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March 30, 2021

Letter No. 46837

Anthony Strupulis P.E., State Pipeline Coordinator
State Pipeline Coordinator's Section
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 1100
Anchorage, AK 99501

RE: Trans-Alaska Pipeline System, Pipeline Milepost 30.8 and 32.6
Land Description Modification for Right-of-Way Lease, ADL 63574
Rock Sill and Vanes, Sagavanirktok River Erosion Control

Dear Mr. Strupulis:

Alyeska Pipeline Service Company, agent for the Trans Alaska Pipeline System Right-of-Way Lessees, hereby applies to modify the description of the TAPS facilities attached to the referenced lease to include lands needed to accommodate the subject new construction. This follows the planned work review during the last several Monthly Lands and Permits Meetings.

The lands required for construction are described on Attachment A, and a narrative and drawings are enclosed describing the work in further detail. The lands needed to accommodate the new structure after construction will be precisely described upon completion of the as-built survey.

Thank you for your consideration of this application, and please contact me at 787-8170, if more information is needed.

Sincerely

Peter C. Nagel

Peter C. Nagel, SR/WA
Land and Right-of-Way

Enclosures

cc: SPCS Records

ATTACHMENT A

TAPS Milepost 30.8

Township 6 North, Range 14 East (Umiat Meridian)

Section 31 SW4NW4, those lands adjacent to the Trans Alaska Pipeline right-of-way as shown on the attached drawings as Proposed Construction Area, containing approximately 6.9 acres.

TAPS Milepost 32.6

Township 5 North, Range 14 East (Umiat Meridian)

Section 7 NW4NW4, those lands adjacent to the Trans Alaska Pipeline right-of-way as shown on the attached drawings as Proposed Construction Area, containing approximately 9.2 acres.

Trans Alaska Pipeline System, Milepost 30.8
Installation of Buried Rock Sill
Permit Narrative (March 2021)

Purpose

The purpose of this project is to install a buried sill adjacent to the Sagavanirktok River to protect the integrity of the Trans-Alaska Pipeline. Changes in the flow patterns of the river in this area has resulted in the possibility that the bank could erode further which would then threaten the integrity of the buried mainline pipe.

Site Description

The project site is located approximately 31 miles south of TAPS Pump Station 1 and 27 miles north of Pump Station 2. In this area the Dalton Highway and the pipeline follow the west side of the Sagavanirktok floodplain which is over a mile wide. Soils in this area consist of organic silt with some sand, gravel mixed with sand, numerous cobbles and scattered boulders.

The vegetation zone is lowland tundra, which consists of sedges, grasses and mosses. Fish species in the Sag River are the Arctic Char, Arctic Grayling, Burbot and White Fish. The Sag River is classified as an anadromous fish stream, and its side channels are also considered anadromous because of their connection to the main channel.

Problem Description

Recent high-water events have resulted in channel changes and increased bank erosion towards the Pipeline. These channel changes will continue if unmitigated and threaten the pipeline integrity in a major flood event.

The area of concern is the land buffer east of CV8. This buffer is vulnerable to increased erosion due to recent channel changes.

On this reach of the Sag River over 200 feet of bank was eroded during a single flood event in 1992.

Work Description

The project will construct a buried sill of Class III and IV rip rap on the existing land buffer between the pipeline and river bank consisting. The organic surface layer will be stripped first and stockpiled adjacent to the ditch separately from the sill ditch spoils. As the rip rap is installed, gravel from the excavation will be placed to fill the voids in the rip rap and backfilled to the original grade. Any excess spoil will be removed and stockpiled or spread on the existing gravel pad nearby. Afterwards stockpiled organics will be placed on the fill and track-walked lightly, with fertilizer if appropriate.

Access to the site will be with tundra/equipment mats from the workpad.

Work in and Around Water

There will be no instream work in the Sagavanirktok River. There is a possibility that ground water will be encountered in the trench but the excavation will not be dewatered.

Environmental Impacts and Mitigation

A buried sill was the preferred alternative to a conventional spur dike or a revetment to minimize the footprint of the project. There will be no impact to aquatic life because all of the existing structures are on the floodplain, and not in active channels.

Other than the access path/s on tundra mats, equipment travel will be confined to the buried sill footprint. Silt fences will be used as required along the temporary ditch spoil stockpile and excavation to protect any adjacent wet ground. The revegetation application that will be used for this project has been successfully demonstrated to restore the pre-existing biological productivity within two to three years in a high latitude arctic environment.

There is no designated critical habitat in the vicinity of the area. Direct impacts to threatened and endangered species are very unlikely because they are not known to inhabit the subject area. Polar bears and eiders are typically not denning or nesting here. In addition, if a polar bear were to stray this far inland, all of Alyeska's operations follow the company's Polar Bear Interaction Plan that has been approved by the US Fish and Wildlife Service.

There should be no loss of wetlands, and no additional mitigation is planned.

Approximate Construction Scope of Work

Equipment used on the project will be rock trucks, backhoes and loaders. The work will occur between June and October of 2021 and will take approximately 21 days to complete.

1. Mobilize personnel and equipment
2. Construct access to the work site
3. Excavate buried sill footprint
4. Place rip rap
5. Backfill with gravel
6. Cap the footprint of excavation with stockpiled organics
7. Dispose of excess material, clean up work site and demobilize

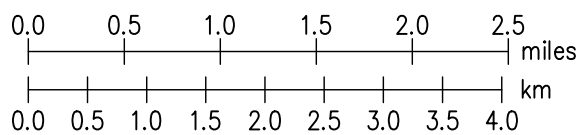
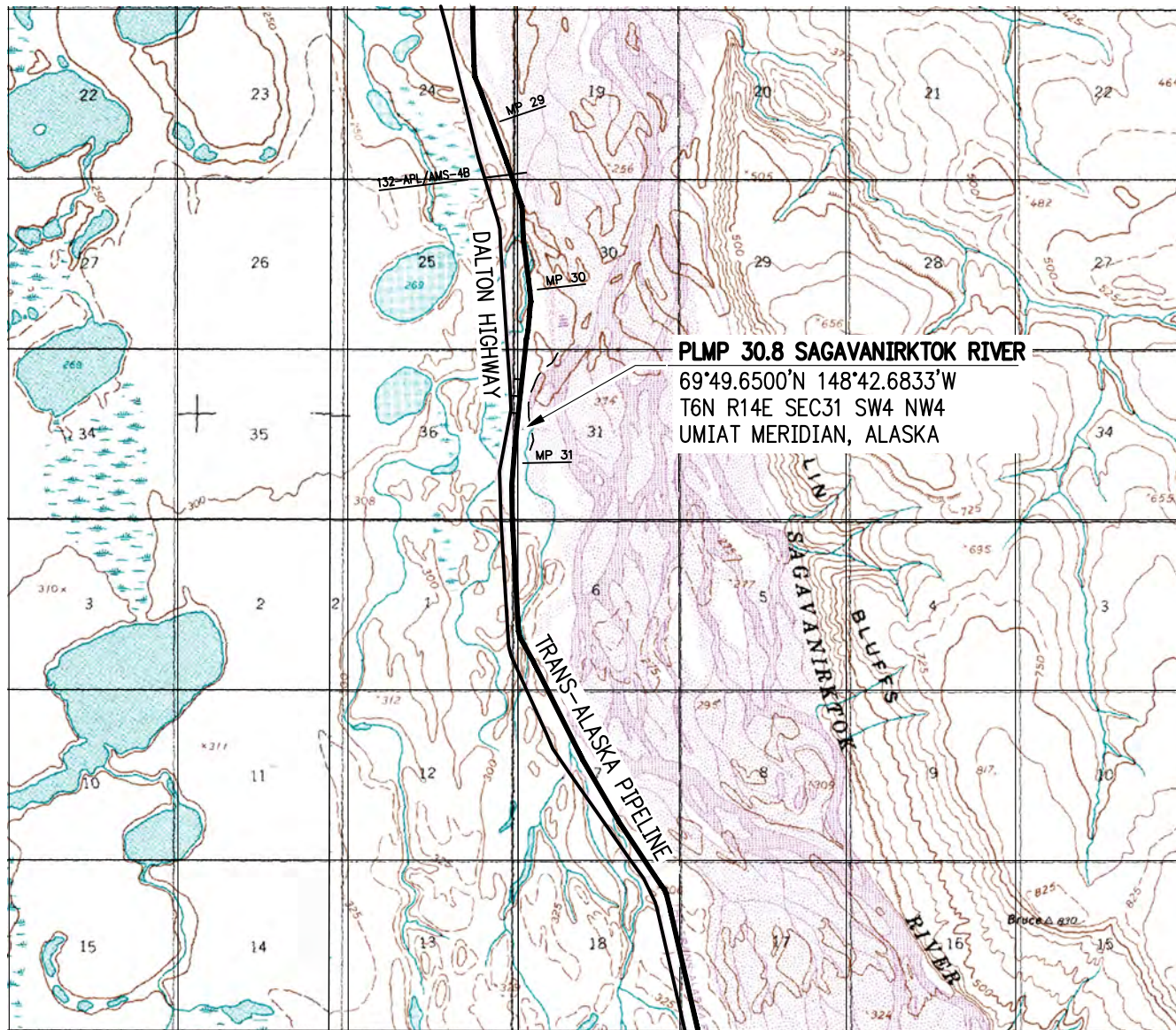
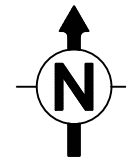
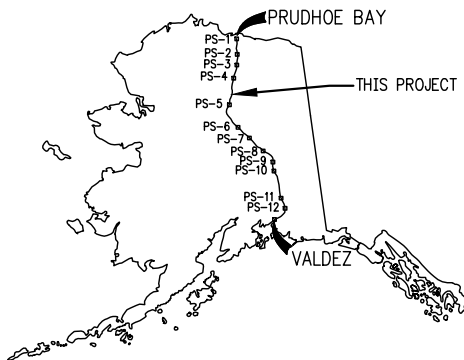
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ADJACENT PROPERTY OWNERS: STATE OF ALASKA

ALYESKA PIPELINE SERVICE CO.

2021 RIVERS AND FLOODPLAINS IMPROVEMENTS
SAGAVANIRKTOK RIVER – BURIED SILL
LOCATION AND VICINITY MAP

TRANS ALASKA PIPELINE SYSTEM

DATE: 02/26/21

PLATE 1

REV. B DWN. MTH CKD. AJN APPR. JPD

SCALE: AS NOTED

SHEET 1 OF 3

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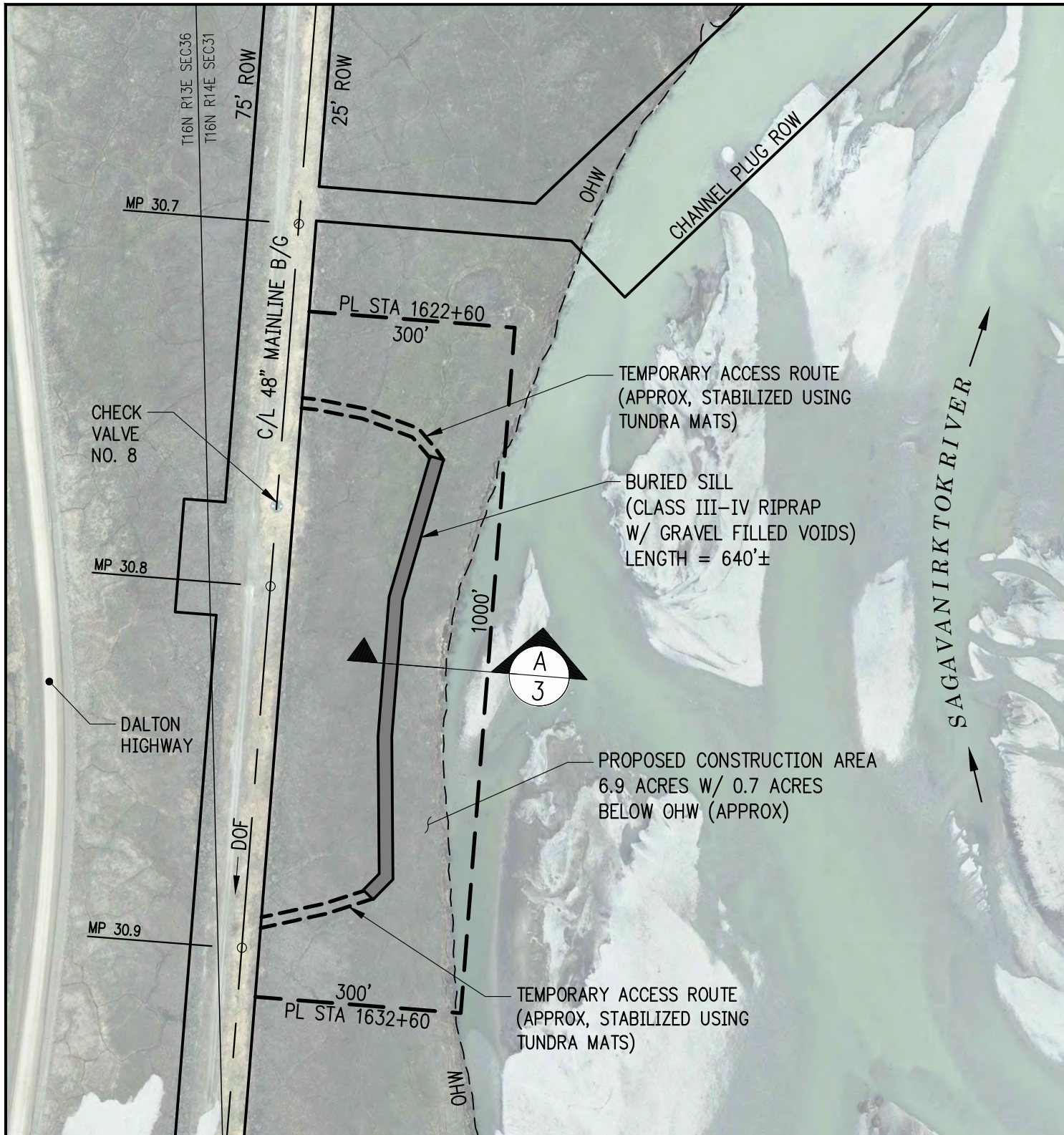
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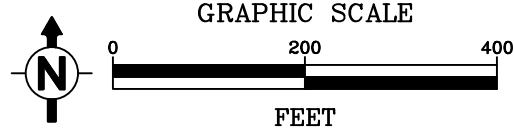
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PLAN
SCALE: 1" = 200'

PHOTO DATE: 2015

ADJACENT PROPERTY OWNERS: STATE OF ALASKA

ALYESKA PIPELINE SERVICE CO.	
TRANS ALASKA PIPELINE SYSTEM	
DATE: 02/26/21	PLATE 2
SCALE: AS NOTED	SHEET 2 OF 3

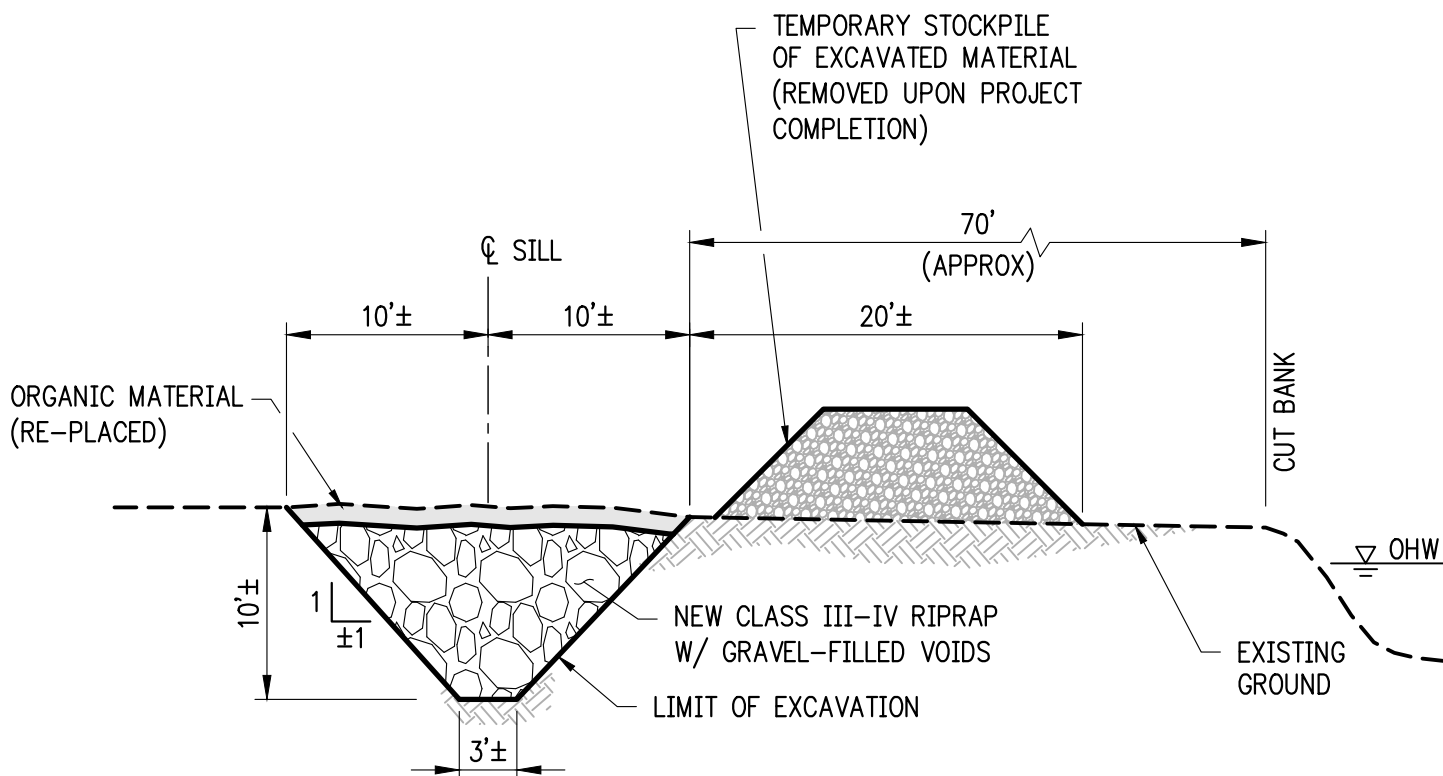
2021 RIVERS AND FLOODPLAINS IMPROVEMENTS
SAGAVANIRKTOK RIVER – BURIED SILL
PLAN

REV. B	DWN. MTH	CKD. AJN	APPR. JPD
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AUTOCAD DWG. DO NOT REVISE MANUALLY.

ESTIMATED MATERIAL QUANTITIES

	BELOW OHW	ABOVE OHW	TOTAL
CLASS III-IV RIPRAP (CY)	0	3,400	3,400
CLASS III-IV RIPRAP (SF)	0	13,000	13,000



TYPICAL SECTION

SCALE: 1" = 10"



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ALYESKA PIPELINE SERVICE CO.

2021 RIVERS AND FLOODPLAINS IMPROVEMENTS
SAGAVANIRKTOK RIVER – BURIED SILL
SECTIONS

TRANS ALASKA PIPELINE SYSTEM

DATE: 02/26/21

PLATE 3

REV. B DWN. MTH CKD. AJN APPR. JPD

SCALE: AS NOTED

SHEET 3 OF 3

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Permit Narrative, Milepost 32.6
Sagavanirktok (Sag) River Rock Vane Installation
Permit Narrative

Purpose

The purpose of this project is to install rock vanes at Pipeline Milepost 32.6 on the Sagavanirktok River to protect the integrity of the Trans-Alaska Pipeline. These rock vanes will reestablish the bank line as it was in 2018 and prevent further erosion towards the buried mainline pipe.

Site Description

The project site is located approximately 33 miles south of Pump Station 1 and 25 miles north of Pump Station 2 on the Trans-Alaska Pipeline. In this area the Dalton Highway and the pipeline follow the west side of the Sagavanirktok floodplain which is over a mile wide. Soils in this area consist of organic silt with some sand, gravel mixed with sand, numerous cobbles and scattered boulders. The vegetation zone is lowland tundra, which consists of sedges, grasses and mosses. The fish species in the Sag River are the Arctic Char, Arctic Grayling, Burbot and White Fish. The Sag River is classified as an anadromous fish stream, and its side channels are also considered anadromous because of their connection to the main channel.

Problem Description

There's been continuing bank erosion towards the pipeline downstream of an existing revetment. The buffer in this eroding area between the Sag River and the pipeline is as little as 159 feet. Between 2013 and 2020 up to approximately 82 feet of bank was lost to erosion.

The existing revetment buttresses the Pipeline from the Sag River main channels. Because at this location the Sag River is braided, channel patterns can shift over time that can lead to severe angles of attack on the stream bank. These channel shifts can result in significant bank erosion towards the pipeline and threaten its integrity.

Project Description

This project will install a series of rock vanes with 'hockey' blades at their tips, along the eroding bank. The tips of the rock vanes will be approximately aligned with the 2018 bankline. The westerly sections of the rock vanes (streambank side) will be buried in a trench and the easterly sections that lie between the 2018 and current eroding bankline will not be buried. See attached drawings for more details on the existing structures, quantities and dimensions.

To minimize disturbances to existing vegetation, tundra/equipment mats will be used to access the worksite from the existing pipeline workpad. All work will be done from the top or along the structure footprint. No in-stream equipment work is anticipated except for the equipment bucket.

Upon completion of work stockpiled organics will be used on the final cover to promote natural revegetation of native species.

Work in and Around Water

Only the excavator bucket is anticipated to be in the water during construction.

Equipment requirements include front-end loaders, backhoes, bulldozers, dump truck and off-highway trucks. The work is expected to take about 30 days to complete during the time frame of June 1, 2021 and October 31, 2021.

Environmental Considerations and Mitigation

The design with partially buried vanes is the preferred alternative to a conventional spur dike or a revetment. This method has the least impact on aquatic resources by keeping away from the riverbank and actively flowing water. The construction equipment movements will be confined to the existing TAPS workpad, the project footprint and mats. The revegetation application that will be used for this project has been successfully demonstrated to restore the pre-existing biological productivity within two to three years in a high latitude arctic environment.

There is no designated critical habitat in the vicinity of the area. Direct impacts to threatened and endangered species are very unlikely because they are not known to inhabit the subject area. Polar bears and eiders are typically not nesting or denning here. In addition, if a polar bear were to stray this far inland, all of Alyeska's operations follow the company's Polar Bear Interaction Plan that has been approved by the US Fish and Wildlife Service.

There should be no loss of wetlands, and no additional mitigation is planned.

Approximate Construction Sequence of Work

1. Mobilize personnel and equipment
2. Haul material
3. Install Tundra Mats
4. Remove and stockpile organics from work area
5. Excavate trench and construct rock vanes
6. Cap the footprint of excavation with stockpiled organics and trackwalk
9. Dispose of excess material, clean up work site, remove mats and demobilize.

The work sequence and access routes may be altered slightly depending on field conditions encountered at time of construction.

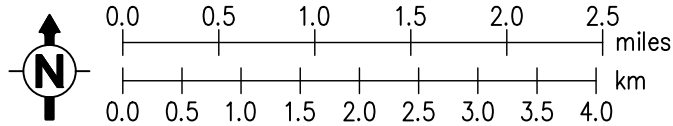
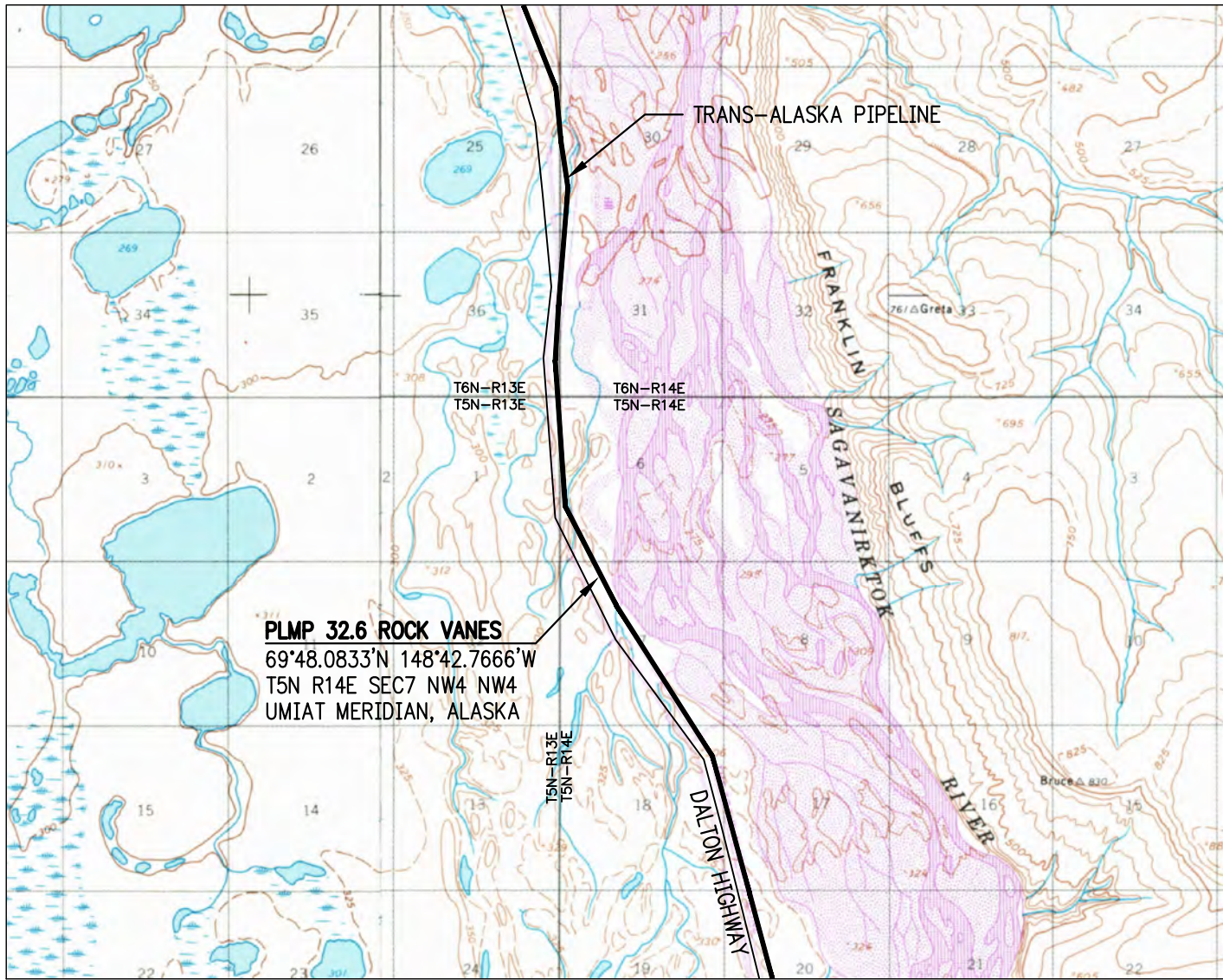
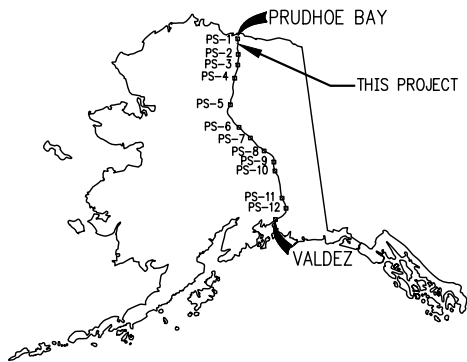
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ADJACENT PROPERTY OWNER: STATE OF ALASKA

ALYESKA PIPELINE SERVICE CO.

2021 RIVERS AND FLOODPLAINS IMPROVEMENTS
LOWER SAGAVANIRKTOK RIVER – ROCK VANES
LOCATION AND VICINITY MAP

TRANS ALASKA PIPELINE SYSTEM

DATE: 02/26/21

PLATE 1

REV. B DWN. JAM CKD. AJN APPR. JPD

SCALE: AS NOTED

SHEET 1 OF 3

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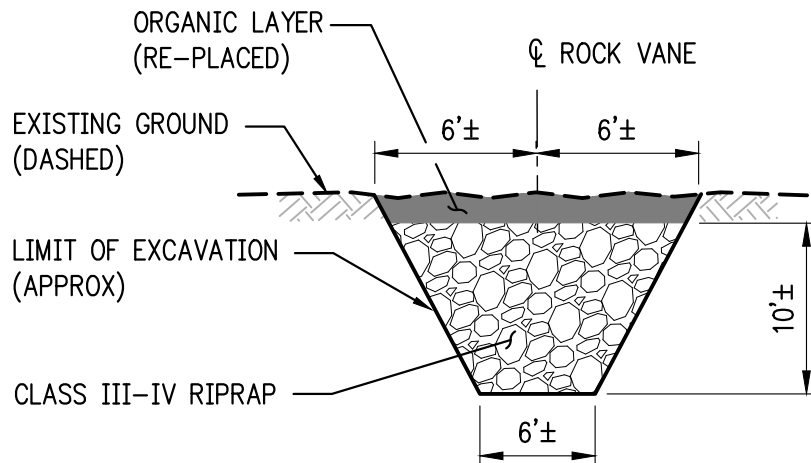
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ESTIMATED MATERIAL QUANTITIES

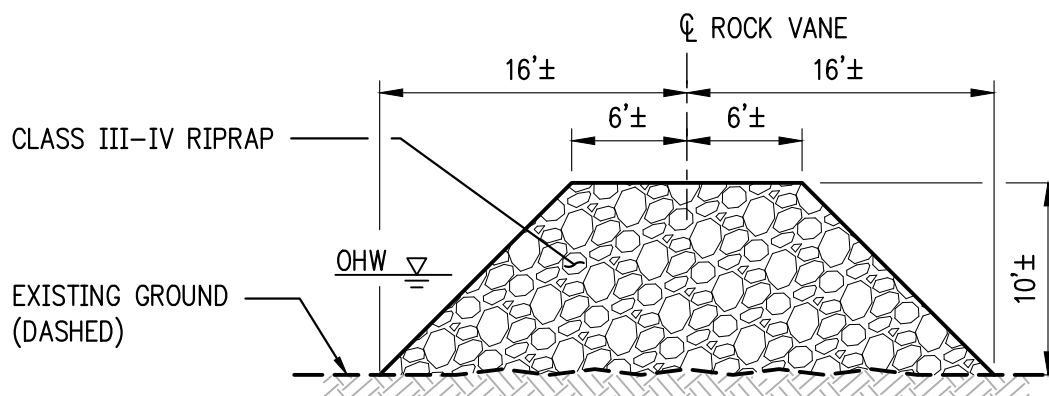
	BELOW OHW	ABOVE OHW	TOTAL
CLASS III-IV RIPRAP (CY) ROCK VANE	3,400	1,150	4,550
CLASS III-IV RIPRAP (SF) ROCK VANE	10,500	3,000	13,500



TYPICAL SECTION (ON LAND)

SCALE: 1" = 10'

A
2



TYPICAL SECTION (IN WATER)

SCALE: 1" = 10'

B
2

ADJACENT PROPERTY OWNER: STATE OF ALASKA

ALYESKA PIPELINE SERVICE CO.

2021 RIVERS AND FLOODPLAINS IMPROVEMENTS
LOWER SAGAVANIRKTOK RIVER – ROCK VANES
SECTIONS

TRANS ALASKA PIPELINE SYSTEM

DATE: 02/26/21

PLATE 3

REV. B DWN. JAM CKD. AJN APPR. JPD

SCALE: AS NOTED

SHEET 3 OF 3

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