



Chris Wrobel
Permitting Coordinator
ConocoPhillips Alaska, Inc.
P.O. Box 100360
Anchorage, AK 99510-0360
Phone: (907) 263-4691
Email: Chris.P.Wrobel@ConocoPhillips.com

January 16, 2018

DOG Permitting
State of Alaska
Department of Natural Resources
550 West 7th Avenue, Suite 1100
Anchorage, AK 99501-3563

Re: Greater Kuparuk Road Improvements, MSD to CPF-2
Kuparuk River Unit

To whom this may concern:

ConocoPhillips Alaska, Inc. (CPAI) respectfully requests an amendment to LO/NS 81-180 in order to improve existing gravel roads between Mine Site D (MSD) and Central Processing Facility No. 2 (CPF-2) within the Kuparuk River Unit (KRU). The purpose of the project is to bring existing main roads and drill site access roads up to current engineering standards for the safe and efficient movement of drilling rigs and to stabilize underlying permafrost.

Additional details are provided in the attached project description, application form, and figures.

If you have any questions or need additional information, please contact me at (907) 263-4691, or at Chris.P.Wrobel@ConocoPhillips.com

Sincerely,

A handwritten signature in black ink that reads "Chris Wrobel".

Chris Wrobel
Coordinator - Permitting

Attachments:

Project Description
ADNR DOG Unit Plan of Operations Amendment Forms
Figures



Greater Kuparuk Road Improvements

Project Description

Project Overview

ConocoPhillips Alaska, Inc. (CPAI) requests authorization to improve existing gravel roads within the Kuparuk River Resource Development District and Kuparuk River Unit (Kuparuk). The purpose of the project is to bring existing main roads and drill site access roads up to current engineering standards for the safe and efficient movement of drilling rigs and to stabilize underlying permafrost. Currently, there are various road sections where the existing road height ranges from 1 foot to 4 feet above the ground surface. Areas along the existing roads lack sufficient bearing capacity and during past drilling rig moves, rigs have become stuck, impeding traffic and delaying activities. This project would increase the thickness of selected road sections to approximately 6.5 feet above the ground surface, and increase the width to 35 feet across the road surface. Thicker roads would have a wider and more stable surface that requires less maintenance, allows more efficient drilling rig movement, and provides safer driving conditions.

Location

The project is located along the Oliktok Road south of the Drill Site 3N (DS-3N) access road intersection, and east/west along the Spine Road between Central Processing Facility 1 (CPF-1) and DS-2M. The project area also includes the drill site (DS) access roads for DS-3N, DS-2G, and between DS-3M and DS-3I. The project is located within the meridian, townships, ranges, and sections listed below in Table 1.

Table 1. Project location by meridian, township, range, and section.

Meridian, Township, & Range	Section
U11N 8E	23, 24, 26, 27
U11N 9E	1, 11, 12, 14, 15, 16, 19, 20, 21, 29, 32
U11N 10E	5, 6, 8, 9
U12N 9E	2, 3, 10, 11, 15, 22, 23, 25, 26, 36
U13N 8E	25, 36
U13N 9E	28, 33

Project Area

Approximately 26 miles of roads would be improved. The new road surface will be 35 feet wide for both main roads and drill site access roads. The following dimensions and quantities are conservative estimates based on preliminary information and may be reduced during final design. The new toe-to-toe width will vary from 61 to 81 feet depending on terrain. Road sections will be widened by one foot to 20 feet per side, resulting in approximately 48 acres of new road footprint. Approximately 293,000 cubic yards of gravel would be placed in the new footprint. Additional gravel would be placed on top of the existing road prism for a total gravel volume of 1,300,000 cubic yards. In a single year, up to six miles of road may be improved with up to 300,000 cubic yards of gravel placed in up to 15 acres of new road footprint. Table 2 lists each road segment planned for improvement, along with the associated ADNR LONS, road length, gravel requirements, and acreage of the new footprint (outside of the existing footprint toe). See also the attached Figures.

Table 2. Road Segments Planned for Improvements

Road Segment	LONS	Road Type	Road Area	Length (Miles)	Gravel Required (CY)	New Acres
CPF-2 to DS-2B	81-172	Main	CPF2	1.65	62,731	3.55
DS-3K to DS-1Y	81-179	Main	CPF3	7.46	311,297	13.08
MSD to CPF-2	81-180	Main	CPF2	6.45	257,646	11.81
DS-1A to MSC	81-183	Main	CPF1	1.21	47,175	1.75
DS-2G	82-180	Access	CPF2	1.75	96,723	4.35
DS-2B to DS-2A	83-002	Main	CPF2	1.72	73,718	1.63
DS-2A to DS-2M	84-132	Main	CPF2	2.80	120,006	2.65
DS-3N	84-137	Access	CPF3	1.30	70,326	2.60
DS-3M to DS-3I	84-138	Access	CPF3	1.84	107,050	3.57

Construction Schedule

Construction is planned from 2018 through 2022 and includes the road types shown on the attached Figures and in Table 2 above. There are no new roads or road extensions planned with this project. Specific road sections will be scheduled year-by-year depending on future drilling objectives. Impacts to migratory birds would be substantially minimized by placing the first lift of gravel on the tundra in April before the migratory bird nesting window begins.

Gravel Source

Gravel will be sourced from Mine Sites E and C, and potentially F. The project will utilize the nearest available gravel source to reduce driving distances and vehicle traffic.

Culverts

Some existing 24-inch surface flow culverts will be replaced as necessary with smooth wall steel pipe. There are no culverts in fish bearing streams planned for replacement.

Waters of the U.S.

The expanded footprint is assumed to be Waters of the U.S., primarily wetlands and occasional fill in waterbodies where waterbodies are already adjacent to the existing road prism. Habitat descriptions of the wetlands and waterbodies are provided in the attached letter report from Weston Solutions, Inc. Areas where waterbodies may receive fill are provided in the attached figures from Lounsbury and Associates, Inc. During pre-application meetings with the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife, a wetland delineation and functional assessment (i.e. aquatic site assessment) were determined by the agencies to be unnecessary due to the project's very narrow impact area, its purpose (maintenance), and the presence of existing disturbance along the road edges.

Threatened and Endangered Species

Both the spectacled eider and the polar bear are listed under the Endangered Species Act and may be found within the project area. Additionally, the project is located within Unit 2, terrestrial denning habitat, of the designated polar bear critical habitat. Both species are covered under the Programmatic Biological Opinion for the 2016-2017 Wetland Impacts of the North Slope. Project construction may occur year-round. Impacts to nesting spectacled eiders would be avoided by placing gravel on the tundra outside of the migratory bird nesting season. The project footprint lacks the topographic relief that would accumulate enough snow to support polar bear denning. Potential effects to transient (non-denning) polar bears that may enter the project area will be minimized through CPAI's compliance with existing and future authorizations under the Marine Mammal Protection Act (MMPA) Letters of Authorization (LOA).

Cultural Resources

A Cultural Resources survey was conducted for the project. No cultural or historic resources were found near the project area. Results of the survey are summarized in a letter report by Reanier and Associates submitted separately to the U.S. Army Corps of Engineers and the State Historic Preservation Office.

Construction Equipment

Typical construction equipment may include graders, front-end loaders, dump trucks, and excavators. Fuel would be provided by a refueling service truck. Work will be conducted from existing roads.

Other Permits and Authorizations

- North Slope Borough Development Permit
- Alaska Department of Fish and Game Fish Habitat Permit
- U.S. Fish and Wildlife Service, Section 7 Consultation
- Alaska State Historic Preservation Officer Section 106 Review
- Alaska Department of Natural Resources Division of Oil and Gas Unit Amendment
- Alaska Department of Environmental Conservation, Section 401 Water Quality Certification
- Various Pipeline Right of Way (ROW), Letters of Non-Objection



UNIT PLAN OF OPERATIONS AMENDMENT APPLICATION

State of Alaska
 Department of Natural Resources, Division of Oil & Gas
 550 W. 7th Ave, Suite 1100, Anchorage, AK 99501-3563
 Phone: 907-269-8800 Fax: 907-269-8943
 Permitting Email: dog.permitting@alaska.gov



SECTION I: APPLICANT INFORMATION	
1. Applicant: Name: ConocoPhillips Alaska, Inc. (CPAI) Mailing Address: P.O. Box 100360 City: Anchorage State: AK Zip Code: 99510-0360 Phone: 907-265-6213 Fax: n/a Email: Jessika.L.Gonzalez@ConocoPhillips.com	2. Applicant Contact: First Name: Jessika Last Name: Gonzalez Title: Permitting Coordinator Mailing Address: P.O. Box 100360 City: Anchorage State: AK Zip Code: 99510-0360 Phone: 907-265-6213 Fax: n/a Email: Jessika.L.Gonzalez@ConocoPhillips.com
3. Unit Name Kuparuk River Unit	
4. Unit Operator Contact: First Name: Wendy Last Name: Mahan Title: Field Environmental Coordinator Mailing Address: P.O. Box 100360 City: Prudhoe Bay State: AK Zip Code: 99734 Phone: 907-659-7212 Fax: 907-659-7254 Email: N1438@conocophillips.com Describe the relationship between the Unit Operator and the Applicant: CPAI is the unit operator	
SECTION II: 3RD PARTY INFORMATION (Fill out this section only if you are applying for the Applicant)	SECTION III: APPLICATION DATE AND NUMBER
3rd Party Company Name: N/A First Name: N/A Last Name: N/A Title: N/A Mailing Address: N/A City: N/A State: N/A Zip Code: N/A Phone: N/A Fax: N/A Email: N/A Describe the affiliation to the Applicant: N/A	Application Date (Office Use Only): Application Number: LO/NS 81-180
SECTION IV: PROJECT INFORMATION	
1. Project Name:	KRU Road Improvement Project Mine Site D to CPF-2
2. Proposed Start Date:	4/15/2018

3. Project Description:

Is activity discussed in the approved Plan of Development on file with the Division's Units Section? Yes No

Describe what and where:
 ConocoPhillips Alaska, Inc. (CPAI) requests authorization to improve existing gravel roads within the Kuparuk River Resource Development District and Kuparuk River Unit (Kuparuk). The purpose of the project is to bring existing main roads and drill site access roads up to current engineering standards for the safe and efficient movement of drilling rigs and to stabilize underlying permafrost. Please see the attachments for additional details.

SECTION V: LAND STATUS

1. State Mineral Estate:

Are supplemental pages for land status included in Appendix C? Yes No

Affected ADL: See Appendix C Date Effective: Varies Date Assigned: Unknown

Oil And Gas Lessee(s): CPAI

Surface Ownership: State of Alaska

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: None identified

Jointly Managed Lands: None identified

Other Considerations: None

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Add gravel to increase width and height of existing roadway	Umia, Multiple Townships, Ranges, and Sections	N/A (Linear)

2. State of Alaska Surface Lands:

Are supplemental pages for land status included in Appendix C? Yes No

Oil And Gas Mineral Estate Owner: N/A

Access Authorization(s): N/A

Special Use Lands: N/A

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
N/A	N/A	N/A

3. Private Lands:

Are supplemental pages for land status included in Appendix C? Yes No

Oil And Gas Mineral Estate Owner: N/A

Surface Ownership And Access Agreement(s): N/A

Special Use Lands: N/A

Jointly Managed Lands: N/A

Other Considerations: N/A

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

SECTION VI: SEQUENCE AND SCHEDULE OF OPERATIONS

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1.	Addition of gravel	4/15/2018	12/31/2022
2.	N/A	N/A	N/A

3.	N/A	N/A	N/A
4.	N/A	N/A	N/A
5.	N/A	N/A	N/A
6.	N/A	N/A	N/A
7.	N/A	N/A	N/A
8.	N/A	N/A	N/A
9.	N/A	N/A	N/A

SECTION VII: PROJECTED USE REQUIREMENTS

1. Describe the proposed operations, including the location and design, of **Well Sites**:

N/A

2. Describe the proposed operations, including the location and design, of **Buildings**:

N/A

3. Describe the proposed operations, including the location and design, of **Fuel and Hazardous Substances**:

N/A

4. Describe the proposed operations, including the location and design, of **Solid Waste Sites**:

N/A

5. Describe the proposed operations, including the location and design, of **Water Supplies**:

N/A

6. Describe the proposed operations, including the location and design, of **Utilities**:

N/A

7. Describe the proposed operations, including the location and design, of **Material Sites**:

N/A

8. Describe the proposed operations, including the location and design, of **Roads**:

This project would increase the thickness of selected road sections to approximately 6.5 feet above the ground surface, and increase the width to 35 feet across the road surface. Thicker roads would have a wider and more stable surface that requires less maintenance, allows more efficient drilling rig movement, and provides safer driving conditions. Please see the attachments for additional details.

9. Describe the proposed operations, including the location and design, of **Airstrips**:

N/A

10. Describe the proposed operations, including the location and design, of **All Other Facilities and Equipment**:

N/A

11. If another permit(s) is required for the above described Projected Use Requirements, provide the following information:

Agency	Permit Type	Permit Number	Application Status	Projected Use Requirement(s)
North Slope Borough	Conditional Development Permit	TBD	Draft	8
North Slope Borough	TLUI	N/A	Submitted	8
ADF&G	Fish Habitat Permit	TBD	Submitted	8
USACE	Section 404 Individual Permit	N/A	Submitted	8
USFWS	Section 7 Consultation	N/A	Approved	8
ADNR	DOG Unit PoO Amendment	TBD	Submitted	8

See attached.

Not Applicable

Not Applicable

LAND STATUS: SUPPLEMENTAL SECTION

1. State Mineral Estate:

Affected ADL: 025647 Date Effective: 11/2/1964 Date Assigned: Unknown

Oil And Gas Lessee(s): CPAI

Surface Ownership: State of Alaska

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: None Identified

Jointly Managed Lands: None Identified

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Add gravel to increase width and height of existing roadway	Umiat, T11N, R10E, S5, 6	N/A (Linear)
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Affected ADL: 025646 Date Effective: 11/2/1694 Date Assigned: Unknown

Oil And Gas Lessee(s): CPAI

Surface Ownership: State of Alaska

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: None Identified

Jointly Managed Lands: None Identified

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Add gravel to increase width and height of existing roadway	Umiat, T11N, R9E, S1, 11, 12	N/A (Linear)
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: 025653 Date Effective: 11/2/1694 Date Assigned: Unknown

Oil And Gas Lessee(s): CPAI

Surface Ownership: State of Alaska

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: None Identified

Jointly Managed Lands: None Identified

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Add gravel to increase width and height of existing roadway	Umiat, T11N, R9E, S14	N/A (Linear)
Click here to enter text.	Click here to enter text.	Click here to enter text.
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Affected ADL: 025654	Date Effective: 11/2/1694	Date Assigned: Unknown
Oil And Gas Lessee(s): CPAI		

Surface Ownership: State of Alaska

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: None Identified

Jointly Managed Lands: None Identified

Other Considerations: None Identified

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Add gravel to increase width and height of existing roadway	Umiate, T 11N, R9E, S15, 16, 21	N/A (Linear)
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Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL.	Date Effective: Enter Date.	Date Assigned: Enter Date.
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Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement: Yes No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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2. State of Alaska Surface Lands:

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: [Click here to enter text.](#)

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Oil And Gas Mineral Estate Owner: [Click here to enter text.](#)

Access Authorization(s): [Click here to enter text.](#)

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: [Click here to enter text.](#)

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Oil And Gas Mineral Estate Owner: [Click here to enter text.](#)

Access Authorization(s): [Click here to enter text.](#)

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: [Click here to enter text.](#)

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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3. Private Lands:

Oil And Gas Mineral Estate Owner: [Click here to enter text.](#)

Surface Ownership And Access Agreement(s): [Click here to enter text.](#)

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: [Click here to enter text.](#)

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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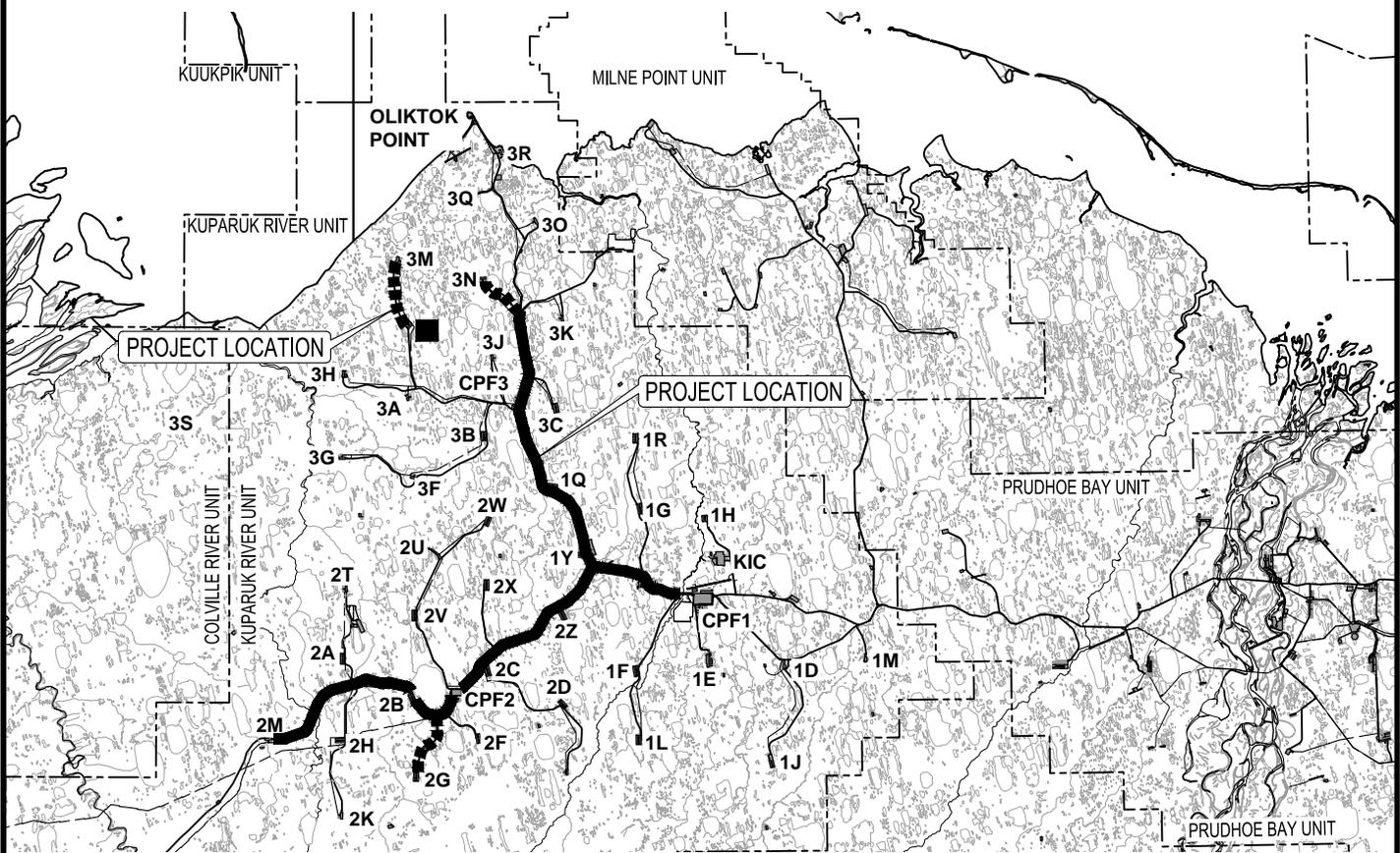
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Surface Ownership And Access Agreement(s): [Click here to enter text.](#)

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: Click here to enter text.		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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<p>Oil And Gas Mineral Estate Owner: Click here to enter text.</p> <p>Surface Ownership And Access Agreement(s): Click here to enter text.</p> <p>Special Use Lands: Click here to enter text.</p> <p>Jointly Managed Lands: Click here to enter text.</p> <p>Other Considerations: Click here to enter text.</p>		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Click here to enter text.	Click here to enter text.	Click here to enter text.
<p>Oil And Gas Mineral Estate Owner: Click here to enter text.</p> <p>Surface Ownership And Access Agreement(s): Click here to enter text.</p> <p>Special Use Lands: Click here to enter text.</p> <p>Jointly Managed Lands: Click here to enter text.</p> <p>Other Considerations: Click here to enter text.</p>		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Click here to enter text.	Click here to enter text.	Click here to enter text.



PURPOSE:
GRAVEL ROAD SAFETY
IMPROVEMENTS TO PROVIDE
ADEQUATE SUMMER ACCESS FOR
DRILL RIGS.

DATUM: BPMSL, NAD83 ASP ZONE 4

APPLICANT: CONOCO PHILLIPS
2017 ALASKA, INC

LOCATION: T11N R8E, T11N R9E,
T11N R10E, T12N R9E
T13N R8E, T13N R9E
UMIAT MERIDIAN

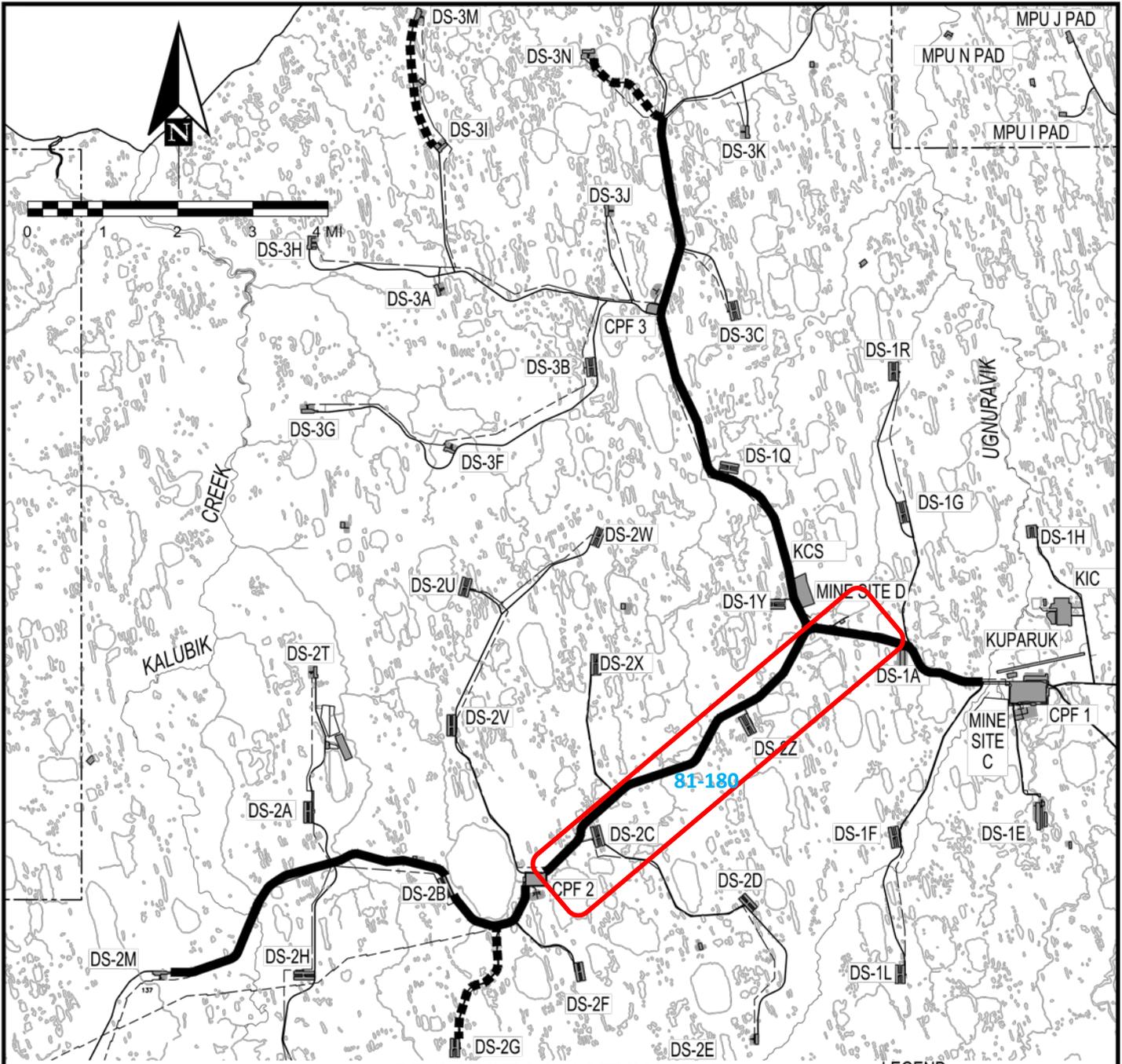
ADDRESS:

PROPOSED: GKA ROAD
IMPROVEMENTS

IN: KUPARUK RIVER UNIT
NEAR/AT: KUPARUK
COUNTY: ANS BOROUGH
STATE: ALASKA

SHEET 1 of 22
11-16-2017





PROJECT LOCATION MAP

LEGEND

- MAIN ROAD IMPROVEMENTS
- ACCESS ROAD IMPROVEMENTS



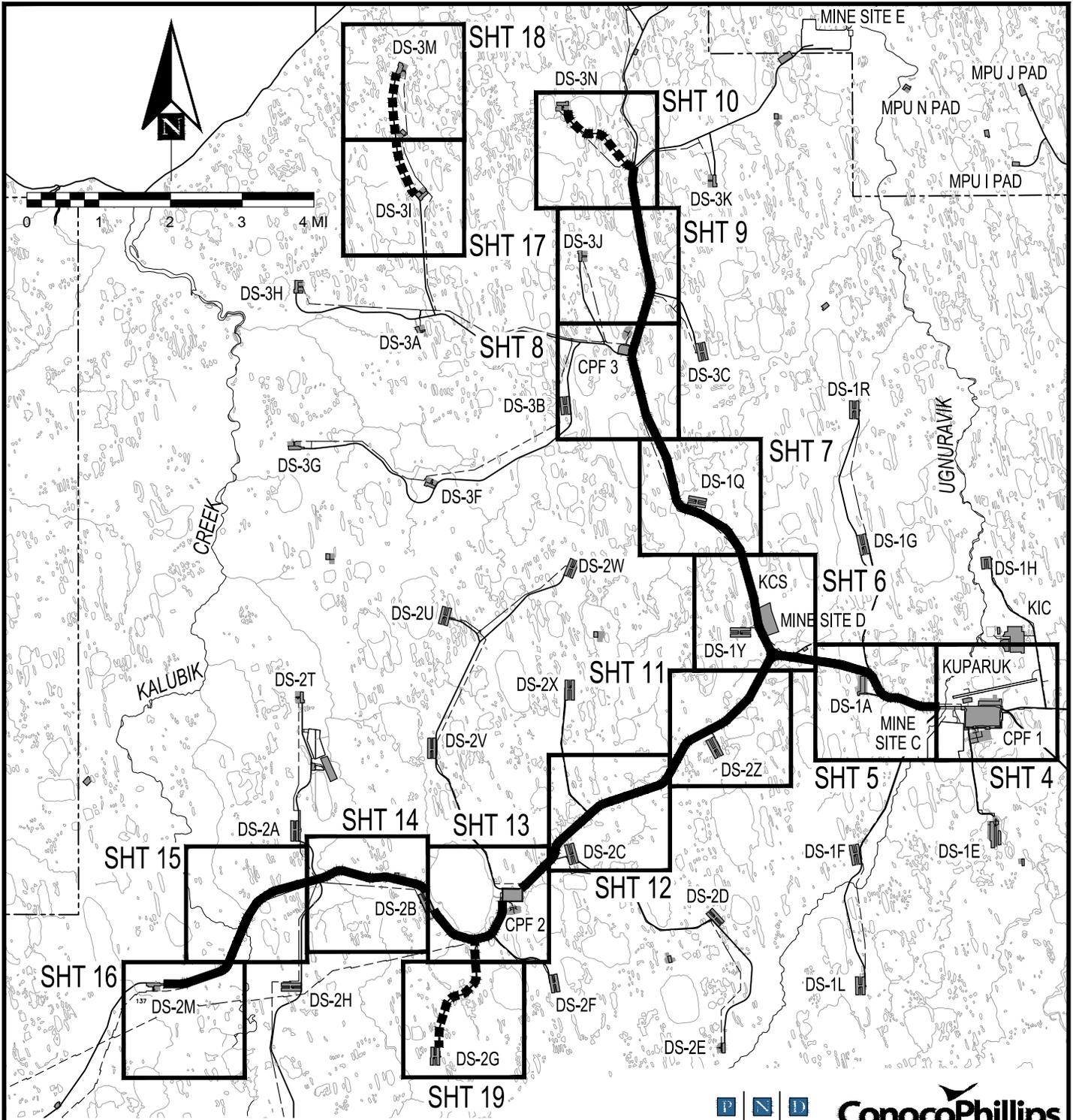
ROAD IMPROVEMENT QUANTITIES	
TOTAL ROAD LENGTH	26± MILES
EXISTING ROAD FOOTPRINT*	171 ACRES
PROPOSED ROAD EXPANSION FOOTPRINT**	48 ACRES
PROPOSED GRAVEL QUANTITIES	1,325,000 CY

* EXISTING GRAVEL ROAD FOOTPRINT BASED UPON TOPOGRAPHIC SURVEY PERFORMED SEPTEMBER 2016 AND SEPTEMBER 2017, AND AERIAL IMAGERY WHERE SURVEY IS NOT AVAILABLE.
 ** ROAD EXPANSION FOOTPRINT FOR MATERIAL PLACED OVER NATIVE TUNDRA ONLY.

REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD IMPROVEMENTS

THE MAP PROJECTION IS ALASKA STATE PLANE, NAD 83. THIS MAP IS BASED ON DATA PROVIDED BY THE U.S. GEOLOGICAL SURVEY, THE ALASKA DEPARTMENT OF NATURAL RESOURCES, AND CONOCOPHILLIPS ALASKA, INC.

AT: ALASKA
 SHEET **2** of **22** 11-16-2017



LEGEND

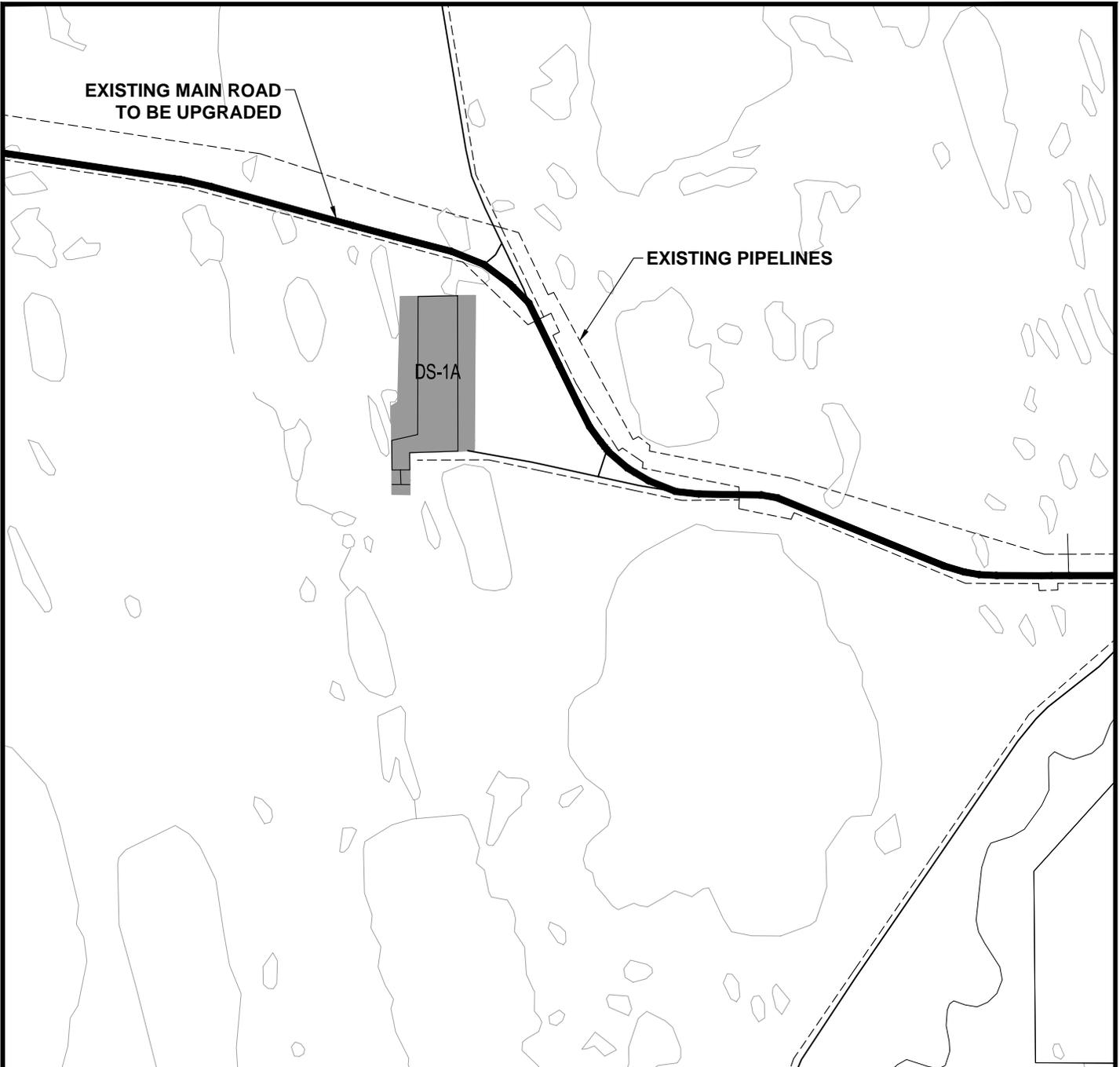
- MAIN ROAD IMPROVEMENTS
- ACCESS ROAD IMPROVEMENTS

ROAD IMPROVEMENTS KEY MAP



REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD IMPROVEMENTS

AT: ALASKA
 SHEET **3** of **22** 11-16-2017



ROAD IMPROVEMENTS (2 of 16)

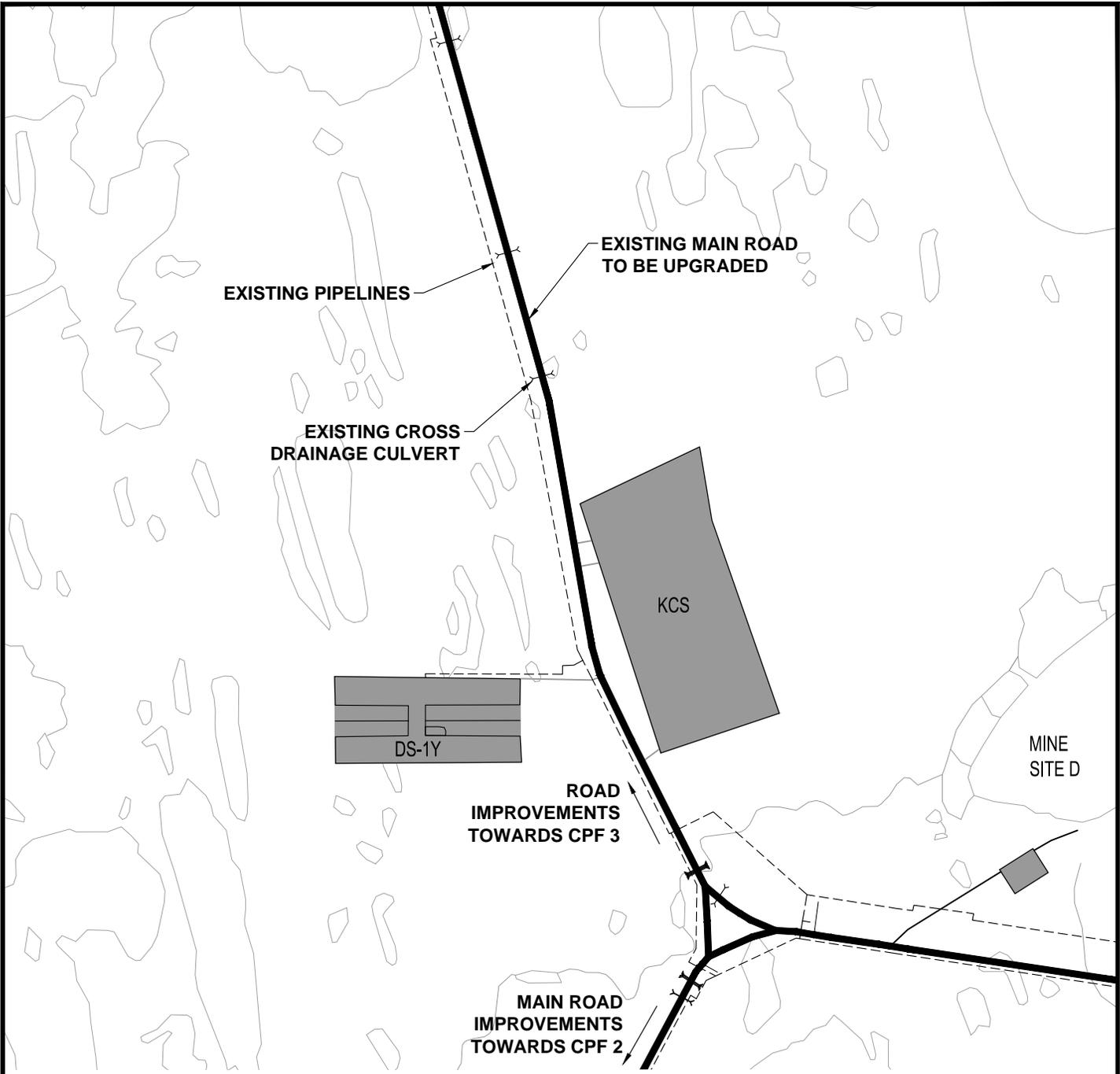


NOTE:
CURRENT TOPOGRAPHIC SURVEY HAS
NOT BEEN PERFORMED ON THIS
PORTION OF PROJECT.

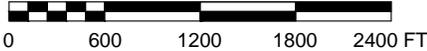


REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS

AT: ALASKA
 SHEET **5** of **22** 11-16-2017



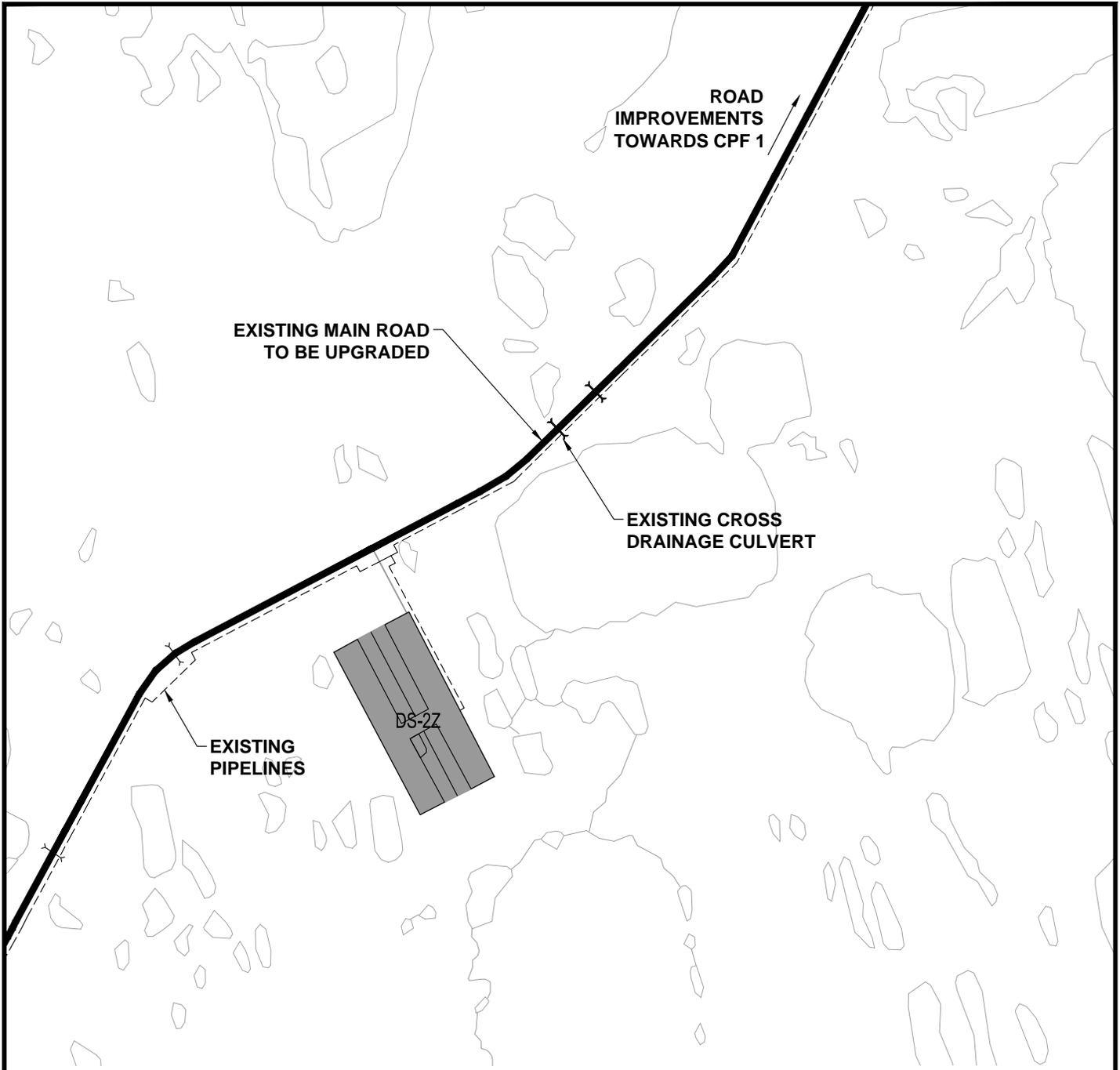
ROAD IMPROVEMENTS (3 of 16)



NOTE:
EXISTING CULVERT LOCATIONS ARE
BASED ON TOPOGRAPHIC SURVEY.



REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD IMPROVEMENTS
 AT: ALASKA
 SHEET **6** of **22** 11-16-2017



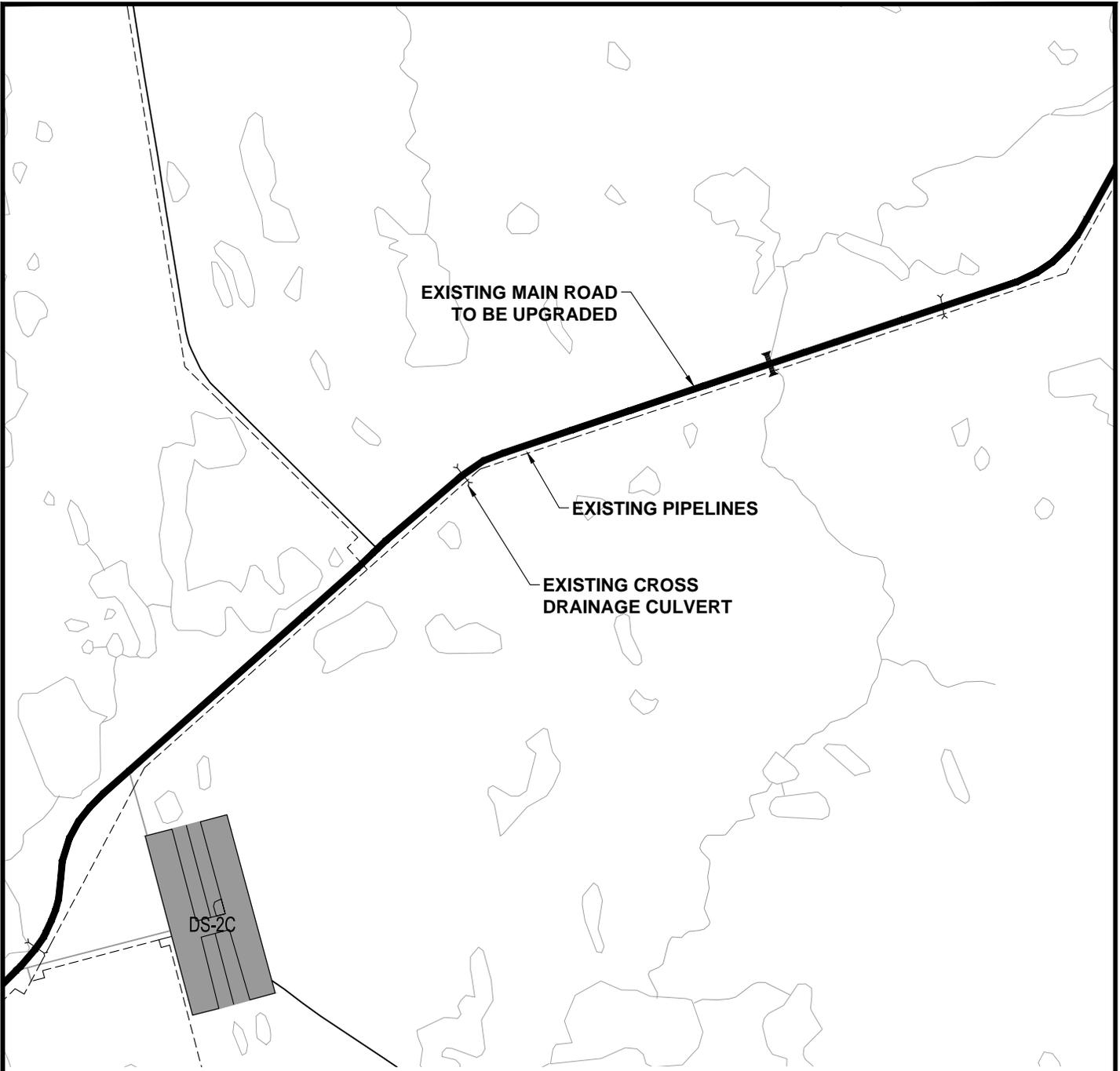
ROAD IMPROVEMENTS (8 of 16)



NOTE:
EXISTING CULVERT LOCATIONS ARE
BASED ON TOPOGRAPHIC SURVEY.



REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS
 AT: ALASKA
 SHEET **11** of **22** 11-16-2017



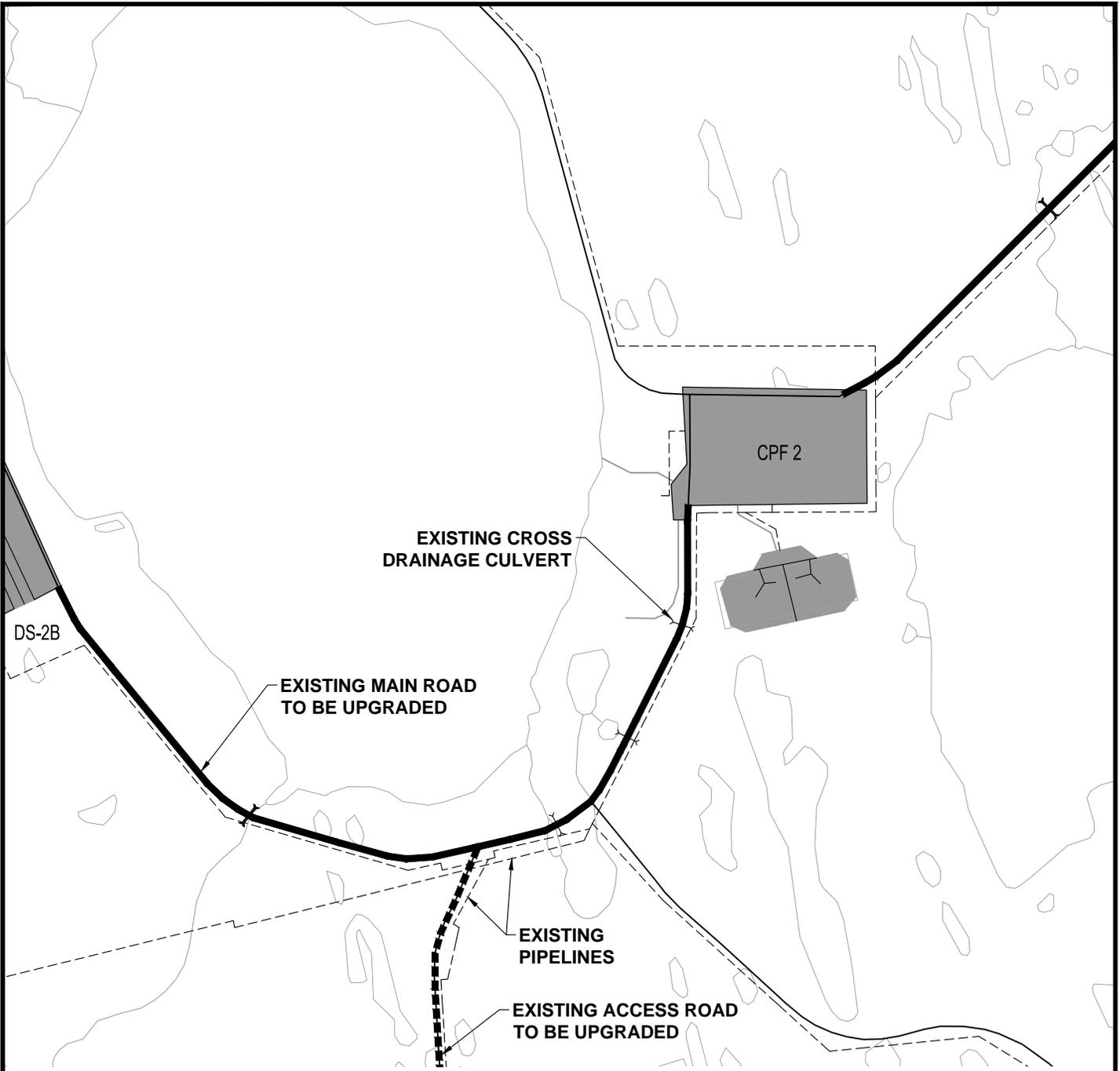
ROAD IMPROVEMENTS (9 of 16)



NOTE:
EXISTING CULVERT LOCATIONS ARE
BASED ON TOPOGRAPHIC SURVEY.



REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS
 AT: ALASKA
 SHEET **12** of **22** 11-16-2017

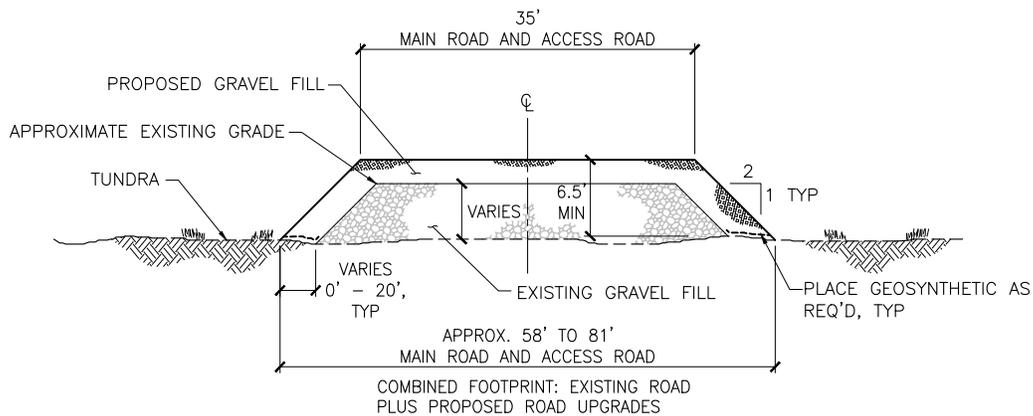


ROAD IMPROVEMENTS (10 of 16)

NOTE:
EXISTING CULVERT LOCATIONS ARE
BASED ON TOPOGRAPHIC SURVEY.



REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS
 AT: ALASKA
 SHEET **13** of **22** 11-16-2017



TYPICAL MAIN ROADWAY AND ACCESS ROADWAY IMPROVEMENT SECTION

NOT TO SCALE

NOTES:

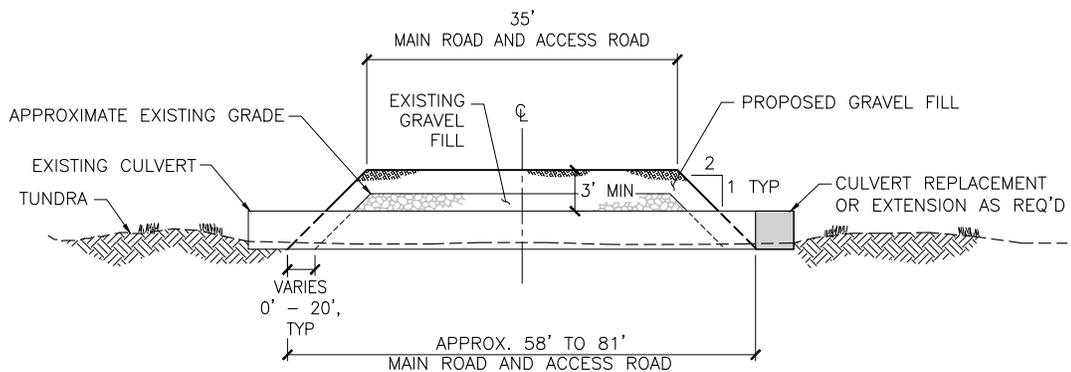
1. COMBINED ROAD FOOTPRINTS SHOWN ABOVE ARE APPROXIMATIONS BASED UPON TYPICAL ROAD PRISMS. ACTUAL FOOTPRINTS WILL VARY BASED UPON LOCAL TUNDRA FEATURES AND TOPOGRAPHY. ROAD WIDTHS MAY BE WIDER THAN DIMENSIONS INDICATED IN ISOLATED AREAS WHERE NATURAL TERRAIN DEPRESSIONS OCCUR, OR WHERE INFRASTRUCTURE REQUIRES A TALLER ROAD PRISM (e.g. STREAM AND PIPELINE CROSSINGS).
2. GRAVEL EXPANSION FOOTPRINT MAY OCCUR ON BOTH SIDES OF ROADWAY, AND IN SOME INSTANCES, ONLY ON ONE SIDE OF ROADWAY.
3. GEOSYNTHETIC FABRIC MAY BE INSTALLED PRIOR TO GRAVEL PLACEMENT IN ROAD FOOTPRINT EXPANSION AREAS, AS DEEMED NECESSARY.



ConocoPhillips
Alaska, Inc.

REFERENCE: 2017
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TYPICAL CULVERT CROSSING SECTION

NOT TO SCALE

NOTES:

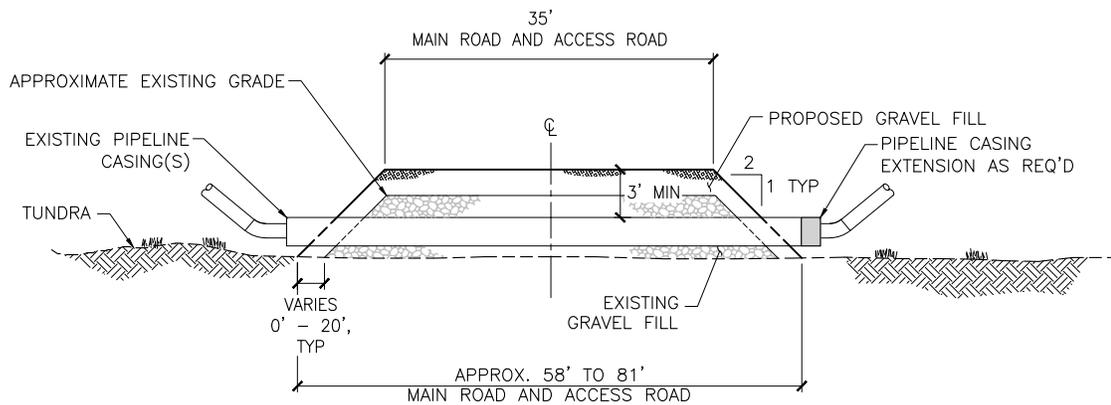
1. CULVERTS SHALL BE REPLACED BY A CULVERT OF SIMILAR DIAMETER, OR EXTENDED AS NECESSARY.
2. CULVERT EXTENSIONS MAY BE REQUIRED ON ONE OR BOTH SIDES OF ROAD.
3. CULVERTS AT KNOWN FISH BEARING STREAMS SHALL NOT BE MODIFIED.
4. UP TO 200 CULVERTS MAY BE REPLACED OR EXTENDED ALONG THE PROJECT LENGTH.
5. CULVERTS MAY BE REPLACED OR EXTENDED UP TO A TOTAL LENGTH OF 120 FT.



ConocoPhillips
Alaska, Inc.

REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS

AT: ALASKA
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TYPICAL PIPELINE CROSSING SECTION

NOT TO SCALE

NOTES:

1. PIPELINE CASINGS SHALL BE EXTENDED AS NECESSARY, AND MAY BE REQUIRED ON ONE OR BOTH SIDES OF ROAD.
2. UP TO 190 PIPELINE CASINGS MAY BE EXTENDED ALONG THE PROJECT LENGTH.
3. PIPELINE CASINGS MAY BE EXTENDED UP TO A TOTAL LENGTH OF 185 FT.



ENGINEERS, INC.

ConocoPhillips
Alaska, Inc.

REFERENCE: 2017
 APPLICANT: CPAI
 PROPOSED: GKA ROAD
 IMPROVEMENTS

AT: ALASKA

SHEET **22** of **22** 11-16-2017