stripes, band	Form: horizontal
Line: linear, horizontal	Line: horizontal, vertical, bands, dense	Line: rectangular, linear, curving
Color: brown, tan	Color: light to dark green	Color: black, gray
Texture: smooth	Texture: smooth, dappled, medium-coarse	Texture: smooth (road)

5.22.2.1 Proposed Activity Description

The Mainline, Chulitna camp, and a pipe storage yard are proposed to be approximately 0.3 mile to the north of this KOP. As proposed the Mainline is west of this KOP behind the tree line, roughly paralleling George Parks Highway. Due to distance and dense vegetation, the pipeline,

camp, and storage yard would not be visible from this location. No long- or short-term contrasts are anticipated to the landform, water, vegetation, or structure of this viewshed.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.22.3 Conclusions

The KOP 39 viewpoint is from the George Parks Highway in an area identified by the George Parks Highway Scenic Byway Corridor Partnership Plan as having moderate visual sensitivity. The vegetation would block views of the Project from this area.

5.23 KOP S MT. MCKINLEY PRINCESS WILDERNESS LODGE - MP 133 PARKS HWY, TRAPPER CREEK, AK

5.23.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6939436.1, Easting 642386.1

Distance from proposed activity: 1.16 miles from the Mainline, 4.32 miles from the Mainline crossing of the Chulitna River

5.23.2 Narrative

This KOP is located at the back deck of the Mt. McKinley Princess Wilderness Lodge, looking toward Denali and the Alaska Range (Figure 21). The foreground slopes downward toward the river, but the river is not visible from this location due to the topography and dense vegetation. The middle-ground is rolling. The far background, which consists of the mountains of the Alaska Range, is rugged and jagged. In the foreground are two cultural modifications: the deck and a strip of pavement below. The deck is constructed of darker wood with a railing consisting of square wood posts and railings with black metal balusters. The pavement is wide enough to allow one or two vehicles through but is a back access to the hotel and not a road. Dense vegetation begins about 1 foot after the pavement ends (gravel and dirt are found between). Denali is visible from the deck on clear days.

Figure 21. KOP S, view from Mt. McKinley Princess Wilderness Lodge, facing northwest.

KOP: S		Date: 6/27/16
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, rolling middle-ground, jagged and angular background	Form: organic shapes, continuous, regular; patchy background	Form: flat, geometric shapes
Line: horizontal foreground, curving middle-ground, diagonal/angular background	Line: low verticals at foreground; curving with some verticals in foreground and middle-ground	Line: horizontal, vertical, geometric
Color: tan/gray foreground, tan to blue background	Color: light green with some dark green foreground and middle-ground; dark green, blue background	Color: gray, brown
Texture: smooth foreground, middle-ground, and background	Texture: generally smooth foreground, middle-ground, and background; some rough patches at foreground	Texture: smooth

5.23.2.1 Proposed Activity Description

This KOP is located on the back deck of the Mt. McKinley Princess Wilderness Lodge, 1.16 miles east of the proposed Mainline and 4.32 miles south of the location where the Mainline would cross the Chulitna River. Due to the distance, as well as intervening topography and vegetation,

the pipeline would not be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.23.3 Conclusion

This view is primarily experienced by hotel guests at the Mt. McKinley Princess Wilderness Lodge and diners at the associated restaurant. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.24 KOP 37 MT. MCKINLEY PRINCESS WILDERNESS LODGE – MP 133 PARKS HWY, TRAPPER CREEK, AK

5.24.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6939357.951, Easting 642360.333

Distance from proposed activity: approximately 1.4 miles from the construction corridor and 3.14 miles from the Chulitna Camp and pipe storage yard

5.24.2 Narrative

KOP 37 consists of the view from the Mt. McKinley Princess Wilderness Lodge, looking southwest from a flat terrace (Figure 22). The foreground is a flat, horizontal, black/gray asphalt parking lot. Brown, wood structures stand in the foreground. Dense, ordered vegetation is in both the foreground and middle-ground. Denali and the Chulitna River are visible, but this location does not look in that direction.

Figure 22. KOP 37, existing view from the Mt. McKinley Princess Wilderness Lodge looking southwest. (Project is beyond the vegetated ridge.)

KOP: 37		Date: 9/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal, planar; jagged peaks in the distance	Form: smooth, linear	Form: horizontal
Line: horizontal, linear	Line: verticals, horizontals, dense	Line: flat, horizontal, vertical
Color: brown, gray, blue	Color: light to dark green	Color: black, gray (parking lot); brown (wood)
Texture: smooth	Texture: rough background, medium-coarse in foreground	Texture: smooth (asphalt), rough (wood)

5.24.2.1 Proposed Activity Description

The proposed Mainline would be located 1.4 miles to the southwest of this KOP. The Chulitna Camp and Pipe Storage Yard are proposed to be located 0.8 mile to the south. Due to distance,

dense vegetation, and topography, the pipeline, camp, and pipe storage yard would not be visible from this location. In particular, a ridge slopes upward just to the southwest, blocking views in that direction. There are no anticipated contrasts in the short or long term. Construction in the vicinity of this KOP would occur between the summer of 2020 and summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.24.3 Conclusions

This view is from the Mt. McKinley Princess Wilderness Lodge looking southwest. This area is primarily used by tourists and tourists staying at the lodge. Views of the proposed corridor, camp, and pipe storage yard would be blocked by the topography and vegetation on the adjacent ridge.

5.25 KOP R DENALI STATE PARK VISITOR CENTER – MP 135.4 PARKS HWY

5.25.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6943449.4, Easting 644609.7

Distance from proposed activity: 2.88 miles from the Mainline, 2.81 miles from the Mainline Chulitna River crossing

5.25.2 Narrative

These KOPs were not surveyed during the field visits for this report due to current accessibility and may be visited at a later date based on future Project decisions. At the time of survey, there was no access road to the site.

5.26 KOP 38 DENALI VIEWPOINT SOUTH REST AREA/OBSERVATION DECK – MP 134.8 PARKS HWY

5.26.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6943252.2, Easting 641674.393

Distance from proposed activity: approximately 1.7 miles from the pipeline; approximately 1.8 miles from the Chulitna River crossing

5.26.2 Narrative

KOP 38 is located at the Denali State Park viewpoint, on the west side of the highway (Figure 23). A concrete viewing area is constructed near the edge of a bluff, looking northwest. The river below is visible in places but the center of the view is Denali and associated mountains. Vegetation consists of dense, dark green conifers. Gravel bars in river/river banks are brown and tan, contrasting with the brighter green and gold of the vegetation in the foreground on the east bank of the river.

Figure 23. KOP 38, existing view from the George Parks Highway Rest Area, facing west.

KOP: 38		Date: 8/24/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: foreground not visible (slope down); horizontal middle-ground; jagged,	Form: vertical foreground; vertical, patchy middle-ground; background not	Form: NA

KOP: 38	Date: 8/24/15	
angular, tall background	visible (due to distance)	
Line: vertical, horizontal, complex	Line: vertical foreground; vertical, complex middle-ground	Line: NA
Color: brown, black	Color: light to dark green	Color: NA
Texture: rough foreground and middle-ground	Texture: rough	Texture: NA

5.26.2.1 Proposed Activity Description

The Mainline would be located 1.7 miles to the northwest of this KOP. The Chulitna River crossing is located 1.8 miles north of this KOP. Due to distance, vegetation, and largely topography, the pipeline would not be visible from this location. As the river crossing is 1.8 miles from this location, views would be blocked by both vegetation and the topography. Contrasts to landform, water, vegetation, and structure are not anticipated in the short or long term. Mainline construction in the vicinity of this KOP is expected to occur during the summer of 2022. Crossing of the Chulitna River would occur in the winter of 2022–2023 through the summer of 2023. No pipe bridge is proposed for this crossing.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.26.3 Conclusions

This view looks north toward the Chulitna River and Denali. Views of the Mainline and Chulitna River crossing would be blocked from this area by the vegetation and topography.

5.27 KOP Q DENALI VIEWPOINT SOUTH – MP 134.8 PARKS HWY

5.27.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6943523.3, Easting 641660.4

Distance from proposed activity: 1.04 miles from Mainline, 1.71 miles from the Mainline Chulitna River crossing

5.27.2 Narrative

This KOP is located on a gravel viewing pad on the edge of the bluff a short walk north from the Denali Viewpoint South parking lot (Figure 24). The view is looking across the Chulitna River toward Denali and the Alaska Range. The Chulitna River is a braided river approximately 0.5 mile in width where in view to the north. The river takes up a majority of the middle-ground; beyond the river, the middle-ground is sloping to horizontal. The mountains in the background are steep and jagged and on a clear day include Denali. The viewing pad, which is reached by an approximately 300-meter-long gravel path, has a gravel surface with a railing of square wood posts and cylindrical metal handrails. A wood structure is located on the northeast side of the gravel pad. The wood structure has cylindrical wood posts at the corners and a wood-shingled gable roof overgrown with plants. Interpretive materials and signs are located within the shelter.

Figure 24. KOP Q, view from Denali Viewpoint South northern viewing pad, facing northwest.

KOP: Q		Date: 6/27/16
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: steep foreground; flat to rolling middle-ground; jagged, steep background	Form: soft, complex, irregular foreground; smooth, regular, middle-ground and background	Form: horizontal, vertical, columns and lines
Line: angular, steep foreground; curving middle-ground; jagged background	Line: soft, curving foreground and middle-ground; soft, continuous background	Line: horizontal, vertical

KOP: Q		Date: 6/27/16
Color: gray foreground and middle-ground; gray, blue background	Color: light to dark green foreground and middle-ground, dark green background	Color: gray, brown
Texture: rough foreground; broken, smooth middle-ground; hard, broken, rugged background	Texture: soft, complex foreground; repetitive, soft middle-ground and background	Texture: coarse

5.27.2.1 Proposed Activity Description

This KOP is located on a gravel viewing pad above the Denali Viewpoint South, 1.04 miles west of the proposed Mainline and 1.71 miles south of the location where the Mainline would cross the Chulitna River. Due to the distance, as well as intervening topography and vegetation, the pipeline would not be visible from this location in the short or long term. No contrasts to landform, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.27.3 Conclusion

This view is primarily experienced by tourists visiting Denali State Park and the DNPP. It is accessed from Denali Viewpoint South, which is frequented by travelers on the George Parks Highway and features interpretive signage, public restrooms, and paved camping areas for recreational vehicles (RVs) and trailers. The viewer sensitivity at this location is high. However, the Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.28 KOP P LOWER TROUBLESOME CREEK CAMPGROUND – MP 137.2 PARKS HWY

5.28.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6946884.3, Easting 642189.4

Distance from proposed activity: 0.00 mile from the access road, 0.08 mile from the Mainline

5.28.2 Narrative

This KOP is located at the Lower Troublesome Creek Campground (Figure 25). The KOP looks west down the trail through the campsites. The foreground vegetation is dense. The trail provides a view into middle-ground vegetation, where the brown vertical lines of tree trunks are prominent. The trail is mostly straight with some gentle curves. The trail turns to the left/southwest and is out of view after approximately 125 feet. The proposed pipeline access road would coincide with the current campground trail. Due to dense vegetation, no background is visible.

Figure 25. KOP P, view from Lower Troublesome Creek Campground, facing west.

KOP: P		Date: 7/1/16
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, regular, slight downward slope	Form: dense, regular, continuous	Form: flat, horizontal, curving, verticals, geometric shapes
Line: horizontal, linear, continuous	Line: verticals prominent in middle-ground, horizontals	Line: geometric, horizontal, vertical
Color: gray to brown	Color: light to dark green, brown	Color: gray and brown
Texture: flat, smooth	Texture: complex, smooth	Texture: smooth

5.28.2.1 Proposed Activity Description

This KOP is located at the edge of the parking lot for the Lower Troublesome Creek Campground, 0.00 mile from the proposed access road and 0.08 mile east of the proposed Mainline. While the Mainline would not be visible from this location, the construction of an access road through the campground and picnic area would create moderate to weak contrasts in landform, vegetation, and structure. The contrast would be greatest during the construction period, in particular the contrast in structure. Machinery and equipment would introduce the most contrast during the construction phase. No long-term impact is anticipated in structures. Mainline construction in the vicinity of this KOP is expected for summer 2022.

Landform/Water

Due to the already flat and horizontal landform, contrast to landform would be weak to nonexistent. Grading may introduce a weak contrast in form, line, color, and texture in the short term. These contrasts would be weak to nonexistent in the long term.

Vegetation

The access road would introduce moderate contrast in form and line in the short term due to clearing. Weak contrast would be introduced to color and texture by vegetation regrowth. Contrasts in form and line would be moderate to weak in the long term, and contrasts to color and texture would be weak to nonexistent as new vegetation matures.

Structure

The contrast in structure in the short term would be moderate in form, line, and color, and moderate to weak in texture due to the presence of machinery and equipment and the proximity of tourists. Because most of the machinery and equipment would be used during construction, the greatest contrast would be introduced in the short term only. In the long term, contrast in structure would be introduced by the access road, which would create a weak contrast in form and line.

5.28.3 Simulation

The simulation for KOP P (Figure 26) depicts the view of the proposed access road from the campground parking lot. There may be moderate contrasts introduced to vegetation in the short and long term. Contrasts introduced to structure would be more moderate in the short term and weak in the long term as it is anticipated that there would be more machinery and equipment present during the construction period.

Figure 26. Simulation of view from KOP P after construction.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear forms from clearing *Contrast:* moderate	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* moderate to weak
Contrast summary: Moderate to weak contrast is anticipated in the short term, with weak contrast introduced to landform and moderate contrast introduced to structure and vegetation. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear forms from clearing *Contrast:* moderate	Form: flat *Contrast:* weak to none
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: horizontal *Contrast:* weak to none
Color: brown, gray	Color: light greens	Color: NA

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Contrast: weak to none	*Contrast:* weak to none	*Contrast:* none
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Moderate to weak contrast is anticipated in vegetation, and weak long-term contrast is anticipated to landform. Long-term contrast to structure would be weak to none. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.28.4 Conclusion

This view is primarily experienced by tourists traveling on the George Parks Highway. The Lower Troublesome Creek Campground has a high number of visitors due to its easy access from the highway and its amenities, which include camping areas, picnic tables, public bathrooms, and river access by trail. Contrast in structure would be moderate in the short term due to the presence of machinery and equipment during construction, but would be weak to nonexistent in the long term. Contrast to vegetation would be moderate in the short and long term due to linear forms and irregular lines created by clearing. The overall contrast would be moderate. Recommended mitigation includes minimizing vegetation cutting and employing BMPs to revegetate the area.

5.29 KOP O UPPER TROUBLESOME CREEK TRAILHEAD – MP 137.7 PARKS HWY

5.29.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6947499.5, Easting 642250.3

Distance from proposed activity: 0.08 mile from the Mainline

5.29.2 Narrative

This KOP is located at the Upper Troublesome Creek trailhead, just off the George Parks Highway approximately 430 meters north of Troublesome Creek (Figure 27). The trailhead is reached by a gravel road approximately 300 meters long from the turn off the highway to the far end of the parking area. The road forms a u-shape with the parking area at the far end. As such, the parking area is secluded and not visible from the highway. The parking area is gravel and is surrounded by dense vegetation on all sides. No middle-ground or background is visible in any direction due to the vegetation. The immediate topography is flat.

Figure 27. KOP O, view from Upper Troublesome Creek trailhead, facing northeast.

KOP: O		Date: 7/1/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, regular	Form: dense, regular, continuous	Form: flat, horizontal
Line: horizontal, linear, continuous	Line: horizontal, vertical	Line: horizontal
Color: gray, tan	Color: light to dark green	Color: gray
Texture: flat, smooth	Texture: complex, smooth	Texture: smooth

5.29.2.1 Proposed Activity Description

This KOP is located at the Upper Troublesome Creek trailhead, 0.08 mile south of the proposed Mainline. Due to dense intervening vegetation, the pipeline would not be visible from this location in the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible	Line: not visible	Line: not visible

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Contrast: none	*Contrast:* none	*Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.29.3 Conclusion

This view is from the Upper Troublesome Creek Trailhead looking north. This area is primarily used by tourists. Views of the proposed corridor would be blocked by the dense intervening vegetation. No contrasts are anticipated in the short or long term.

5.30 KOP N GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.30.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 6985554.8, Easting 366632.4

Distance from proposed activity: 0.01 mile from materials site 35-4-025-1 FP2, 0.03 mile from materials site 35-4-025-2 FP3, and 0.06 mile from materials site 35-4-025-2 FP1.

5.30.2 Narrative

This KOP is located on the George Parks Highway at a location between two proposed materials sites. This portion of the highway is straight, with curves moving out of the field of view in both directions. There is a slight slope on both sides of the road, after which the landscape is fairly flat (Figure 28). The middle-ground drops out of the field of view and is blocked by foreground vegetation. Angular mountains are visible in the background on both sides of the road. There are two dirt roads off the highway near the KOP, one on the east side where the materials site would be located and one on the west side just past the proposed materials site. There are no public pullouts or parking areas nearby.

Figure 28. KOP N, view from George Parks Highway, facing east.

KOP: N		Date: 6/27/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, angular to jagged background	Form: regular, continuous foreground	Form: flat, straight to curving foreground; vertical, angular at middle-ground
Line: horizontal foreground; diagonal, angular background	Line: horizontal with occasional verticals at foreground, continuous background	Line: horizontal foreground; vertical, diagonal at middle-ground
Color: tan foreground; brown, blue background	Color: light to dark green, lightest at low foreground	Color: gray, black, yellow, white foreground; gray middle-ground
Texture: smooth to coarse foreground, smooth background	Texture: complex foreground, smooth background	Texture: smooth foreground and middle-ground

5.30.2.1 Proposed Activity Description

This KOP is located on the George Parks Highway 0.01 mile from materials site 35-4-025-1 FP2, 0.03 mile from materials site 35-4-025-2 FP3, and 0.06 mile from materials site 35-4-025-2 FP1. Because the materials sites may be in use beyond the pipeline construction phase, associated contrasts are anticipated to be both short and long term. It is anticipated that the amount of materials and machinery in this location may diminish after the construction phase, in which case

the long-term contrast would be weak to nonexistent. Project construction in the vicinity of this KOP is scheduled for summer 2019 through the summer of 2022.

Landform/Water

The construction of three materials sites near this location would introduce flat forms, horizontal lines, brown colors, and smooth textures. As the landform is naturally flat and horizontal at this location, the materials sites would introduce weak contrast to landform in both the short and long term.

Vegetation

Clearing for the materials sites would create linear forms and irregular lines, light greens, and patchy textures in vegetation. There would be a moderate contrast in form and line. A weak contrast in color would be introduced by regrowth but may diminish with time as vegetation matures. New vegetation would be patchy but as the current vegetation is already patchy in type, this would introduce no contrast.

Structure

Machinery and equipment would introduce geometric and linear forms, vertical and horizontal lines, smooth textures, and yellow, brown, and gray colors. These elements would create moderate to weak contrast, depending on the location of the equipment and materials in association with the George Parks Highway. The addition of machinery and equipment to this area would create a moderate contrast in structure. It is anticipated that the amount of materials and machinery may diminish after the construction phase, in which case the long-term contrast to structure would be weak to nonexistent.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear form from clearing *Contrast:* moderate	Form: geometric, cylindrical *Contrast:* moderate
Line: horizontal *Contrast:* weak to none	Line: irregular line form clearing *Contrast:* moderate	Line: horizontal, vertical *Contrast:* moderate
Color: brown *Contrast:* weak to none	Color: light green *Contrast:* weak	Color: brown, black, gray, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* none	Texture: smooth *Contrast:* moderate
Contrast summary: Moderate short-term contrast would be created in vegetation and structure due to machinery and equipment. Contrast to landform would be weak to none. Additional mitigating measures recommended: Minimize vegetation removal. Locate entry to the storage yard at an angle to the road. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear form from clearing *Contrast:* moderate	Form: NA *Contrast:* weak to none
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: NA *Contrast:* weak to none
Color: brown *Contrast:* weak to none	Color: light green *Contrast:* weak to none	Color: NA *Contrast:* weak to none

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* none	Texture: NA *Contrast:* weak to none
Contrast summary: Long-term contrasts at this location depend on whether the materials site is used after the construction phase. In this case, long-term contrasts would be similar to short-term contrasts. Contrast is anticipated to be weak to moderate for landform and vegetation. Additional mitigating measures recommended: Minimize vegetation cutting, and maintain vegetation screen at the intersection with the George Parks Highway. Employ BMPs to revegetate area. Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

5.30.3 Conclusion

This view is from the George Parks Highway looking toward a proposed materials site. Moderate to weak contrast in landform, vegetation, and structure would be created by the construction of a materials site at this location. Mitigation measures would include minimizing vegation removal, maintaining a vegetative screen along the George Parks Highway, and locating equipment and structures away from the road or behind a vegetative screen to minimize visibility. The belowground pipeline would not be visible at this location but some of the clearing from construction would remain visible during operation. Use of BMPs is recommended for any areas used just for the short term. Restoring vegetation would minimize the long-term impacts.

5.31 KOP 36 WINDY CREEK TRAIL/RST 707 – CANTWELL, AK

5.31.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7035738.813, Easting 702161.406

Distance from proposed activity: approximately 0.1 mile from the Cantwell pipe storage yard

5.31.2 Narrative

KOP 36 looks out on a distinct foreground, middle-ground, and background (Figure 29). The foreground is flat, straight, and smooth with soft, scattered vegetation. The middle-ground is rolling curving, and smooth, with large amounts of distinct, vertical vegetation. The background is angular, jagged, and rough with smooth vegetation. Cultural modifications from the existing airport facilities dominate the view.

Figure 29. KOP 36, existing view from RST 707.

KOP: 36		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, rolling middle-ground, angular background	Form: patchy, distinct, numerous	Form: rectangles, geometric, horizontal
Line: straight foreground; band, curving middle-ground; angular, jagged background	Line: soft foreground, vertical middle-ground, smooth background	Line: horizontal, vertical
Color: gray foreground; blue, gray, brown back	Color: green; seasonal red, yellow; dark green in middle-ground	Color: tan, red, blue, gray
Texture: smooth, clumped foreground; smooth middle-ground; rough background	Texture: scattered foreground	Texture: smooth

5.31.2.1 Proposed Activity Description

A camp and pipe storage yard is proposed 0.1 mile to the south of this KOP. Due to the short distance and lack of tall vegetation between them, the camp and pipe storage yard would be visible from this location; however, as this area is already occupied by a railway and storage area, the overall contrast would be weak in the short term. As the storage yard is temporary, no long-term contrast is anticipated. Project construction in the vicinity of this KOP is scheduled for the summer of 2022 through the summer of 2023.

Landform/Water

Grading for the proposed camp and pipe storage yard would introduce flat forms, horizontal lines, brown to black colors, and fine to smooth textures. The landform in this location is already relatively flat, with prominent horizontal lines, brown color, and smooth textures. Therefore, the contrast in landform related to the proposed facilities would be weak. No long-term contrast is anticipated as the camp and storage yard would be temporary.

Vegetation

The proposed camp and pipe storage yard would create minimal change to vegetation as the location is already occupied by a railroad and storage area. The contrast to vegetation would be weak in the short term. As the storage yard and camp are temporary, no long-term contrast is anticipated.

Structure

The presence of a camp and pipe storage yard would introduce rectangular, cylindrical, and geometric forms; horizontal and vertical lines; brown, gray, and tan colors; and smooth textures. These contrasts, created by machinery and equipment, would be weak in the short term as the location already has a railroad and storage area. There would be no long-term contrasts in structure due to the camp and pipe storage yard, because they are temporary.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* Weak	Form: minimal change anticipated *Contrast:* Weak	Form: rectangles, cylindrical, geometric *Contrast:* Weak
Line: horizontal *Contrast:* Weak	Line: minimal change anticipated *Contrast:* Weak	Line: horizontal, vertical *Contrast:* Weak
Color: brown-black *Contrast:* Weak	Color: minimal change anticipated *Contrast:* Weak	Color: brown, gray, tan *Contrast:* Weak
Texture: fine to smooth *Contrast:* Weak	Texture: minimal change anticipated *Contrast:* Weak	Texture: smooth *Contrast:* Weak
Contrast summary: Weak contrast is anticipated in the short term to landform, vegetation, and structure. Additional mitigating measures recommended: Use areas that have been previously modified. Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible	Line: not visible	Line: not visible

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Contrast: None	*Contrast:* None	*Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No long-term contrast is anticipated. Additional mitigating measures recommended: Employ BMPs to revegetate area.		

5.31.3 Conclusions

This view would be primarily experienced by existing users of the airport facilities and by tourists accessing the trail. Due to the existing modfication of the area, the contrast created by any grading, changes to vegetation, and material storage would be low. No impacts from the Project would occur at this location.

5.32 KOP 35 CANTWELL SCHOOL – CANTWELL, AK

5.32.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7035849.364, Easting 704996.299

Distance from proposed activity: approximately 1.7 miles from the Mainline and pipe storage yard; approximately 1.0 mile from the Cantwell Camp.

5.32.2 Narrative

KOP 35 is located on a gravel service drive on the south side of Cantwell School (Figure 30). Some windows look this direction and a majority of the parking lot is visible to the northeast. Two outbuildings are located to the west of the KOP. Vegetation lines the south side of the gravel drive and is cut through by a transmission line (east to west) on the southwest side.

Figure 30. KOP 35, existing view from the Cantwell School.

KOP: 35		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, no water	Form: strips	Form: rectangular
Line: horizontal	Line: horizontal, vertical	Line: horizontal, vertical
Color: gray	Color: light to dark green, predominately dark; red, yellow seasonally	Color: gray, blue, white, green
Texture: rough, coarse but even	Texture: medium density; even but random in distribution, rough	Texture: smooth

5.32.2.1 Proposed Activity Description

A pipe storage yard would be located approximately 1.7 miles to the southwest of the school. Cantwell Camp would be located approximately 1.0 mile south of the school. Due to the

distance, dense vegetation, and topography, the camp and pipe storage yard would not be visible during construction and are temporary facilities that would not last long term. Contrasts to the viewshed are not anticipated in either the short or long term. Project construction in the vicinity of this KOP is scheduled for the summer of 2020 through the summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.32.3 Conclusions

This view would primarily be experienced by students, employees, and visitors to the Cantwell School. The vegetation and topography would block views of the Project features. There are no anticipated contrasts to the viewshed in either the short or long term.

5.33 KOP 34 CANTWELL SCHOOL – CANTWELL, AK

5.33.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7035870.895, Easting 705071.911

Distance from proposed activity: approximately 0.5 mile from Mainline construction.

5.33.2 Narrative

KOP 34 is located on Second Ave in front of the Cantwell School (Figure 31). The KOP view is into the dense trees on the east side of the road and Cantwell School is located on the west side with a playground and gravel parking lot in front. Vegetation is thick and predominately conifers and evergreen trees. Angular peaks are visible in the distance. The road detracts from the scenic quality with its darker colors and linear form.

Figure 31. KOP 34, existing view from the Cantwell School.

KOP: 34		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; rugged, angular background; no water	Form: prominent, rough	Form: flat, linear, horizontal
Line: straight, regular foreground; diagonal, complex, background	Line: linear, horizontal, vertical, regular	Line: regular, straight, horizontal
Color: brown patches foreground, purple-blue background, white seasonal	Color: dark green, light green; yellow, red, brown seasonally	Color: black, gray
Texture: sparse, medium	Texture: continuous band with clumps; dense	Texture: smooth (road), handed with medium-coarse

5.33.2.1 Proposed Activity Description

The proposed Mainline would be located approximately 0.5 mile to the east of the Cantwell School and this KOP. Due to the distance and dense vegetation, the pipeline would not be visible

in either construction or operation phases. There are no anticipated contrasts to the viewshed in either the short or long term. Project construction in the vicinity of this KOP is scheduled for the summer of 2022.

Contrast Ratings: construction and operation/short-term and long-term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.33.3 Conclusions

This view would primarily be experienced by students, employees, and visitors to the Cantwell School. The vegetation and topograph would block views of the Project features.

5.34 KOP 33 NENANA RIVER – PLEASE PROVIDE A MILEPOST

5.34.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7043253.344, Easting 709037.603

Distance from proposed activity: approximately 1.0 mile upstream of the Mainline river crossing

5.34.2 Narrative

KOP 33 is a view from the George Parks Highway back (south) along Nenana River (Figure 32). The foreground is steep gravel slanting down toward the Nenana River. The river is green/gray, smooth, and curving. The background is angular, irregular, and coarse, with rough, matte vegetation. In the foreground and middle-ground, the vegetation is complex, horizontal/vertical, dominantly light green (particularly at the river banks) and smooth.

Figure 32. View from KOP 33 showing existing view of the Nenana River, facing southeast (downstream).

KOP: 33		Date: 8/25/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat water; steep, gravel foreground; angular background	Form: smooth foreground, linear middle-ground, rough background	Form: rectangular, geometric
Line: irregular, complex; curving river	Line: complex, horizontal, vertical	Line: horizontal and vertical, geometric
Color: brown, gray; green, gray water	Color: light green dominant in middle-ground; dark green; brown, yellow seasonally especially in background	Color: gray, green, brown
Texture: coarse foreground, coarse middle-ground, medium-coarse background, smooth water	Texture: smooth foreground and middle-ground, matte background	Texture: random, patchy

5.34.2.1 Proposed Activity Description

The proposed pipeline would cross the river approximately 1 mile downstream. Based on the preliminary concept plan, the crossing would not be visible from this location on the George Parks Highway. Due to the distance, vegetation, and topography, the pipeline would not be visible in either construction or operation. There would be no short- or long-term contrasts to this viewshed. Mainline and pipe bridge construction in the vicinity of this KOP is scheduled for the summer of 2021 through summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform/Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.34.3 Conclusions

This view would be experienced by motorists on the George Parks Highway and recreational users of the Nenana River. The area is identified as high scenic in the George Parks Highway Scenic Byway Corridor Partnership Plan (ADNR 2008). The pipe bridge would be visible from the George Parks Highway and also from the river. Use of construction equipment would create contrast from the existing conditions. The cylindrical forms of the bridge would contrast with the largely horizontal landscape. Developing a low profile bridge, immediately adjacent to the existing George Parks Highway bridge would minimize impacts.

5.35 KOP 32 NENANA RIVER – PLEASE PROVIDE A MILEPOST

5.35.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7043247.027, Easting 709033.201

Distance from proposed activity: approximately 1.0 mile upstream of the Mainline river crossing

5.35.2 Narrative

KOP 32 contains the view from the George Parks Highway looking east across the Nenana River (Figure 33). The flat, brown, curving plane of the river contrasts with the brighter colors in the foreground and dark green conifers in the middle-ground. The view encompasses a variety of forms including the strong, continuous band of conifers on the opposite river bank; smooth, rolling hills in the middle-ground; and rugged, rolling hills in the distance.

Figure 33. View from KOP 32 showing the existing view of the Nenana River, facing east.

KOP: 32		Date: 8/25/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, steep foreground, water; angular background	Form: smooth foreground; striped, solid middle-ground; rough, asymmetrical background	Form: linear, diagonal, vertical (transmission line)
Line: irregular, complex, curving, jagged	Line: complex, continuous, horizontal, vertical	Line: continuous, horizontal
Color: gray water; brown, gray land	Color: light to dark green; brown, yellow, red seasonally	Color: brown, gray
Texture: smoother water, coarse foreground, medium to fine middle-ground, medium to coarse background	Texture: smooth foreground, coarse middle-ground, matte background	Texture: smooth

5.35.2.1 Proposed Activity Description

The proposed pipeline would cross the river approximately 1 mile downstream. Based on the preliminary concept plan, the crossing would not be visible from this location on the George Parks Highway. Due to the distance, vegetation, and topography, the pipeline would not be visible in either construction or operation. There would be no short- or long-term contrasts to this viewshed. Mainline and pipe bridge construction is scheduled for the summer of 2021 through summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.35.3 Conclusions

This view would be experienced by motorists on the George Parks Highway and recreational users of the Nenana River. The area is identified as high scenic in the George Parks Highway Scenic Byway Corridor Partnership Plan (ADNR 2008). The bridge would not, however, be visible from this location on the George Parks Highway.

5.36 KOP 31 GEORGE PARKS HIGHWAY MILEPOST 224

5.36.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7055458.545, Easting 707681.638

Distance from proposed activity: approximately 0.5 mile from the pipe storage yard

5.36.2 Narrative

KOP 31 is located just north of Carlo Creek, looking northeast (Figure 34). The foreground includes foliage and a small, gravel parking lot in front of a café. Foliage quickly graduates from low, light green to dark green (conifers). Angular mountains in background are diagonal in line and covered by dark green, smooth vegetation. Cultural modifications including the parking lot, restaurant, and motel dominate the view.

Figure 34. View from KOP 31 facing north.

KOP: 31		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat to rolling; angular background	Form: verticals, horizontal, clustered	Form: geometric, ordered, medium, vertical
Line: horizontal, diagonal	Line: vertical, horizontal, linear	Line: regular horizontals and verticals, geometric
Color: gray brown, green in the distance	Color: light green foreground; dark green middle-ground and background; brown, yellow, seasonal	Color: brown, red, tan, gray, white (roof)
Texture: medium-coarse	Texture: coarse middle-ground, smooth foreground and background	Texture: smooth

5.36.2.1 Proposed Activity Description

The pipeline would be constructed adjacent to the George Parks Highway corridor using conventional cut and fill. A material site would be located approximately 0.3 miles to the north and a pipe storage yard would be located approximately 0.5 miles to the north. Construction of the Project in the vicinity of this KOP and use of the pipe storage yard is expected from the summer of 2022 through the summer of 2023.

Landform/Water

Contrasts to the landform would be weak in the short and long term, consisting of horizontal forms and lines, smooth textures. During construction, additional black, gray, and brown colors and anticipated, along with smooth textures, both created by the clearing and grading of the pipe storage yard. Minimal long-term contrast is anticipated as the pipe storage yard would be temporary.

Vegetation

Clearing would introduce contrasting geometric and linear forms to the vegetation, particularly at the site of the pipe storage yard. An increase of light green colors is anticipated in association with regrowth following the clearing, and patchy textures would be introduced. The contrasts to form and line would be moderate in the short term. Contrast in vegetation form is anticipated to be moderate long term due to clearing but would be weak long term in line, color, and texture.

Structure

Contrasts to structure are limited to the construction phase and are related to the pipe storage yard. The pipe storage yard machinery and equipment would introduce linear, geometric, and cylindrical forms of moderate contrast. Horizontal and vertical lines would also create moderate contrast. As the pipeline would be below ground and the pipe storage yard is temporary, there would be no long-term contrast in structure. Smooth textures and gray, brown, and black colors would create a short-term contrast in the landscape.

5.36.3 Simulation

The simulation for KOP 31 (Figure 35) depicts the view of the proposed material site and pipe storage yard from the George Parks Highway during construction. There may be moderate contrasts introduced to vegetation in the short and long term, but structure contrasts, while moderate, are anticipated to be short-term only due to the temporary nature of the pipe storage yard.

Figure 35. Simulation of view from KOP 31 during construction.

Contrast Rating: Construction

Landform /Water	Vegetation	Structure
Form: Horizontal, flat *Contrast:* Weak	Form: geometric and linear forms created by clearings may be visible *Contrast:* Moderate	Form: linear, geometric, cylindrical *Contrast:* Moderate
Line: horizontal *Contrast:* Weak	Line: geometric and linear forms created by clearings *Contrast:* Moderate	Line: horizontal, vertical *Contrast:* Moderate
Color: black, gray, brown *Contrast:* Weak	Color: light greens, brown *Contrast:* Weak	Color: gray, brown, black *Contrast:* Weak
Texture: smooth *Contrast:* Weak	Texture: patchy *Contrast:* Weak	Texture: smooth *Contrast:* Weak
Contrast summary: Moderate to weak contrast is anticipated in the short term, including moderate contrast to structure and vegetation, and weak contrast to landform. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation

Landform/Water	Vegetation	Structure
Form: Horizontal, flat *Contrast:* Weak	Form: geometric and linear forms created by clearings may be visible *Contrast:* Moderate	Form: NA *Contrast:* None
Line: horizontal; minimal change anticipated—pipe storage *Contrast:* Weak	Line: geometric and linear forms created by clearings *Contrast:* Weak	Line: NA *Contrast:* None
Color: brown *Contrast:* Weak	Color: light greens, brown *Contrast:* Weak	Color: NA *Contrast:* None
Texture: smooth *Contrast:* Weak	Texture: patchy *Contrast:* Weak	Texture: NA *Contrast:* None
Contrast summary: Moderate to no contrast is anticipated in the long term. Moderate contrast would be created to vegetation by clearing, weak contrast to landform, and no long-term contrast to structure. Additional mitigating measures recommended: Employ BMPs to revegetate area. If lights are employed during operation, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

5.36.4 Conclusions

This view is primarily experienced by tourists using the DNPP and Denali State Park, motorists on the George Parks Highway, and guests at the nearby restaurants and motels. The area is identifies as having moderate scenic quality in the George Parks Highway Scenic Byway Corridor Partnership Plan. There would be weak contrast created by the use of construction equipment and pipe storage in the area. Weak to moderate contrast would be created by vegetation clearing. Minimizing the vegetation clearing and using BMPs to restore vegetation after construction would minimize impacts.

5.37 KOP 30 DENALI NATIONAL PARK WILDERNESS ACCESS CENTER

5.37.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7074155.346, Easting 702468.499

Distance from proposed activity: approximately 0.7 mile from Mainline construction

5.37.2 Narrative

KOP 30 is located in front of the Denali National Park Wilderness Access Center, facing the parking lot to the southeast (Figure 36). The foreground is primarily paved, with sections of dirt planted with conifers and deciduous trees (primarily birch). The background is angular and rugged, with solid vegetation, rough graduating to smooth.

Figure 36. KOP 30, existing view of Denali National Park Wilderness Access Center, facing south.

KOP: 30		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, angular and rugged background	Form: vertical, patchy foreground; solid background	Form: flat, rectangular, regular, horizontal
Line: rugged; hard, horizontal foreground	Line: vertical foreground; irregular to regular, curving background	Line: horizontal, continuous, smooth, regular
Color: brown foreground; brown upper background	Color: light to dark green; yellow, red seasonally	Color: gray, brown
Texture: smooth to rough	Texture: rough to smooth	Texture: smooth

5.37.2.1 Proposed Activity Description

The proposed pipeline would be constructed approximately 0.7 mile to the east of this KOP. Due to the distance and the dense foliage, the pipeline would not be visible from this location either

during construction (short term) or operation (long term). The proposed construction therefore would not introduce any contrasts to the viewshed from this KOP. Mainline construction in the vicinity of this location is expected to occur in the summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated in landform, water, vegetation, or structure. Additional mitigating measures recommended: None		

5.37.3 Conclusions

This view is experienced by tourists arriving at the Denali National Park Wilderness Center. The area has a high viewer sensitivity rating; however, the trees and topography would block all views of Project features from this location.

5.38 KOP M GRANDE DENALI LODGE – MP 238.1 PARKS HWY

5.38.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7069756.7, Easting 406910.8

Distance from proposed activity: 0.17 mile from the Mainline

5.38.2 Narrative

This KOP is located at the Grande Denali Lodge, looking up the hill from the parking area (Figure 37). The Grande Denali Lodge is located on the southwest side of a cluster of hotels on the George Parks Highway near the entrance to the DNPP. The lodge is up a steep slope from the highway and is accessed by a road with several switchbacks. The KOP is located at the Grande Denali Lodge parking area looking back toward the entrance road. There is a steep slope up the east side of the road and down on the west. A ravine and ridgeline are visible to the southeast above the road. The ravine, while narrow, provides deeper visibility than the steep, rough-faced eastern view from farther north along the parking lot. Vegetation is dense where not deterred by steep, exposed faces of rock.

Figure 37. KOP M, view from the Grande Denali Lodge, facing east.

KOP: M		Date: 6/28/16
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, rolling middle-ground; angular background	Form: diverse, irregular foreground, middle-ground, and background	Form: horizontal, flat
Line: horizontal foreground, curved middle-ground, angular/diagonal background	Line: solid, continuous foreground, middle-ground, and background	Line: horizontal
Color: tan foreground and middle-ground, brown background	Color: light to dark green foreground and middle-ground; background light green speckled with dark green	Color: tan
Texture: coarse foreground, smooth to coarse middle-ground, coarse background	Texture: smooth to patchy	Texture: coarse

5.38.2.1 Proposed Activity Description

This KOP is located in the parking lot near the front entrance of the Grande Denali Hotel, 0.17 mile east of the proposed Mainline. Due to intervening topography and thick vegetation, the pipeline would not be visible from this location in the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated. Mainline construction in the vicinity of this KOP is expected in the summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.38.3 Conclusion

This view is primarily experienced by tourists visiting the DNPP and staying at or visiting the Grande Denali Lodge. This location has a high number of sensitive viewers. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.39 KOP L DENALI PRINCESS WILDERNESS LODGE – MP 238.6 PARKS HWY

5.39.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7070177.6, Easting 593770.6

Distance from proposed activity: 0.18 mile from the Mainline

5.39.2 Narrative

This KOP is located at the Denali Princess Wilderness Lodge entrance, looking at the ridge to the east (Figure 38). The Denali Princess Wilderness Lodge is located in the middle of a cluster of hotels on the George Parks Highway near the entrance to the DNPP. Due to a ridge and dense vegetation, the proposed pipeline would not be visible from this location. The highway curves slightly downward in both directions. A row of shops, restaurants, and hotels is located on the opposite side of the road, all with wood façades and green, metal roofs.

Figure 38. KOP L, view from Denali Princess Wilderness Lodge, facing east.

KOP: L		Date: 6/28/16
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; rolling to rugged middle-ground; steep, jagged background	Form: sparse foreground; numerous, regular middle-ground and background	Form: flat, curved road; geometric, angular buildings
Line: horizontal foreground, angular middle-ground and background	Line: vertical background and middle-ground	Line: horizontal road; diagonal, vertical, horizontal buildings
Color: gray, tan foreground and middle-ground	Color: light green foreground, light to dark green middle-ground and background	Color: gray, black road; brown, green white buildings
Texture: coarse to smooth foreground; rugged, coarse middle-ground and background	Texture: soft, broken foreground; textured, regular middle-ground; smooth, continuous background	Texture: smooth road; smooth buildings with some texture from signs/fonts

5.39.2.1 Proposed Activity Description

This KOP is located in the parking lot between the George Parks Highway and the Denali Princess Wilderness Lodge, 0.18 mile southwest of the proposed Mainline. Due to intervening topography and dense vegetation, the pipeline would not be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.39.3 Conclusion

This view is primarily experienced by tourists staying at the hotels and eating at the restaurants near the entrance to the DNPP. It is also experienced by motorists on the George Parks Highway. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.40 KOP K MCKINLEY CHALET RESORT – MP 238.9 PARKS HWY

5.40.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7070576.8, Easting 406258.6

Distance from proposed activity: 0.03 mile from the Mainline

5.40.2 Narrative

This KOP is located at the entrance of the front parking lot of the McKinley Chalet Resort (Figure 39). The McKinley Chalet Resort is the farthest north in a cluster of hotels located on the George Parks Highway near the entrance to the DNPP. The highway slopes gradually down as it heads into the steep-sided river valley to the north. The mountains are very unique and scenic at this location. The slopes along the roadway are steep, exposed rock in grays, tans, and browns (on the east side of the road). Vegetation where the slope is less steep is dense and made up of low shrub-like trees, vertical lines of black spruce, and deciduous trees with lighter-colored trunks.

Figure 39. KOP K, view from McKinley Chalet Resort, facing north-northeast.

KOP: K		Date: 6/28/16
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: Gently sloping foreground; steep, angular middle-ground and background	Form: smooth foreground, curving strip at middle-ground, continuous background	Form: smooth, curving horizontal, occasional verticals
Line: horizontal, sloping foreground; diagonal to vertical middle-ground and background	Line: horizontal foreground, vertical and mottled middle-ground and background	Line: horizontal, vertical
Color: gray, tan, brown	Color: light green foreground, light to dark green middle-ground and background	Color: gray, brown, red (light posts)
Texture: smooth foreground; rough, rugged, coarse middle-ground and background	Texture: smooth foreground and background, smooth to coarse middle-ground	Texture: smooth

5.40.2.1 Proposed Activity Description

This KOP is located 0.03 mile from the proposed Mainline. The Mainline would be along the highway to the north and would turn up the slope approximately 0.03 mile from this KOP. Contrasts introduced by the Project would be moderate to weak during the construction phase. Due to the Mainline's proximity to the highway and the sparse vegetation directly next to the road,

machinery and equipment would introduce a moderate contrast in structure and grading would introduce a moderate to weak contrast in landform. There are high numbers of recreational visitors who would see this view, but as the viewshed already includes grading along the sides of the road and structures including signs and lamp posts, the contrast in structures would be more moderate. Project construction in the vicinity of this KOP is expected in summer 2022.

Landform/Water

The contrast introduced to landform would be moderate to weak in form and line, and weak in color and texture. These contrasts are anticipated due to grading and would be present in the short and long term. Contrasts may be more moderate in the short term and weaker in the long term.

Vegetation

Contrast introduced to vegetation would be moderate to weak in form and line in the short term, with linear forms and irregular lines created from clearing. Light greens and rough textures introduced by regrowth would create a weak contrast in the short term. Irregular lines from clearing may be moderate to weak in the long term. It is anticipated that as vegetation grows back, contrast in form, color, and texture in the long term would be weak to nonexistent.

Structure

Machinery and equipment would introduce geometric and linear forms, vertical and horizontal lines, smooth textures, and yellow, brown, and gray colors. These elements would create moderate to weak contrast, depending on the location of the equipment and materials in association with the George Parks Highway. The addition of machinery and equipment to this area would create a moderate contrast in structure. It is anticipated that the presence of machinery and equipment would be limited to the construction phase and, because the Mainline would be constructed below ground at this location, that there would be no long-term contrast in structure.

5.40.3 Simulation

The simulation for KOP K (Figure 40) depicts the pipeline as it would travel near the highway and up the slope to the right (east) of the viewer. Contrast would be introduced by the introduction of machinery and equipment in the short term and the clearing of vegetation and grading of landform in the short and long term. Because the pipeline would be underground, the contrast would be moderate to weak.

Figure 40. Simulation of view from KOP K after construction.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat, horizontal *Contrast:* moderate to weak	Form: linear forms from clearing *Contrast:* moderate to weak	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal, regular *Contrast:* moderate to weak	Line: irregular lines from clearing *Contrast:* moderate to weak	Line: vertical and horizontal *Contrast:* moderate to weak
Color: gray, brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: rough *Contrast:* weak	Texture: smooth to rough *Contrast:* weak
Contrast summary: Weak contrast is anticipated to vegetation and structure, and no short-term contrast is anticipated to landform besides a weak contrast in landform color. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat, horizontal *Contrast:* moderate to weak	Form: linear forms from clearing *Contrast:* weak	Form: NA *Contrast:* none
Line: horizontal, regular *Contrast:* moderate to weak	Line: irregular lines from clearing *Contrast:* moderate to weak	Line: NA *Contrast:* none
Color: gray, brown	Color: light green	Color: NA

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Contrast: weak	*Contrast:* weak to none	*Contrast:* none
Texture: smooth *Contrast:* weak	Texture: rough *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Moderate to weak contrast is anticipated in vegetation and landform. No long term contrast is anticipated in structure. Additional mitigating measures recommended: None.		

5.40.4 Conclusion

This view is primarily experienced by tourists staying at the hotels and eating at the restaurants near the entrance to the DNPP. It is also experienced by motorists on the George Parks Highway. Short-term contrasts in structure and vegetation would be moderate. Contrasts would be moderate to nonexistent in the long term and limited to landform and vegetation. Due to the proposed pipeline's proximity to the George Parks Highway and this area of high use due to hotels, restaurants, and shops, the Project would impact a large number of people. However, as there is cultural modification already visible in this location, including pavement, signs, and street lamps, additional modifications would have lower impact on the viewshed since the area will revegetate over time. Recommended mitigation includes minimizing vegetation clearing and employing the Restoration plan for the area.

5.41 KOP 29 FOX CREEK CROSSING – MP 241.0 PARKS HIGHWAY

5.41.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7078975.596, Easting 701529.12

Distance from proposed activity: approximately 0.12 mile from Mainline construction and the aerial pipe bridge at Fox Creek

5.41.2 Narrative

KOP 29 is the crossing over Fox Creek (Figure 41). The land rises steeply above the small, rapidly flowing creek. Land forms are rugged verticals in the narrow canyon. Conifers are rough with patchy areas. Cultural modifications are present in the form of the roadway and bridge guardrail but do not dominate the view.

Figure 41. KOP 29, existing view of Fox Creek from the George Parks Highway, facing east.

KOP: 29		Date: 8/25/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: rugged, steep, high, jagged, irregular; narrow water	Form: smooth in foreground, background vertical, rough	Form: horizontals punctuated by verticals
Line: bold, angular, vertical, rugged; flowing water	Line: vertical, broken, rugged; soft background	Line: continuous, horizontal, geometric
Color: browns, reds; gray, white, tan water	Color: light to dark green	Color: gray
Texture: coarse, patchy, rough land; rough, glossy water	Texture: rough, coarse, patchy	Texture: smooth, continuous

5.41.2.1 Proposed Activity Description

Construction of the Mainline and aerial pipe bridge at Fox Creek approximately 0.12 mile from the George Parks Highway would occur during the summer of 2022.

Landform/Water

The proposed crossing would involve construction equipment that may temporarily block views of the water. Grading may introduce horizontals and verticals. The introduction of smooth textures, as well as brown and gray colors, would create a weak contrast. All contrasts to landform/water are weak except for the introduction of strong horizontal lines in the long term, which would create a moderate contrast in the viewshed.

Vegetation

Clearing may lead to less density in vegetation, more strong lines, lighter greens, and patchier textures in the short and long term. These factors would each have a weak contrast with the current viewshed.

Structure

The introduction of cylindrical and geometric forms, as well as horizontal and angular lines, in the construction of the pipe bridge would create moderate short- and long-term contrasts. Additional smooth textures and gray/brown colors would have a weak contrast in both the short and long term.

5.41.3 Simulation

The simulation for KOP 29 (Figure 42) depicts the aerial pipeline crossing at Fox Creek. As shown in the simulation, the proposed pipeline crossing may introduce contrasting horizontal lines to the structure portion of the viewshed. Due to the narrow quality of the ravine, which is accentuated by dense foliage, the contrast would be moderate to weak.

Figure 42. Simulation of view from KOP 29 after construction.

Contrast Rating: Construction

Landform /Water	Vegetation	Structure
Form: Construction equipment may obscure water *Contrast:* Weak	Form: clearing may reduce density of vegetation *Contrast:* Weak	Form: cylindrical, geometric *Contrast:* Moderate
Line: possible introduction of horizontals and verticals from grading *Contrast:* Weak	Line: clearing vegetation may create hard edge/straight line *Contrast:* Weak	Line: horizontal, angular *Contrast:* Moderate
Color: brown, gray *Contrast:* Weak	Color: lighter green *Contrast:* Weak	Color: gray, brown *Contrast:* Weak
Texture: introduction of smooth texture *Contrast:* Weak	Texture: clearing could create additional patchiness *Contrast:* Weak	Texture: smooth *Contrast:* Weak
Contrast summary: Moderate to weak contrast is anticipated in the short term, including moderate contrast in structure and weak contrast in vegetation and landform. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation

Landform/Water	Vegetation	Structure
Form: bridge may obscure water *Contrast:* Weak	Form: clearing may reduce density of vegetation *Contrast:* Weak	Form: cylindrical, geometric *Contrast:* Moderate
Line: possible horizontals/diagonals from grading *Contrast:* Weak	Line: clearing vegetation may create hard edge *Contrast:* Weak	Line: horizontal, angular *Contrast:* Moderate
Color: brown *Contrast:* Weak	Color: lighter green *Contrast:* Weak	Color: gray, brown *Contrast:* Weak
Texture: introduction of smooth texture *Contrast:* Weak	Texture: clearing could create additional patchiness *Contrast:* Weak	Texture: smooth *Contrast:* Weak
Contrast summary: Moderate to weak contrast is anticipated in the long term, including moderate contrast in structure and weak contrast in landform, water, and vegetation. Additional mitigating measures recommended: Construct bridge below ground. Develop bridge with a low profile to minimize visibility. Employ BMPs to revegetate area. Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

5.41.4 Conclusions

This view would be primarily experienced by motorists on the George Parks Highway. The George Parks Highway Scenic Byway Corridor Partnership Plan identifies this area as highly scenic (ADNR 2008). Views of the creek would be for a limited duration, because there are no major pullouts in this location. Use of construction equipment and vegetation clearing would create moderate contrast in this area. Long-term contrast would be created by the introduction of a strong horizontal form from the bridge structure. Mitigation measures include developing a bridge with a low profile and in dark green colors to minimize visibility.

5.42 KOP 28 NENANA RIVER CROSSING – MP 242.8 PARKS HIGHWAY

5.42.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7081419.048, Easting 700197.418

Distance from proposed activity: approximately 0.1 mile from the Mainline and aerial pipe bridge at the Nenana River

5.42.2 Narrative

KOP 28 provides a view of the Nenana River crossing from the existing Nenana River Bridge (Figure 43). The foreground view looks out over the gorge with the river below. The river is prominent and flowing, bounded by the rougher textures on the steep slopes. Vegetation ranges from light green and gold on the river banks to rough, dark green conifers on the slopes of the canyon and the moderately sloped mountains in the background.

Figure 43. KOP 28, existing view of Nenana River from the bridge on the George Parks Highway facing southwest.

KOP: 28		Date: 8/25/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: complex, triangular, steep, rounded, vertical; water curving and prominent	Form: verticals, rough, dense	Form: smooth, horizontal, linear, vertical
Line: flowing, undulating, angular	Line: conifers and birches create strong verticals; background is more even and continuous	Line: straight, vertical
Color: brown, gray, tan	Color: light to dark green, seasonal yellow	Color: gray
Texture: medium-smooth landform, rough water	Texture: rough	Texture: smooth

5.42.2.1 Proposed Activity Description

Construction of an aerial bridge at the Nenana River is proposed. Mainline construction in the vicinity of the Nenana River crossing is scheduled for summer 2022.

Landform/Water

The strongest contrast in landform would be the introduction of horizontal and irregular forms and lines that would block a portion of the view of the Nenana River from the George Parks Highway. This would create a strong contrast during construction (short term) and a moderate long-term contrast during operations. Smooth textures and gray/black would dominate the viewshed where previously landform and water had a rougher texture and was predominately brown, tan, and gray. Contrasts in color and texture would be moderate in the long term.

Vegetation

Clearing would create geometric and irregular lines and forms in vegetation; these contrasting lines and forms would have a high short-term contrast and a moderate long-term contrast. Clearing may also create contrasting patchy textures, moderately contrasting with the current viewshed in the short and long term. Light greens are anticipated to become more dominate following construction as vegetation grows back. Contrast in vegetation color is anticipated to be moderate in the short and long term.

Structure

Construction of the proposed bridge would introduce a strong horizontal line, as well as horizontal, geometric, and cylindrical forms, to the viewshed that would create a strong short- and long-term contrast. The introduction of gray colors and smooth textures would create a moderate short- and long-term contrast.

5.42.3 Simulation

The simulation of KOP 28 (Figure 44) depicts the view following the construction of the proposed Nenana River crossing. As is visible in the simulation, the aerial pipeline crossing would create strong to moderate contrast in structure and vegetation.

Figure 44. Simulation of view from KOP 28 after construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: horizontal, irregular; views of water blocked *Contrast:* Strong	Form: geometric and linear forms from clearing *Contrast:* Strong	Form: horizontal, geometric, cylindrical *Contrast:* Strong
Line: horizontal, irregular; views of water blocked *Contrast:* Strong	Line: irregular lines created by clearing *Contrast:* Strong	Line: introduction of strong, horizontal line *Contrast:* Strong
Color: gray, black *Contrast:* Moderate	Color: green *Contrast:* Moderate	Color: gray *Contrast:* Moderate
Texture: smooth; views of water blocked *Contrast:* Moderate	Texture: patchy *Contrast:* Moderate	Texture: smooth *Contrast:* Moderate
Contrast summary: Strong to moderate contrast is anticipated in the short term to landform, water, vegetation, and structure. Additional mitigating measures recommended: Minimize vegetation clearing. Locate new bridge adjacent to the existing bridge using similar materials and colors. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: views of water blocked *Contrast:* moderate	Form: geometric and linear forms from clearing *Contrast:* moderate	Form: horizontal, geometric, cylindrical *Contrast:* strong
Line: views of water blocked *Contrast:* moderate	Line: irregular lines created by clearing *Contrast:* moderate	Line: introduction of strong, horizontal line *Contrast:* strong
Color: views of water blocked *Contrast:* moderate	Color: green *Contrast:* moderate	Color: gray *Contrast:* moderate
Texture: views of water blocked *Contrast:* moderate	Texture: patchy *Contrast:* moderate	Texture: smooth *Contrast:* moderate
Contrast summary: Strong to moderate contrast is anticipated in the long term to landform, water, vegetation, and structure. The strongest contrast would be to structure, created by the proposed bridge. Additional mitigating measures recommended: Minimize the use of smooth, reflective surfaces and use non-contrasting colors. Minimize vegetation clearing and employ BMPs to restore vegetation. Construct a pedestrian walkway across the pipe bridge to conceal the pipe and tie in to existing use associated with vehicle pullout.		

5.42.4 Conclusions

This view is experienced by motorists using the George Parks Highway and tourists using facilties along the George Parks Highway. The area is identified as high scenic in the George Parks Highway Scenic Byway Corridor Partnership Plan. The construction of an aerial bridge would result in high contrast in this highly scenic area. Recommended mitigation includes limiting vegetation clearing, restoring the existing vegetation, locating the bridge closer to the highway bridges to lessen viewshed disruption, and using a similar color and material palette as the existing structure to the extent practicable.

5.43 KOP J DENALI RV PARK AND MOTEL – MP 245.1 PARKS HWY, HEALY, AK

5.43.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7078602.9, Easting 402225.3

Distance from proposed activity: 0.01 mile from a materials site, 0.19 mile from the Mainline

5.43.2 Narrative

This KOP is located at the entrance of the Denali RV Park and Motel, looking toward the proposed materials site to be located across the George Parks Highway (Figure 45). The highway is flat and straight at this location. Dense vegetation is located immediately next to the road on both sides except along the front of the Denali RV Park and Motel. The vegetation consists primarily of deciduous undergrowth and black spruce. Rugged mountains make up the background. The mountains have vegetation covering most slopes, with more exposed rock at the mountain peaks. Some small patches of snow were visible at the mountain tops during the July 2016 field visit.

Figure 45. KOP J, view from the Denali RV Park and Motel, facing southeast.

KOP: J		Date: 6/28/16
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal foreground; rugged, angular background	Form: numerous, continuous foreground; mottled background	Form: flat
Line: horizontal foreground; diagonal, jagged background	Line: horizontal strip at foreground; continuous, patchy background	Line: horizontal
Color: gray, tan foreground; light to dark brown background	Color: light green foreground, light to dark green background	Color: gray, black, yellow, white
Texture: smooth foreground, rough background	Texture: smooth foreground and background	Texture: smooth

5.43.2.1 Proposed Activity Description

This KOP is located at the Denali RV Park and Motel, 0.01 mile west of a proposed materials site and 0.19 mile east of the proposed Mainline. Although the materials site may be in use beyond the pipeline construction phase, this analysis only considers the short term contrasts. It is anticipated that the amount of materials and machinery in this location may diminish after the construction phase, in which case the long-term contrast to structure would be weak to nonexistent. Project construction in the vicinity of this KOP is scheduled for summer 2021 and summer 2022.

Landform/Water

The construction of a materials site at this location would introduce flat forms, horizontal lines, brown and gray colors, and smooth textures. Because the landform is naturally flat and horizontal in this location, the materials site would introduce weak contrast to landform in both the short and long term.

Vegetation

Clearing would create linear forms and irregular lines, light greens, and patchy textures in vegetation. There would be a moderate contrast in form and line. A weak contrast in color would be introduced by regrowth. A weak contrast would be created in texture, which would be patchy, in contrast to the current dense vegetation. As the materials site may be in use beyond the pipeline construction phase, these contrasts would be both short and long term. Contrast in color and texture may diminish with time as vegetation matures.

Structure

Machinery and equipment would introduce geometric and linear forms, vertical and horizontal lines, smooth textures, and yellow, brown, and gray colors. These elements would create moderate to weak contrast, depending on the location of the equipment and materials in association with the George Parks Highway. The addition of machinery and equipment to this area would create a moderate contrast in structure. It is anticipated that the amount of materials and machinery may diminish after the construction phase, in which case the long-term contrast to structure would be weak to nonexistent.

5.43.3 Simulation

The simulation for KOP J (Figure 46) depicts the material site that would be located next to the George Parks Highway across the road (southeast) from the viewer. As shown, the site may introduce moderate contrasts in landform and vegetation, which would be short term. Some of these contrasts would be long-term contrasts to allow for the long restoration time periods.

Figure 46. Simulation of view from KOP J during construction.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear form from clearing *Contrast:* moderate	Form: geometric, cylindrical *Contrast:* moderate
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: vertical, horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak to none	Color: light green *Contrast:* weak	Color: brown, black, gray, yellow *Contrast:* moderate
Texture: smooth *Contrast:* none	Texture: patchy *Contrast:* weak	Texture: smooth *Contrast:* moderate
Contrast summary: Moderate short-term contrast would be created in vegetation and structure due to machinery and equipment. Contrast to landform would be weak to nonexistent. Additional mitigating measures recommended: Minimize vegetation removal. Locate entry to the storage yard at an angle to the road. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear form from clearing *Contrast:* moderate	Form: NA *Contrast:* weak to none
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* moderate	Line: NA *Contrast:* weak to none

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Color: brown, gray *Contrast:* weak to none	Color: light green *Contrast:* weak to none	Color: NA *Contrast:* weak to none
Texture: smooth *Contrast:* none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* weak to none
Contrast summary: Long-term contrasts at this location depend on whether the materials site is used after the construction phase. In this case, long-term contrasts would be similar to short-term contrasts. Contrast is anticipated to be weak to moderate for landform and vegetation. Additional mitigating measures recommended: Minimize vegetation cutting, and maintain vegetation screen along the George Parks Highway. Employ BMPs to revegetate area. Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

5.43.4 Conclusion

This KOP is located on the George Parks Highway and contains a view of the location of a proposed material site. Moderate contrast in vegetation and structure, along with weak contrast in landform, would be introduced by the construction of a materials site. Mitigation measures would include minimizing vegetation removal, maintaining a vegetative screen along the George Parks Highway, to the extent practicable, and locating equipment and structures away from the Highway or behind vegetative screens to minimize visibility. The belowground pipeline, camp, and pipe storage yard would not be visible at this location because the view is largely blocked by existing vegetation, but some of the clearing from construction would remain visible during operation. Use of BMPs is recommended for any areas used just for the short term. Restoring vegetation would minimize the long-term impacts.

5.44 KOP 27 OTTO LAKE ROAD/RST 709 – HEALY, AK

5.44.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7086197.487, Easting 694828.848

Distance from proposed activity: approximately 0.7 mile from Healy Camp and the pipe storage yard

5.44.2 Narrative

This view from KOP 27 is from the north shore of Otto Lake on Otto Lake Road (Figure 47). Conifers frame the view to the George Parks Highway, and dark, rugged peaks are visible in the background. Colors range from dark green to light green with seasonal yellow. The flat road dominates the view but the adjacent trees and mountains provide layers of contrasting forms and textures.

Figure 47. KOP 27, existing view (east) from Otto Road.

KOP: 27		Date: 8/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, rolling (distant)	Form: vertical, regular	Form: flat, horizontal
Line: horizontal, flat, straight	Line: vertical, parallel	Line: straight, horizontal
Color: browns, dark purple	Color: light to dark greens	Color: gray, black
Texture: medium-rough	Texture: dense, ordered	Texture: uniform, directional, matte

5.44.2.1 Proposed Activity Description

A pipe storage yard would be constructed approximately 0.7 mile to the east of this KOP. Due to the distance and dense vegetation, the proposed pipe storage yard would not be visible from this location. Therefore, no contrasts are anticipated to this viewshed, either in the short term or long term, due to the proposed construction and operation of the pipeline and related facilities. Project

construction in the vicinity of this KOP is expected from summer of 2021 through summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:* None
Line: not visible *Contrast:* None	Line: pipe storage yard would not be visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: pipe storage yard would not be visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.44.3 Conclusions

The view from KOP 27 would be experienced by tourists traveling to Otto Lake from the George Parks Highway. The George Parks Highway Scenic Byway Corridor Partnership Plan identifies this area along the highway as high scenic (ADNR 2008); however, the construction and use of the pipe storage yard would not be visible from this area.

5.45 KOP 26 OTTO LAKE ROAD/RST 709 – HEALY, AK

5.45.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7086132.488, Easting 694827.42

Distance from proposed activity: approximately 1.2 miles from Mainline construction

5.45.2 Narrative

KOP 26 is located on the north shore of Otto Lake, looking south (Figure 48). The foreground is a grassy park with scattered conifers. Shrubs and tall grasses are found along the lake shore. Dense, deciduous trees and conifers are present on all sides of the lake except the south side. On the south side, vegetation is low and grassy with a few scattered conifers. Mountains slope up from the south lake shore. The closer mountains are smoother, with some rugged outcrops; the mountain range behind is jagged with scattered, rough vegetation.

Figure 48. KOP 26, existing view of Otto Lake, facing south.

KOP: 26		Date: 8/25/15
Scenic Quality Classification: A		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal foreground and water; jagged, rugged, bold background	Form: rough strips in foreground; sparse background	Form: NA
Line: horizontal, flowing foreground; jagged, rugged, broken background	Line: soft, irregular foreground; hard, broken, angular background	Line: NA
Color: brown foreground; blue, white, brown background	Color: light to dark green foreground; dark green background; seasonal yellow and brown	Color: NA
Texture: medium-smooth foreground; rough, non-directional background	Texture: uniform, dense foreground; scattered, rough background	Texture: NA

5.45.2.1 Proposed Activity Description

The proposed pipeline would be constructed below ground using granular embankment fill approximately 1.2 miles to the south of this location, across Otto Lake. Due to good visibility across the water and lack of trees on the south shore, the pipeline may introduce some contrast to the viewshed both in the short and long term. Mainline construction in the vicinity of this KOP is expected from the summer of 2021 through summer of 2022.

Landform/Water

The only contrasting element anticipated in landform/water is the increase of visible brown and gray. Exposure of the landform would result in this weak color contrast along the hillside where the pipeline is constructed.

Vegetation

Clearing would introduce more linear, horizontal forms and lines to the vegetation. Rougher textures are anticipated due to the construction of the pipeline, which would create a visible line across the hillside during construction (see simulation in Figure 49). More light greens may be visible as vegetation grows back following construction. The linear, horizontal form of the pipeline may dissipate slightly with vegetation growth, but a weak contrast is anticipated in the long term.

Structure

Due to the distance between the KOP at the north end of Otto Lake and construction at the south end (1.2 miles away), no contrast in structures is anticipated to be visible.

5.45.3 Simulation

The simulation for KOP 26 (Figure 49) depicts the proposed pipeline following construction. As shown in the simulation, clearing vegetation and grading is anticipated to introduce a horizontal line to the landscape. However, due to the distance between KOP 26 and the proposed pipeline, the contrast created would be weak.

Figure 49. Simulation of view from KOP 26 after construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: linear forms from clearing *Contrast:* weak	Form: NA *Contrast:* none
Line: NA *Contrast:* none	Line: irregular lines from clearing *Contrast:* weak	Line: NA *Contrast:* none
Color: gray, brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: NA *Contrast:* none
Texture: smooth *Contrast:* None	Texture: rough *Contrast:* weak	Texture: NA *Contrast:* none
Contrast summary: Weak contrast is anticipated to vegetation; no short-term contrast is anticipated to landform or water besides a weak contrast in landform color. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: linear forms from clearing *Contrast:* Weak	Form: NA *Contrast:* none
Line: NA *Contrast:* none	Line: irregular lines from clearing *Contrast:* weak	Line: NA *Contrast:* none
Color: gray, brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: NA *Contrast:* none
Texture: smooth *Contrast:* none	Texture: rough *Contrast:* weak	Texture: NA *Contrast:* none
Contrast summary: Weak contrast is anticipated to vegetation, as well as to landform color. No long-term contrast is anticipated to landform form, line, or texture. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.45.4 Conclusions

KOP 26 provides a view from the north shore of Otto Lake and would be experienced primarily by tourists using the lake, including motorists on the George Parks Highway. The George Parks Highway Scenic Byway Corridor Partnership Plan identifies this area along the highway as high scenic (ADNR 2008). Weak contrast would be visible at this distance from vegetation clearing and use of embankment fill. Minimizing the clearing of vegetation and use of Project Restoration Plan is recommended to reduce impacts. Some construction will take place during the winter and would therefore reduce impacts.

5.46 KOP 25 TRI-VALLEY SCHOOL FACING SOUTH – HEALY, AK

5.46.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7088875.384, Easting 695743.916

Distance from proposed activity: approximately 0.7 mile north of a materials site and 1.4 miles north of Healy camp and the pipe storage yard

5.46.2 Narrative

KOP 25 is located at the south side of Tri-Valley School, looking south (Figure 50). It is in a rough, gravel parking lot. The parking lot is bordered by light green grasses, green shrubs, and dark green conifers. The foliage is dense. There are limited mountain views in some directions but the mountains are mostly blocked by trees.

Figure 50. KOP 25, existing view of Tri-Valley School facing south.

KOP: 25		Date: 8/25/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, rough, regular (mountains not visible above trees)	Form: numerous, vertical strips	Form: NA
Line: straight, continuous, horizontal	Line: regular, continuous, vertical, horizontal	Line: NA
Color: gray	Color: light to dark green; yellow, brown seasonally	Color: NA
Texture: medium-coarse, continuous	Texture:	Texture: NA

5.46.2.1 Proposed Activity Description

The proposed pipeline would be constructed approximately 2.0 miles to the west of the school. Due to the distance and thick vegetation between the proposed pipeline location and the school,

the pipeline would not be visible from this location. Visibility through the primarily conifer forest is extremely poor at this site. No contrasts are anticipated either in the short term or long term from the construction and operation of the proposed pipeline. Mainline construction in the vicinity of this KOP is expected in the summer of 2021 through summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* None	Form: not visible *Contrast:* None	Form: not visible *Contrast:*
Line: not visible *Contrast:* None	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* None	Color: not visible *Contrast:* None	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None	Texture: not visible *Contrast:* None
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.46.3 Conclusions

The view from KOP 25 is experienced primarily by employees, students, and visitors of the Tri-Valley School. The topography and vegetation would block all views of the Project features, and there would be no visual impacts from this location.

5.47 KOP 24 TRI-VALLEY SCHOOL – HEALY, AK

5.47.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7088881.44, Easting 695737.871

Distance from proposed activity: approximately 2.0 miles from the Mainline

5.47.2 Narrative

KOP 24 is located at the south side of Tri-Valley School, looking west-southwest (Figure 51). It is in a rough gravel parking lot. The parking lot is bordered by light green grasses, green shrubs, and dark green conifers. The foliage is dense. There are limited mountain views in some directions but these are mostly blocked by trees.

Figure 51. KOP 24, existing view of Tri-Valley School, facing west-southwest.

KOP: 24		Date: 8/25/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal, regular	Form: regular, linear	Form: flat, horizontal
Line: horizontal, continuous, smooth	Line: regular, continuous, vertical	Line: regular, horizontal
Color: brown	Color: light to dark green, seasonal yellows and reds	Color: brown gray
Texture: even	Texture: dense, coarse	Texture: medium, smooth

5.47.2.1 Proposed Activity Description

The proposed pipeline would be constructed approximately 2.0 miles to the west of the school. Due to the distance and thick vegetation between the school and proposed pipeline, the pipeline would not be visible from this location. Visibility through the primarily conifer forest is extremely poor at this site. No contrasts are anticipated either in the short term or long term from the

construction and operation of the proposed pipeline. Mainline construction in the vicinity of this KOP is expected in the summer of 2021 through summer of 2022.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.47.3 Conclusions

The view from KOP 24 is experienced primarily by employees, students, and visitors of the Tri-Valley School. The topography and vegetation would block all views of the Project features, and there would be no visual impacts from this location.

5.48 KOP 23 DRY CREEK SITE – PLEASE PROVIDE A MILEPOST

5.48.1 Basic Information

Visual Resource Inventory Class: II

Location: Northing 7595661.9, Easting 397845.8

Distance from proposed activity: approximately 0.9 miles from the Mainline

5.48.2 Narrative

This KOP, located at the Dry Creek Site near MP 525, was not surveyed during the field visits for this report due to current accessibility and may be visited at a later date based on future Project decisions. KOP 23 can be found on the overview map.

5.49 KOP 22 NENANA CITY SCHOOL – NENANA, AK

5.49.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7165451.834, Easting 687311.733

Distance from proposed activity: approximately 0.5 mile from the pipe storage yard

5.49.2 Narrative

KOP 22 is located on the corner of Second Ave and C Street in front of Nenana City School looking southwest (Figure 52). The view in the foreground is dominated by the basketball court's

rectangular form and medium rough textures of the chain-link fence. The browns, grays, blue, and whites of the land, play structures, and residences contrast with the light greens of the vegetation. The land is flat and horizontal, with some verticals created by the playground structures and vegetation.

Figure 52. KOP 22, existing view from Nenana City School facing southwest.

KOP: 22		Date: 8/26/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat	Form: soft	Form: vertical, rectangles, geometric, cylindrical
Line: horizontal, soft	Line: vertical, irregular, soft	Line: vertical, horizontal, geometric
Color: brown	Color: light green	Color: gray, brown, blue, white
Texture: smooth	Texture: smooth; clumped (trees)	Texture: smooth, rough (poles), ordered, medium-rough (fence)

5.49.2.1 Proposed Activity Description

Construction of the Nenana Pipe Storage Yard is proposed approximately 0.5 mile to the southwest of the school. Due to the distance and the surrounding environment of buildings and vegetation, the proposed Nenana Pipe Storage Yard would not be visible from KOP 22. Furthermore, the Nenana Pipe Storage Yard would be a temporary feature. No short- or long-term contrasts are anticipated at this KOP due to the construction of the Nenana Pipe Storage Yard.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.49.3 Conclusions

The view from KOP 22 is primarily experienced by employees, students, and parents at the Nenana City School. The topography and vegetation would block all views of the Project features and there would be no visual impacts from this location.

5.50 KOP 21 NENANA CITY SCHOOL – NENANA, AK

5.50.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7165450.012, Easting 687310.562

Distance from proposed activity: approximately 0.9 mile from Mainline construction

5.50.2 Narrative

KOP 21 is located on the corner of Second Ave and C Street in front of Nenana City School, looking northwest (Figure 53). Residential structures dominate the foreground, with views of moderate rolling hills visible in the background. The grays and browns of the land, road, and structures contrast with the light greens and seasonal yellows and darker greens in the background.

Figure 53. KOP 21, existing view from Nenana City School.

KOP: 21		Date: 8/26/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; moderate, rolling background	Form: soft foreground; regular, solid background	Form: rectangular, geometric, regular in form, contrasting with vegetation
Line: horizontal foreground; flowing, curving, soft background	Line: vertical, irregular foreground; continuous background	Line: horizontal, vertical, smooth, geometric
Color: gray, brown	Color: light green foreground, dark green background, seasonal yellow	Color: tan, green, brown
Texture: smooth	Texture: glossy, smooth, clumped foreground; medium-rough, continuous background	Texture: smooth, patchy

5.50.2.1 Proposed Activity Description

Construction of the pipeline is proposed approximately 0.9 mile to the northwest of the school. Due to the distance between the KOP and the proposed pipeline location, as well as the surrounding environment of buildings and vegetation, the pipeline would not be visible from this location in the short-term construction period or during long-term operations.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.50.3 Conclusions

The view from KOP 21 is primarily experienced by employees, students, and parents at the Nenana City School. The topography and vegetation would block all views of the Project features. No contrast is anticipated in the short or long term.

5.51 KOP 20 TANANA RIVER AND THE GEORGE PARKS HIGHWAY – MP 305.0, NENANA, AK

5.51.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7166599.889, Easting 685865.221

Distance from proposed activity: adjacent to the Tanana River crossing; adjacent to the George Parks Highway crossing

5.51.2 Narrative

KOP 20 provides a view of the Tanana River north of the George Parks Highway bridge, looking west to the river (Figure 54). The river is flat, horizontal, flowing, and gray with brightly colored green vegetation on both banks. Vegetation has seasonal yellows and reds. Tall, dark conifers form a dense screen on the opposite bank.

Figure 54. Existing view of the Tanana River from the George Parks Highway from KOP 20.

KOP: 20		Date: 8/26/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, gentle slope; horizontal, flowing water	Form: low strips in the foreground; angular background	Form: NA
Line: horizontal, curving	Line: regular, soft foreground; angular background	Line: NA
Color: brown, gray	Color: light green foreground; dark green background; seasonal yellow and red	Color: NA
Texture: smooth	Texture: smooth foreground, medium-coarse background	Texture: NA

5.51.2.1 Proposed Activity Description

The Tanana River crossing would be constructed using open-cut techniques adjacent to this KOP. The greatest contrast would be created by machinery and equipment present during construction. Weak contrast would be created by grading and clearing, and may be long term. Tanana River crossing construction (horizontal directional drill) is scheduled to occur during the summer of 2022.

Landform/Water

Contrasts to landform and water would be weak both in the long term and short term, including the introduction of flat forms, horizontal lines, brown and gray colors, and smooth textures. Because the landscape is already dominated by similar characteristics, the contrast anticipated is minimal.

Vegetation

Clearing would introduce linear forms, irregular lines, and patchy textures to the vegetation. Regrowth of vegetation following construction may result in an increase in light green colors. These traits contrast weakly with the current vegetation both in the short term and in the long term.

Structure

Contrasting structures would be limited to the short term because the pipeline would be below ground. During construction, however, moderate contrast in form and line would be created by the presence of machinery and equipment. These would introduce verticals, horizontals, and geometric forms, as well as vertical and horizontal lines.

Contrast Rating: Construction

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear forms from clearing *Contrast:* weak	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* weak	Line: irregular line from clearing *Contrast:* weak	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak	Color: light greens *Contrast:* Weak	Color: tan, brown, yellow *Contrast:* none
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* none
Contrast summary: Moderate to no contrast is anticipated in the short term, with moderate contrast introduced to structure and weak contrast to landform and vegetation. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear forms from clearing *Contrast:* Weak	Form: NA *Contrast:* None
Line: horizontal *Contrast:* Weak	Line: irregular line from clearing *Contrast:* Weak	Line: NA *Contrast:* None
Color: brown, gray	Color: light greens	Color: NA

Contrast: Weak	*Contrast:* Weak	*Contrast:* None
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* Weak	Texture: NA *Contrast:* None
Contrast summary: Weak long-term contrast is anticipated to landform and vegetation. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.51.3 Conclusions

The view from KOP 20 is experienced by motorists traveling on the George Parks Highway, residents of the community of Nenana, and tourists using the Tanana River. The use of construction equipment would create moderate contrast. There would also be weak contrast created by clearing and grading work. Mitigation measures include minimizing the clearing of vegetation, particularly near the road, and restoring the vegetation screen as quickly as possible. This segment of the George Parks Highway was identified in the George Parks Highway Scenic Byway Corridor Partnership Plan as low to moderate scenic with a higher capacity to absorb visual changes (ADNR 2008); therefore, the level of contrast would be acceptable in this area.

5.52 KOP 19 TANANA RIVER AND THE GEORGE PARKS HIGHWAY – MP 304.9, NENANA, AK

5.52.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7166372.408, Easting 685985.229

Distance from proposed activity: approximately 0.85 mile from the pipe storage yard, approximatley 0.1 mile from the Mainline

5.52.2 Narrative

KOP 19 is located just south of the Tanana River crossing north of the town of Nenana, looking south toward the river (Figure 55). Vegetation next to the George Parks Highway is low but dense, so there is limited visibility of the river. Tall conifers are present on the opposite river bank. No mountains were visible at the time of the field visit (but the field visit was on a rainy, low-visibility day). The landform is flat and horizontal, with a gentle slope down toward the smooth, gray Tanana River.

Figure 55. Existing view at KOP 19 of the Tanana River from the George Parks Highway, facing southeast.

KOP: 19		Date: 8/26/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, gentle slope; horizontal	Form: low strips in foreground and background; angular background	Form: horizontal, rectangular, geometric
Line: horizontal	Line: regular, soft foreground; angular background	Line: horizontal, curve, geometric
Color: brown, gray	Color: light green foreground, dark green background, seasonal yellow, red	Color: grays
Texture: smooth	Texture: smooth foreground; medium-coarse background	Texture: smooth

5.52.2.1 Proposed Activity Description

The proposed Nenana pipe storage yard would be constructed approximately 0.85 mile to the west of this KOP. The pipeline would be approximately 0.05 mile west of this location but would be below the Tanana River and not visible from KOP 19.

Landform/Water

Both short-term and long-term potential contrasts to landform are weak, consisting of the introduction of flat forms, horizontal lines, brown and gray colors, and smooth textures. These traits vary little from the characteristics the landscape already possesses.

Vegetation

Clearing would introduce linear forms, irregular lines, and patchy textures to vegetation in both the short and long term. More light greens may be visible as vegetation grows back following clearing. The contrast in form, line, color, and texture would be weak in the short term and in the long term.

Structure

Contrasts to structure would exist only in the short term, during the construction phase. The presence of machinery and equipment would add vertical, horizontal, and geometric forms; vertical and horizontal lines; tan, brown, and yellow colors; and smooth to rough textures. The contrasts to form and line would be moderate; the contrasts to color and texture would be weak to none. There are no anticipated long-term contrasts in structure.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear forms from clearing *Contrast:* weak	Form: verticals, horizontals, geometric *Contrast:* moderate
line: Horizontal *Contrast:* weak	Line: irregular line from clearing *Contrast:* weak	Line: vertical and horizontal *Contrast:* Moderate
Color: brown, gray *Contrast:* Weak	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* Weak to none
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* weak to none
Contrast summary: Moderate to no contrast is anticipated in the short term, with moderate contrast introduced to structure and weak contrast to landform and vegetation. Additional mitigating measures recommended: Minimize clearing of vegetation. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: NA *Contrast:* none	Form: NA *Contrast:* none
Line: NA *Contrast:* none	Line: NA *Contrast:* none	Line: NA *Contrast:* none
Color: NA *Contrast:* none	Color: NA *Contrast:* none	Color: NA *Contrast:* none
Texture: NA	Texture: NA	Texture: NA

Contrast: none	*Contrast:* none	*Contrast:* none
Contrast summary: No long-term contrast is anticipated. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.52.3 Conclusions

This view from KOP 19 is experienced by motorists traveling on the George Parks Highway, residents of the community of Nenana, and tourists using the Tanana River. The use of construction equipment would create moderate contrast. There would also be weak contrast created by clearing and grading work. Mitigation measures include minimizing the clearing of vegetation, particularly near the road, and restoring the vegetation screen as quickly as possible. This segment of the George Parks Highway was identified in the George Parks Highway Scenic Byway Corridor Partnership Plan as low to moderate scenic, with a higher capacity to absorb visual changes; therefore, the level of contrast would be acceptable in this area (ADNR 2008).

5.53 KOP 18 GEORGE PARKS HIGHWAY – PLEASE PROVIDE A MILEPOST

5.53.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7167882.949, Easting 685763.873

Distance from proposed activity: approximately 0.3 mile from Mainline construction

5.53.2 Narrative

KOP 18 is located on the George Parks Highway, looking east toward the proposed pipeline and railroad spur (Figure 56). The foliage is low but dense in the foreground, with a general clearing adjacent to the road. Clumps of deciduous trees make visibility through the clearing difficult. On the far side of the clearing, a wooded area starts. Dense trees continue up and completely cover hills.

Figure 56. KOP 18, view from the George Parks Highway north of Nenana, facing east.

KOP: 18		Date: 8/26/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; moderate, rolling background	Form: smooth, low foreground; smooth, regular background; vertical middle-ground	Form: rectangular, geometric, linear (transmission lines)
Line: soft, horizontal foreground; curving background	Line: soft, horizontal, vertical, continuous	Line: horizontal, vertical, geometric
Color: browns	Color: light to medium green, yellow-green; pink, yellow, brown seasonally	Color: red, brown, blue
Texture: smooth, uniform, some patches of medium-fine texture visible at railroad cuts	Texture: smooth, ordered; scattered foreground	Texture: smooth, uniform

5.53.2.1 Proposed Activity Description

The proposed belowground pipeline would be constructed using conventional grading and would be located adjacent to the proposed Nenana Railroad Spur approximately 0.3 mile to the southeast. Project construction in the vicinity of this KOP is scheduled to occur in the winter of 2021–2022.

Landform/Water

Construction of the belowground pipeline and Nenana Railroad Spur would have weak to no effect on the landform. The construction may introduce more horizontals to the landscape, having weak to no contrast with the current landscape. More tan and brown colors and smooth textures may be visible in the short and long term due to grading. While the Tanana River is nearby, it is not within view of this KOP.

Vegetation

Vegetation clearing may lead to additional linear forms, irregular lines, and patchy textures, leading to moderate to weak contrast in the short term and weak contrast in the long term. More light greens may be visible during the regrowth of vegetation following construction.

Structure

The presence of equipment during construction would create moderate contrast by the introduction of vertical, horizontal, and geometric forms, and vertical and horizontal lines. Machinery and equipment would introduce more tan, brown, yellow, and black colors, as well as smooth to rough textures, which would add weak to no contrast to the viewshed. A majority of contrasting structures would be present only during construction and thus create only short-term contrasts. Additional horizontals would be present in the viewshed in the long term, but would be a weak contrast due to the distance and foliage between the highway and proposed construction.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: horizontal, flat *Contrast:* none	Form: linear forms from clearing *Contrast:* moderate	Form: verticals, horizontals, geometric (from equipment) *Contrast:* moderate
Line: horizontal *Contrast:* weak	Line: irregular line from clearing *Contrast:* weak	Line: verticals (equipment) *Contrast:* moderate
Color: tan, brown *Contrast:* none	Color: light greens *Contrast:* weak	Color: tan, brown, yellow, black *Contrast:* weak to none
Texture: smooth *Contrast:* none	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* weak to none
Contrast summary: Moderate to weak contrast would be introduced to vegetation, and moderate to weak contrast are anticipated to structure. No contrast is anticipated to landform. Additional mitigating measures recommended: Minimize clearing of vegetation, particularly near the road. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: linear forms from clearing *Contrast:* weak	Form: horizontal *Contrast:* weak to none
Line: horizontal	Line: irregular line from clearing	Line: horizontal

Contrast: weak	*Contrast:* weak	*Contrast:* weak to none
Color: tan, brown *Contrast:* none	Color: light greens *Contrast:* Weak	Color: NA *Contrast:* none
Texture: smooth *Contrast:* none	Texture: patchy *Contrast:* weak	Texture: NA *Contrast:* none
Contrast summary: Weak to no long-term contrast is anticipated for landform, vegetation, and structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.53.3 Conclusions

The view from KOP 18 is experienced by motorists traveling on the George Parks Highway, residents of the community of Nenana, and tourists using the Tanana River. The use of construction equipment would create moderate contrast. There would also be weak contrast created by clearing and grading work. Mitigation measures include minimizing the clearing of vegetation, particularly near the road, and restoring the vegetation screen as quickly as possible. This segment of the George Parks Highway was identified in the George Parks Highway Scenic Byway Corridor Partnership Plan as low scenic, so the level of contrast would be acceptable in this area (ADNR 2008).

5.54 KOP 17 GEORGE PARKS HIGHWAY/TANANA VALLEY STATE FOREST – PLEASE PROVIDE A MILEPOST

5.54.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7181980.624, Easting 701166.95

Distance from proposed activity: approximately 3.6 miles south of the Mainline, pipe storage yard, Dunbar Camp, and railroad work pad

5.54.2 Narrative

This KOP is located at the south side off George Parks Highway, looking north (Figure 57). Dense, vertical, and regular vegetation contrasts with the flat, dark highway. The highway is along a ridge, and the land slopes up on the north side of the road at this location, blocking northerly views.

Figure 57. KOP 17, view from the George Parks Highway, looking north.

KOP: 17		Date: 8/26/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, sloping	Form: dense, regular	Form: flat, horizontal
Line: horizontal, smooth	Line: soft, regular, vertical	Line: flat, horizontal
Color: brown	Color: light to dark green; red, yellow, brown seasonally	Color: gray, brown
Texture: smooth, uniform	Texture: smooth, patchy scattered	Texture: smooth

5.54.2.1 Proposed Activity Description

The pipeline, a pipe storage yard, Dunbar Camp (120 beds), and a railroad work pad would be constructed approximately 3.6 miles to the north of this KOP. However, due to distance, the topography (which includes a ridge sloping upward on the north side of the road), and dense vegetation, none of the facilities would be visible from this location either during construction or

operation. Therefore, no contrasts are anticipated in the short or long term. Project construction for the Mainline and facilities in this area is scheduled from the summer of 2020 (camp construction) through the winter of 2021–2022.

Contrast Ratings: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* None	Line: not visible *Contrast:* None
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: None		

5.54.3 Conclusions

This view would be experienced by motorists traveling on the George Parks Highway between Anchorage and Fairbanks. Because the vegetation and topography would block any views of the Project features from this location, the anticipated level of contrast would be compatible with the high scenic classification assigned to this area in the Geoge Parks Highway Scenic Byway Corridor Partnership Plan.

5.55 KOP 16 GEORGE PARKS HIGHWAY/TANANA VALLEY STATE FOREST – PLEASE PROVIDE A MILEPOST

5.55.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7180827.353, Easting 698707.44

Distance from proposed activity: approximately 3.0 miles from the Mainline and Mainline Block Valve (MLBV) 29.

5.55.2 Narrative

KOP 16 is located at a viewpoint pullout along the George Parks Highway (Figure 58). The viewpoint is located on a ridge, and the foreground has a moderately steep slope down toward a broad, flat middle-ground. The background, far across the broad middle-ground, is asymmetrical and rolling. The middle-ground is spotted with lakes, ponds, and waterways that are flat, white/gray, and glossy. The vegetation is diverse and in strips with a rounded, patchy middle-ground. Vegetation types are smooth and scattered.

Figure 58. KOP 16, existing view from the George Parks Highway, looking northwest.

KOP: 16		Date: 8/26/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: moderately steep foreground; flat middle-ground; asymmetrical, rolling background; glossy water	Form: diverse strip; rounded, patchy middle-ground	Form: NA
Line: straight, curving, horizontal foreground and middle-ground; slightly angular, rolling background	Line: soft, irregular	Line: NA
Color: brown, blue (far mountains), white/gray (water)	Color: light to dark green; red, yellow, brown seasonally	Color: NA
Texture: smooth, uniform	Texture: smooth, patchy, scattered (different vegetation types)	Texture: NA

5.55.2.1 Proposed Project Activity

The proposed pipeline and MLBV 29 would be constructed and buried below ground using frost packing/surface leveling approximately 3.0 miles from this KOP. Aboveground appurtenances associated with MLBV 29 would be constructed. Although the Project construction area is lower in elevation than this KOP, the distance, intervening vegetation, and topographic features, it is anticipated that the neither the buried pipeline or MLBV 29 appurtenances would be visible from this KOP. No contrast is anticipated in the short or long term.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: none		

5.55.3 Conclusions

The view from KOP 16 is experienced by motorists traveling on the George Parks Highway to Fairbanks, in an area assigned a high scenic classification in the George Parks Highway Scenic Byway Corridor Partnership Plan (ADNR 2008). The Project features would be located 3 miles away from the KOP. Because the contrast from any grading would be weak during both constrction and operations, impacts would be minimal and no mitigation measures are recommended.

5.56 KOP 15 – MP 75 ELLIOTT HIGHWAY, LIVENGOOD, AK

5.56.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7267478.481, Easting 700596.019

Distance from proposed activity: approximately 0.25 mile from Livengood Camp and a pipe storage yard

5.56.2 Narrative

The Elliott Highway KOP is located just west of the intersection of Elliott Highway and the Dalton Highway, looking north toward the proposed storage yard (Figure 59). The land is flat, horizontal, brown, and smooth. Vegetation is patchy and solid; the vegetation types are random and patchy, but as a whole the vegetation is continuous and dense, primarily green (with yellow, red, purple, and gray present seasonally). The only structure in the view is the road, a horizontal, gray/brown, fine dirt road.

Figure 59. KOP 15, Elliott Highway.

KOP: 15		Date: 8/26/15
Scenic Quality Classification: B		Overall Sensitivity Rating: L
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal	Form: patchy (by type), solid (as a whole)	Form: horizontal
Line: horizontal, smooth	Line: verticals, soft	Line: horizontal
Color: brown	Color: greens, seasonal yellow, purple, red, gray	Color: gray, brown
Texture: smooth	Texture: even, random, continuous, dense	Texture: fine, continuous

5.56.2.1 Proposed Activity Description

The area adjacent to Elliott Highway would be used for construction of Livengood Camp (120 beds) and a pipe storage yard; however, the camp and pipe storage yard are located far enough

from the road that the dense vegetation would serve as a screen between the facilities and the highway. The pipeline would be located approximately 0.6 mile to the east of the KOP and due also to dense vegetation would not be visible during construction or operation. Project construction in the vicinity of this KOP is timed to occur from the winter of 2021–2022 through summer of 2023.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: Preemptive mitigation is recommended. Locate access road to the camp at an angle to highway; maintain vegetative screen.		

5.56.3 Conclusions

This view from the Elliott Highway would primarily be experienced by motorists on the highway and tourists using nearby rivers and trails. The Project features would not be visible due to the vegetation screen except at the entry to the camp. Locating the access road at an angle would minimize visibility.

5.57 KOP I HESS CREEK OVERLOOK – PLEASE PROVIDE A MILEPOST

5.57.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7280717.7, Easting 406384.9

Distance from proposed activity: 0.75 mile from the Mainline

5.57.2 Narrative

This KOP is located at the Hess Creek overlook (Figure 60). The overlook is located on the west side of the Dalton Highway and looks to the west and northwest. The proposed pipeline would be located north and east of the road and overlook. Due to a rise in the topography, the proposed pipeline would not be visible from this location. To the west of the road is an expanse of gravel fill. The gravel detracts from the directly adjacent scenery, because it lacks the gentle slope and vegetation, but it opens up the wider view, enabling visitors to see across the valleys below, uninterrupted by vegetation.

Figure 60. KOP I, view from Hess Creek overlook, facing north.

KOP: I		Date: 6/28/16
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: curving foreground, sloping middle-ground, and rolling background (to the left/northwest)	Form: mottled and continuous foreground, middle-ground, and background	Form: curving, horizontal
Line: diagonal to horizontal foreground, curving middle-ground and background	Line: horizontal foreground, vertical middle-ground, and continuous, rolling background	Line: horizontal to diagonal
Color: tan foreground, brown to blue background	Color: light green, yellow, and pink foreground; gray, light to dark green middle-ground and background	Color: gray, tan, yellow, and white
Texture: smooth and soft foreground, middle-ground, and background	Texture: soft foreground, textured (verticals) at middle-ground, smooth background	Texture: smooth

5.57.2.1 Proposed Activity Description

This KOP is located at the Hess Creek overlook, 2.79 miles south of Hess Creek and 0.75 mile southwest of the proposed Mainline. Due to the distance as well as intervening topography and vegetation, the pipeline would not be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.57.3 Conclusion

The Hess Creek overlook is a stopping point for both recreational travelers and truck drivers. The gravel pullout is wide and offers interpretive signage. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.58 KOP H HESS CREEK PULLOUT – PLEASE PROVIDE A MILEPOST

5.58.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 7281968.9, Easting 406432.3

Distance from proposed activity: 0.14 mile from the Mainline

5.58.2 Narrative

This KOP is located at a pullout 2.21 miles south of Hess Creek on the east side of the Dalton Highway (Figure 61). The parking area is surrounded by substantial rock walls and has no view with the exception of the narrow area created by the road cut to the north. Some distant mountains are visible to the north beyond the road, though this view is not in the direction of the KOP. The rock walls are steep and exposed, showing a variety of layers and colors. The top of the rock wall is horizontal to sloping and vegetation, primarily trees, is visible along the edge. Some piles of loose dirt and a human-made hole filled with rainwater are found along the horizontal surface that creates the parking area. There is no view in the direction of the proposed pipeline and the pipeline therefore would not be visible.

Figure 61. KOP H, view from Hess Creek pullout, facing north.

KOP: H		Date: 6/28/16
Scenic Quality Classification: C		Overall Sensitivity Rating: L
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground; angular, irregular, and vertical middle-ground	Form: sparse, simple foreground; vertical, semi-regular middle-ground	Form: flat, semi-regular
Line: horizontal foreground; diagonal, vertical, horizontal middle-ground	Line: broken, irregular foreground; horizontal strip of verticals at middle-ground	Line: horizontal
Color: tan and gray foreground; white, tan, red, and brown middle-ground	Color: light green foreground, light to dark green and brown middle-ground	Color: tan to gray
Texture: smooth foreground; rough, rugged, and smooth middle-ground	Texture: smooth foreground; irregular, smooth middle-ground	Texture: smooth

5.58.2.1 Proposed Activity Description

This KOP is located at a pullout 2.21 miles south of Hess Creek and 0.14 mile west of the proposed Mainline. The pullout is surrounded by high rock walls. Due to intervening topography, the pipeline would not be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.58.3 Conclusion

The Hess Creek Pullout is a stopping point for both recreational travelers and truck drivers. The gravel pullout has a gravel parking area but does not have a view or any amenities. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.59 KOP G HESS CREEK BRIDGE – MP 23.7 DALTON HWY

5.59.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7284229.7, Easting 403607.3

Distance from proposed activity: 0.25 mile from the west materials site, 0.21 mile from the east materials site, and 0.81 mile from the Mainline

5.59.2 Narrative

This KOP is located at Hess Creek bridge looking out across Hess Creek (Figure 62). The bridge is approximately 20 feet above the water. There are steep banks, approximately 10 feet high, on both sides of the river, after which the land is flat to rolling with gentle hills in the background. The river, land, and road are mostly tan to brown in color. Due to the dense vegetation on the riverbanks, visibility is minimal and thus the materials sites would not be visible.

Figure 62. KOP G, view from Hess Creek bridge, facing southwest.

KOP: G		Date: 6/28/16
Scenic Quality Classification: A		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal foreground, vertical middle-ground, and continuous background	Form: horizontal foreground, vertical middle-ground	Form: horizontal, geometric, sloping
Line: horizontal foreground, horizontal to curving middle-ground and background	Line: mottled, broken foreground; continuous middle-ground and background	Line: horizontal and vertical
Color: tan to brown foreground, brown to blue middle-ground and background	Color: light green foreground, dark strip at middle-ground, light to dark green background	Color: tan, gray
Texture: smooth foreground, middle-ground, and background	Texture: smooth	Texture: smooth

5.59.2.1 Proposed Activity Description

This KOP is located where the Dalton Highway crosses Hess Creek, 0.25 mile east of materials site 65-3-0142 FP1, 0.21 mile west of materials site 65-3-014-2 FP2, and 0.81 mile from the proposed Mainline. Due to the distance and dense intervening vegetation, the pipeline would not

be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.59.3 Conclusion

This view of Hess Creek is most commonly seen by truck drivers and tourists driving the Dalton Highway. Because there is a gravel pullout and river access, this location may also be used by fishermen. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.60 KOP 12 YUKON RIVER CAMP – MP 56 DALTON HWY

5.60.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7310696.754, Easting 649688.927

Distance from proposed activity: approximately 3.0 miles from a pipe storage yard, approximately 1.0 mile from the Mainline

5.60.2 Narrative

KOP 12 is located at the northeast end of the Yukon River Camp parking area, looking northwest (Figure 63). The foreground is flat, with thick deciduous trees at the edge of the road and an unpaved parking lot and a field beyond. Low, rolling hills in the background are marked by all the vertical lines of a conifer-dominated forest. The brighter green and reds of the vegetation contrast with the tans and browns of the parking area and road. Although not visible in this direction, the industrial structures that constitute the Yukon River Camp impact the scenic quality in the area.

Figure 63. KOP 12, current view from the Yukon River Camp facing southeast.

KOP: 12		Date: 9/25/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, rolling background	Form: smooth foreground; rough, vertical background	Form: flat, smooth
Line: soft, straight, horizontal foreground, curving background	Line: soft, continuous foreground; vertical, rugged background	Line: regular, soft, horizontal
Color: browns	Color: light to dark green; yellow, orange, brown seasonally	Color: browns
Texture: smooth foreground and background	Texture: smooth, clumped foreground; coarse background	Texture: smooth, uniform

5.60.2.1 Proposed Activity Description

The proposed storage yard originally planned adjacent to the Yukon River Camp parking lot has been moved 3 miles north. Therefore, there is no contrast anticipated in the short or long term at this KOP. Project construction is timed to occur in this vicinity during the winter of 2022–2023.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible Contrast: none	Form: not visible Contrast: none	Form: not visible Contrast: none
Line: not visible Contrast: none	Line: not visible Contrast: none	Line: not visible Contrast: none
Color: not visible Contrast: none	Color: not visible Contrast: none	Color: not visible Contrast: none
Texture: not visible Contrast: none	Texture: not visible Contrast: none	Texture: not visible Contrast: none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: None		

5.60.3 Conclusions

As proposed, the pipeline is approximately 1.0 mile west of this KOP and the nearest pipe storage yard is 3.0 miles distant. Therefore, the area would see no contrast related to the proposed pipeline construction or operation.

5.61 KOP 13 CROSSING AT YUKON RIVER – MP 56 DALTON HWY

5.61.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7310318.693, Easting 649468.268

Distance from proposed activity: adjacent to a horizontal directional drilling (HDD) location along the Yukon River

5.61.2 Narrative

KOP 13 is located on the north bank of the Yukon River, looking southeast to southwest (Figure 64). The Dalton Highway Bridge, which also carries the TAPS pipeline, is located to the southeast and high above the beach/river access. The river is wide, with moderately steep terrain on both sides. The water is milky gray and swiftly moving. The north bank has a slope and flattens out (at the location of the Yukon River Camp); the south side has low, sloped mountains. Vegetation is mixed deciduous and conifers that are predominately dark green. Vegetation is patchy by type but dense overall. Although not visible when looking west (the direction of the KOP), the bridge, which is higher at the southern side, creates a strong diagonal line with verticals to the southeast and influences the scenic quality in the area.

Figure 34. KOP 13, current view of the Yukon River, facing southwest.

KOP: 13		Date: 8/27/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: rounded, patches of rough but mostly smooth; water horizontal, curving, large volume	Form: patchy (by type of vegetation), solid	Form: vertical, horizontal, angular, geometric
Line: curving, diagonal, horizontal, smooth	Line: regular, continuous, soft, smooth	Line: horizontal, vertical, angular, geometric
Color: browns	Color: light to dark green, yellow and brown seasonally	Color: grays, browns
Texture: smooth, with one small rough patch (left by recent landslide)	Texture: smooth to medium-smooth, dense, clumped by type	Texture: smooth, ordered, directional

5.61.2.1 Proposed Activity Description

This KOP, located on a bank of the Yukon River directly adjacent to the Yukon River Camp, looks toward the proposed Yukon River crossing. The pipeline's river crossing would be below ground and the entry points of the pipe for HDD are beyond the view of this KOP. Due to distance, foliage, and topography, no construction would be visible from this location. Because the pipeline would be below ground, there would be no long-term contrast or changes to the site.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: Not visible *Contrast:* None	Form: Not visible *Contrast:* None	Form: Not visible *Contrast:* None
Line: Not visible *Contrast:* None	Line: Not visible *Contrast:* None	Line: Not visible *Contrast:* None
Color: Not visible *Contrast:* None	Color: Not visible *Contrast:* None	Color: Not visible *Contrast:* None
Texture: Not visible *Contrast:* None	Texture: Not visible *Contrast:* None	Texture: Not visible *Contrast:* None
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: Preemptive mitigation recommended to ensure no contrast is visible includes locating entry and exit points behind vegetation screens and minimizing removal of vegetation.		

5.61.3 Conclusions

No contrasts are anticipated to landform, water, vegetation, or structure due to the proposed pipeline construction and operation. Mitigation is suggested to ensure that no contrast occurs: locating entry and exit points behind vegetation screens and minimizing the removal of vegetation would minimize the impacts.

5.62 KOP 14 DALTON HIGHWAY NORTH OF FIVE MILE CAMP – MP 60 DALTON HWY

5.62.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7312549.027, Easting 647347.748

Distance from proposed activity: adjacent to a pipe storage yard, 0.1 mile from Five Mile Camp

5.62.2 Narrative

KOP 14 is located on the Dalton Highway, just north of the Five Mile Camp, looking northwest (Figure 65). Topography of this location is mostly flat. Vegetation, consisting of birch and conifers, is dense on both sides of the road. Directly adjacent to the road is a strip of grasses and low brush. The brown, flat stretch of the Dalton Highway dominates the view. Other industrial-style facilities associated with the TAPS are visible nearby.

Figure 65. KOP 14, current view of the Dalton Highway, facing northwest.

KOP: 14		Date: 8/27/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, gentle, regular	Form: solid, regular, tall, vertical, strip	Form: flat, regular, linear, strip,
Line: simple, regular, horizontal	Line: medium-soft, regular, continuous, horizontal, vertical	Line: horizontal, straight to curving
Color: browns	Color: light and dark greens, brown to cream (tree trunks), yellow and brown seasonally	Color: browns, yellows, blacks
Texture: smooth, uniform	Texture: medium-smooth, dense	Texture: smooth

5.62.2.1 Proposed Activity Description

The area immediately adjacent to the Dalton Highway on the west side of the highway would be used as a pipe storage yard. The KOP, located on the east side of the Dalton Highway looking

northwest, is approximately 0.2 mile from the proposed pipeline. However, because the pipeline would be below ground and the vegetation between the KOP and the pipeline is dense, there would be no long-term contrast.

Landform/Water

Because the landform is already flat and linear, no changes to form, line, color, or texture are anticipated during the location's short-term use as a storage yard. Minimal grading may occur but would have a weak to nonexistent effect on the overall landform. There are no long-term contrasts to landform anticipated.

Vegetation

The construction of a storage yard immediately adjacent to this KOP would create moderate contrasts to vegetation in form and line; geometric and linear forms are anticipated from clearings. During the construction period, the vegetation may be patchy in texture due to clearing. The regrowth of vegetation may result in more light green colors. No long-term contrasts to vegetation are anticipated.

Structure

The storage yard would introduce contrasting forms, lines, colors, and textures to the viewshed. Machinery and equipment would add geometric and cylindrical shapes, as well as vertical and horizontal lines. Constrasting colors in brown, black, gray, and yellow would be present, also due to the presence of machinery and equipment. Structures would not be present in the long term; therefore, no long-term contrast is anticipated.

5.62.3 Simulation

The simulation for KOP 14 depicts the proposed pipe storage yard during construction (Figure 66). The pipe storage yard is anticipated to introduce moderate contrasts, particularly to vegetation and structure, in the short term. Because the pipe storage yard would be temporary, no long-term contrasts are anticipated.

Figure 66. Simulation of view from KOP 14 during construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: no change expected *Contrast:* weak	Form: geometric and linear forms created by clearings *Contrast:* moderate	Form: geometric, cylindrical *Contrast:* moderate
Line: no change expected *Contrast:* weak	Line: strong lines created by clearings and roads *Contrast:* moderate	Line: vertical, horizontal *Contrast:* moderate
Color: no change expected *Contrast:* weak	Color: light green *Contrast:* weak	Color: browns, blacks, grays, yellows *Contrast:* Moderate
Texture: no change expected *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth *Contrast:* Moderate
Contrast summary: Moderate short-term contrast would be created in vegetation and structure due to machinery and equipment. Weak contrast is anticipated to landform. Additional mitigating measures recommended: Minimize vegetation removal. Locate entry to the storage yard at an angle to the road. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.62.4 Conclusion

The pullout on the Dalton Highway where this KOP is located is currently used by workers on the TAPS. The stretch of highway would be observed briefly by motorists and tourists. If vegetation is removed to create additional space for pipe storage yard, contrast in vegetation would be moderate from the lines created by the clearings. The presence of machinery and equipment creates moderate contrast in structure. Because the storage yard would be temporary, long-term contrasts are not anticipated.

5.63 KOP F 86 MILE OVERLOOK – MP 86.6 DALTON HWY

5.63.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7346686.8, Easting 623626.1

Distance from proposed activity: 0.59 mile from the Mainline

5.63.2 Narrative

This KOP was not surveyed during the field visits for this report due to current accessibility. At the time of survey, the entrance road was closed for construction. This site may be visited at a later date based on future Project decisions. Mainline construction in the vicinity of this KOP is expected in summer 2021 and summer 2022.

5.64 KOP E FINGER MOUNTAIN WAYSIDE – MP 98.1 DALTON HWY

5.64.1 Basic Information

Visual Resource Inventory Class: III

Location:

Northing 7362023.7, Easting 613525.4

Distance from proposed activity: 0.08 mile from the Mainline

5.64.2 Narrative

This KOP is located at the turnoff for Finger Mountain Wayside, looking to the west across the highway (Figure 67). The wayside, which is east of the KOP, includes a parking area, bathrooms, and a small trail with interpretive signage. The vegetation is low and continuous. Visibility is good in all directions except to the north, which is blocked by a rock outcropping. The landscape consists of rolling hills with large stones and boulders scattered throughout. The TAPS is underground and runs next to the highway on the east side. The proposed pipeline would be located on the west side of the highway and may be collocated with a fiber-optic line that currently runs underground along the west side of the highway. The vegetation is low and even, and there is no change in vegetation where the TAPS is located.

Figure 67. KOP E, view from Finger Mountain Wayside turnoff, facing southeast.

KOP: E		Date: 6/29/16
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat to sloping foreground, rolling middle-ground and background	Form: low, numerous, regular	Form: flat and sloping
Line: horizontal foreground, horizontal to curving diagonal middle-ground and background	Line: curving diagonal	Line: horizontal
Color: gray and tan foreground and middle-ground, tan to blue background	Color: light green with dark green patches at middle-ground	Color: gray

Texture: smooth with rough patches in foreground, middle-ground, and background	Texture: smooth with rough patches	Texture: smooth

5.64.2.1 Proposed Activity Description

This KOP is located at Finger Mountain Wayside, 0.08 mile east of the proposed Mainline. The greatest contrast would be created by machinery and equipment present during construction. Weak contrast to landform and vegetation would be created by grading and clearing, and may be long term. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated. Mainline construction in the vicinity of this KOP is expected in summer 2021 and summer 2022.

Landform/Water

Due to the relatively flat landform in the immediate vicinity of this KOP, contrasts to landform would be weak to nonexistent in the short and long term. Smooth textures as well as gray and brown colors due to grading may introduce a weak contrast, but no contrast is anticipated to the form, line, and texture of the landform.

Vegetation

The Mainline would introduce weak to no contrast in vegetation. Some geometric and linear forms may be introduced by clearing. A contrast of light green colors created by new growth may be present in the short term but is not anticipated to be a long-term contrast.

Structure

Machinery and equipment would introduce moderate to weak contrast in structure during the construction phase. Because the pipeline would be below ground, no long-term contrast created by structures is anticipated.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear forms from clearing *Contrast:* weak	Form: verticals, horizontals, geometric *Contrast:* moderate
Line: horizontal *Contrast:* weak to none	Line: irregular line from clearing *Contrast:* weak	Line: vertical and horizontal *Contrast:* moderate
Color: brown, gray *Contrast:* weak	Color: light greens *Contrast:* weak	Color: tan, brown, yellow *Contrast:* moderate
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth to rough *Contrast:* moderate to weak
Contrast summary: Moderate to no contrast is anticipated in the short term, with moderate contrast introduced to structure and weak contrast to landform and vegetation. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak to none	Form: linear forms from clearing *Contrast:* weak to none	Form: NA *Contrast:* none
Line: horizontal	Line: irregular line from clearing	Line: NA

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Contrast: weak to none	*Contrast:* weak to none	*Contrast:* none
Color: brown, gray *Contrast:* weak to none	Color: light greens *Contrast:* weak to none	Color: NA *Contrast:* none
Texture: smooth *Contrast:* weak to none	Texture: patchy *Contrast:* weak to none	Texture: NA *Contrast:* none
Contrast summary: Weak long-term contrast is anticipated to landform and vegetation. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.64.3 Conclusion

The Finger Mountain Wayside is a stopping point for both recreational travelers and truck drivers. It has a substantial gravel parking area, restrooms, and several short interpretive trails with signs. Contrast introduced would be moderate to weak in the short term and weak to nonexistent in the long term. The presence of machinery and equipment would introduce moderate to weak contrast in structure during construction. Recommended mitigation includes minimizing vegetation clearing and employing BMPs to revegetate the area.

5.65 KOP D FINGER MOUNTAIN WAYSIDE – MP 98.1 DALTON HWY

5.65.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7362247.2, Easting 613468

Distance from proposed activity: 0.14 mile from the Mainline

5.65.2 Narrative

This KOP is located at a pedestrian viewpoint at Finger Mountain Wayside (Figure 68). The viewpoint is an overlook a short climb up from the parking lot on a gravel trail. It includes interpretive signs and an expansive view to the north. The topography consists of rolling hills and a broad river basin to the north, where the Kanuti River is located. The highway curves across the landscape on the west side of the basin. Many lakes and ponds are visible but the river itself is hard to distinguish. The TAPS is visible, with the two parallel stripes of adjacent vegetation prominent, as opposed to the portion closest to the KOP, which is not visible due to low continuous vegetation across the TAPS and landscape.

Figure 68. KOP D, view from Finger Mountain Wayside, facing northwest.

KOP: D		Date: 6/29/16
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: sloping foreground, rolling middle-ground and background	Form: low, numerous, regular vegetation	Form: flat and sloping
Line: curving diagonals at foreground, middle-ground, and background	Line: curving diagonals (following landform contours); linear along TAPS in middle-ground	Line: horizontal
Color: gray to tan foreground and middle-ground; tan to blue background	Color: light green with occasional dark green patches at middle-ground	Color: gray
Texture: smooth with rough and rugged patches in foreground and middle-ground	Texture: smooth with occasional rough patches	Texture: smooth

5.65.2.1 Proposed Activity Description

This KOP is located at Finger Mountain Wayside, 0.14 mile east of the proposed Mainline. Due to the topography and the continuous vegetation, the Mainline would not be visible at its closest location due west of the viewpoint with the exception of during construction. However, as evidenced by the TAPS, it would likely be visible in the middle-ground. Due to good visibility across the valley and lack of trees, the pipeline may introduce some contrast to the viewshed

both in the short and long term. Mainline construction in the vicinity of this KOP is expected in summer 2021 and summer 2022.

Landform/Water

Contrasts to landform would be weak to nonexistent in the short and long term. Gray and brown colors may introduce a weak contrast but no contrast is anticipated to the form, line, and texture of the landform.

Vegetation

Clearing would introduce linear forms, irregular lines, and patchy textures to the vegetation. Regrowth of vegetation following construction may result in an increase in light green colors. These traits would contrast weakly with the current vegetation both in the short and long term.

Structure

Contrasting structures would be limited to the short term because the pipeline would be below ground. During construction, however, moderate to weak contrast in form and line would be created by machinery and equipment. These would introduce verticals, horizontals, and geometric forms, as well as vertical and horizontal lines.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: linear forms from clearing *Contrast:* weak	Form: verticals, horizontals, geometric *Contrast:* moderate to weak
Line: NA *Contrast:* none	Line: irregular lines from clearing *Contrast:* weak	Line: vertical and horizontal *Contrast:* moderate to weak
Color: gray, brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: tan, brown, yellow *Contrast:* weak
Texture: smooth *Contrast:* none	Texture: rough *Contrast:* weak	Texture: smooth to rough *Contrast:* weak
Contrast summary: Weak contrast is anticipated to vegetation and structure, and no short-term contrast is anticipated to landform besides a weak contrast in landform color. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn them off when not needed and aim them away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: linear forms from clearing *Contrast:* weak	Form: NA *Contrast:* none
Line: NA *Contrast:* none	Line: irregular lines from clearing *Contrast:* weak	Line: NA *Contrast:* none
Color: gray, brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: NA *Contrast:* none
Texture: smooth *Contrast:* none	Texture: rough *Contrast:* weak	Texture: NA *Contrast:* none
Contrast summary: Weak contrast is anticipated to vegetation, as well as landform color. No long-term contrast is anticipated to form, line, or texture. No long-term contrast is anticipated to structure. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.65.3 Conclusion

The Finger Mountain Wayside is a stopping point for both recreational travelers and truck drivers. It has a substantial gravel parking area, restrooms, and several short interpretive trails with signs. Due to the distance between the Finger Mountain Wayside overlook and the portion of the Project that would be visible, contrast introduced would be weak to nonexistent in the long term. Short-term contrasts would be moderate to weak, due to nearby equipment and machinery associated with construction. Overall contrast would be weak. Recommended mitigation includes minimizing vegetation clearing and employing BMPs to revegetate the area.

5.66 KOP C ARCTIC CIRCLE CAMPGROUND – MP 115.6 DALTON HWY

5.66.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7383924, Easting 598077.8

Distance from proposed activity: 1.58 miles from the Mainline

5.66.2 Narrative

The Arctic Circle Campground is located 0.5 mile from the Dalton Highway and the Arctic Circle rest area and sign (Figure 69). It is within an area of dense vegetation including black spruce and birch. The TAPS and proposed pipeline are 1.5 miles east of the easternmost campsite and are not visible from this location. The campground is secluded and consists of a dirt loop road with campsites arranged in a radial pattern off the road. The ground is mostly flat and even, but consists of some small slopes that make the road bumpy in places. This KOP is located at the parking area and campsite that are closest to the TAPS and proposed Project, at the northeast side of the campground.

Figure 69. KOP C, view from Arctic Circle Campground, facing east.

KOP: C		Date: 6/29/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal, regular, flat to gently sloping	Form: dense, regular, continuous	Form: horizontal, flat
Line: horizontal, linear	Line: vertical, horizontal	Line: horizontal
Color: tan, gray	Color: light to dark green	Color: gray, tan
Texture: flat, smooth	Texture: complex, smooth	Texture: smooth

5.66.2.1 Proposed Activity Description

This KOP is located at the Arctic Circle Campground, 1.58 miles west of the proposed Mainline. Due to the distance and intervening vegetation, the pipeline would not be visible from this location in either the short or long term. No contrasts to landform, water, vegetation, or structure are anticipated.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible	Form: not visible	Form: not visible

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Contrast: none	*Contrast:* none	*Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast is anticipated. Additional mitigating measures recommended: None		

5.66.3 Conclusion

The Arctic Circle Campground is used by tourists on the Dalton Highway and is a popular stopping point due to the nearby Arctic Circle sign. The Project would not be visible from this location due to the distance and intervening vegetation and topography. No contrasts are anticipated in the short or long term.

5.67 KOP B GOBBLERS KNOB – MP 132.1 DALTON HWY

5.67.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7405161.9, Easting 602029.4

Distance from proposed activity: 0.72 mile from the Mainline and 0.75 mile from a materials site

5.67.2 Narrative

KOP B is located at the Gobblers Knob rest area, looking north toward Prospect Camp and Pump Station 5 (part of the current pipeline system) (Figure 70). The view is down into the river valley. The highway and TAPS are visible going across the valley in the background. A low ridge in the middle-ground blocks some of the view into the valley. Due to the ridge, the TAPS is not visible where it passes closer to the road (to the east and northeast) but is visible in the middle-ground moving into the background.

Figure 70. KOP B, view from Gobblers Knob rest area, facing north.

KOP: B		Date: 6/29/16
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: steep slope down in foreground; rolling, gradually sloping middle-ground; steep to sloping background	Form: regular vertical/horizontal foreground; continuous middle-ground and background	Form: horizontal, vertical, angular, geometric, linear
Line: horizontal, curving foreground and middle ground; diagonals at background	Line: curves and verticals in foreground; short verticals in middle ground; continuous background	Line: horizontal, vertical, diagonals, geometric forms
Color: tan foreground and middle ground; tan to blue background	Color: light to dark green, brown, foreground and middle ground; dark green to blue background	Color: tan, gray
Texture: smooth foreground, middle ground, and background	Texture: smooth foreground and background; smooth to coarse middle ground	Texture: smooth

5.67.2.1 Proposed Activity Description

This KOP is located at Gobblers Knob, 0.7 mile from the proposed Mainline. At its closest point, the Mainline would be approximately 0.7 mile due east. A materials site is located 0.75 mile east of the KOP but the materials site and this closest portion of the Mainline would not be visible due to the intervening topography. The Mainline may introduce weak contrasts to the landform and vegetation approximately 2.5 miles north of the KOP where it would cross the valley near the

TAPS. Mainline construction in the vicinity of this KOP is expected in summer 2021 and summer 2022.

Landform/Water

Due to the distance between the Gobblers Knob rest area and the portion of the Mainline that would be visible, the proposed Project would present weak to no contrast in landform in the short or long term. Grading may introduce weak contrast in line.

Vegetation

The Mainline would introduce weak to no contrast in vegetation. Some geometric and linear forms may be introduced by clearing. A contrast of light green colors created by new growth may be present in the short term but is not anticipated to be a long-term contrast.

Structure

Due to the distance between the Gobblers Knob rest area and the portion of the Mainline that would be visible, the proposed Project would introduce no contrast in structure in either the short or long term.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: geometric and linear forms created by clearing *Contrast:* weak to none	Form: NA *Contrast:* none
Line: horizontal *Contrast:* weak	Line: regular lines created by clearing *Contrast:* weak to none	Line: NA *Contrast:* none
Color: tan *Contrast:* weak to none	Color: light green *Contrast:* weak to none	Color: NA *Contrast:* none
Texture: smooth *Contrast:* none	Texture: smooth *Contrast:* weak	Texture: NA *Contrast:* none
Contrast summary: Weak contrast created by clearing for cut and fill. Additional mitigating measures recommended: Minimize vegetation clearing.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* none	Form: geometric and linear forms created by clearing *Contrast:* weak to none	Form: NA *Contrast:* none
Line: horizontal *Contrast:* none	Line: strong regular lines created by clearing *Contrast:* weak to none	Line: NA *Contrast:* none
Color: tan *Contrast:* none	Color: light green *Contrast:* none	Color: NA *Contrast:* none
Texture: smooth *Contrast:* none	Texture: smooth *Contrast:* none	Texture: NA *Contrast:* none
Additional mitigating measures recommended: Minimize vegetation clearing. Use BMPs to restore vegetation.		

5.67.3 Conclusion

This view is primarily experienced by truck drivers and tourists traveling along the Dalton Highway. Due to the ridge to the west, the pipeline would not be visible at its closest point. It would, however, be visible in the far middle-ground across the valley. Due to the distance, little to no contrast is anticipated from this location. Some weak short- and long-term contrast may be created by vegetation clearing. Overall the contrast would be weak to none. Recommended mitigation includes minimizing vegetation cutting and employing BMPs to revegetate the area.

5.68 KOP A COLDFOOT CAMP – MP 175 DALTON HWY

5.68.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 7462189.4, Easting 621812.4

Distance from proposed activity: 0.06 mile from camp and 0.1 mile from a pipe storage yard

5.68.2 Narrative

KOP A is located at Coldfoot Camp facing east toward the proposed camp (Figure 71). A majority of the foreground is a dirt parking area. A stream, which resembles a long pond from this vantage point, is on the right (southwest). The pond is surrounded by a grassy area, the south portion of which serves as a helicopter landing pad. Dense vegetation lines the edges of the dirt parking area. Due to the dense vegetation, no middle-ground is visible. Scenic, rugged mountains are visible to east and north/northwest.

Figure 71. KOP A, view from Coldfoot Camp, facing east.

KOP: A		Date: 6/29/16
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, rugged foreground; rugged, angular, and sloping background	Form: smooth strip of low vegetation, dense verticals at foreground; continuous, regular background	Form: flat, geometric
Line: horizontal foreground; curving to diagonal/angular background	Line: horizontals and curving; some verticals in foreground	Line: horizontal, geometric
Color: tan foreground, tan to brown background	Color: light to dark green	Color: tan, white, yellow, red, blue
Texture: smooth with some rough portions at foreground and background	Texture: smooth	Texture: smooth

5.68.2.1 Proposed Activity Description

The land adjacent to the northeast and southeast would be used as a camp and pipe storage yard, respectively. The edge of the camp would be approximately 0.06 mile from this KOP and the edge of the pipe storage yard would be approximately 0.1 mile from the KOP. Because the camp may be in use beyond the pipeline construction phase, associated contrasts are anticipated to be both short and long term. Project construction in the vicinity of this KOP is expected in summer 2021 and summer 2022.

Landform/Water

The construction of a pipe storage yard and camp would introduce horizontal and irregular forms and lines, brown to tan colors, and smooth textures to the current landform. Due to the grading and clearing of land already present within the current Coldfoot Camp, the contrast in form, line, color, and texture created by the addition of an adjacent camp would be weak. The camp is not anticipated to create any contrast with the small pond and stream in the foreground. Because the camp may be in use beyond the pipeline construction phase, these contrasts would be both short and long term.

Vegetation

Clearing would create geometric and linear forms, irregular lines, light greens, and patchy textures in the vegetation. The contrast would be moderate to strong in form and line. There would be a moderate contrast in color due to the clearing and regrowth. A moderate contrast would also be created in texture, which would be patchy, in contrast to the current dense line of vegetation along the eastern edge of Coldfoot Camp. Because the materials site may be in use beyond the pipeline construction phase, these contrasts would be both short and long term.

Structure

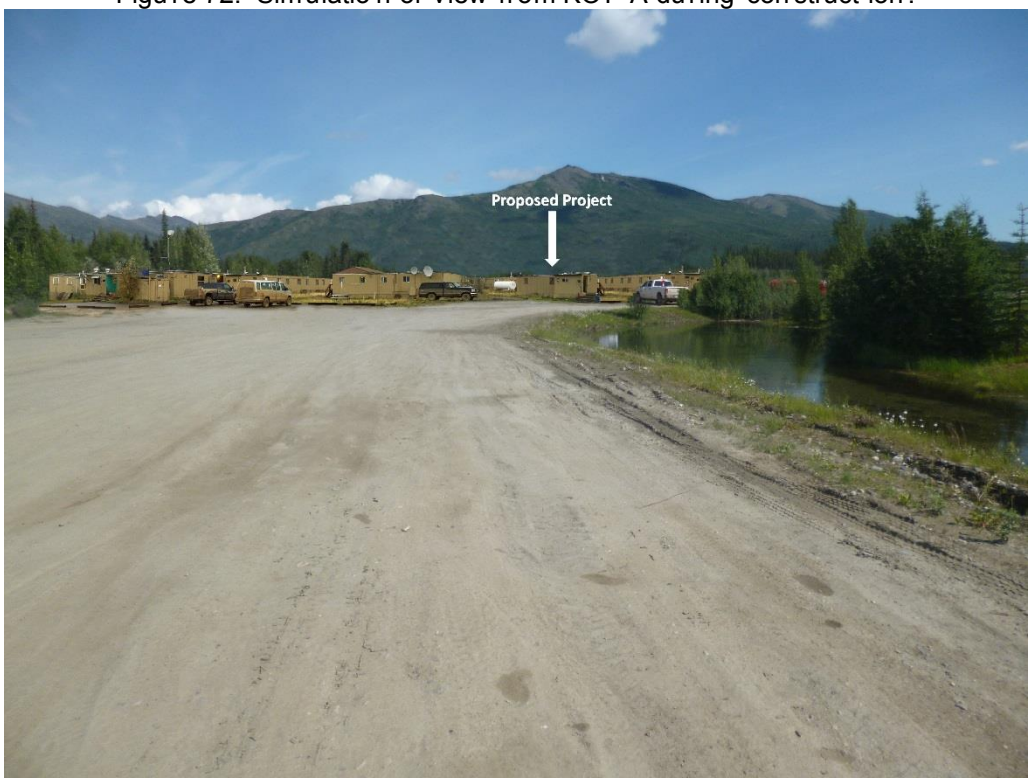
Machinery and equipment would introduce geometric and linear forms, vertical and horizontal lines, smooth textures, and yellow, brown, and gray colors. These elements would create weak to moderate contrast in the viewshed, depending on the location of the equipment and materials in association with the entry road.

5.68.3 Simulation

The KOP simulation depicts the proposed camp (Figure 72). As shown, the camp may introduce weak to moderate contrasts in landform and vegetation, which would be short term. Moderate to

strong contrasts may be introduced to the form and line of the vegetation. Some of these would be long-term contrasts if the camp's use were to continue after the construction phase.

Figure 72. Simulation of view from KOP A during construction.



Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: geometric and linear forms created by clearing *Contrast:* moderate to strong	Form: horizontals, verticals, geometric forms *Contrast:* weak
Line: horizontal *Contrast:* weak	Line: strong regular lines created by clearing *Contrast:* moderate	Line: horizontals, verticals, geometric forms *Contrast:* weak
Color: tan *Contrast:* weak	Color: light green *Contrast:* moderate	Color: yellow, brown, black *Contrast:* weak
Texture: smooth *Contrast:* weak	Texture: Smooth *Contrast:* weak	Texture: smooth *Contrast:* weak
Contrast summary: Strong to weak contrast is anticipated in the short term, including weak contrast in landform and structure, and moderate to strong contrast in vegetation. Additional mitigating measures recommended: Use similar colors—grays, tans—for materials. Minimize vegetation clearing.		

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: flat	Form: geometric and linear forms	Form: horizontals, verticals, geometric

Contrast Rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Contrast: Weak	created by clearing *Contrast:* Strong	forms *Contrast:* Weak
Line: horizontal *Contrast:* Weak	Line: strong regular lines created by clearing *Contrast:* Moderate	Line: horizontals, verticals, geometric forms *Contrast:* Weak
Color: tan *Contrast:* Weak	Color: light green *Contrast:* Moderate	Color: yellow, brown, black, gray, tan *Contrast:* Weak
Texture: smooth *Contrast:* Weak	Texture: smooth *Contrast:* Weak	Texture: smooth *Contrast:* Weak
Contrast summary: Long-term contrasts at this location depend on whether the camp is used after the construction phase. In this case, long-term contrasts would be similar to short-term contrasts. Contrast is anticipated to be weak for landform and structure, and weak to strong for vegetation. Additional mitigating measures recommended: Use similar colors—grays, tans—for materials. Minimize vegetation clearing. Use BMPs to restore vegetation.		

5.68.4 Conclusion

This view is primarily experienced by truck drivers and other workers, as well as tourists traveling along the Dalton Highway. The Coldfoot Camp is one of the primary places where tourists and workers can reserve hotel rooms, eat meals, and get gas on the Dalton Highway. The construction of a camp and pipe storage yard would have a moderate to weak overall impact on this location. Due to the high use of Coldfoot Camp, the Project would impact a large number of people. However, because there is extensive cultural modification already visible at this location, additional modifications would have less impact on the viewshed. Impacts from the addition of a camp and pipe storage yard could be minimized by using similar colors (such as grays and tans) for materials, minimizing vegetation clearing, and using BMPs to restore vegetation.

5.69 KOP 11 ARCTIC INTERAGENCY VISITOR CENTER, FACING NORTHEAST – MP 175 DALTON HWY, COLDFOOT, AK

5.69.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7462283.227, Easting 621366.801

Distance from proposed activity: approximately 0.8 mile from a compressor station, approximately 1.0 mile from the Mainline, approximately 0.8 mile from MLBV 15 (at the compressor station)

5.69.2 Narrative

KOP 11 is located in front of the Arctic Interagency Visitor Center, facing east-northeast (Figure 73). The flatness of the parking lot contrasts with the rolling hills and angular, rugged background. Vegetation provides additional contrast in the foreground with regular verticals from black spruces and birches. The colors of the vegetation in the foreground and background are primarily light to dark green, with some seasonal yellow and red. The snow-covered peaks in the background bring additional variety to the viewshed in their form, color, and irregularity.

Figure 73. KOP 11, Arctic Interagency Visitor Center, facing northeast.

KOP: 11		Date: 8/27/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, curving to angular/rugged background	Form: diverse, numerous foreground; low, solid to patchy background	Form: flat, curving
Line: horizontal, regular foreground; curving to rugged background	Line: vertical foreground, simple to broken background	Line: horizontal, curving
Color: browns and grays	Color: light to dark green, yellow to red seasonally	Color: brown, gray
Texture: uniform, medium foreground; patchy, rough background	Texture: random, dense, and medium-coarse to stippled and sparse	Texture: smooth, ordered

5.69.2.1 Proposed Activity Description

Compressor Station 6 would be constructed approximately 0.8 mile to the northeast of the KOP and the Arctic Interagency Visitor Center. The pipeline and Compressor Station 6 are located on the opposite side of the Dalton Highway from the Arctic Interagency Visitor Center. The slightly

curving entryway to the visitor center and the dense foliage make the Dalton Highway invisible from the visitor center parking lot. Project construction for the Mainline, compressor station, and MLBV is timed to occur during the summer of 2021 through the winter of 2021–2022.

Due to the distance between KOP 11 and the proposed activity, along with the dense vegetation, the proposed activity would not be visible from this KOP. Thus, no contrasts or changes are expected to landform/water, vegetation, or structure.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* none	Color: not visible *Contrast:* None
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none
Contrast summary: No short- or long-term contrast anticipated. Additional mitigating measures recommended: None		

5.69.3 Conclusions

Due to the vegetation screen that surrounds the visitor center, the Project features would not be visible from KOP 11. No contrast is anticipated during the short or long term.

5.70 KOP 10 ARCTIC INTERAGENCY VISITOR CENTER, FACING SOUTHEAST – MP 175 DALTON HWY, COLDFOOT, AK

5.70.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7462278.335, Easting 621362.935

Distance from proposed activity: approximately 0.4 mile from the camp and pipe storage yard, approximately 0.8 mile from the Mainline

5.70.2 Narrative

KOP 10 is located in front of the Arctic Interagency Visitor Center, facing southeast (Figure 74). The foreground is a flat, horizontal plane covered with lighter-colored birches and darker-green conifers. In the middle-ground, rolling peaks have sparse outcroppings with seasonal red and gold colors. Jagged, dark blue/brown peaks rise in the background, contrasting with the smooth textures of the middle-ground. The parking lot with its flat, horizontal lines, smooth textures, and muted grays and browns contrasts with but does not dominate the landscape.

Figure 74. KOP 10 Arctic Interagency Visitor Center, facing southeast.

KOP: 10		Date: 8/27/15
Scenic Quality Classification: B		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat foreground, curving to jagged background	Form: diverse, numerous in foreground; low, regular background	Form: flat, curving
Line: regular, horizontal foreground; curving to rugged background	Line: vertical foreground; simple, flowing background	Line: horizontal, curving
Color: brown to blue	Color: light to dark green, brown to red seasonally	Color: brown, gray
Texture: medium, even foreground; sparse, rough background	Texture: rough, even, dense foreground; even, uniform, medium background	Texture: smooth, ordered

5.70.2.1 Proposed Activity Description

Construction of the camp and pipe storage yard in Coldfoot is proposed approximately 0.4 mile to the southeast. The camp and pipe storage yard would be located on the other side of the Dalton Highway from the Arctic Interagency Visitor Center. The slightly curving entryway to the visitor center and the dense foliage make the Dalton Highway invisible from the visitor center parking lot. Project construction is timed to occur during the summer of 2021 through the winter of 2021–2022.

Due to the distance between the KOP and the proposed activity, along with the dense vegetation, the proposed activity would not be visible from this KOP. Thus, no contrasts or changes are expected to landform/water, vegetation, or structure.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: not visible *Contrast:* none	Form: not visible *Contrast:* none	Form: not visible *Contrast:* none
Line: not visible *Contrast:* none	Line: not visible *Contrast:* none	Line: not visible *Contrast:* none
Color: not visible *Contrast:* none	Color: not visible *Contrast:* None	Color: not visible *Contrast:* none
Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none	Texture: not visible *Contrast:* none

Contrast summary: No short- or long-term contrast anticipated.

Additional mitigating measures recommended: None

5.70.3 Conclusion

Due to the vegetation screen that surrounds the visitor center, the Project features would not be visible from KOP 10.

5.71 KOP 9 MARION CREEK CAMPGROUND – MP 179.7 DALTON HWY

5.71.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7469553.603, Easting 622064.728

Distance from proposed activity: adjacent to Mainline construction

5.71.2 Narrative

KOP 9 is located at the entrance/exit of Marion Creek Campground, facing west toward the Dalton Highway (Figure 75). The campground access road is a flat, horizontal plane bisected by the Dalton Highway. In the middle-ground rolling hills frame the view of jagged, snow-covered peaks in the background. Colors in the area range from the light to dark greens of the low shrubs punctuated by the darker greens of the black spruce along the road. The strong verticals of the black spruce in the foreground and the jagged peaks in the background contrast with the smoother, horizontal forms of the road and the valley floor.

Figure 75. KOP 9, Marion Creek Campground entrance road, facing west.

KOP: 9		Date: 8/27/15
Scenic Quality Classification: A		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: flat, horizontal foreground; moderate, gentle middle-ground; rugged, bold, distinct background	Form: regular, vertical, diverse foreground; solid, vertical, middle-ground; sparse background	Form: flat, horizontal
Line: horizontal, simple foreground; angular, converging, complex middle-ground; jagged, angular, diagonal background	Line: vertical, regular foreground and middle-ground; smooth background	Line: horizontal, straight, hard, smooth
Color: browns, grays	Color: mostly dark green, some light green; red and yellow seasonally	Color: gray, brown
Texture: medium-grain foreground; coarse patches middle-ground; coarse, matte background	Texture: rough, clumped foreground; rough, continuous, dense middle-ground; stippled, sparse background	Texture: smooth, ordered, matte

5.71.2.1 Proposed Activity Description

The proposed pipeline would be constructed below ground in the immediate foreground, crossing the campground entry road, using conventional grading. Mainline construction is timed to occur during the summer of 2021 through the winter of 2021–2022.

Landform/Water

The proposed belowground pipeline would introduce moderate to weak contrasts in landform. Grading, which would occur during the construction phase, would create more flat, horizontal forms and lines. Grading would also add more brown colors and fine to smooth textures. Some of the grading would be needed solely for construction but grading would also last long term above the location of the pipeline.

Vegetation

Clearing would create linear forms and irregular lines during construction that would also be a contrasting element in the long term. Regrowth following construction may add to the light green colors. The general texture of the vegetation may be patchier due to clearing and construction efforts.

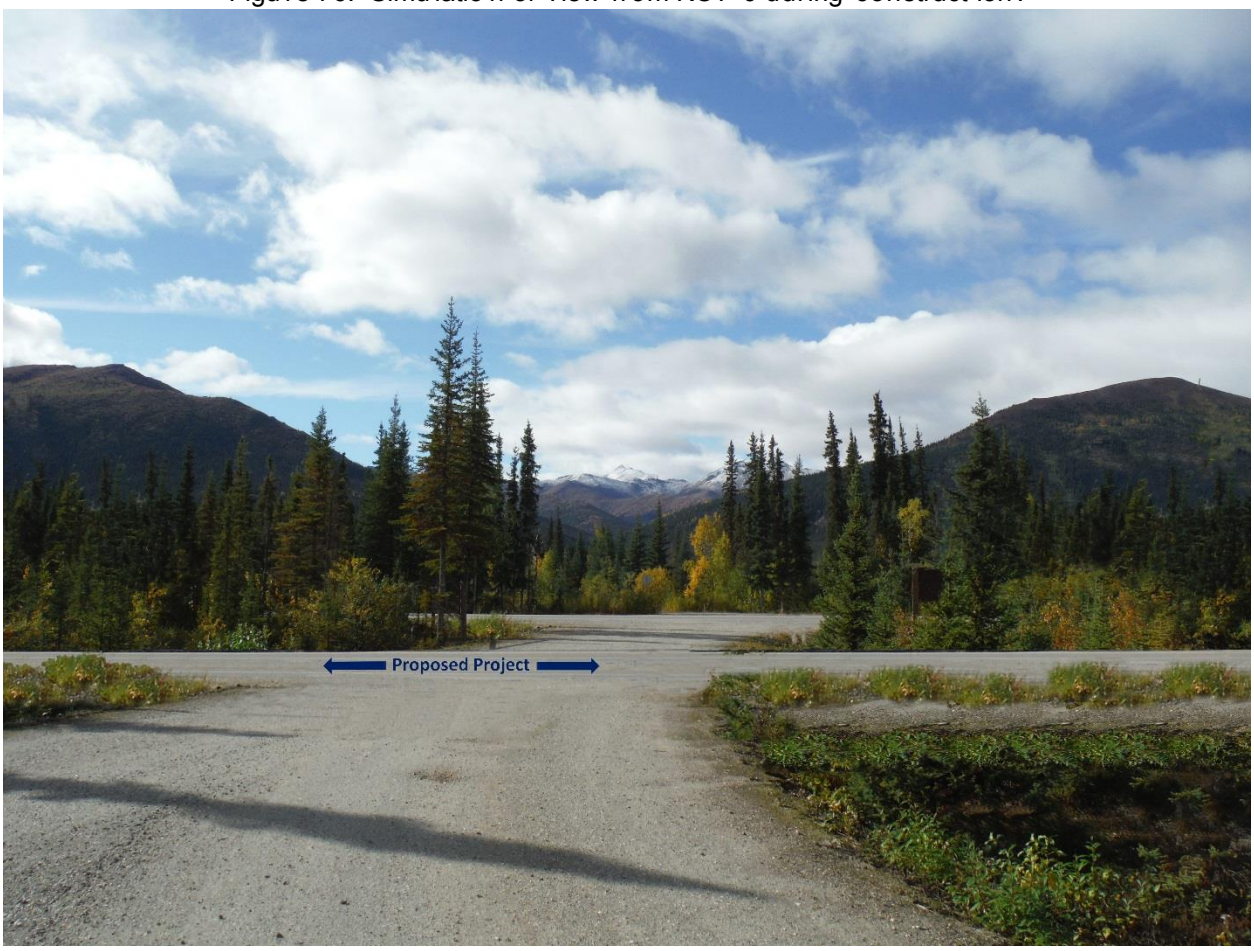
Structure

Construction equipment and machinery would create structural contrasts in the short term, adding geometric and cylindrical forms; vertical and horizontal lines; yellow, brown, and black colors; and smooth to coarse textures. Because the pipeline is proposed to be below ground, there are no long-term structural contrasts expected.

5.71.3 Simulation

The simulation of KOP 9 (Figure 76) depicts the view during construction. Contrast would be moderate during construction, because the pipeline would cross the entry road to Marion Creek Campground. Because the pipeline would be below ground, contrast in structure would go from moderate during construction to none in the long term. However, grading and vegetation clearing would create weak to moderate long-term contrast.

Figure 76. Simulation of view from KOP 9 during construction.



Contrast rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* moderate to weak	Form: linear form from clearing *Contrast:* moderate	Form: geometric (equipment) *Contrast:* moderate
Line: horizontal *Contrast:* weak	Line: irregular line from clearing *Contrast:* moderate	Line: vertical, horizontal *Contrast:* moderate
Color: brown *Contrast:* weak	Color: light greens *Contrast:* moderate	Color: yellow, brown, and black *Contrast:* moderate
Texture: fine to smooth *Contrast:* moderate	Texture: patchy *Contrast:* moderate	Texture: smooth to coarse *Contrast:* moderate
Contrast summary: Moderate contrast would be introduced to vegetation and structure from clearing and equipment, and weak contrast would be introduced to landform. Additional mitigating measures recommended: Minimize cutting of vegetation. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: linear form from clearing *Contrast:* moderate	Form: NA *Contrast:* none
Line: horizontal *Contrast:* weak	Line: irregular line from clearing *Contrast:* moderate	Line: NA *Contrast:* none
Color: brown Contrast: weak	Color: light greens Contrast: moderate	Color: NA *Contrast:* none
Texture: fine to smooth *Contrast:* moderate	Texture: patchy *Contrast:* moderate	Texture: NA *Contrast:* none
Contrast summary: Weak contrast would be introduced to landform and moderate contrast to vegetation due to clearing. No long-term contrast in structure anticipated. Additional mitigating measures recommended: Minimize clearing of vegetation, retain/restore vegetative screen.		

5.71.4 Conclusions

Marion Creek Campground is frequently used by motorists on the Dalton Highway. Contrasts to the existing landforms would result from grading for the pipeline. Clearing vegetation would also result in weak contrasts to the vegetation in both the short and long term. The colors and geometric forms of equipment in this location during construction would create moderate short-term contrast. Construction in this area should occur during winter to minimize impacts to tourists. Minimizing the amount of vegetation clearing and use of BMPs to restore vegetation would also reduce long-term impacts.

5.72 KOP 8 DALTON HIGHWAY NEAR REVISED STATUTE 2477 TRAIL (RST) 254/WISEMAN-CHANDALAR – PLEASE PROVIDE A MILEPOST

5.72.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7492362.111, Easting 634415.365

Distance from proposed activity: pipe storage yard 0.33 mile southeast, Mainline 0.1 miles east

5.72.2 Narrative

KOP 8 encompasses the view from Dalton Highway at the access to the Wiseman/Chandalar Trail looking east to the mountains (Figure 77). A band of dark green conifers is in the immediate foreground adjacent to the road. A horizontal plane used for gravel is in the middle-ground. This plane is dominated by the smoother textures of grasses and medium textures of gravels. A band of rough-textured conifers sits at the bottom of the mountains that rise gradually above the gravel storage area. The Dalton Highway and entrance road are regular, horizontal planes in the immediate foreground. The colors of the highway and entrance road are predominately grays and blacks.

Figure 77. View of existing gravel area from Dalton Highway, facing east (KOP 8).

KOP: 8		Date: 8/27/15
Scenic Quality Classification: B		Overall Sensitivity Rating: M
Landscape Description		
Landform/Water	**Vegetation**	**Structure**
Form: horizontal foreground, moderate to rugged background, no water	Form: rough, vertical foreground; strips, dense	Form: flat, horizontal, curving (road)
Line: regular, straight, horizontal foreground; diagonal, angular, rugged background	Line: verticals, regular, continuous	Line: horizontal, curving
Color: gray, brown foreground; gray middle-ground; brown and blue background	Color: dark greens with seasonal yellows and reds, reds dominate hill	Color: gray, tan
Texture: smooth foreground, medium to rough background	Texture: rough foreground; smooth middle-ground; uniform, dense, rough background	Texture: medium, uniform

5.72.2.1 Proposed Activity Description

A pipe storage yard would be located 0.33 mile to the southeast of KOP 8 during construction. The proposed pipeline would be below ground approximately 0.1 mile to the east. Due to the thick vegetation and the pipe storage yard's location southeast of the entry road, the pipe storage yard would not be visible from this location. However, some contrasts are anticipated from pipeline construction and long-term operation. Mainline construction is timed to occur during the summer of 2021 through the summer of 2022.

Landform/Water

While the pipe storage yard would not be visible and therefore would not create any contrasts to the landform, the pipeline itself would introduce contrasting forms, lines, colors, and textures to the landscape. Grading would contribute geometric and horizontal forms, horizontal lines, brown and tan colors, and medium-rough textures to the landform. Due to the horizontal qualities of the current landform and the dense vegetation adjacent to the road, the contrast would be weak. Contrasts are anticipated to be similar for the construction and operations phases.

Vegetation

The pipe storage yard would not be visible from KOP 8, but the construction of the pipeline a short distance from the road would create contrasts in vegetation. Clearing would introduce horizontal forms, irregular lines, light green colors, and patchy textures. Contrasts are anticipated to be similar for the construction and operations phases.

Structure

The pipe storage yard would not be visible from this location, but the proposed pipeline would create contrasts in structures on the landscape during the construction phase. Construction of the belowground pipeline would necessitate machinery and materials, which would introduce to the landscape rectangles and cylinders; horizontal and irregular lines; yellow, brown, and gray colors; and smooth textures. The short-term contrast in form would be moderate; the short-term contrast in line, color, and texture would be weak. Because the pipeline would be below ground, there is no long-term contrast in structures anticipated.

Contrast Rating: Construction/Short Term

Landform/Water	Vegetation	Structure
Form: pipe storage yard not visible; geometric, horizontal forms Contrast: Weak	Form: pipe storage yard not visible; horizontal clearing Contrast: Weak	Form: pipe storage yard not visible; rectangles, cylinders Contrast: Moderate
Line: horizontal lines Contrast: Weak	Line: pipeline irregular lines from clearing Contrast: Weak	Line: horizontal, irregular Contrast: Weak
Color: browns and tans Contrast: Weak	Color: light green Contrast: Weak	Color: yellow, brown, gray Contrast: Weak
Texture: medium-rough Contrast: Weak	Texture: patchy Contrast: Weak	Texture: construction equipment – smooth Contrast: Weak
Contrast summary: Moderate contrast would be expected in form from equipment used during construction. Weak contrast in landforms and vegetation would be expected from grading and clearing. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term		
Landform /Water	Vegetation	Structure
Form: geometric, horizontal *Contrast:* Weak	Form: Horizontal *Contrast:* Weak	Form: NA *Contrast:* None
Line: horizontals *Contrast:* Weak	Line: Irregular lines *Contrast:* Weak	Line: NA *Contrast:* None
Color: browns and tans *Contrast:* Weak	Color: light green *Contrast:* Weak	Color: NA *Contrast:* None
Texture: medium-rough *Contrast:* Weak	Texture: patchy *Contrast:* Weak	Texture: NA *Contrast:* None
Contrast summary: Weak contrast is expected in landforms and vegetation from grading and clearing. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.72.3 Conclusions

The area around KOP 8 is currently used for gravel storage, but the KOP is located adjacent to the Dalton Highway at the access for Revised Statute 2477 Trail (RST) 254. Weak contrasts to the landform would be created by grading for the pipeline. The clearing would result in weak contrasts to the vegetation. Use of equipment and storage of pipe in this location during construction would create weak contrasts. Construction in this area should occur during winter to minimize impacts to tourists. Minimizing the amount of vegetation clearing and using BMPs to restore vegetation would reduce long-term impacts.

5.73 KOP 7 PULLOUT BELOW ATIGUN PASS ON THE DALTON HIGHWAY – PLEASE PROVIDE A MILEPOST

5.73.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 7550408.27, Easting 639247.205

Distance from proposed activity: approximately 0.16 mile from Mainline construction

5.73.2 Narrative

KOP 7 is located at a pullout along the Dalton Highway (Figure 78). The pullout features a large dirt parking area, a restroom, and informational signs. These features are located behind the viewpoint but influence the scenic quality in the area. The existing TAPS is visible on the east side of the road. The vegetation consists of low shrubs with some verticals from low deciduous trees creating a patchy/irregular texture. The landform transitions from flat/horizontal in the foreground to a rolling, moderate middle-ground, and a steep, jagged background. Structures consist of the flat planes of the Dalton Highway. Vegetation provides contrast in form, line, color, and texture from the road in the foreground and mountains in the middle-ground and background.

Figure 78. KOP 7, pullout on the Dalton Highway below Atigun Pass, facing south.

KOP: 7		Date: 8/28/15
Scenic Quality Classification: A		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: horizontal, flat foreground; rolling, moderate middle-ground; jagged, steep background	Form: gentle, curing foreground; irregular middle-ground and background	Form: flat, cylindrical
Line: horizontal, curving foreground; curving, converging middle-ground; diagonal, angular background	Line: vertical foreground, and middle-ground; patchy background	Line: horizontal, curving, cylindrical
Color: brown, gray foreground and middle-ground; black, gray, white background	Color: seasonal gold foreground; red, green seasonal middle-ground; red, green background	Color: gray, tan
Texture: smooth foreground; rough middle-ground; smooth background	Texture: ordered, medium-rough foreground; smooth, patchy middle-ground; smooth background	Texture: smooth, fine

5.73.2.1 Proposed Activity Description

Construction of the belowground pipeline is proposed using various cut and fill techniques. The Pipeline is planned to cross the Dalton Highway approximately 0.16 mile to the south of KOP 7. Mainline construction is timed to occur during the summer of 2022 through the summer of 2023.

Landform/Water

The proposed pipeline would create weak contrasts in landform, adding flat and horizontal forms, horizontal and irregular lines, tan and brown colors, and smooth textures. The landform at the location of the proposed pipeline is already horizontal but digging and grading may create additional or bolder horizontals in the foreground. While the pipeline would be below ground, the long-term effects would be similar: additional horizontals, and possibly more smooth textures in the foreground.

Vegetation

Clearing for the pipeline would create more linear forms and irregular lines in the foreground vegetation. Clearing may also eliminate many of the vertical lines created by the trees directly adjacent to the road, creating a smoother and patchier vegetative landscape rather than a linear one. Regrowth following construction may introduce more light green colors to the landscape; however, pipeline construction and operation may eliminate many of the trees directly adjacent to the road, which supply a majority of the light green and yellow color. Shrub and grassland on the hills beyond is primarily dark green, brown, and yellow-to-red seasonally.

Structure

Construction would introduce several contrasts in structure to the landscape. Machinery and equipment would create: geometric, cylindrical, vertical, and horizontal forms; horizontal and vertical lines; yellow, brown, and black colors; and smooth textures. Because the pipeline would be below ground, there would be no long-term contrasts in structure.

5.73.3 Simulation

The simulation of KOP 7 (Figure 79) depicts the view during construction of the proposed pipeline. A greater contrast would be introduced to structures in the viewshed during construction; following construction, the pipeline would be below ground and construction machinery would no longer be present.

Figure 79. Simulation of view from KOP 7 during construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: flat, horizontal *Contrast:* weak	Form: linear forms from clearing *Contrast:* weak	Form: geometric, vertical, and horizontal *Contrast:* weak
Line: horizontal, irregular *Contrast:* weak	Line: irregular line from clearing, fewer verticals from loss of trees *Contrast:* weak	Line: horizontal, vertical, cylindrical *Contrast:* weak
Color: tan, brown *Contrast:* weak	Color: light green regrowth, loss of some light green/yellow *Contrast:* weak	Color: yellow, brown, and black *Contrast:* weak
Texture: smooth *Contrast:* weak	Texture: patchy *Contrast:* weak	Texture: smooth *Contrast:* weak
Contrast summary: Weak contrast created to landform, vegetation, and structure by construction machinery and equipment. Additional mitigating measures recommended: Limit vegetation clearing to areas within the permanent and temporary construction ROW of the proposed Mainline only. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: flat, horizontal *Contrast:* Weak	Form: linear forms from clearing *Contrast:* Weak	Form: NA *Contrast:* None
Line: horizontal, clearing *Contrast:* Weak	Line: irregular line from clearing *Contrast:* Weak	Line: NA *Contrast:* None
Color: tan, brown *Contrast:* Weak	Color: light green regrowth, loss of some light green/yellow *Contrast:* Weak	Color: NA *Contrast:* None
Texture: smooth *Contrast:* Weak	Texture: patchy *Contrast:* Weak	Texture: NA *Contrast:* None
Contrast summary: Weak long-term contrast would be created in landform and vegetation by grading and clearing. Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.73.4 Conclusion

Located near the base of Atigun Pass, this vehicular pullout is frequently used by motorists on the Dalton Highway. Contrasts to the existing landforms would occur from grading and trenching. Clearing vegetation would also result in weak contrasts to the vegetation in both the short and long term. The colors and geometric forms of equipment in this location during construction would create weak contrast. Construction in this area should occur during winter to minimize impacts to tourists. Minimizing the amount of vegetation clearing and use of BMPs to restore vegetation would reduce long-term impacts.

5.74 KOP 6 BASE OF ATIGUN PASS – PLEASE PROVIDE A MILEPOST

5.74.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 7562344.975, Easting 647733.11

Distance from proposed activity: adjacent to Mainline construction

5.74.2 Narrative

KOP 6 is located at a pullout just below Atigun Pass, where the current TAPS pipeline crosses under the road, facing southwest (Figure 80). Vegetation is sparse to none (mostly obscured by snow during the August 28, 2015, field visit). Landforms are flat and horizontal in the foreground and are more jagged in the background. The Dalton Highway slopes and curves as it traverses Atigun Pass. The dark uniform surface contrasts with the bright, coarse textures of the adjacent mountain slopes.

Figure 80. KOP 6, below the summit of Atigun Pass, facing southwest.

KOP: 6		Date: 8/28/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: jagged, slightly rounded, irregular	Form: little to none	Form: sloping, curving
Line: broken, hard, angular, rugged	Line: simple	Line: regular, curving
Color: browns, grays	Color: light green/brown	Color: brown
Texture: striped, rough, coarse	Texture: sparse, random	Texture: uniform, medium-smooth

5.74.2.1 Proposed Activity Description

Construction of the pipeline is proposed below ground, adjacent to the road using a variety of cut and fill techniques. Construction of the Mainline near this KOP is scheduled to occur between the summers of 2022 and 2023 (Construction Execution Plan – Pipeline, August 25, 2015). Wintertime construction is not proposed for this location. The Mainline would be constructed adjacent to the aboveground TAPS and Dalton Highway.

Landform/Water

The construction of a belowground pipeline adjacent to this KOP would introduce flat forms, horizontal lines, brown colors, and smooth-to-rough textures during both the construction and operation phases. These contrasts would be relatively weak due to the pipeline's location below ground.

Vegetation

Vegetation at this location is sparse, low, and may be lacking altogether in some locations. Vegetation may have an increase in horizontal forms and irregular lines due to clearing. In the first few years of the operations phase, there may be an increase in light greens and smoother textures as the vegetation regrows following construction. Contrasts created would be weak, both over the short term and the long term.

Structure

Moderate contrasts are anticipated in structure during the construction phase. The presence of machinery and materials would result in the addition of cylindrical, geometric, and angular forms; vertical, horizontal, and angular lines; tan, brown, and black colors; and coarse to smooth textures. There would be no contrasts in structure during the operations phase because the pipeline would be below ground.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: NA *Contrast:* None	Form: cylindrical, geometric, angular *Contrast:* Moderate
Line: horizontal *Contrast:* weak	Line: irregular lines *Contrast:* Weak	Line: vertical, horizontal, angular *Contrast:* Moderate
Color: brown *Contrast:* weak	Color: light green *Contrast:* Weak	Color: tan, brown, and black *Contrast:* Moderate
Texture: smooth to rough *Contrast:* weak	Texture: NA *Contrast:* None	Texture: coarse to smooth *Contrast:* Moderate
Contrast summary: weak contrast is expected in the landform and vegetation from grading and cut work. Additional short-term mitigating measures recommended: If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: NA *Contrast:* none	Form: NA *Contrast:* none
Line: horizontal *Contrast:* weak	Line: irregular lines *Contrast:* weak	Line: NA *Contrast:* none
Color: brown *Contrast:* weak	Color: light green *Contrast:* weak	Color: NA *Contrast:* none
Texture: smooth to rough *Contrast:* weak	Texture: NA *Contrast:* none	Texture: NA *Contrast:* none
Contrast summary: weak contrast is expected in the landform and vegetation from grading and cut work. Additional long-term mitigating measures recommended: Minimize vegetation clearing and employ BMPs to restore vegetation.		

5.74.3 Conclusions

KOP 6 is at the base of Atigun Pass. The viewpoint is a frequent stop for tourists and motorists using the Dalton Highway. As proposed the Project is directly adjacent to the TAPS and Dalton Highway. The geometric forms of construction equipment would create weak contrasts during the construction phase. Limiting construction to winter is recommended to minimize the impacts at this visually sensitive location. There would be some change in landform and vegetation from grading that would be visible during the summer months. Use of BMPs to restore vegetation is recommended.

5.75 KOP 5 ATIGUN PASS – MP 244.7 DALTON HWY

5.75.1 Basic Information

Visual Resource Inventory Class: IV

Location: Northing 7561530.366, Easting 646245.237

Distance from proposed activity: adjacent to Mainline construction

5.75.2 Narrative

KOP 5 includes the view from Atigun Pass (Figure 81). The landforms adjacent to the road are angular and rocky. The mountains in the middle-ground are jagged, slightly rounded, hard, and irregular. Vegetation (somewhat obscured by snow during the August 28, 2015, field visit) is sparse and random on the slopes. The Dalton Highway traverses the pass and is curving and steep in form. The regularity of the road contrasts with the rugged peaks and is remarkable for the steepness of the grade.

Figure 81. KOP 5, Atigun Pass, facing north.

KOP: 5		Date: 8/28/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: jagged, slightly rounded, irregular	Form: few	Form: curving, rolling, steep, smooth
Line: broken, angular, rugged, hard	Line: simple	Line: curving, regular
Color: browns, grays	Color: light green to brown	Color: brown
Texture: rough, coarse, random	Texture: sparse, random	Texture: medium smooth, uniform

5.75.2.1 Proposed Activity Description

Construction of belowground pipeline adjacent to the road (slightly to the east) is proposed using a variety of cut and fill and granular embankment fill techniques. Construction of the Mainline near this KOP is scheduled to occur between the summers of 2022 and 2023 (Construction Execution Plan – Pipeline, August 25, 2015). Wintertime construction is not proposed for this location. The Mainline would be constructed adjacent to the aboveground TAPS and Dalton Highway.

Landform/Water

The construction of a belowground pipeline adjacent to the road at this KOP location would introduce flat forms, horizontal lines, brown colors, and rough textures to the landform both during construction and in the long term, during operation. These contrasts in landform would be less visible during the winter due to snow cover.

Vegetation

Vegetation at this location is sparse, low, and may be lacking altogether in some locations. Vegetation may have an increase in horizontal forms and irregular lines due to clearing. In the first few years of the operations phase, there may be an increase in light greens and smoother textures as the vegetation regrows following construction. Contrasts created would be weak, both over the short term and the long term.

Structure

Because the pipeline is proposed to be below ground, there are no structural contrasts anticipated during the operations phase or over the long term. The construction phase, however, would introduce geometric forms; additional horizontal and vertical lines; yellow, brown, and black colors; and smooth textures. Due to the narrow area of construction in comparison to the broad viewshed, the contrast of these additional structures would be moderate to weak.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: horizontal lines forms from clearing *Contrast:* weak	Form: geometric forms from equipment *Contrast:* Moderate to weak
Line: horizontal *Contrast:* weak	Line: Irregular lines *Contrast:* weak	Line: additional horizontal and vertical lines from equipment *Contrast:* moderate to weak
Color: brown *Contrast:* weak	Color: NA *Contrast:* none	Color: yellow, brown, black *Contrast:* moderate to weak
Texture: rough *Contrast:* weak	Texture: NA *Contrast:* none	Texture: smooth *Contrast:* moderate to weak
Contrast summary: short-term weak impacts expected from use of construction equipment. Additional weak contrast expected in land and vegetation from grading and cutting. Additional short-term mitigating measures recommended: If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: flat *Contrast:* weak	Form: horizontal forms from clearing *Contrast:* weak	Form: NA *Contrast:* none
Line: horizontal *Contrast:* Weak	Line: irregular lines *Contrast:* Weak	Line: NA *Contrast:* none
Color: brown *Contrast:* weak	Color: brighter greens *Contrast:* weak	Color: NA *Contrast:* none
Texture: rough *Contrast:* weak	Texture: new vegetation may be smoother *Contrast:* weak	Texture: NA *Contrast:* none

Contrast summary: Weak long-term contrast expected from newer vegetation.
Additional mitigating measures recommended: Minimize vegetation clearing and employ BMPs to revegetate area.

5.75.3 Conclusion

KOP 5 is at the top of Atigun Pass. The viewpoint is a frequent stop for tourists and motorists using the Dalton Highway. As proposed the Project is directly adjacent to the TAPS and Dalton Highway. The geometric forms of construction equipment would create weak contrasts during the construction phase. There would be some change in landform and vegetation from grading. Limiting construction to winter is recommended to minimize the impacts at this visually sensitive location. Some long-term contrast in the vegetation would be visible during the summer months. BMPs should be employed to revegetate the area.

5.76 KOP 4 GALBRAITH CAMPGROUND VIEW TO THE SOUTH – MP 274.7 DALTON HWY

5.76.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7597679.898, Easting 643653.898

Distance from proposed activity: approximately 3.0 miles from the Mainline, approximately 3.5 miles from a compressor station, approximately 3.0 miles from MLBV 9.

5.76.2 Narrative

KOP 4 is located on the road to Galbraith Campground, looking southeast (Figure 82). The foreground is gently sloping toward Galbraith Lake. The background is jagged and irregular. The minimal vegetation consists of low, light green and brown grasses with yellow occurring seasonally. Minimal contrast is created by the horizontal, regular forms of the campground structures, while the jagged peaks contrast dramatically with the horizontal lake and flat landforms of the foreground. Other vertical forms in the distance consist of structures that are associated with the TAPS pumping station identified in Figure 82.

Figure 82. KOP 4, Galbraith Campground facing southeast.

KOP: 4		Date: 8/28/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform /Water	Vegetation	Structure
Form: sloping middle-ground and foreground; jagged, irregular background	Form: little to none	Form: sloping, horizontal
Line: foreground smooth, background rugged	Line: simple	Line: regular
Color: browns, gray	Color: light green, brown, yellow seasonally	Color: brown, gray
Texture: rough, coarse background, medium-rough foreground	Texture: sparse	Texture: uniform, medium smooth

5.76.2.1 Proposed Activity Description

Installation of pipeline below ground using various cut and fill techniques is proposed. The pipeline would be located to the west and east of the current TAPS, which is above ground. In this location the TAPS occurs between KOP 4 and the Mainline from Project pipeline segments south of MP 145.75. Construction of a compressor station is proposed approximately 3.5 miles to the southeast adjacent to the existing pump station. From this location the TAPS occurs between KOP 4 and the compressor station.

Construction of MLBV 9 is proposed at MP 146.2 along the Mainline north of the compressor station. In this location the TAPS occurs between KOP 4 and MLBV 9.

Due to the distance between the KOP and the proposed activity, along with the topography, the proposed activity would not be visible from this KOP. Thus, no contrasts or changes are expected to landform/water, vegetation, or structure.

Contrast Rating: Construction and Operation/Short Term and Long Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: NA *Contrast:* none	Form: NA *Contrast:* none
Line: NA *Contrast:* none	Line: NA *Contrast:* none	Line: NA *Contrast:* none
Color: NA *Contrast:* none	Color: NA *Contrast:* none	Color: NA *Contrast:* none
Texture: NA *Contrast:* none	Texture: NA *Contrast:* none	Texture: NA *Contrast:* none
Contrast summary: No contrast expected in the area during construction or operation. Additional short-term mitigating measures recommended: Maximize winter construction schedule to minimize impacts on tourists. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare. Additional long-term mitigating measures recommended. Employ BMPs to revegetate area. Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

5.76.3 Conclusion

The area around KOP 4 is used by tourists visiting the campground and by travelers on the Dalton Highway. Short-term contrast would be created by the use of equipment and presence of personnel. Long-term contrast from the compressor station would be weak. No contrast from the belowground pipeline is expected.

5.77 KOP 3 GALBRAITH CAMPGROUND VIEW TO THE NORTH – MP 274.7 DALTON HWY

5.77.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7597685.66, Easting 643652.292

Distance from proposed activity: approximately 0.4 mile from Galbraith Camp and the pipe storage yard

5.77.2 Narrative

KOP 3 is located on the road to Galbraith Campground, looking northeast (Figure 83). The foreground is gently sloping. There is an almost horizontal horizon to the north. To the northeast and east are jagged and irregular mountains. Vegetation is minimal, and colors are light green and brown with seasonal yellows. At the time of the site visit, vegetation was sparse against the snow. The road to the campground slopes and curves and disappears into the horizon.

Figure 83. KOP 3, entry road to Galbraith Campground facing north.

KOP: 3		Date: 8/28/15
Scenic Quality Classification: A		Overall Sensitivity Rating: H
Landscape Description		
Landform/Water	**Vegetation**	**Structure**
Form: sloping to flat middle-ground, rugged background	Form: little to none	Form: sloping, horizontal
Line: foreground smooth, background smooth to rugged	Line: simple	Line: regular
Color: browns, gray	Color: light green, brown, yellow seasonally	Color: brown, gray

Texture: medium-rough foreground, coarse background	Texture: sparse	Texture: uniform, medium smooth

5.77.2.1 Proposed Activity Description

A 120-bed work camp and pipe storage yard are proposed 0.4 mile to the north of KOP 3. Construction and operation of this camp, pipe storage yard, and construction of the nearby Mainline are proposed for the winter of 2019–2020 through the winter of 2022–2023 (Construction Execution Plan – Pipeline, August 25, 2015).

Landform/Water

No contrasts or changes are expected to landform or water during either the construction or operation phases. The landform is flat in form and line, and no water is present. Because the proposed activity in this location is a work camp and pipe storage yard, the contrast in the landscape would be temporary, with no long-term contrast expected.

Vegetation

Contrasts or changes expected to vegetation during construction are minimal to none. The presence of the work camp and pipe storage yard may result in additional horizontal and linear forms due to vegetation clearing. There may be an increase in light green colors during spring following the removal of the work camp and pipe storage yard, as vegetation grows back. No contrasts are anticipated during operation.

Structure

The presence of a work camp and pipe storage yard would introduce contrasting structures to the viewshed. Added forms would be geometric and cylindrical, adding horizontal and vertical lines, darker colors, and smooth textures to the viewshed. These changes would be temporary and expected to last only during the construction phase. No contrast is anticipated during operation.

5.77.3 Simulation

The simulation of KOP 3 (Figure 84) depicts the proposed work camp and pipe storage yard located on the road to Galbraith Campground. The addition of machinery and equipment would have a moderate to weak effect on the viewshed.

Figure 84. Simulation of view from KOP 3 after construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* None	Form: Clearing may create temporary horizontal forms *Contrast:* Weak to none	Form: geometric, cylindrical forms *Contrast:* Weak
Line: NA *Contrast:* None	Line: clearing may create temporary horizontal lines *Contrast:* Weak to none	Line: horizontal and vertical lines from new structures *Contrast:* Moderate
Color: NA *Contrast:* None	Color: possible increase in light green colors during vegetation regrowth *Contrast:* Weak to none	Color: darker colors *Contrast:* Weak
Texture: NA *Contrast:* None	Texture: NA *Contrast:* None	Texture: smooth textures *Contrast:* Weak
Contrast summary: Short-term weak contrast expected from the smooth textures, darker colors, and geometric forms of materials stored in the pipe storage yard and the structures developed for the camp. Additional mitigating measures recommended: Establish work camp and pipe storage yard in previously disturbed areas. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward in order to minimize glare.		

Contrast Rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* None	Form: NA *Contrast:* None	Form: NA *Contrast:* Weak
line: NA *Contrast:* None	Line: NA *Contrast:* None	Line: NA *Contrast:* None
Color: NA *Contrast:* None	Color: NA *Contrast:* None	Color: NA *Contrast:* None
Texture: NA *Contrast:* None	Texture: NA *Contrast:* None	Texture: NA *Contrast:* None
Contrast summary: No contrast expected in the area during operation. Additional mitigating measures recommended: None		

5.77.4 Conclusion

The view from KOP 3 is experienced by small numbers of tourists using the campground facilities; however, the use of this camp is timed to occur in the late-summer/fall of 2022 and into winter 2022–2023 when visitor activity is typically declining. Short-term contrast would be created by the use of the area to store materials and by the structures associated with the camp. The features would be visible but are not expected to dominate the view in the area. Use of fencing to screen the area and limiting construction to winter would minimize the impacts.

5.78 KOP 2 355 MILE WAYSIDE – MP 355 DALTON HWY

5.78.1 Basic Information

Visual Resource Inventory Class: III

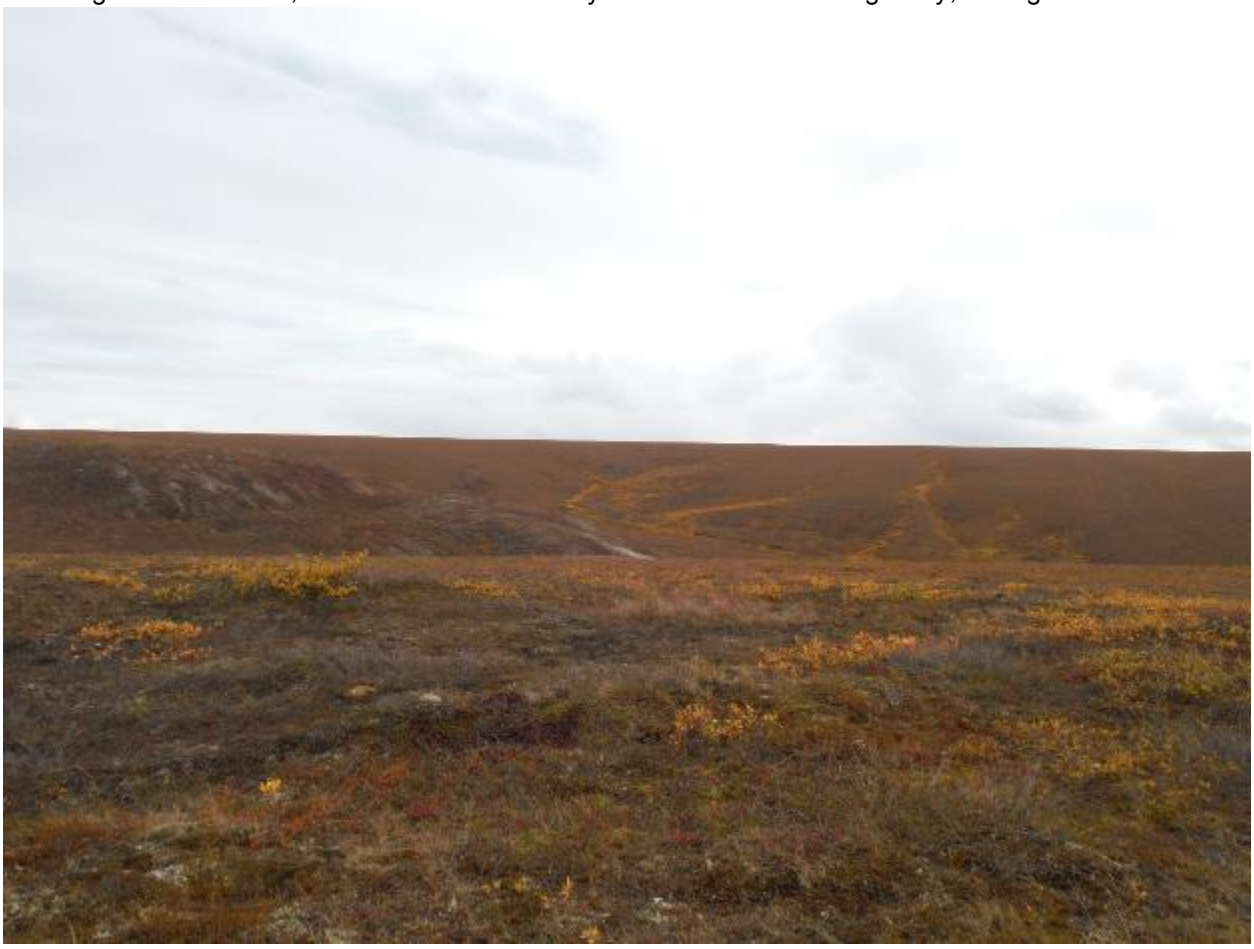
Location: Northing 7707328.445, Easting 668937.432

Distance from proposed activity: approximately 0.7 mile from the Mainline

5.78.2 Narrative

KOP 2 is located at the 355-mile wayside (located at Dalton Highway Milepost {MP} 355) on the Dalton Highway. The wayside consists of a gravel parking area, small bathroom, and informational panel (the latter two are located at the west end of the parking area). The view is flattened looking southwest toward the gentle slope of the next ridge (Figure 85). Vegetation consists of brown, tan, and green grasses with visible seasonal reds. The rolling landforms block the views of the Dalton Highway. There are no structures or water present in the view although the gravel parking area, restroom, and information panel located behind this viewpoint influence the quality of scenery.

Figure 85. KOP 2, view from 355-mile wayside on the Dalton Highway, facing southeast.



KOP: 2		Date: 8/28/15
Scenic Quality Classification: C		Overall Sensitivity Rating: M
Landscape Description		
Landform /Water	Vegetation	Structure
Form: rolling foreground and background, regular, curving	Form: short, regular	Form: NA
Line: soft, curving, horizontal, flowing	Line: soft, continuous	Line: NA
Color: brown, tan, gray	Color: brown, tan, green; red and yellow seasonal	Color: NA
Texture: medium to fine, patchy, spare	Texture: uniform, patchy by type	Texture: NA

5.78.2.1 Proposed Activity Description

Installation of pipeline is proposed below ground on a ridge approximately 0.7 mile to the east using conventional cut and fill techniques. Construction of the Mainline in areas adjacent to this

KOP (MP 56.8 to MP 113.1) is scheduled for winter of 2022–2023 (Construction Execution Plan – Pipeline, August 25, 2015).

Landform/Water

The contrast of landform anticipated from both construction and operation is weak to none. The form, line, and color and the present landforms would remain unchanged. Some medium-rough textures may be introduced during movement of dirt during construction and the potential addition of gravel over the cut during construction and operations.

Vegetation

Weak changes in form, line, color, and texture of vegetation are anticipated during construction and operation. Horizontal forms and lines may be created in the vegetation from clearing and may last through the operation period depending on cover methods. Horizontal lines of tan and light green colors are anticipated during and following clearing. Vegetative textures may be smoother as new vegetation starts to grow.

Structure

As depicted in the simulation of KOP 2 (Figure 86), changes in structure are anticipated during construction. Predicted changes would be short term only; no contrast in structure is anticipated during operation. The greatest contrast would be created by the presence of machinery and materials. These may introduce geometric and cylindrical forms; horizontal and vertical lines; yellow, brown, and black colors; and smooth textures.

5.78.3 Simulation

The simulation for KOP 2 (Figure 86) depicts the view from the 355-Mile Wayside of the proposed pipeline construction on the adjacent ridge if Mainline construction were to take place during the summer when public access to this KOP is possible. As depicted, contrast from the pipeline itself would be minimal because it would be below ground, but the short-term contrast created by machinery and equipment may be greater. As planned, sections of the Mainline would be constructed during the winter and would be inaccessible to the public during this period.

Figure 86. Simulation of view from KOP 2 during construction.

Contrast Rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* none	Form: potential added horizontals from clearing *Contrast:* weak	Form: geometric, cylindrical forms *Contrast:* moderate
Line: NA *Contrast:* none	Line: potential horizontal lines from clearing *Contrast:* weak	Line: horizontal and vertical *Contrast:* moderate
Color: NA *Contrast:* none	Color: horizontal lines created by clearing *Contrast:* weak	Color: yellow, brown, black *Contrast:* weak
Texture: addition of gravel over cut may cause weak changes in texture *Contrast:* weak	Texture: new vegetation may be smoother *Contrast:* weak	Texture: smooth *Contrast:* weak
Contrast summary: Weak contrast created by clearing for cut and fill. Additional mitigating measures recommended: Use previously disturbed areas during construction to minimize visual impacts. Winter construction will minimize visual impacts perceived by tourists.		

Contrast rating: Operation/Long Term

Landform/Water	Vegetation	Structure
Form: NA *Contrast:* None	Form: potential added horizontals from clearing *Contrast:* Weak	Form: NA *Contrast:* None
Line: NA *Contrast:* none	Line: Irregular lines *Contrast:* Weak	Line: NA *Contrast:* none
Color: NA *Contrast:* none	Color: brighter greens *Contrast:* Weak	Color: NA *Contrast:* none
Texture: addition of gravel over cut may cause weak changes in texture *Contrast:* Weak	Texture: new vegetation may be smoother *Contrast:* Weak	Texture: NA *Contrast:* none
Contrast summary: Weak contrast created by clearing and change in vegetation. Additional mitigating measures recommended: Use of best management practices (BMPs) to restore vegetation.		

5.78.4 Conclusion

During summer construction, the presence of equipment and personnel would result in weak contrast. Installation of the pipeline using cut and fill techniques would create weak contrast in the textures and colors of the vegetation in the short term. Some of this contrast would be visible long term; however, the Project's *Restoration Plan* (to be developed in consultation with agencies) will attempt to reduce the amount of this contrast. Recreational use of this area is limited. As proposed, construction near this KOP would be limited to the winter and would not be visible to visitors. Use of BMPs to restore vegetation would minimize the long-term visual impacts associated with the clearing.

5.79 KOP 1 TERMINUS OF DALTON HIGHWAY – MP 415 DALTON HWY, DEADHORSE

5.79.1 Basic Information

Visual Resource Inventory Class: III

Location: Northing 7795319.096, Easting 672139.477

Distance from proposed activity: approximately 7.5 miles from the GTP facility

5.79.2 Narrative

KOP 1 is located in Deadhorse, and looks north across Colleen Lake at the northern terminus of Dalton Highway where it culminates at Airport Way (Figure 87). The flat, still waters of the lake mirror the colors of the sky. The lake and flat landforms contrast with the geometric forms of the industrial structures that are clustered irregularly along the banks. Industrial structures in close proximity to the viewpoint reduce the scenic quality of the area. Vegetation consists of low plants in rough clumps. The dominant color in the area is provided by the vegetation, which ranges from green and brown with some seasonal yellows and reds, and the nearby structures, which consist primarily of white, gray, and tan metal structures. There are no trees visible.

This location is the closest a potential viewer could get to the Project facilities (approximately 6 miles northwest of this KOP). From this point, access to the Project occurs through the Prudhoe Bay Unit, which is largely secure as it is an area designated for oil and gas development. It is not

expected that visitors or individuals seeking recreational opportunities would go beyond this location.

Figure 87. KOP 1, the terminus of Dalton Highway at Colleen Lake in Deadhorse, facing northeast.

KOP: 1		Date: 8/28/15
Scenic Quality Classification: C		Overall Sensitivity Rating: L
Landscape Description		
Landform /Water	Vegetation	Structure
Form: irregular, blocky foreground; low, flat background and water	Form: short, low, rough	Form: horizontal, vertical, circular, geometric
Line: curving, irregular, simple	Line: horizontal, continuous, simple, irregular	Line: horizontal, vertical, circular, geometric
Color: brown, gray	Color: some green, brown, seasonal yellow/red	Color: browns, grays
Texture: uneven, random	Texture: clumped, medium, patchy	Texture: clumped, smooth, ordered

5.79.2.1 Proposed Activity Description

Construction of the GTP facility is proposed on the opposite shore of the lake, approximately 7.5 miles away. As visible in the simulation of KOP 1 (Figure 88), the GTP facility is far enough away that the impact is minimal to none. Construction of the GTP is scheduled to begin in the summer of 2018 and continue through full GTP completion in 2026 (GTP Project Execution Plan, Revision A, July 27, 2015).

Landform/Water

There would be no visible changes to landform or water during either the construction or operational periods. The landform is horizontal and flat; thus, no noticeable contrasts are expected, due especially to the great distance between the KOP and the GTP facility.

Vegetation

No change is anticipated to vegetation during the construction or operational periods. The distance between the KOP and the GTP facility is great enough that vegetation is not visible.

Structure

As visible in the simulation, the operational period of the GTP facility would introduce some horizontal and vertical lines and rectangular forms on the horizon on the opposite bank of Colleen Lake (on the right side in the simulation). Though added colors are anticipated to be tans and grays, the distance and low lighting much of the year mean that the majority of the distant landscape looks tan/gray despite there being actual colors. Textures of the proposed facility are anticipated to be smooth; the horizon is also currently smooth in texture due in part to materials and in part to the distance.

5.79.3 Simulation

The simulation for KOP 1 (Figure 88), shows the anticipated visual impact of the proposed GTP facility north of Colleen Lake. The facility would create some horizontal and vertical forms and lines along the horizon on the right side of the image. The contrast would be weak.

Figure 88. Simulation of KOP 1 view after construction.

Contrast rating: Construction/Short Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* None	Form: NA *Contrast:* None	Form: None *Contrast:* None
Line: NA *Contrast:* None	Line: NA *Contrast:* None	Line: None *Contrast:* None
Color: NA *Contrast:* None	Color: NA *Contrast:* None	Color: Tans, grays *Contrast:* None
Texture: NA *Contrast:* None	Texture: NA *Contrast:* None	Texture: Smooth *Contrast:* None
Contrast summary: No contrast from the construction activities is expected in this location. Additional mitigating measures recommended: Minimize vegetation clearing. If lights are employed during construction, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

Contrast rating: Operation/Long Term

Landform /Water	Vegetation	Structure
Form: NA *Contrast:* None	Form: NA *Contrast:* None	Form: Additional verticals in background *Contrast:* Weak
Line: NA *Contrast:* None	Line: NA *Contrast:* None	Line: Additional verticals in background *Contrast:* Weak
Color: NA *Contrast:* None	Color: NA *Contrast:* None	Color: Tans, grays *Contrast:* None
Texture: NA *Contrast:* None	Texture: NA *Contrast:* None	Texture: Smooth *Contrast:* None
Contrast summary: Contrast created by GTP facility operation is expect to be weak to none. Additional mitigating measures recommended: Minimize the use of smooth, reflective surfaces and use non-contrasting colors. If lights are employed during operation, turn off when not needed, and aim away from recreation areas and downward to minimize glare.		

5.79.4 Conclusion

At a distance of 7.5 miles, contrast created by the GTP facility is expected to be low. Geometric forms would be similar in size, scale, color, and texture to those found on the distant shorelines and those immediately adjacent to the KOP at the terminus of the Dalton Highway. Although the area experiences some use by tourists and tourists, the view is primarily experienced by oil and gas industry workers and would be similar to those currently experienced from this location and at nearby vantage points.

6.0 OVERALL CONCLUSIONS AND IMPACTS

The contrast ratings obtained from site visits and analysis indicate weak to no contrast at a majority of the KOPs resulting from the Project in either the short or long term. More than half of the KOPs would have no short-term or long-term contrasts introduced by the Project.

In the short term, approximately 18 KOPs would have moderate contrasts and three would have strong to moderate contrasts (KOP 33, KOP 29, and KOP 28). The Nenana River crossing (KOP 28), where an aerial bridge is proposed, is the only site that would have strong contrasts, due to the proximity of construction and lack of intervening landscape features. At the majority of KOPs where short-term contrast is anticipated, the contrast would be created by a temporary storage yard or camp. For approximately a dozen KOPs, these contrasts are moderate. There would be several facilities near these locations that would introduce moderate contrast, but due to the temporary nature of the facilities, contrast is not anticipated in the long term. More than half the KOPs are in locations where the proposed activities would not be visible. Visibility from some KOPs may be impossible due to distance, topography, dense vegetation, or some combination thereof. Examples of these include the KOPs located at the Yukon River bank, Arctic Interagency Visitor Center, and Mt. McKinley Princess Lodge (KOPs 13, 30, 37, S, and 37, respectively).

In the long term, 11 KOPs may experience moderate contrast, approximately a dozen KOPs would experience some weak contrasts, and more than 30 would experience no long-term contrast. Of the KOPs with potential long-term moderate contrast, four are locations where the proposed pipeline would cross a road (KOPs T, U, V, and 9), four are potential locations of materials sites or camps (KOPs 20, N, 31, and A), two are potential river crossings (KOPs 29 and 28), and one is a potential access road (KOP P). Both of the water crossings would be visible from the George Parks Highway. The Fox Creek location (KOP 29) is in a narrow ravine with dense foliage and thus may have the lesser impact of the two. The Nenana River crossing (KOP 28), however, would parallel and be within close range of the George Parks Highway bridge and in full view of travelers on the highway. As such, it is anticipated that this location would be the most significantly impacted by the proposed activity.

The KOPs that are expected to experience no long-term contrasts can be grouped into two categories: areas from which no proposed activities would be visible and areas that would only be affected in the short term. Examples of the first group, areas from which no proposed activities would be visible, include the Wilderness Access Center, the Arctic Interagency Visitor Center, the Mt. McKinley Princess Lodge, and the George Parks Highway Observation Deck (KOPs 30, 10, 37, and 38, respectively).

The average sensitivity level rating of the KOPs is medium-high; however, any contrast created would be within the current or recommended management class for a majority of the KOPs. This is due in large part to the number of KOPs for which no contrast is anticipated.

In locations where contrast is anticipated, mitigation measures are recommended. The following mitigation measures are general in nature, and would be subject to further engineering and environmental design in subsequent phases of the Project. As vegetation is a key feature to many of these landscapes, retaining and restoring vegetative features is part of several recommended mitigation measures. These mitigation recommendations include minimizing vegetation cutting, retaining vegetative screens, and using the Project Restoration Plan. Other types of mitigation include keeping some distance between public areas and facilities (which would allow for a vegetative screen and other visibility-decreasing elements).

At locations where lighting would be used, mitigation is recommended to reduce light emissions. This includes turning off lights when they are not needed, aiming lights away from recreation and high public use areas, and aiming lights downward to minimize glare. Further lighting recommendations are included in Resource Report No. 3 in relation to bird habitat.

Several locations were not visited during the field surveys due to accessibility. These include KOPs 46, 47, and 48, KOP R, KOP 23, and KOP F. These KOPs can be found on the overview map (Figure 1).

7.0 ACRONYMS AND TERMS

Term	Definition
°F	degrees Fahrenheit
ACEC	Areas of Critical Environmental Concern
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
AGDC	Alaska Gasline Development Corporation
BLM	Bureau of Land Management
BMP	best management practice
DNPP	Denali National Park and Preserve
EMALL	ExxonMobil Alaska LNG LLC
FERC	Federal Energy Regulatory Commission
GTP	Gas Treatment Plant
HDD	horizontal directional drill
KOP	Key Observation Point
MLBV	Mainline Block Valve
NEPA	National Environmental Policy Act
NGA	National Gas Act
NPS	National Park Service
PBTL	Prudhoe Bay Gas Transmission Line
PBU	Prudhoe Bay Unit
PTTL	Point Thomson Gas Transmission Line
PTU	Point Thomson Unit
RMP	Resource Management Plan
ROW	right-of-way
RST	Revised Statute 2477 Trail
SHPO	Alaska State Historic Preservation Office
SPCS	State Pipeline Coordinator's Section
TAPS	Trans-Alaska Pipeline System
TVSF	Tanana Valley State Forest
U.S.	United States
USFWS	United States Fish and Wildlife Service
VRM	visual resource management

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9.0 **ATTACHMENTS**

ATTACHMENT A: SENSITIVE RESOURCES WITHIN 15 MILES OF PROJECT PLANNING AREA

Attachment A – Sensitive Visual Resource Table

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
Arctic National Wildlife Refuge	National Wildlife Refuge	North Slope	Mainline, GTP	Yes	144	4.3
Denali National Park & Preserve	National Park and Preserve	Denali	Mainline	Yes	536	0.1
Denali State Park	State Park	Denali	Mainline	Yes	609	0
Gates of the Arctic National Park & Preserve	National Park and Preserve	North Slope, Northwest Arctic Borough	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	188	1.21
Iditarod National Historic Trail	National Historic Trail	Matanuska-Susitna Borough	Mainline	Yes	723.5	0
James Dalton Highway Corridor	Scenic Byway	North Slope	Mainline, GTP	Yes	0-406	0
Kanuti National Wildlife Refuge	National Wildlife Refuge	Yukon-Koyukok	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	298	9.61
Kenai National Moose Range	State/National Refuge	Kenai Peninsula Borough	Mainline, LTP	Yes	791	0
Kenai National Wildlife Refuge	National Wildlife Refuge	Kenai Peninsula Borough	Mainline, LTP	Yes	794	5.1
Kenai River Special Management Area	State Special Management Area	Kenai Peninsula Borough	Mainline, LTP	No - blocked by topography	LTP	9.4
Minto Flats State Game Refuge	State Game Refuge	Yukon-Koyukok	Mainline	Yes	432	0
Parks Highway	Scenic Byway	Denali	Mainline	Yes	471	0
Petersville Recreational Mining Area	State Recreational Mining Area	Matanuska-Susitna Borough	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible.	652	15.5
Redoubt Bay Critical Habitat	State Critical Habitat Area	Kenai Peninsula	Mainline	No - blocked by	800	12.2

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
		Borough		topography		
Susitna Flats State Game Refuge	State Game Refuge	Matanuska-Susitna Borough	Mainline	Yes	737	0
Tanana Valley State Forest	State Forest	Fairbanks North Star Borough	Mainline	Yes	409	0
Trading Bay State Game Refuge	State Game Refuge	Kenai Peninsula Borough	Mainline	No - blocked by topography	784	11.4
Willow Mountain Critical Habitat	State Critical Habitat Area	Matanuska-Susitna Borough	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible.	692	13.3
Yukon Flats National Wildlife Refuge	National Wildlife Refuge	Yukon-Koyukok	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible.	365	1.7
Nancy Lake State Recreation Area	State Recreation Area	Matanuska-Susitna Borough	Mainline	Possibly	710	7.4
Little Susitna Recreation River	State Rec River	Matanuska-Susitna Borough	Mainline	Possibly	721	11.4
Willow Creek State Recreation area	State Recreation Area	Matanuska-Susitna Borough	Mainline	No - blocked by topography	704	4.8
Alexander Creek SRR	State Rec River	Matanuska-Susitna Borough	Mainline	Yes	727	0
Talkeetna Recreation River	State Rec River	Matanuska-Susitna Borough	Mainline	Possibly	663	4.2
Kroto Creek and Moose Creek SRR	State Rec River	Matanuska-Susitna Borough	Mainline	Yes	703	0
Prudhoe Bay	City/Community	North Slope	Mainline, GTP	Possibly	1	4.4
Deadhorse	City/Community	North Slope	Mainline, GTP	Possibly	7	4.1
Wiseman	City/Community	Yukon-Koyukuk	Mainline	No - blocked by	230	0.7

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
				topography		
Livengood	City/Community	Yukon-Koyukuk	Mainline	Possibly - DEM not complete from Project feature to community	401	4.3
Old Minto	City/Community	Yukon-Koyukuk	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	450	12.5
Standard	City/Community	Yukon-Koyukuk	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	453	7.2
Nenana	City/Community	Yukon-Koyukuk	Mainline	Yes	474	0.7
Anderson	City/Community	Denali	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	489	3.2
Ferry	City/Community	Denali	Mainline	No - blocked by topography	520	1.2
Lignite	City/Community	Denali	Mainline	No - blocked by topography	522	1.3
Healy	City/Community	Denali	Mainline, Camp/PSY	Yes	529	1.9 (to mainline), 0.5 (to Camp/PSY)
Garner	City/Community	Denali	Mainline	Yes	530	0.3
Suntrana	City/Community	Denali	Mainline	No - blocked by topography	533	4.3
McKinley Park	City/Community	Denali	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	539	3.6
Cantwell	City/Community	Denali	Mainline, Camp/PSY	Yes	568	1.1

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
Summit	City/Community	Matanuska-Susitna	Mainline	Yes	575	0.3
Broad Pass	City/Community	Matanuska-Susitna	Mainline	Possibly	586	1.6
Colorado	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	592	1.4
Curry	City/Community	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	640	7.5
Chase	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	655	5.3
Talkeetna	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	666	5.0
Trapper Creek	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	670	5.2
Sunshine	City/Community	Matanuska-Susitna	Mainline/ PSY/Workpad	Yes to PSY/Workpad	677	4.2
Montana	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	683	4.3
Willow	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography	708	9.4
Tyonek	City/Community	Kenai Peninsula	Mainline	No - blocked by topography	766	4.7
Kustatan	City/Community	Kenai Peninsula	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	801	11.8
Nikiski	City/Community	Kenai Peninsula	Mainline, LTP	Yes	813	0.4
Kenai	City/Community	Kenai Peninsula	Mainline, LTP	Possibly	818	9.3

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
Ridgeway	City/Community	Kenai Peninsula	Mainline, LTP	Possibly	818	13.8
Salamatof	City/Community	Kenai Peninsula	Mainline, LTP	Yes	818	4.5
Susitna	City/Community	Matanuska-Susitna	Mainline	No - blocked by topography		
RST 450 Hickel Highway	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	63	0.0
RST 254 Wiseman-Chandalar	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	219	0.0
RST 1966 Caro-Coldfoot: West Fork Route	Trail	Yukon-Koyukuk	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	221	13.4
RST 899 Hammond River Trail	Trail	Yukon-Koyukuk	Mainline	Possibly	227	0.7
RST 262 Caro-Coldfoot	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	242	0.2
RST 591 Coldfoot-Junction Trail 49 (east route)	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	242	0.2
RST 9 COLDFOOT-CHANDALAR LAKE TRAIL	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	242	0.2
RST 9 Coldfoot-Chandalar Lake Trail	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	242	0.2
RST 209 Bettles-Coldfoot	Trail	Yukon-Koyukuk	Mainline	Yes	250	0.2
RST 1611 Bergman - Cathedral Mountain	Trail	Yukon-Koyukuk	Mainline	Yes	251	0.4
RST 412 Slate Creek	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	256	0.0

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
RST 38 Tramway Bar	Trail	Yukon-Koyukuk	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible.	257	2.9
RST 468 Hunter Creek-Livengood	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	401	0.2
RST 70 Ester-Dunbar	Trail	Yukon-Koyukuk	Camp/Pipe Storage Yard (PSY)	Yes	454	1.7
RST 66 Dunbar-Brooks Terminal	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	455	0.0
RST 1595 Dunbar-Minto-Tolovana	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	456	0.3
RST 152 Nenana-Tanana (serum run)	Trail	Yukon-Koyukuk	Mainline	Yes	472	0.2
RST 264 Old Mail Trail (Nenana-Minto)	Trail	Yukon-Koyukuk	Mainline	Yes	472	0.2
RST 346 Nenana-Kantishna	Trail	Yukon-Koyukuk	Mainline	Yes - crosses pipeline	474	0.4
RST 119 Kobi-Bonnifield Trail to Tatlanika Crk	Trail	Denali	Mainline	Yes	498	1.4
RST 345 Kobi-McGrath (via Nikolai & Big River)	Trail	Denali	Mainline	Yes - crosses pipeline	498	0.2
RST 343 Kobi-Kantishna	Trail	Denali	Mainline	Yes - crosses pipeline	499	0.3
RST 491 Rex-Roosevelt	Trail	Denali	Mainline	Yes - crosses pipeline	499	0.3
RST 340 Lignite-Stampede	Trail	Denali	Mainline	Yes - crosses pipeline	524	0.2
RST 344	Trail	Denali	Mainline	Yes - crosses pipeline	524	0.2

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
Lignite-Kantishna						
RST 709 Healy-Diamond Coal Mine Dirt Road	Trail	Denali	Mainline	Yes - crosses pipeline	528	0.1
RST 625 Cantwell Small Tracts Road (Lovers Lane)	Trail	Denali	Mainline	Yes - crosses pipeline	566	0.2
RST 707 Windy Creek Trails (Cantwell)	Trail	Denali	Camp/PSY	Yes	569	1.3
RST 52 Chulitna Trail	Trail	Matanuska-Susitna	Mainline	No - blocked by topography	606	2.3
RST 100 Indian River-Portage Creek Trail	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible.	608	4.3
RST 469 McWilliams-Gold Creek Trail	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	613	8.6
RST 1509 Curry Landing Strip - Lookout	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	639	4.1
RST 1608 Youngstown-Home Lake	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	643	11.4
RST 516 Black Creek Winter Trail	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	662	14.9
RST 331 Talkeetna-Iron Creek	Trail	Matanuska-Susitna	Mainline	Possibly	667	5.3

Table: Sensitive Areas within 15 miles of the Project Area

Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
RST 1691 Herning Trail-Question Creek	Trail	Matanuska-Susitna	Mainline	Possibly	677	4.4
RST 1506 Goose Creek Road	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	684	3.7
RST 536 Montana Loop Trail	Trail	Matanuska-Susitna	Mainline	No - blocked by topography	684	4.8
RST 1721 Kashwitna River Trail	Trail	Matanuska-Susitna	Mainline	No - blocked by topography	689	7.0
RST 149 Nancy Lake-Susitna	Trail	Matanuska-Susitna	Mainline	Possibly	724	1.0
RST 198 Susitna-McDougal	Trail	Matanuska-Susitna	Mainline	Yes - crosses pipeline	721	0.4
	Trail	Matanuska-Susitna	Mainline	Yes - crosses pipeline	723	0.0
RST 126 Lakeview-McDougal	Trail	Matanuska-Susitna	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	728	13.6
RST 1862 Beluga Indian Trail	Trail	Kenai Peninsula	Mainline	Yes - crosses pipeline	750	0.5
RST 200 Susitna-Tyonek	Trail	Kenai Peninsula	Mainline	Yes - crosses pipeline	764	0.0
RST 338 White River Trail	Trail	Kenai Peninsula	Mainline	No - blocked by topography	788	10.8
Blair Lake State Recreation Site	ILMA Park	Matanuska-Susitna	Mainline	No - blocked by topography	648	1.5
Dry Creek Site	ILMA Park	Matanuska-Susitna	Mainline	Yes	525	1.0
Montana Creek State	ILMA Park	Matanuska-	Mainline	No - blocked by	682	4.7

Table: Sensitive Areas within 15 miles of the Project Area

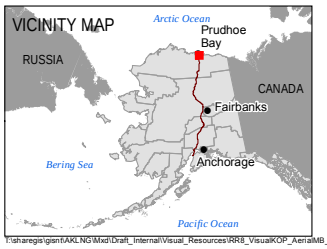
Sensitive Visual Resource	Description	Borough or Census Area	Project Facility Visible from Designated Visual Resource	Visible from Project Footprint[1,2]	MP	Approximate Distance to Project Feature
Recreation Site		Susitna		topography		
Nancy Lake State Recreation Site	ILMA Park	Matanuska-Susitna	Mainline	No - blocked by topography	709	11.3
The Pillars - KRSMA	ILMA Park	Matanuska-Susitna	LTP	Yes	818	13.3
Tokositna River State Recreation Area	ILMA Park	Matanuska-Susitna	Mainline	No - blocked by topography	646	6.2
Nenana River Gorge & Mckinley Village Special Use Area	Special Use Land	Denali	Mainline	No - blocked by topography	545	2.2
Nenana River Gorge & Mckinley Village Special Use Area	Special Use Land	Denali	Mainline	Yes - area overlaps pipeline	533-538	0
DNR Division of Mining, Land, and Water Realty Services Osl L Sh Esc	Special Use Land	Kenai Peninsula	Mainline	No DEM available but based upon distance Project features are not anticipated to be visible	754	11.2
North Slope Area Special Use Lands	Special Use Land	North Slope	Mainline, GTP	Yes - area overlaps pipeline	0-183	0

1 Visibility based on DEM (Digital Elevation Model) does not account for vegetation present that may reduce visibility.

2 Visibility from project footprint determined with Line- of-Sight analysis with ESRI ArcGIS desktop analysis in areas with sufficient DEM availability.

ATTACHMENT B: VISUAL RESOURCE DETAIL MAPS FOR KEY OBSERVATION POINTS

VICINITY MAP



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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 Miles

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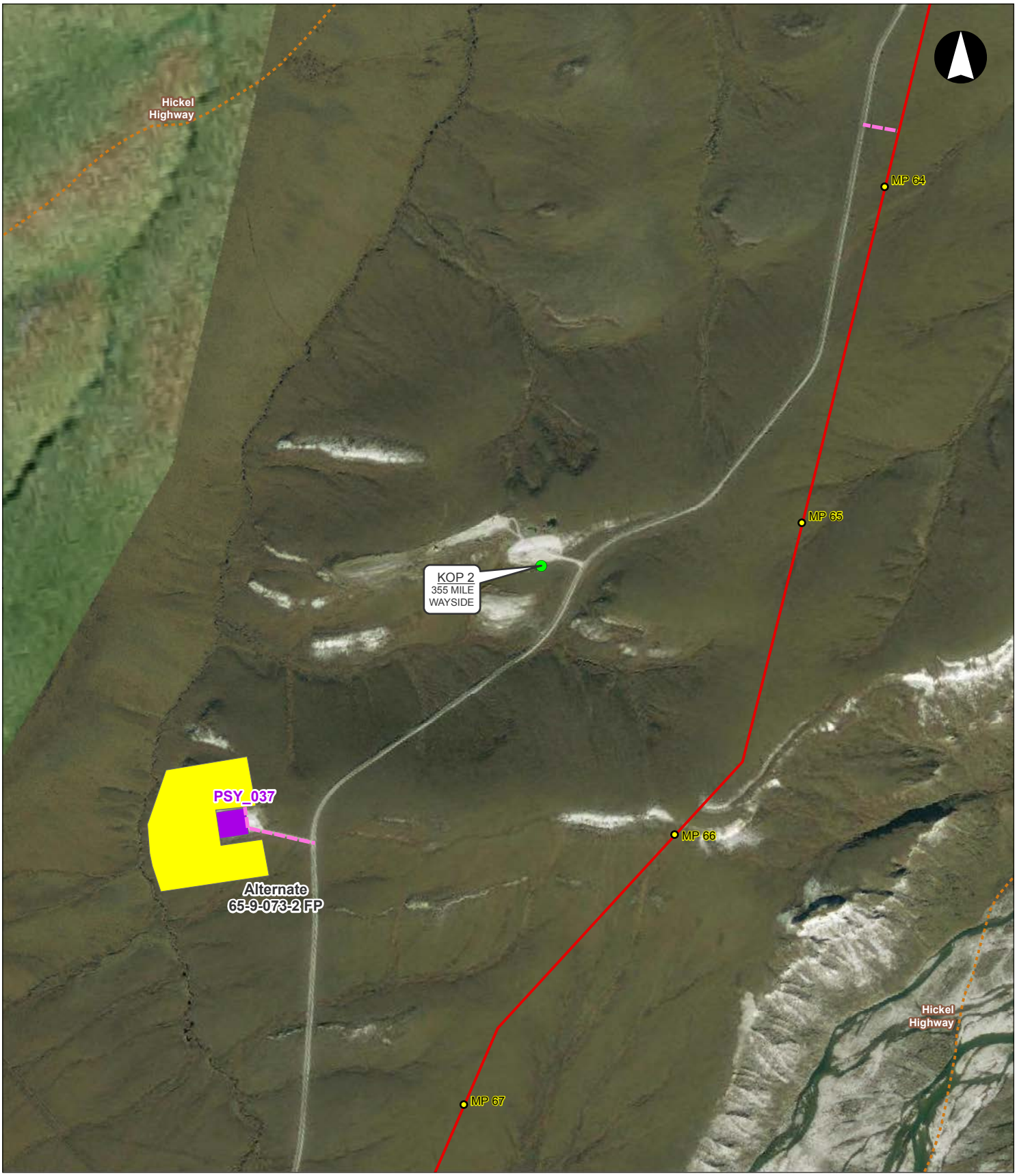
SCALE:	1:24,050		
DATE:	2016-07-26	SHEET:	1 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 1 (2015)



VICINITY MAP

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LEGEND

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0 0.25 0.5 Miles

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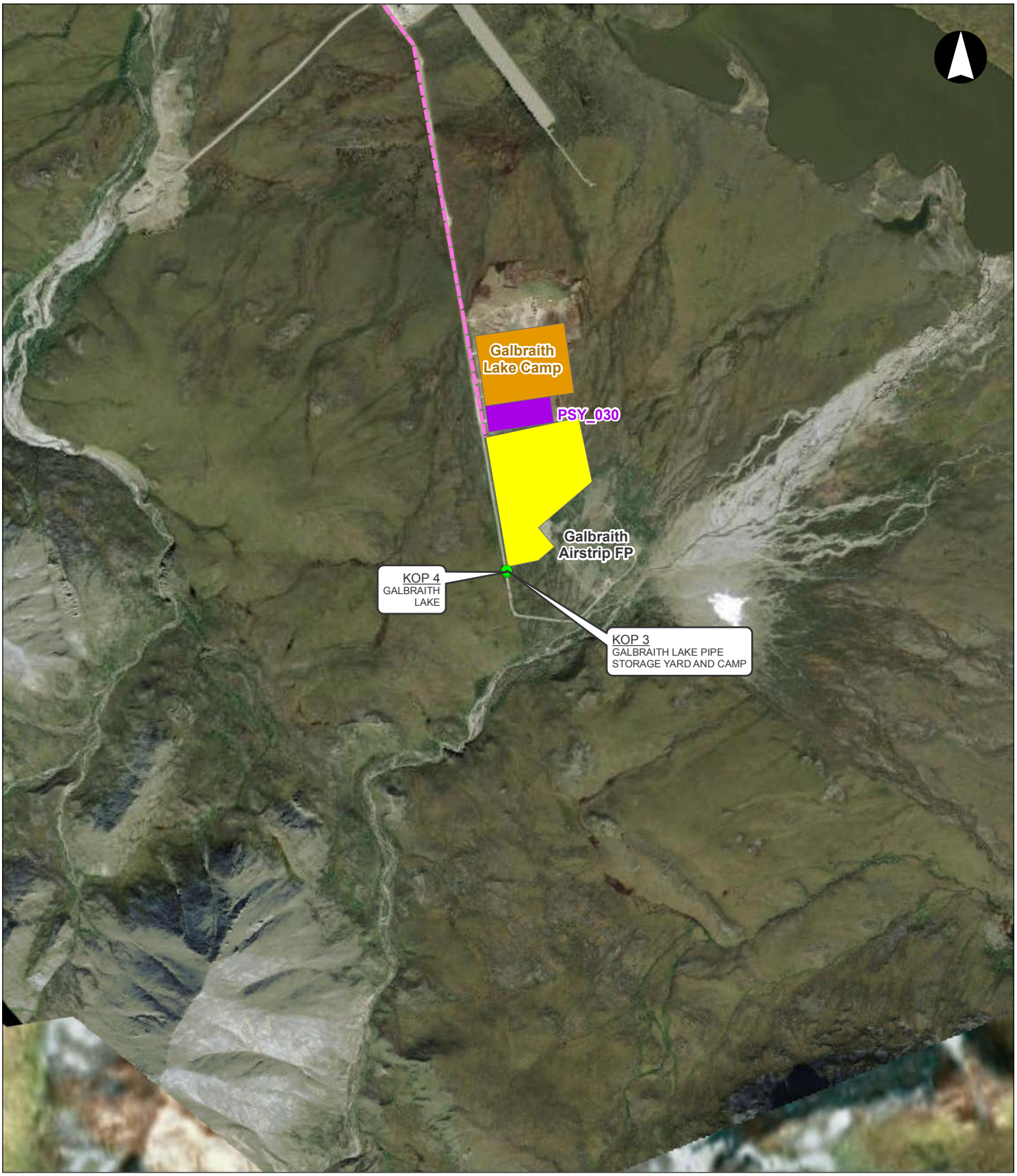
VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT: KOP 2 (2015)



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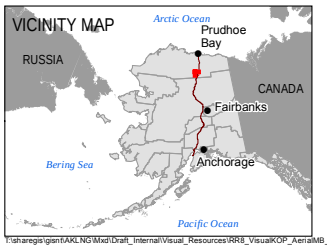

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LEGEND

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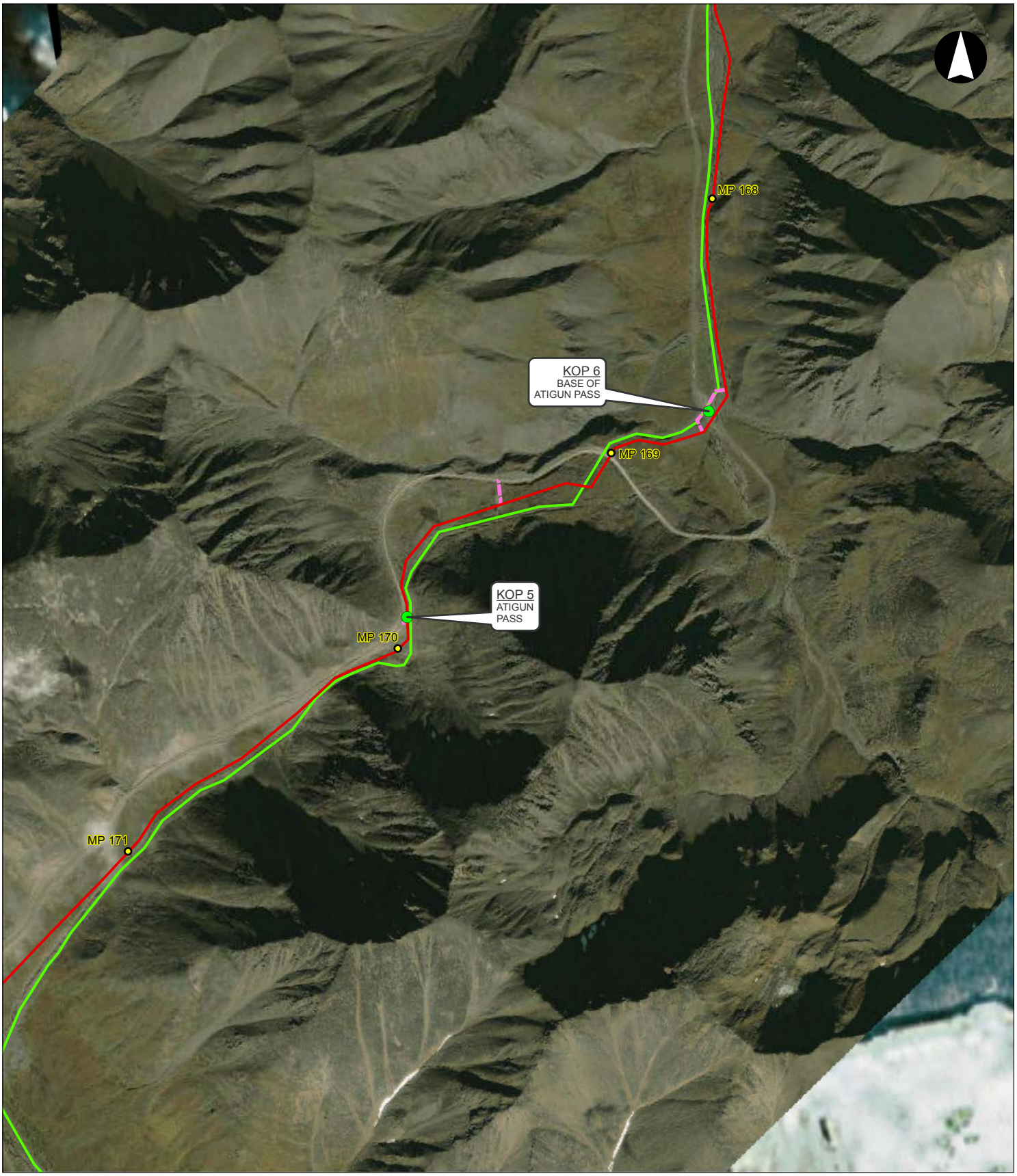
VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 3 AND 4 (2015)



VICINITY MAP

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LEGEND

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- Material Site
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0 0.25 0.5 Miles

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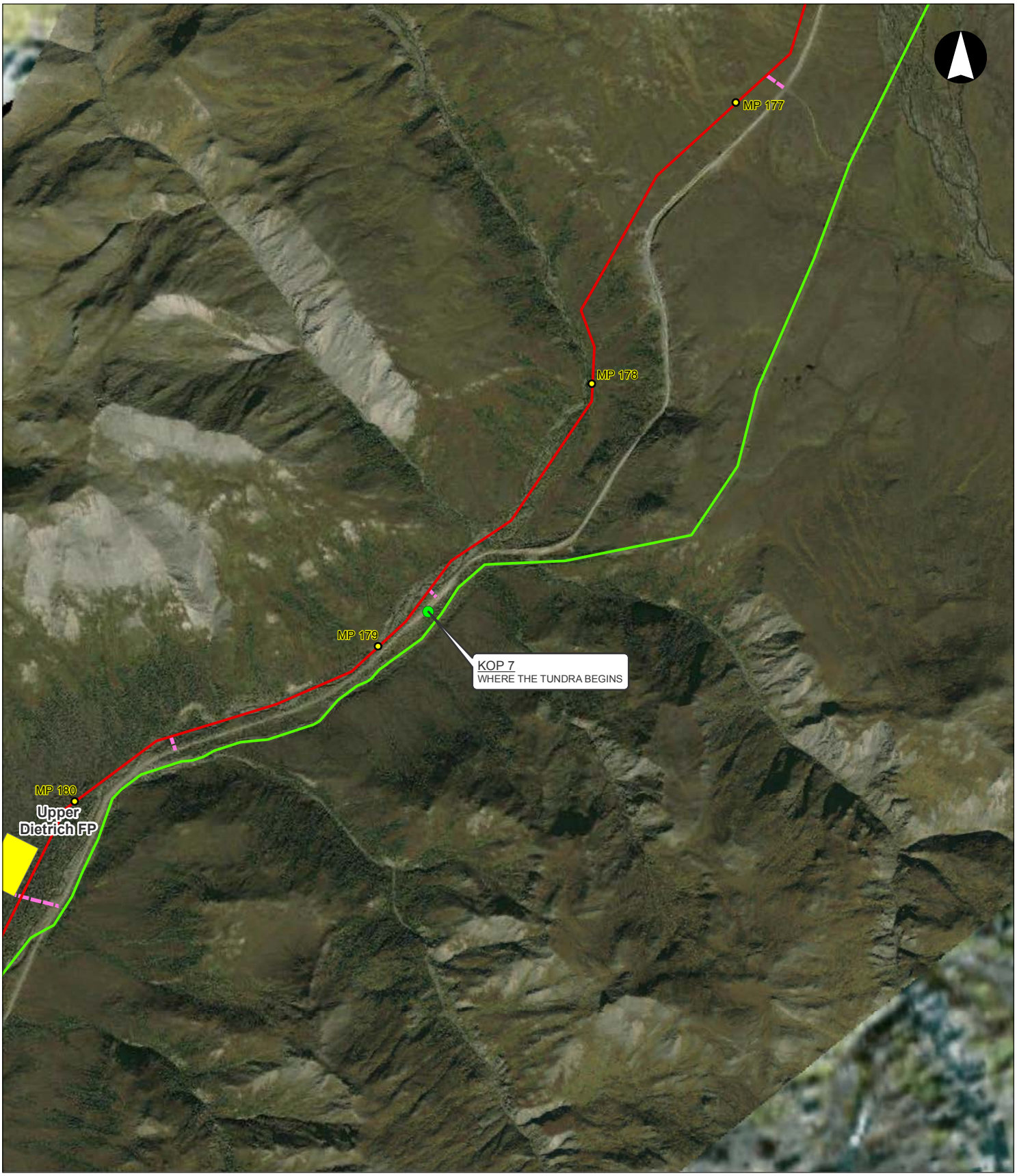
DATE:	2016-07-26	SHEET:	4 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 5 AND 6 (2015)



VICINITY MAP

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LEGEND

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0 0.25 0.5 Miles

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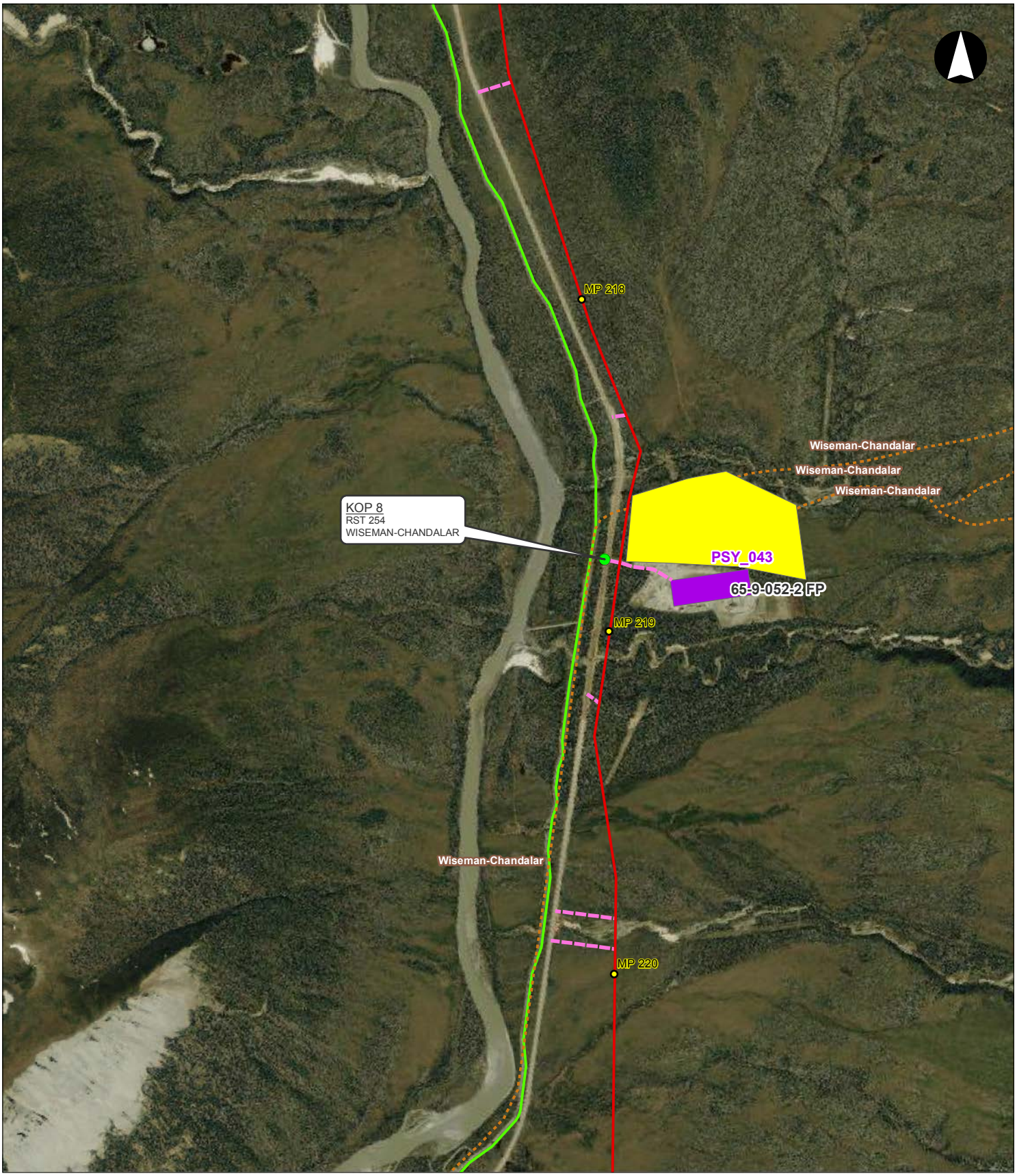
VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 7 (2015)



VICINITY MAP

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LEGEND

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- Park/Refuge Boundary

0 0.25 0.5 Miles

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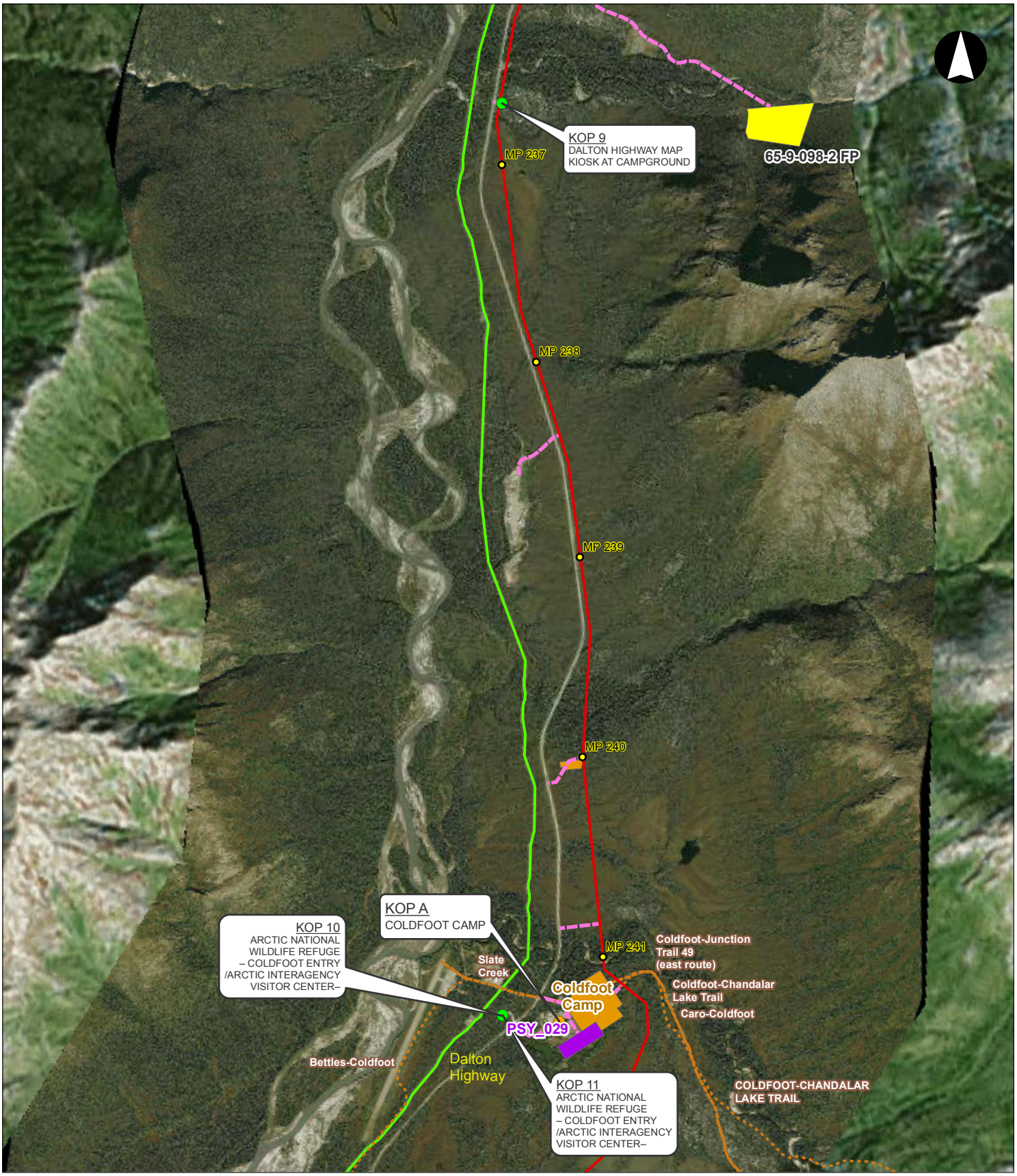
SCALE:	1:24,050		
DATE:	2016-07-26	SHEET:	6 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 8 (2015)



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LEGEND

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0 0.25 0.5 1 Miles

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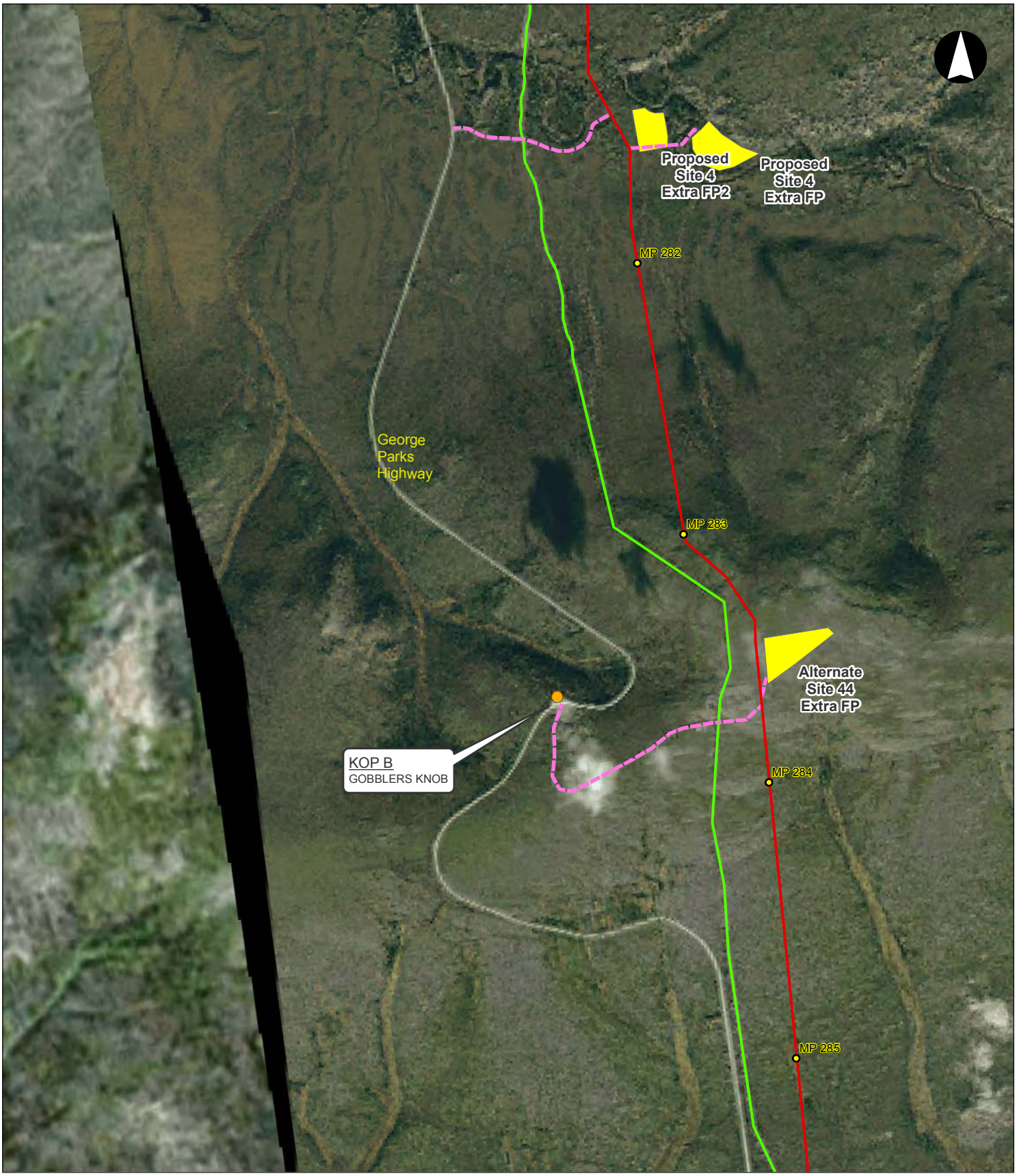
VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP A



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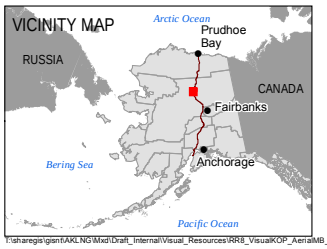

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LEGEND

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- Park/Refuge Boundary

0 0.25 0.5 Miles

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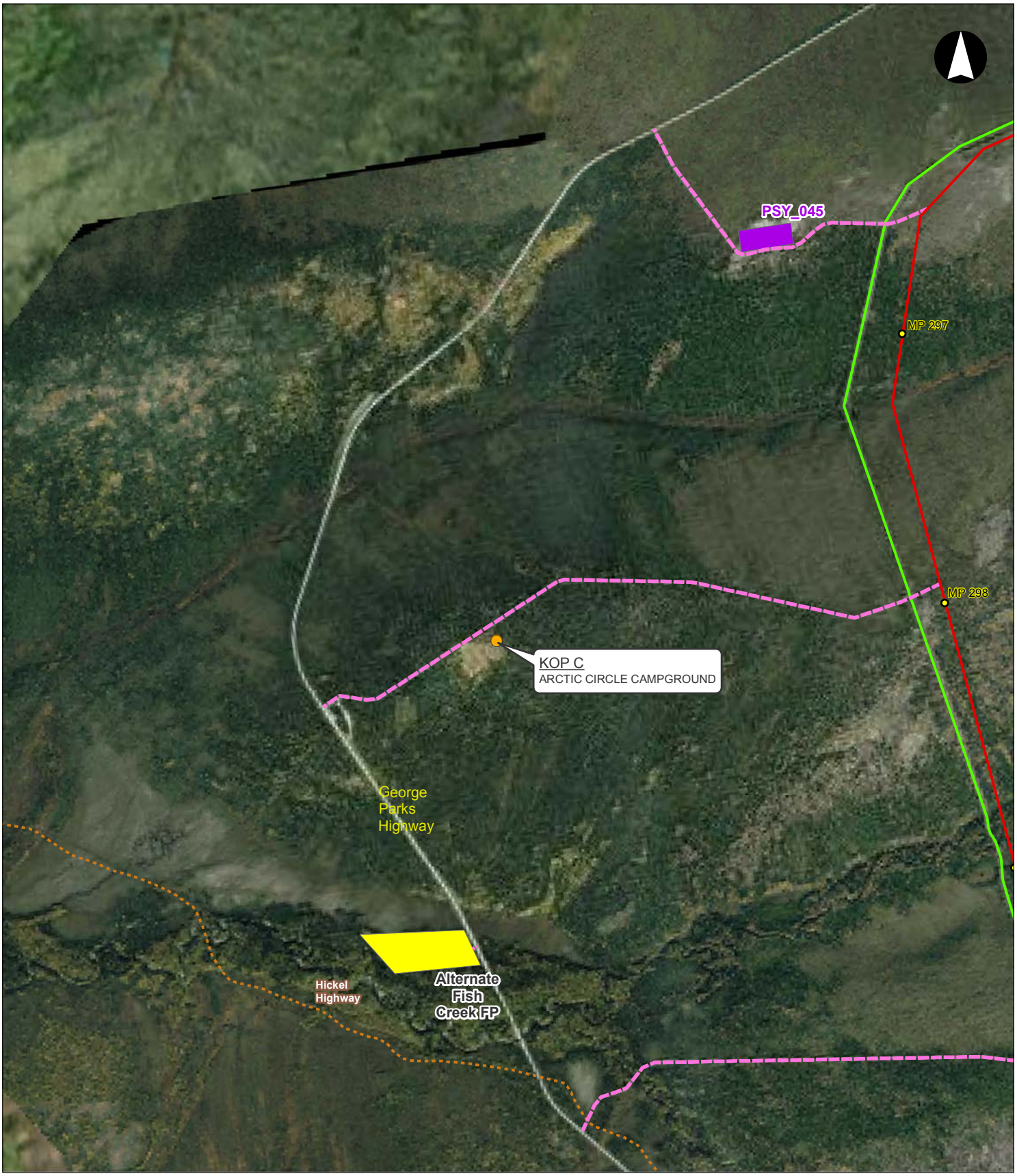
SCALE:	1:29,810		
DATE:	2016-07-26	SHEET:	8 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP B



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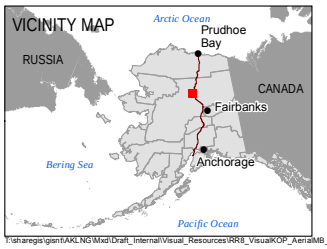

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LEGEND

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0 0.25 0.5 Miles

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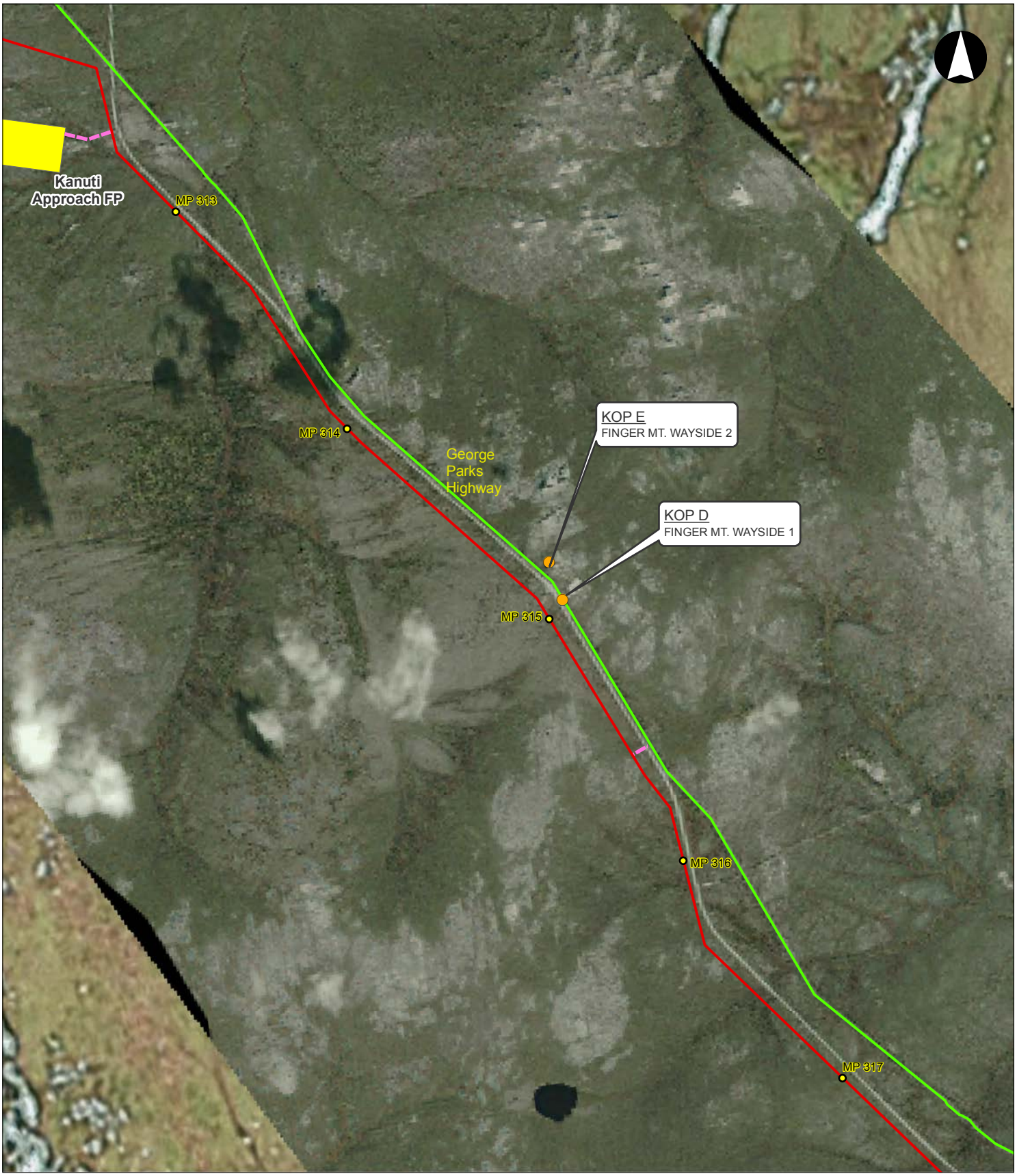
VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP C



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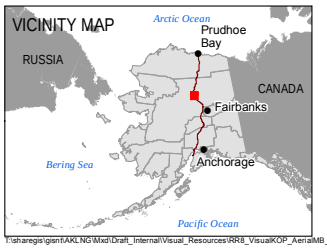

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LEGEND

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- Material Site
- Park/Refuge Boundary

0 0.25 0.5 Miles

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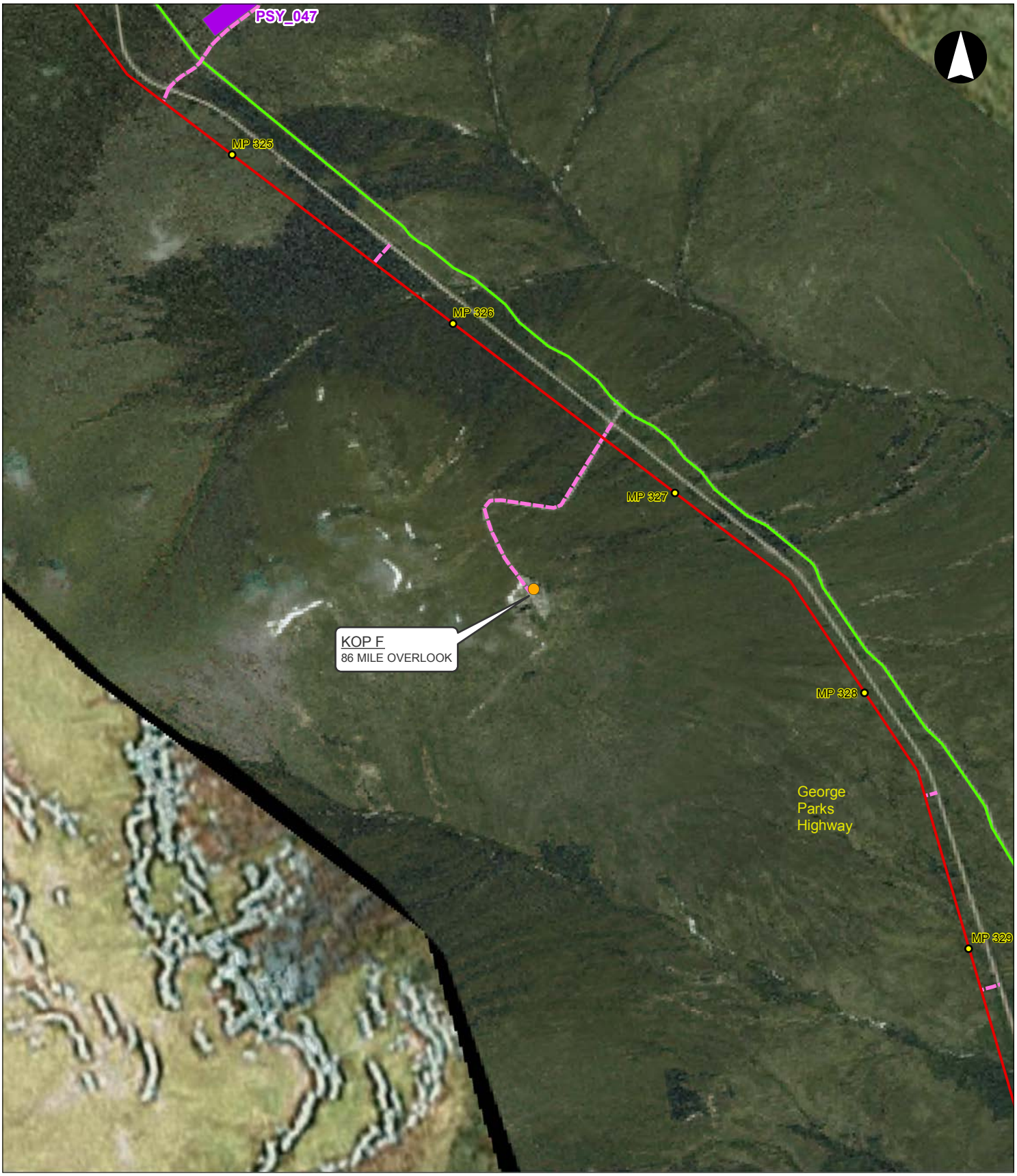
DATE:	2016-07-26	SHEET:	10 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP D, E



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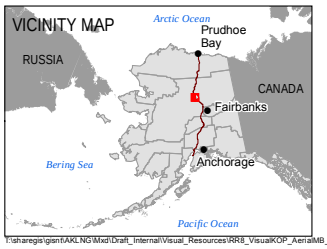

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LEGEND

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0 0.25 0.5 Miles

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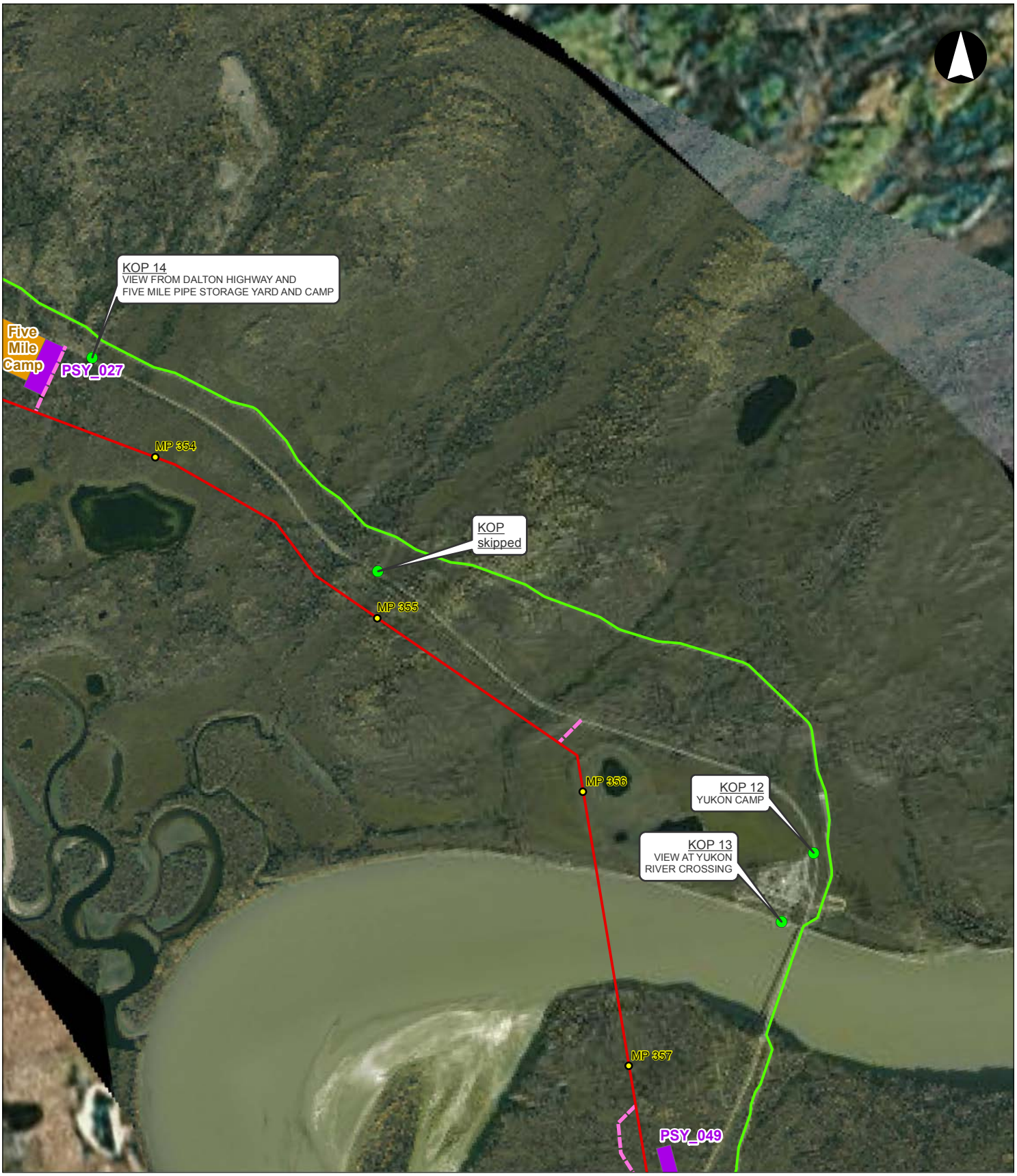
DATE:	2016-07-26	SHEET:	11 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP F



VICINITY MAP

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LEGEND

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0 0.25 0.5 Miles

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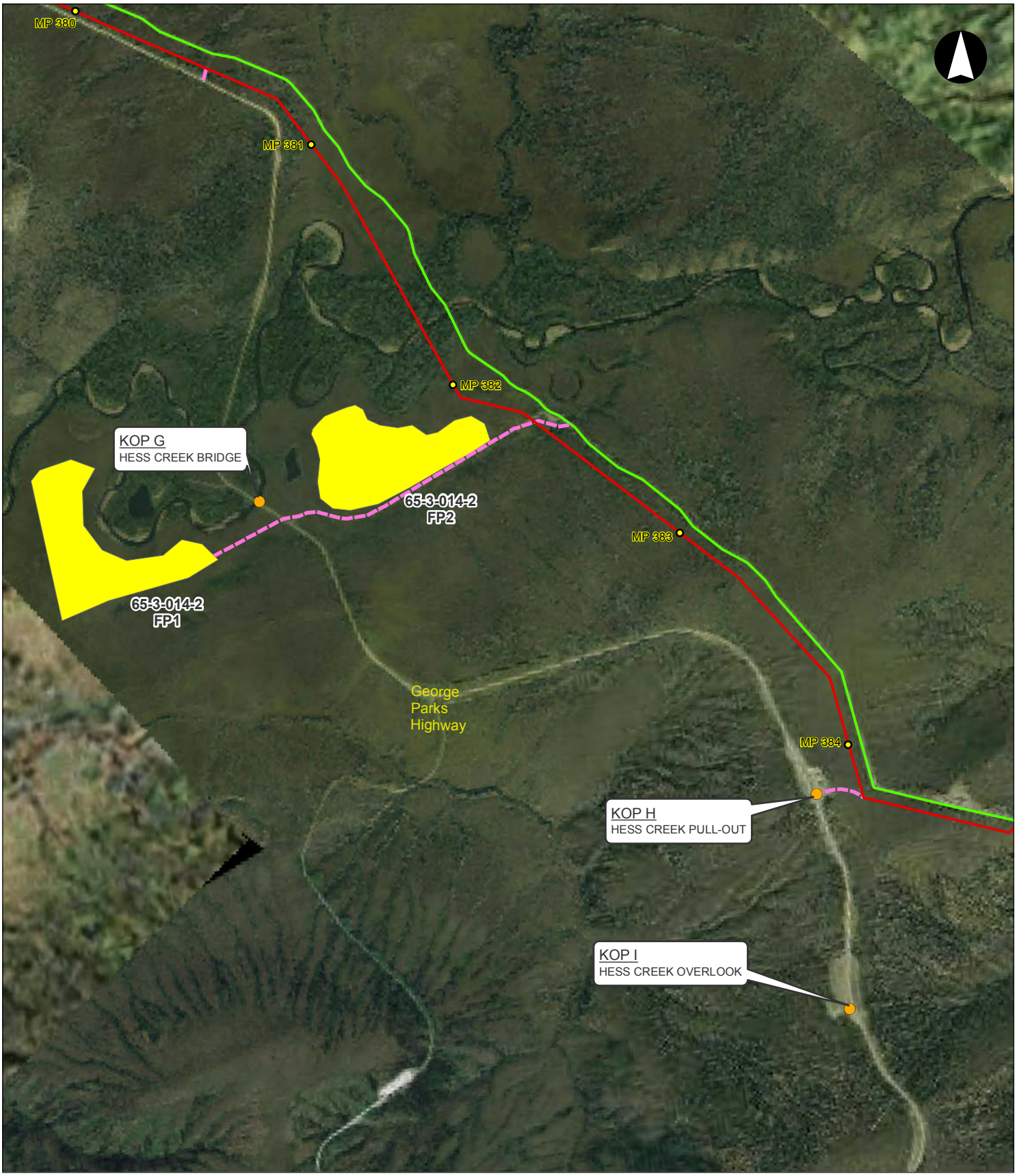
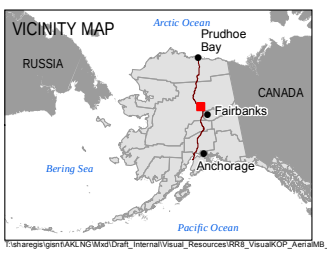
DATE:	2016-07-26	SHEET:	12 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 13, 14 AND 15 (2015)





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 Miles

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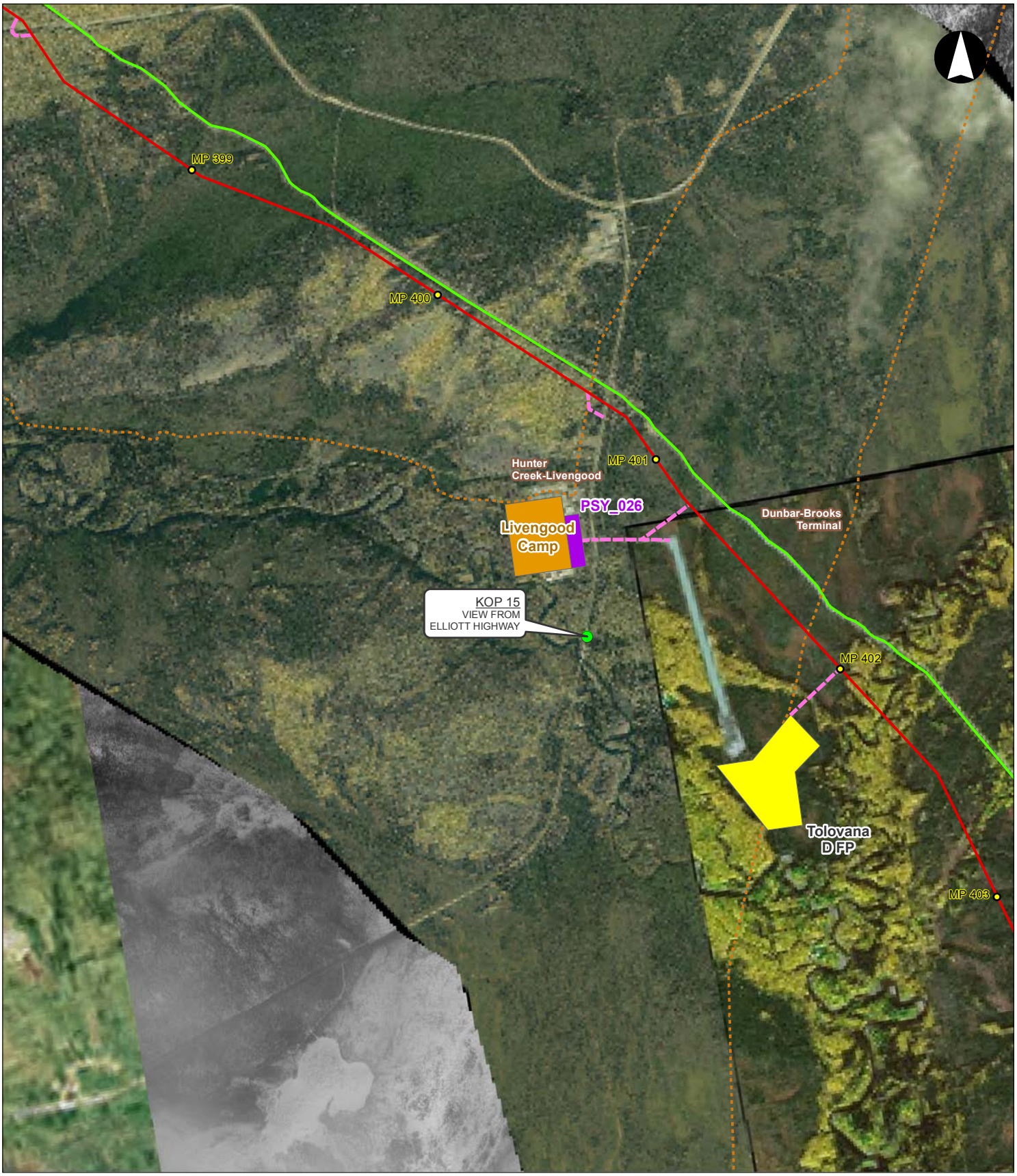
PREPARED BY:	CARDNO		
SCALE:	1:29,810		
DATE:	2016-07-26	SHEET:	13 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP G, H, I



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 Miles

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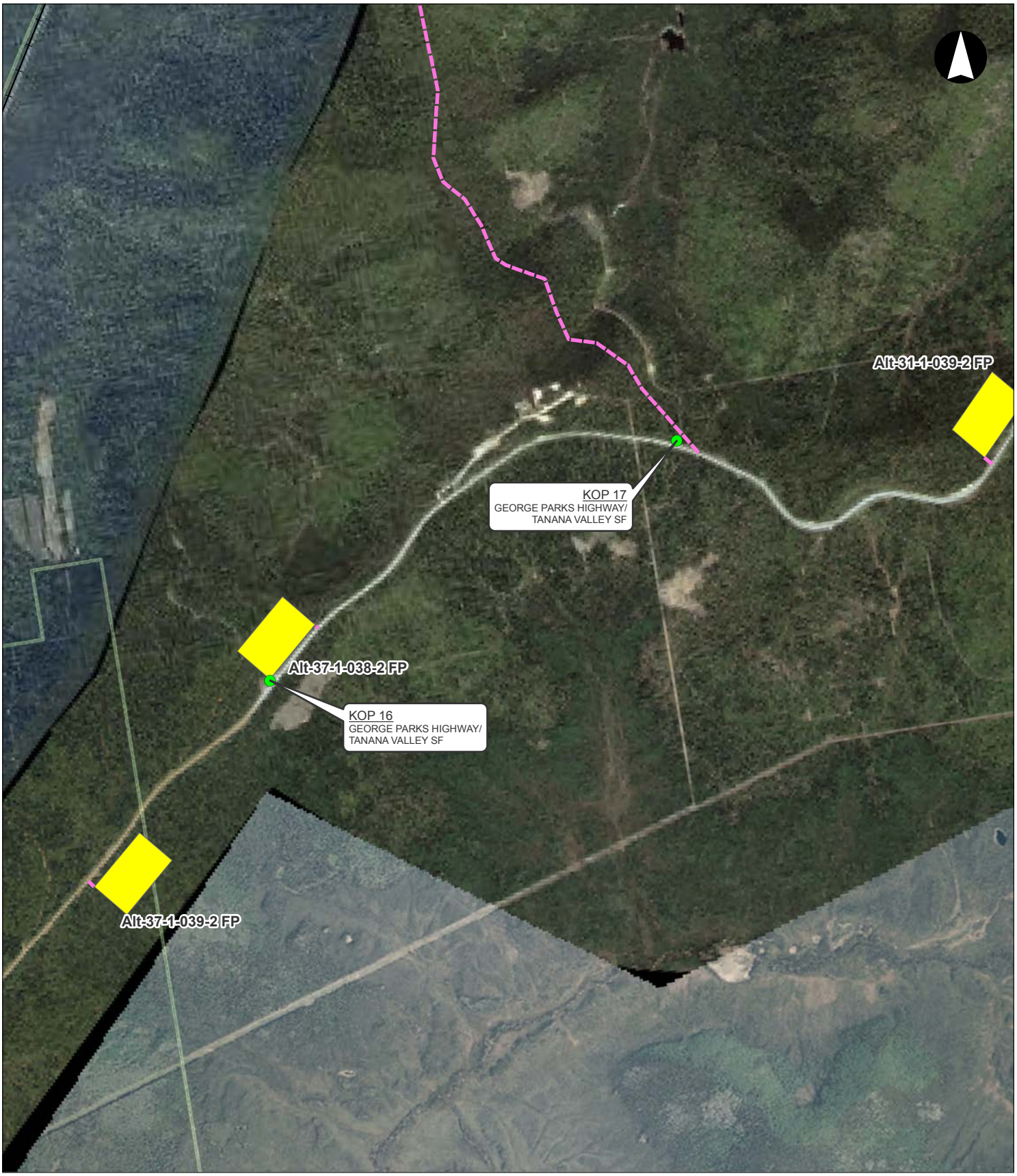
PREPARED BY:	CARDNO		
SCALE:	1:29,810		
DATE:	2016-07-26	SHEET:	14 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 15 (2015)



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

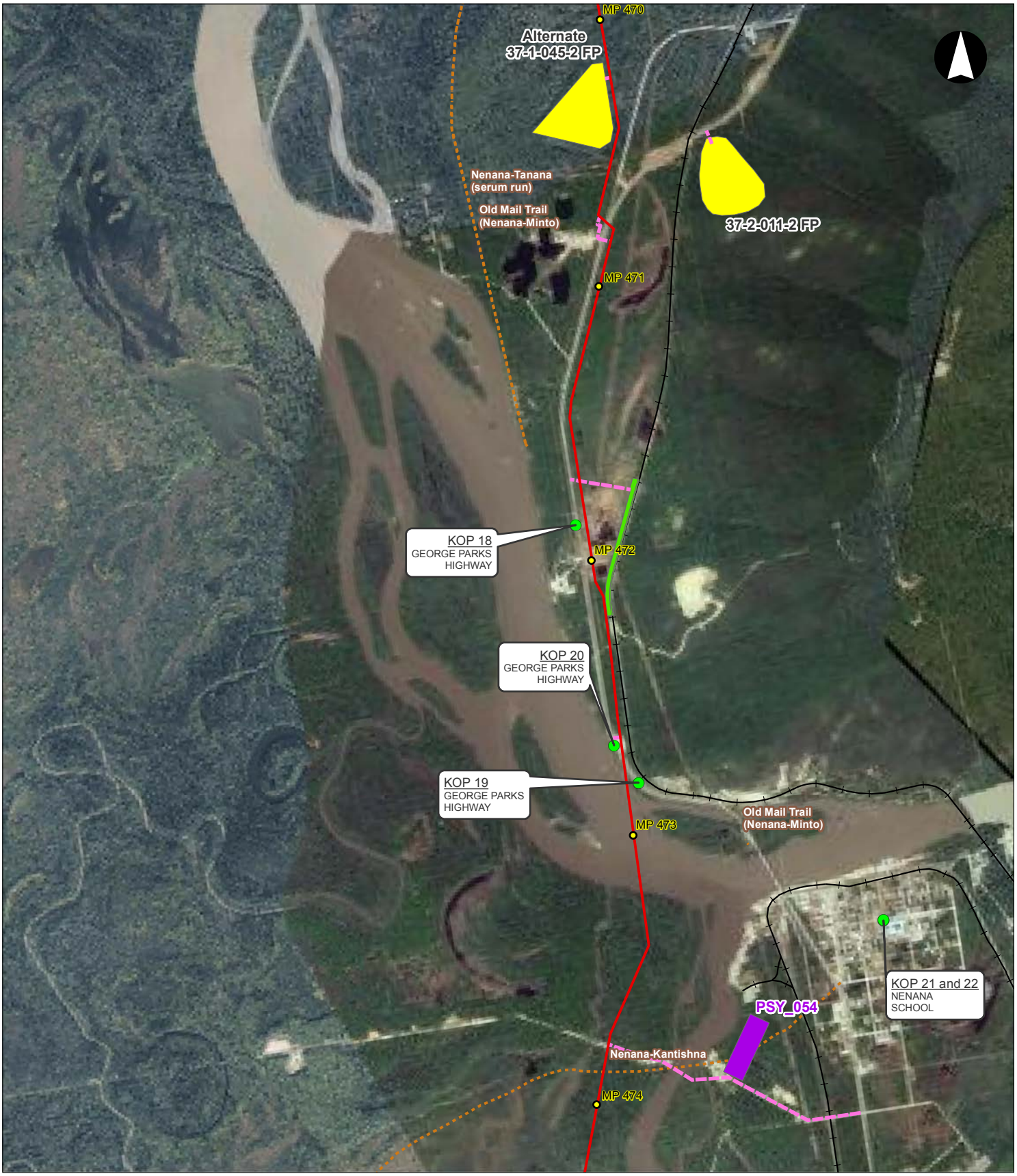
0 0.25 0.5 Miles

DISCLAIMER

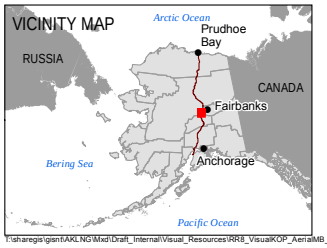
PREPARED BY:	CARDNO		
SCALE:	1:29,810		
DATE:	2016-07-26	SHEET:	15 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 16 AND 17 (2015)



VICINITY MAP



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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
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0 0.25 0.5 Miles

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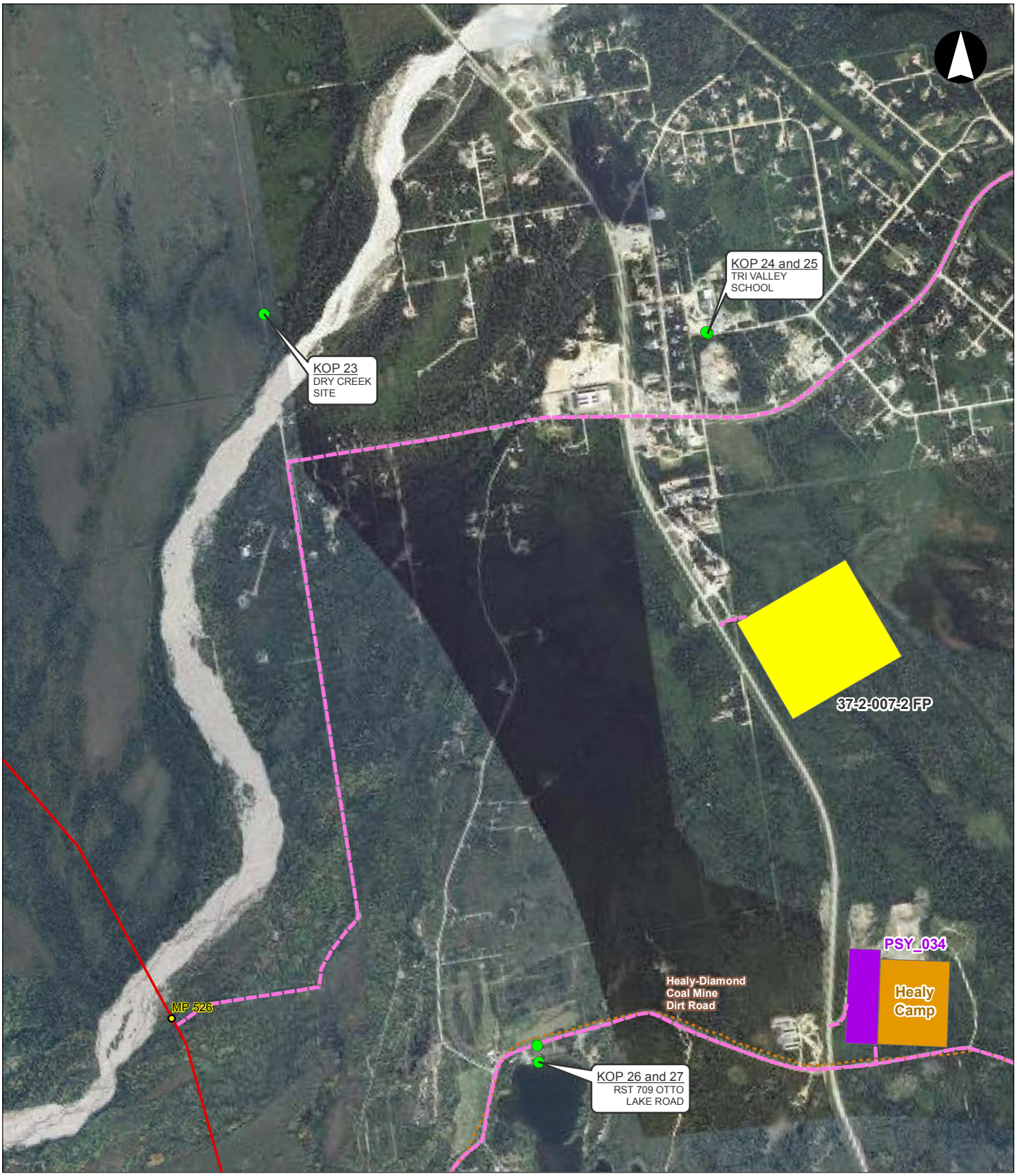
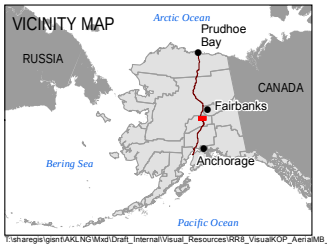
PREPARED BY:	CARDNO		
SCALE:	1:29,810		
DATE:	2016-07-26	SHEET:	16 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 18, 19 AND 20 (2015)



VICINITY MAP



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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

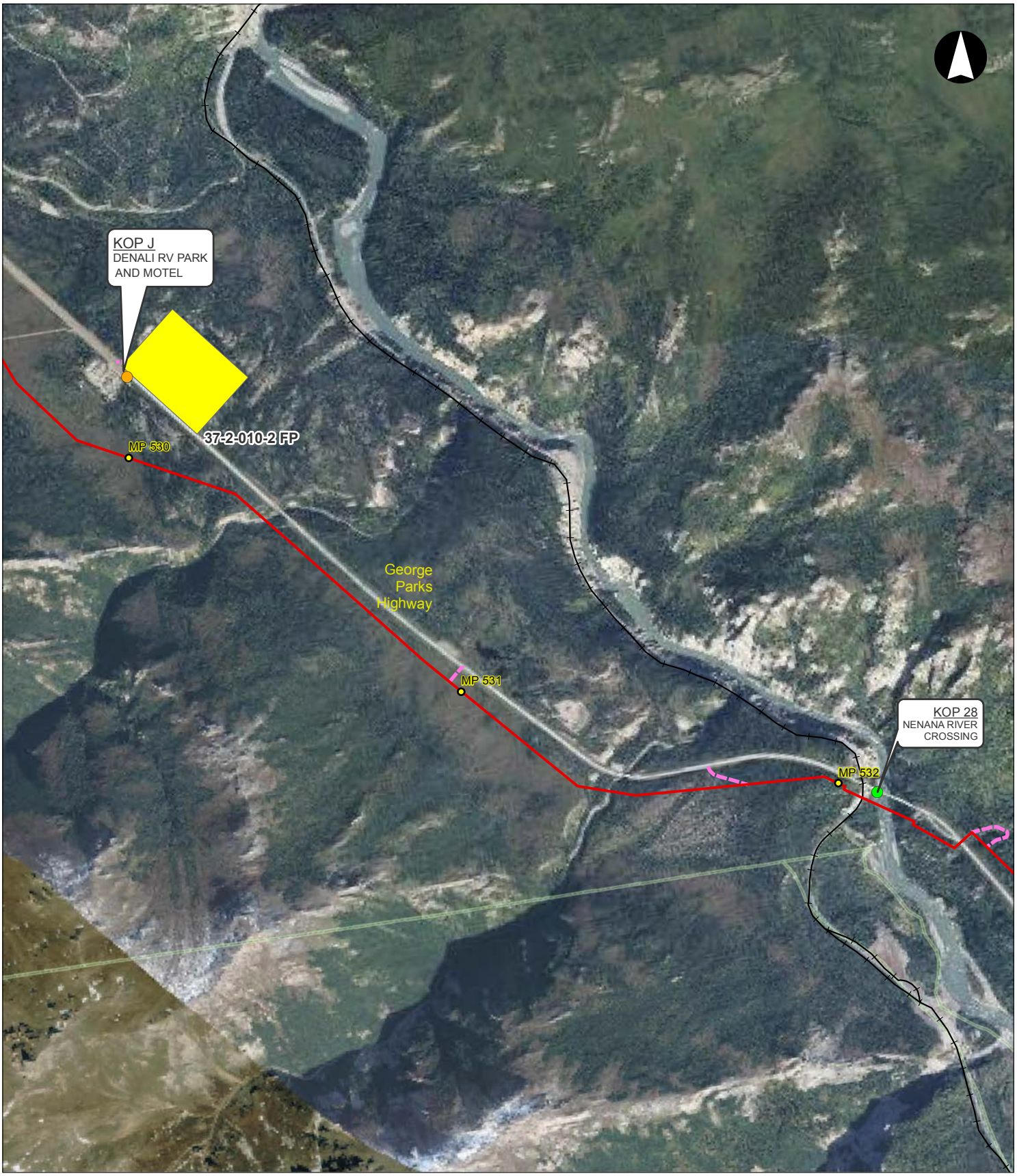
0 0.25 0.5 Miles

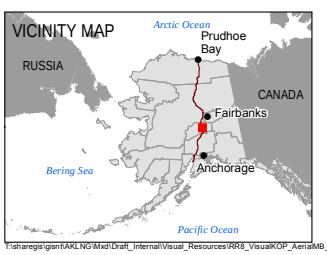
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:20,020		
DATE:	2016-07-26	SHEET:	17 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 23, 24, 25, 26 AND 27





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
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- Scenic Byways
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- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

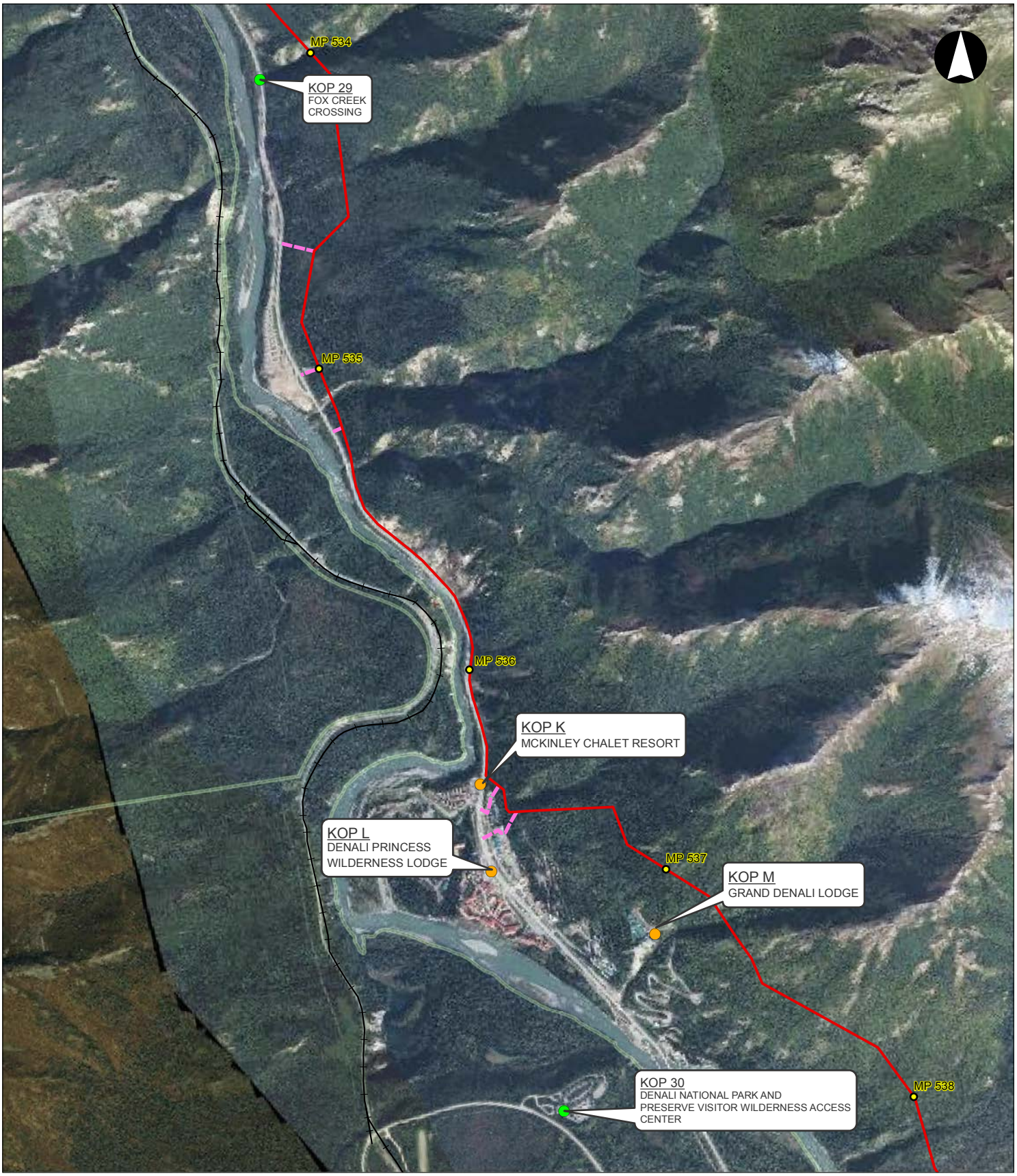
0 0.25 0.5 Miles

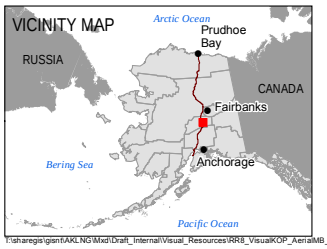
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:20,020		
DATE:	2016-07-26	SHEET:	18 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP J





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

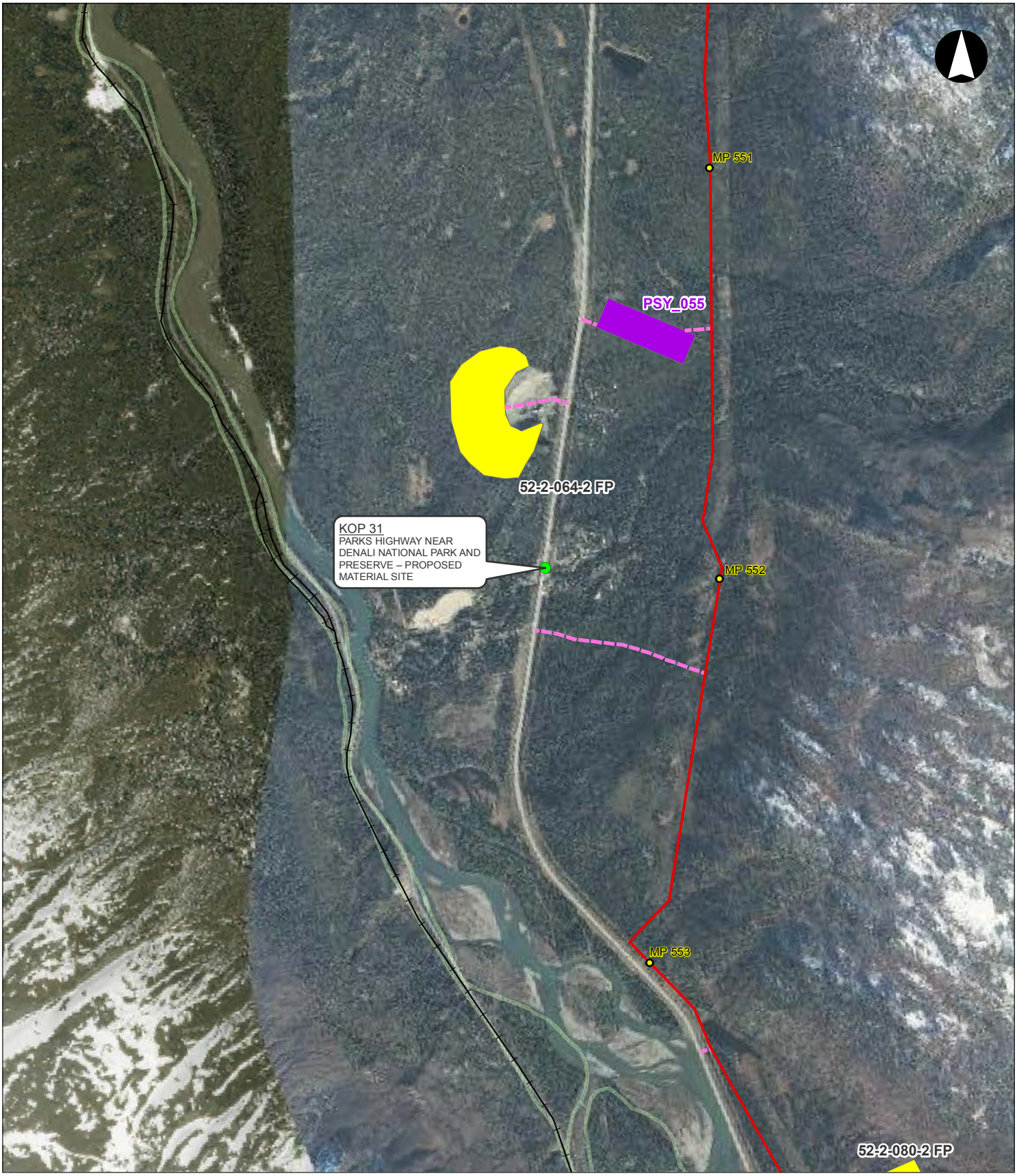
0 0.25 0.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:23,660		
DATE:	2016-07-26	SHEET:	19 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP K, L, M



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

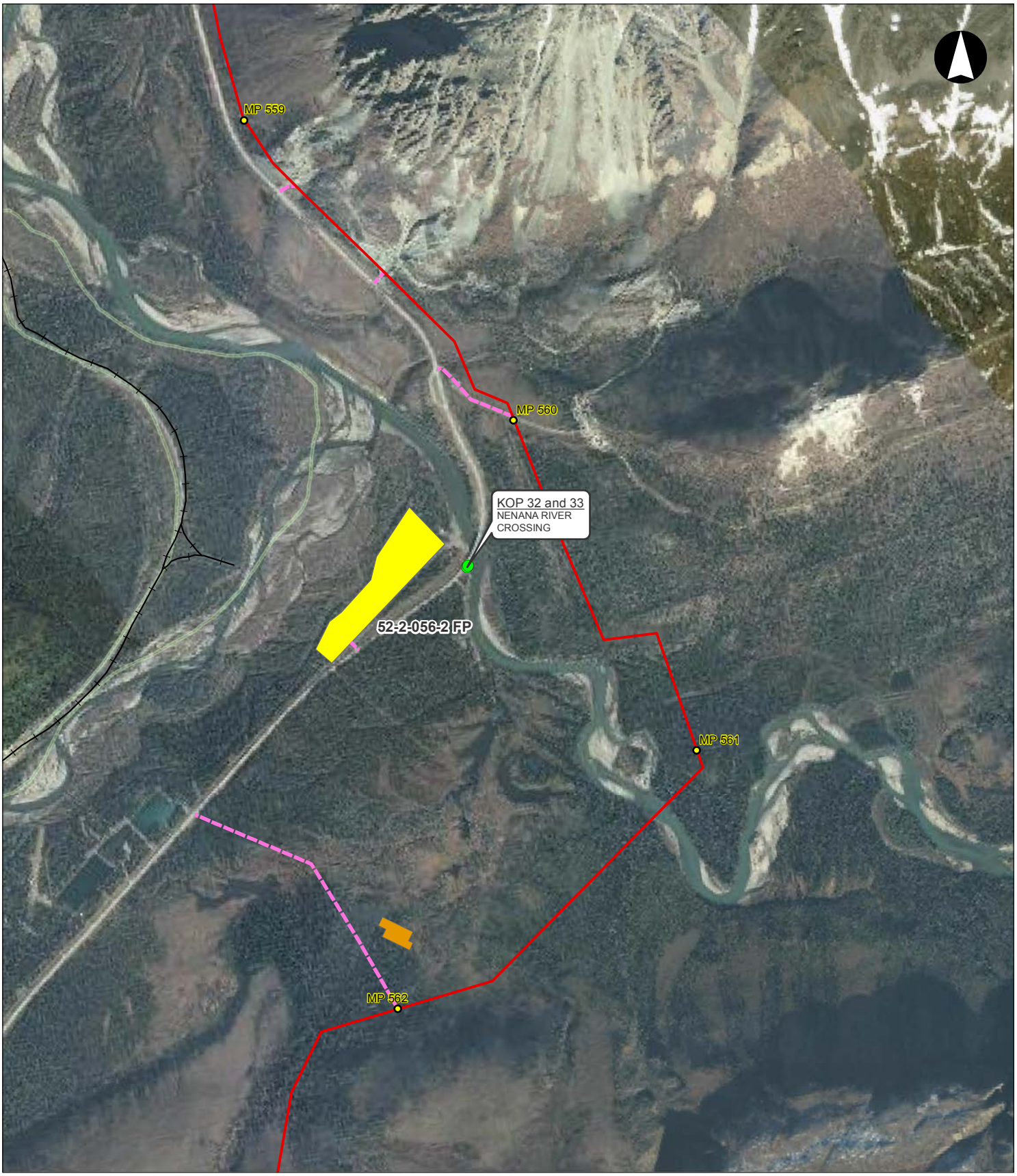
0 0.25 0.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:20,020		
DATE:	2016-07-26	SHEET:	20 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 31 (2015)



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

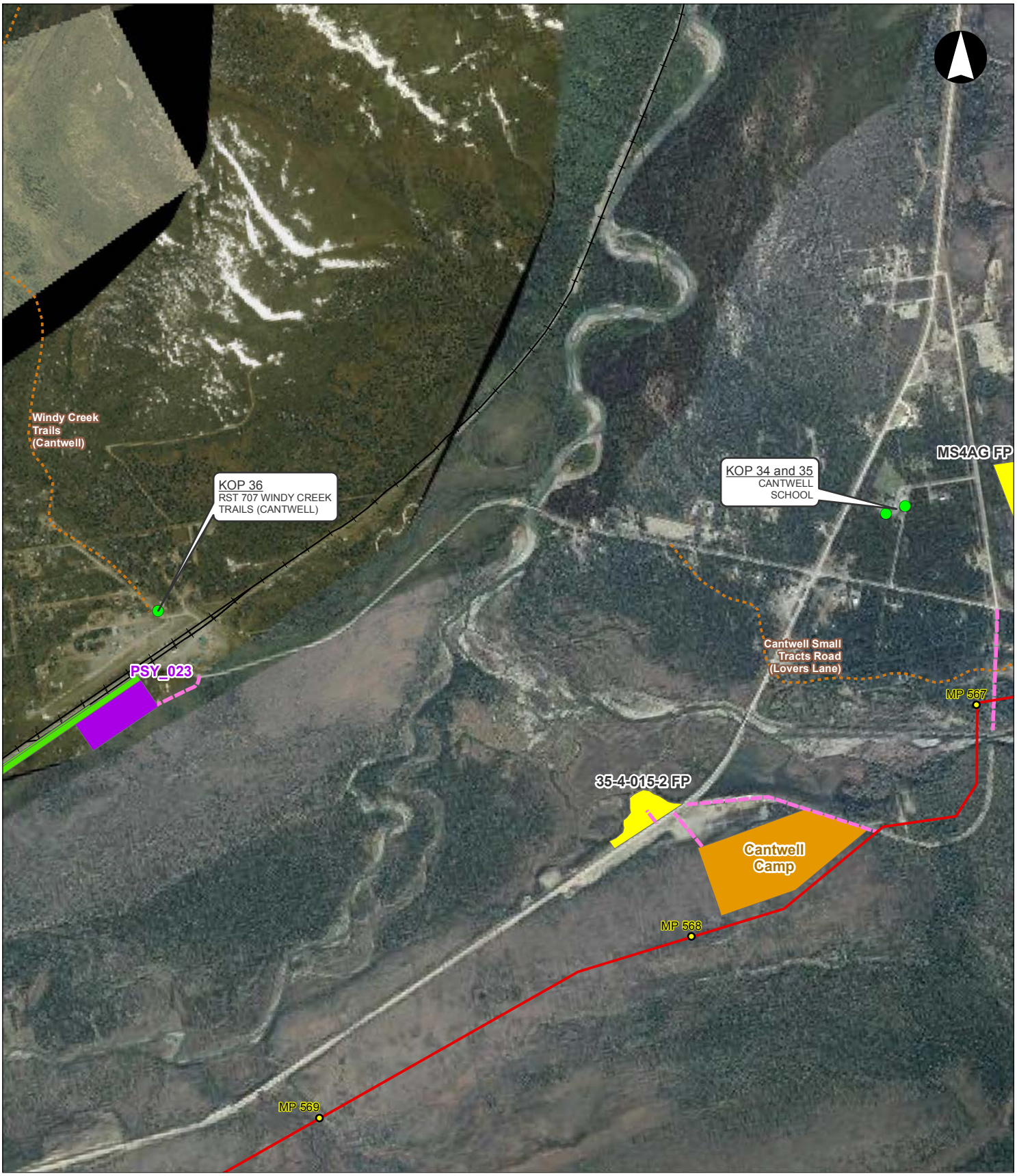
0 0.25 0.5 Miles

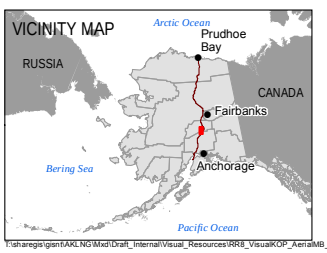
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:20,020		
DATE:	2016-07-26	SHEET:	21 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 32 AND 33 (2015)





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

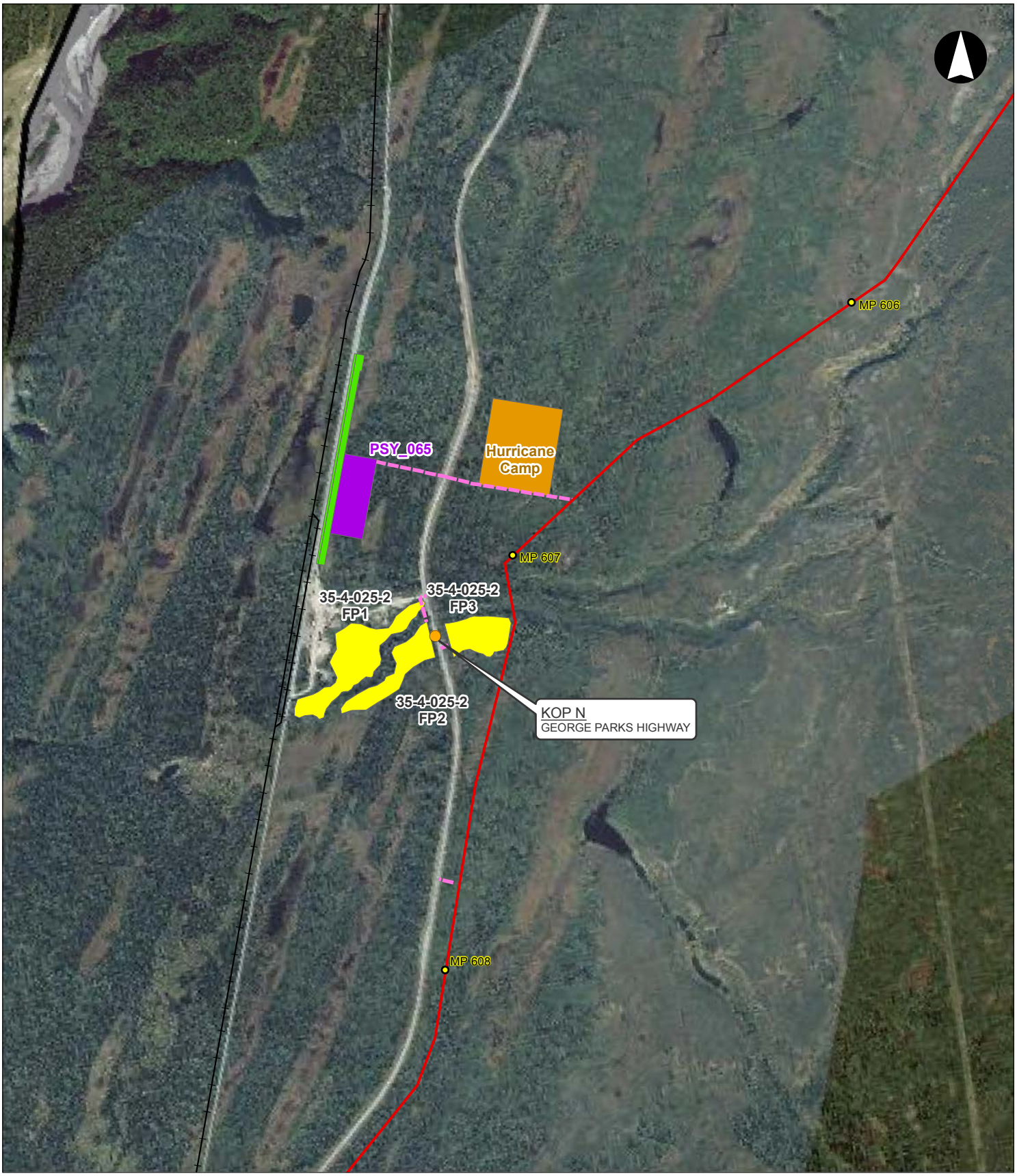
0 0.25 0.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:20,020		
DATE:	2016-07-26	SHEET:	22 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 34, 35 AND 36 (2015)



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

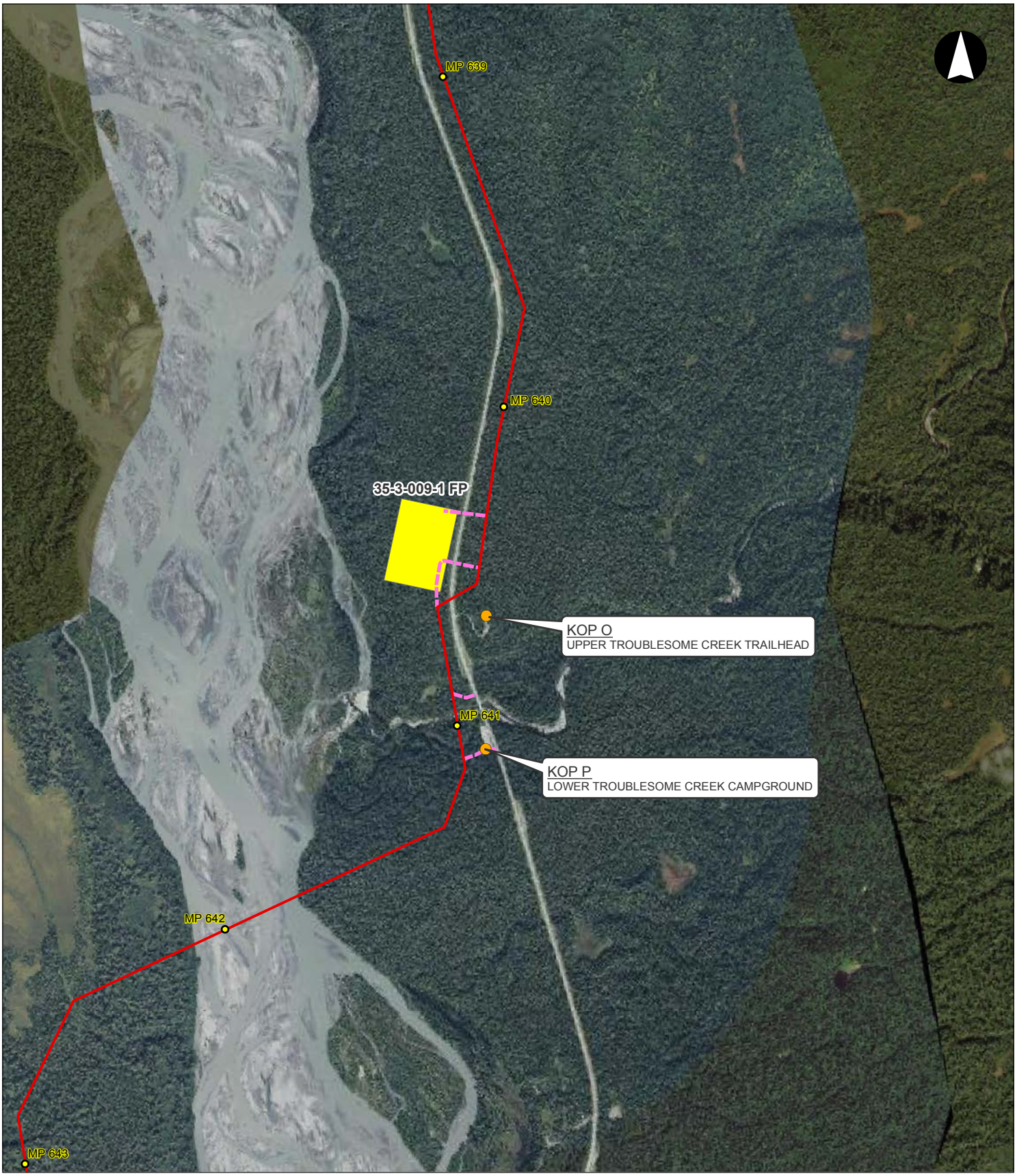
0 0.25 0.5 Miles

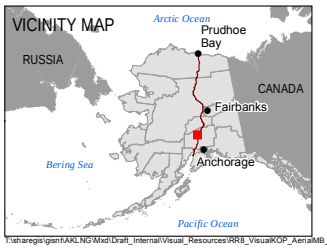
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:19,510		
DATE:	2016-07-26	SHEET:	23 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT: KOP N





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

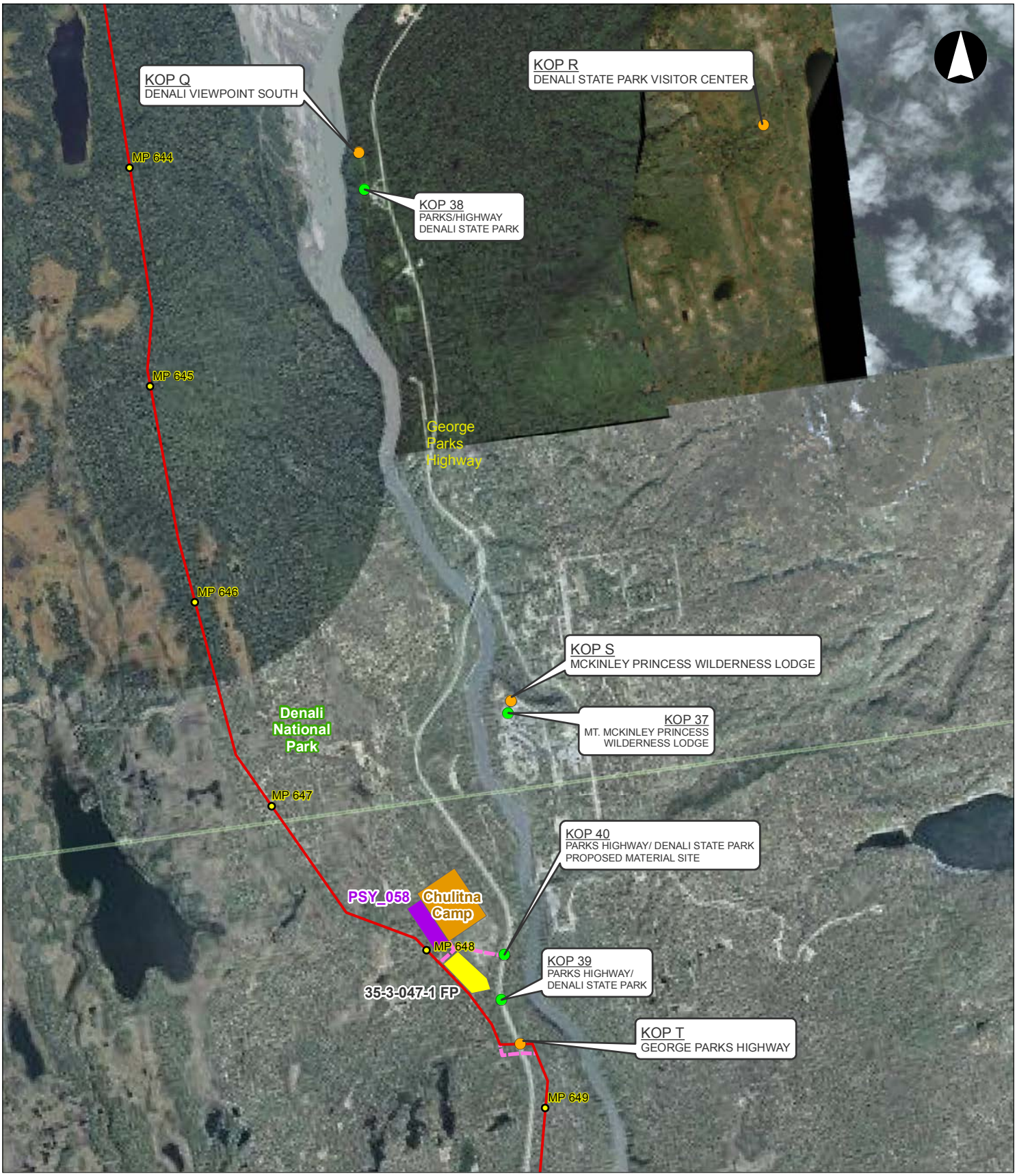
0 0.25 0.5 Miles

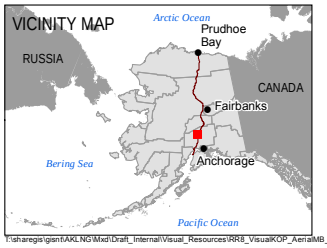
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	24 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP O, P





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
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- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 1 Miles

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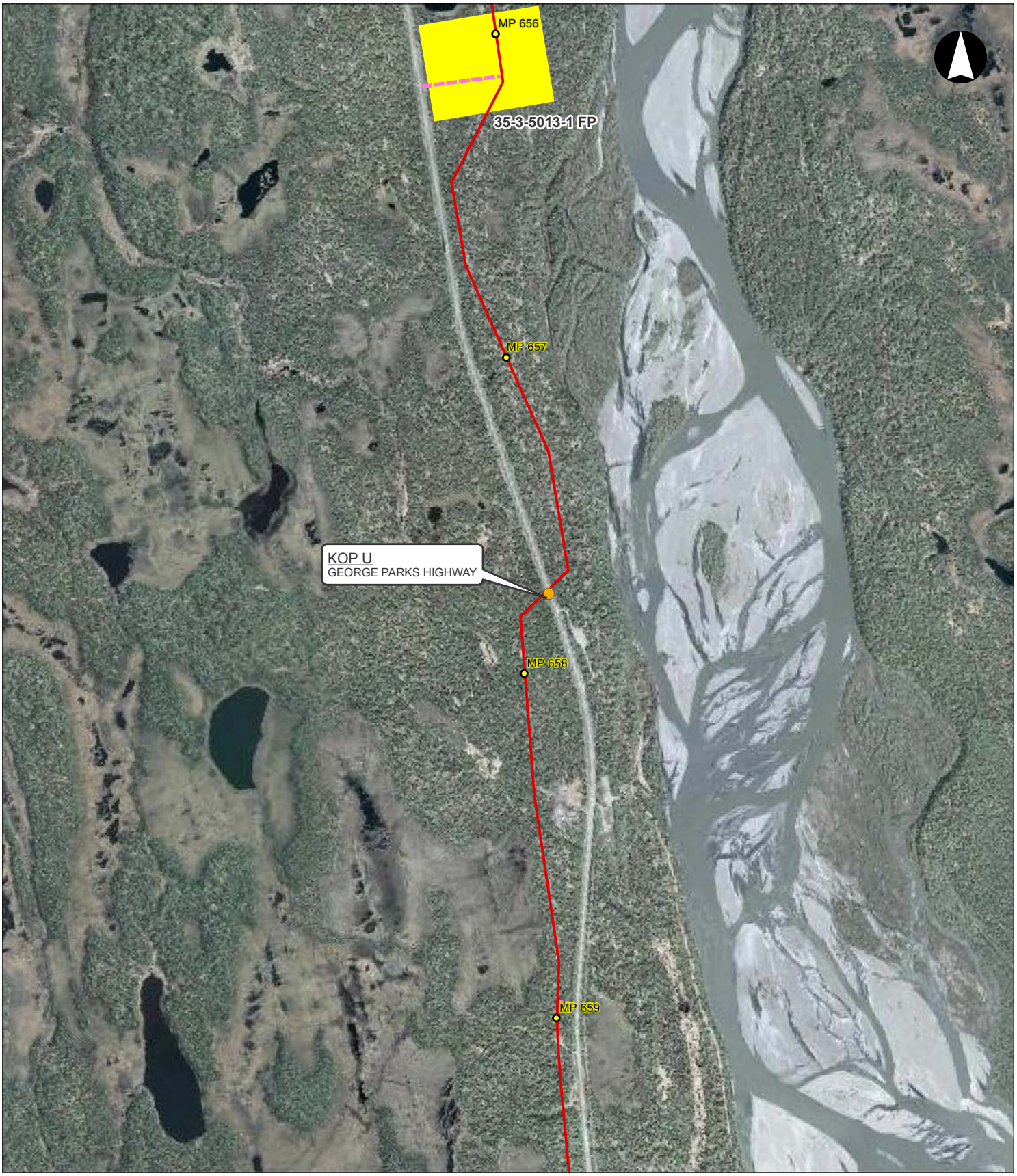
PREPARED BY:	CARDNO		
SCALE:	1:37,710		
DATE:	2016-07-26	SHEET:	25 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP Q, R, S, T



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

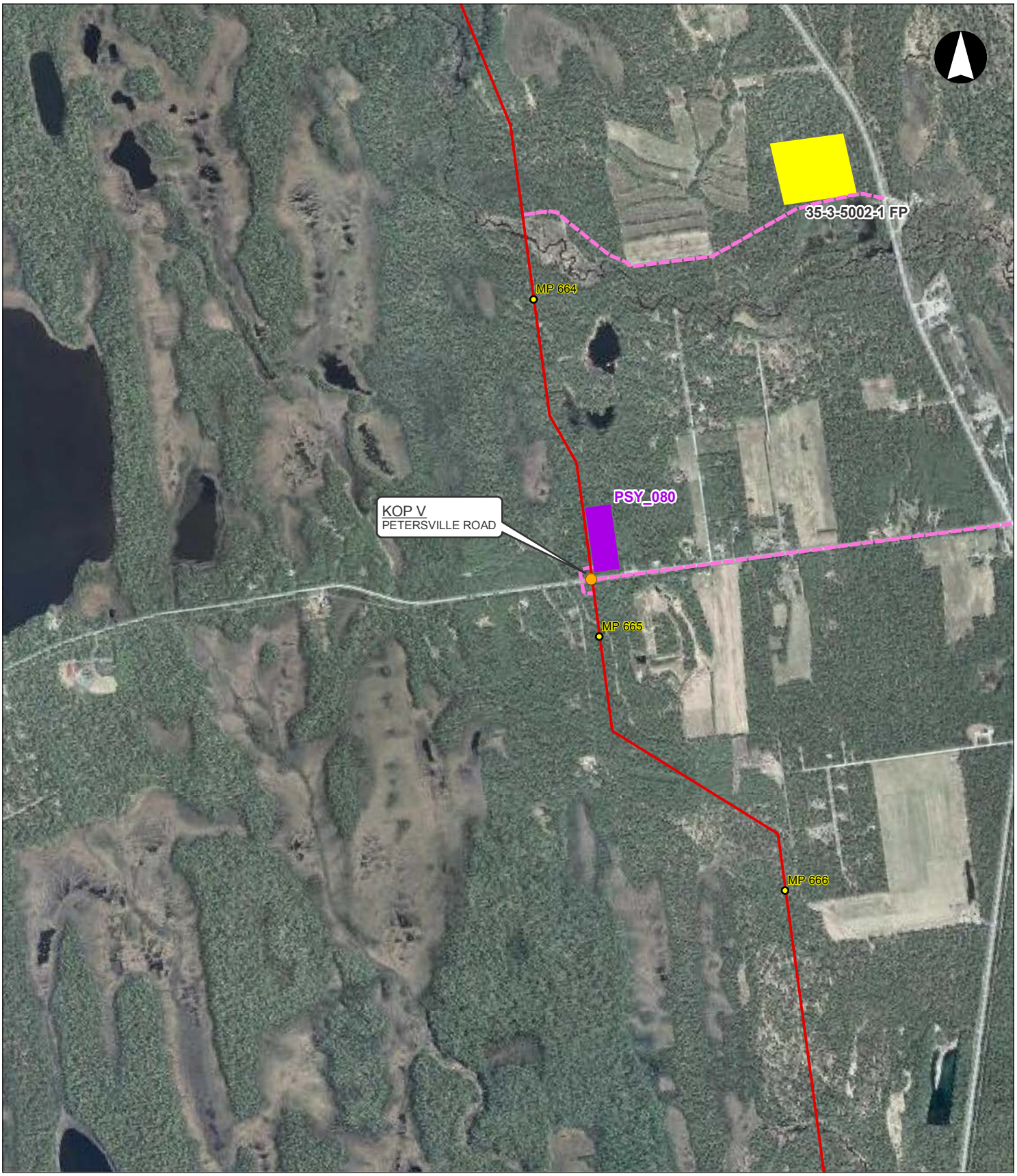
0 0.25 0.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	26 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP U



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
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- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	27 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP V

VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
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- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

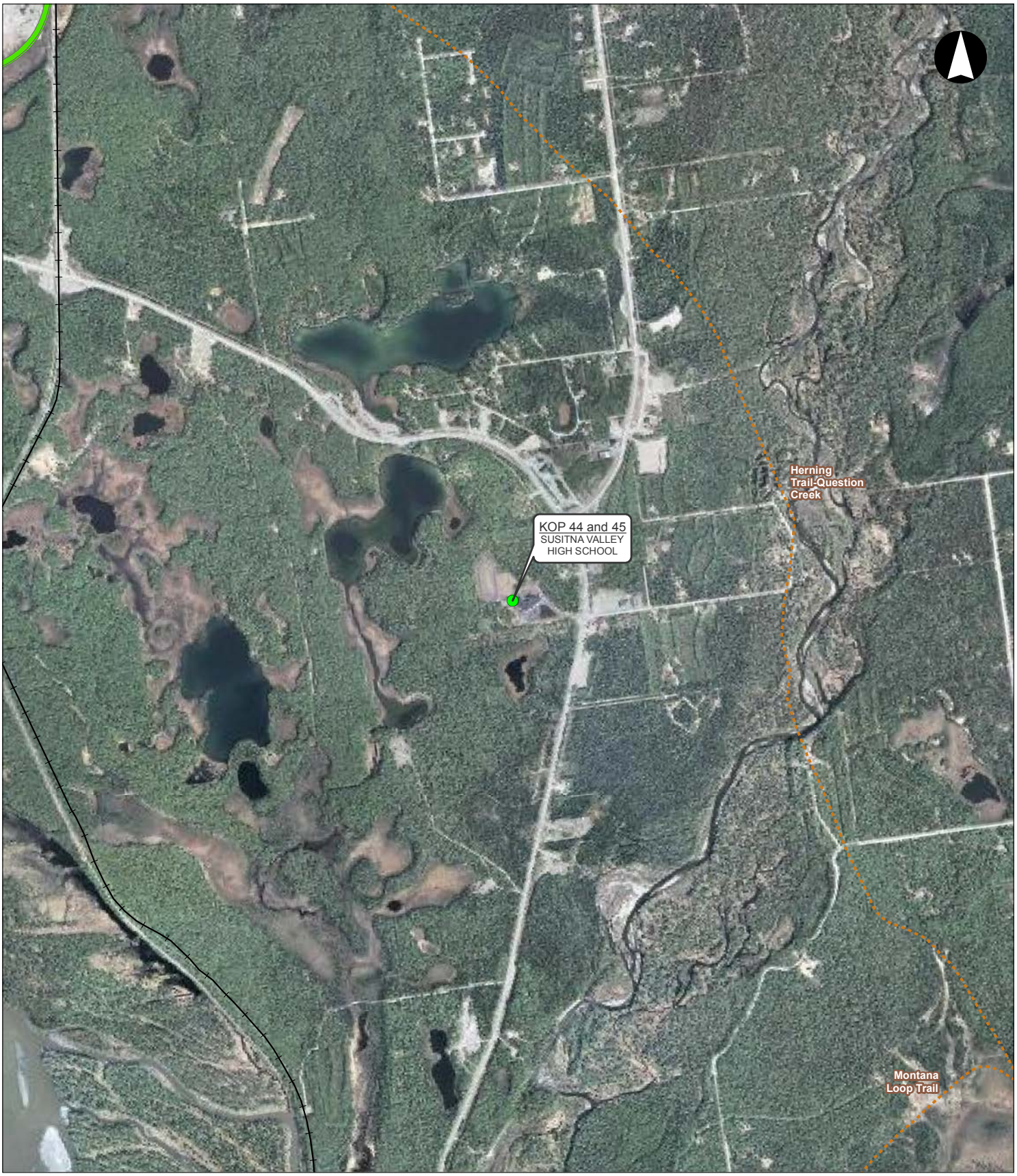
0 0.25 0.5 1 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:37,710		
DATE:	2016-07-26	SHEET:	28 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT: KOP 41, 42 AND 43 (2015)



VICINITY MAP

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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

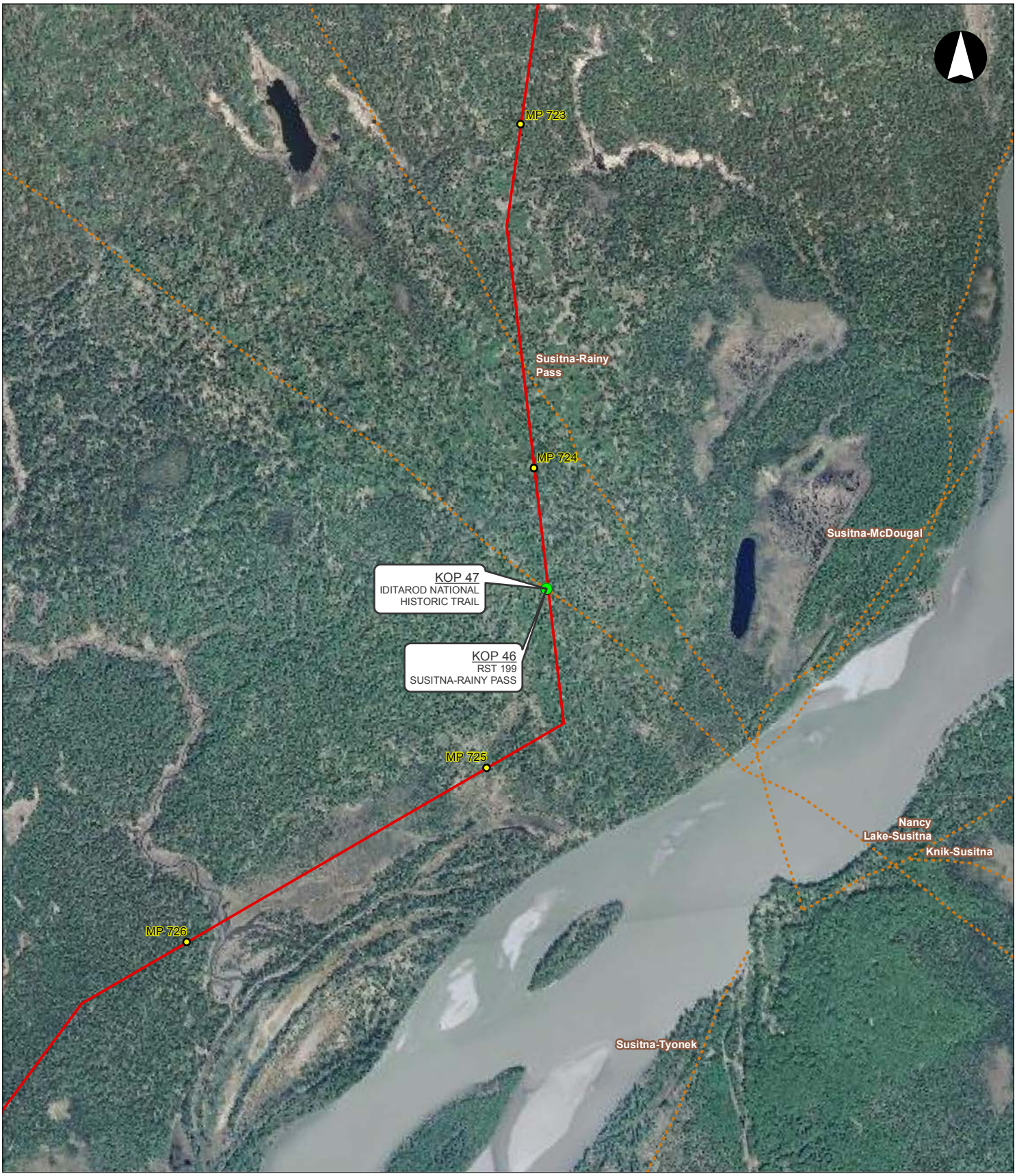
0 0.25 0.5 Miles

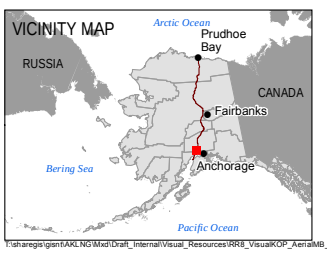
DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	29 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 44 AND 45 (2015)





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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
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- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

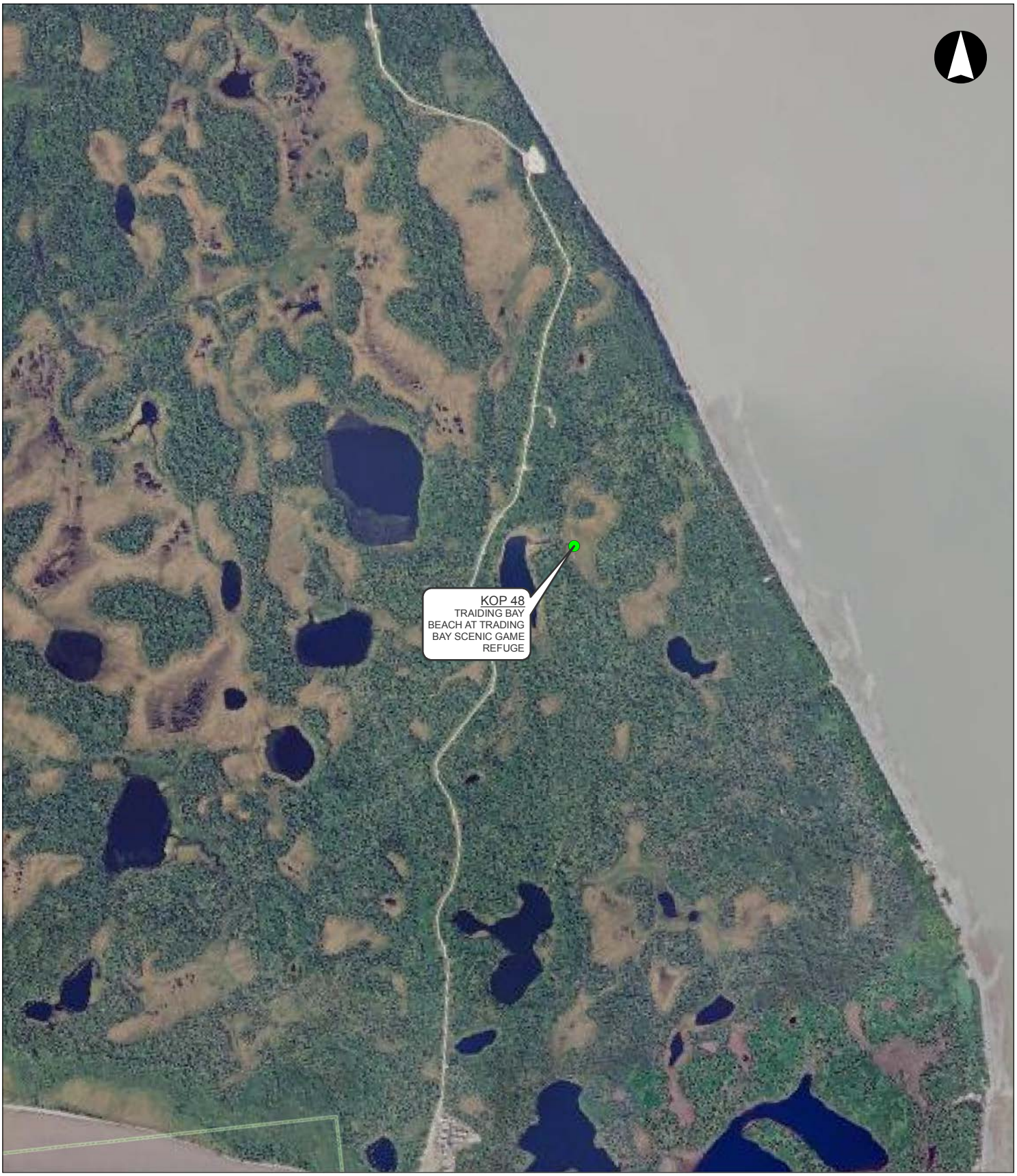
0 0.25 0.5 Miles

DISCLAIMER

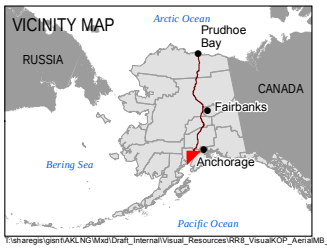
PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	30 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 46 AND 47 (2015)



VICINITY MAP



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LEGEND

- Key Observation Point 2016
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- Park/Refuge Boundary

0 0.25 0.5 Miles

DISCLAIMER

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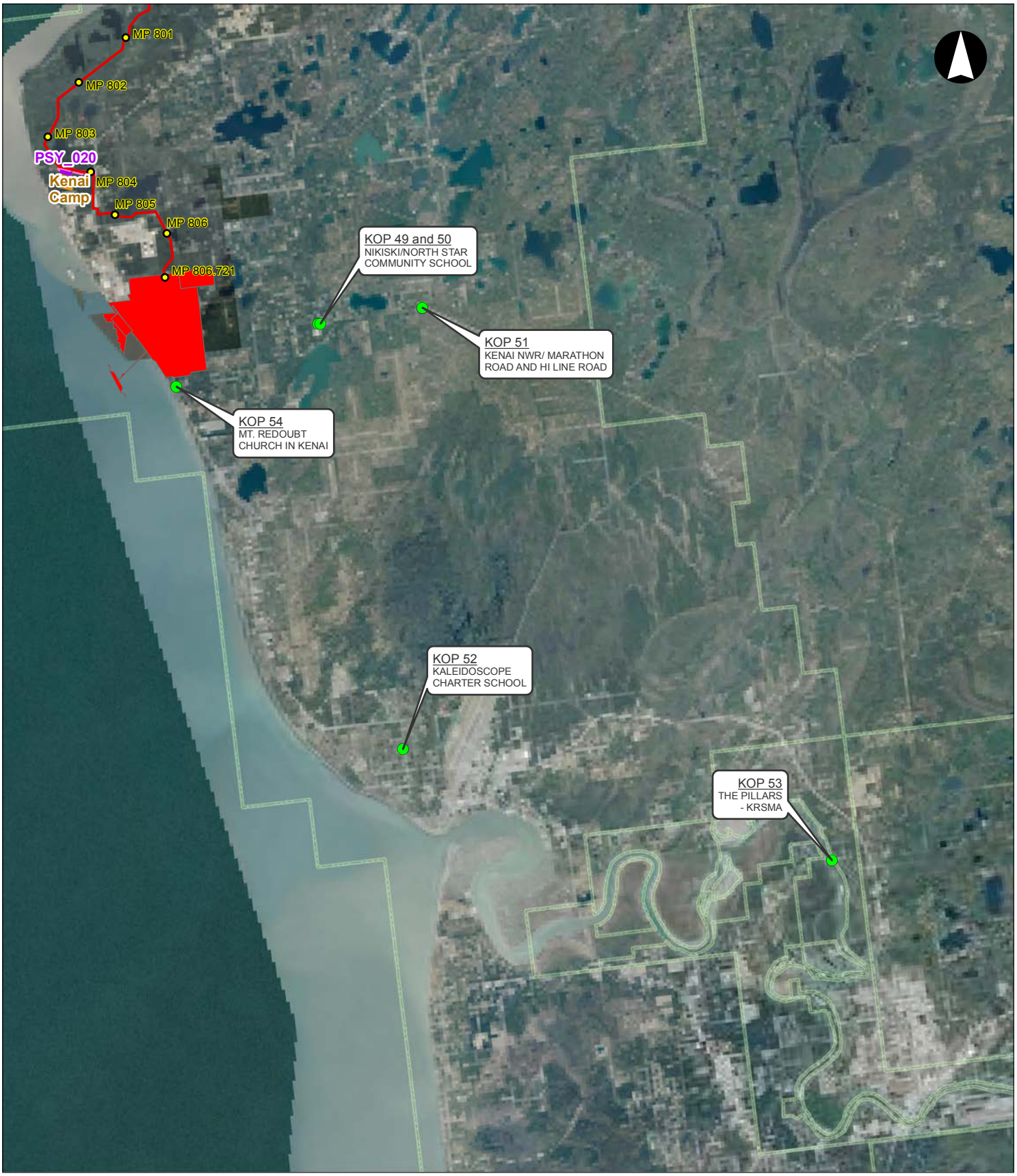
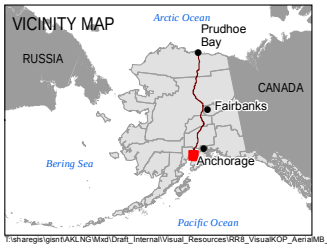
PREPARED BY:	CARDNO		
SCALE:	1:23,990		
DATE:	2016-07-26	SHEET:	31 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 48 (2015)



VICINITY MAP



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LEGEND

- Key Observation Point 2016
- Key Observation Point 2015
- Mile Post
- Access Road
- Current Preferred Route (Rev C)
- Scenic Byways
- Trails
- Alaska Railroad
- Trans Alaska Pipeline
- Camp
- Pipe Storage Yard
- Railroad Spur or Workpad
- Material Site
- Park/Refuge Boundary

0 0.25 0.5 1 1.5 2 2.5 Miles

DISCLAIMER

PREPARED BY:	CARDNO		
SCALE:	1:123,540		
DATE:	2016-07-26	SHEET:	32 of 32

VISUAL RESOURCE WORK PLAN

KEY OBSERVATION POINT:
KOP 49-54 (2015)