

Nanushuk Project

**Figure Set
(Sheets 1-61)**

Submitted by:



October 5, 2018

LEGEND



0 2 4 6 MI

- PROPOSED GRAVEL ROAD
- - - PROPOSED PIPELINE
- PROPOSED PAD
- EXISTING PAD/FACILITY
- EXISTING ROAD
- EXISTING PIPELINE



DATUM: NAVD88, NAD83 ASP Zone 4

APPLICANT: Oil Search Alaska, LLC

ACTIVITY: Road, Pad and Pipeline Construction

ADDRESS: 510 L Street, Suite 310
Anchorage, AK 99501

REFERENCE: POA-2015-025

PROJECT: Nanushuk Project

WATERWAY: Miluveach River

LOCATION: T10N R7,8E ; T11N R5,6,
7,8,9E ; T12N R6E ; T13N
R9E Umiat Meridian

COUNTY: North Slope Borough
STATE: Alaska

SHEET **1** of **61**
8-24-18

SHEET INDEX	
1	NANUSHUK DEVELOPMENT PROJECT VICINITY MAP
2	SHEET INDEX
3	ADJACENT LAND OWNERSHIP
4	ADJACENT LAND OWNERSHIP CONTACT INFORMATION
5	PROJECT OVERVIEW
6	CENTRAL PROCESSING FACILITY (CPF) PAD LAYOUT
7	CENTRAL PROCESSING FACILITY (CPF) PAD SECTIONS
8	DS1 LAYOUT
9	DS1 PAD SECTIONS
10	DS2 LAYOUT
11	DS2 PAD SECTIONS
12	DS3 LAYOUT
13	DS3 PAD SECTIONS
14	OPERATIONS CENTER LAYOUT
15	OPERATIONS CENTER PAD SECTIONS
16	TIE-IN PAD LAYOUT
17	TIE-IN PAD SECTIONS
18	BOAT RAMP
19	BOAT RAMP SECTIONS
20	INFIELD ROADS AND PIPELINES OVERVIEW
21	INFIELD ROADS AND PIPELINES SHT 1 OF 4
22	INFIELD ROADS AND PIPELINES SHT 2 OF 4
23	INFIELD ROADS AND PIPELINES SHT 3 OF 4
24	INFIELD ROADS AND PIPELINES SHT 4 OF 4
25	ACCESS ROAD AND NANUSHUK PIPELINE OVERVIEW
26	ACCESS ROAD AND NANUSHUK PIPELINE SHT 1 OF 8
27	ACCESS ROAD AND NANUSHUK PIPELINE SHT 2 OF 8
28	ACCESS ROAD AND NANUSHUK PIPELINE SHT 3 OF 8
29	ACCESS ROAD AND NANUSHUK PIPELINE SHT 4 OF 8
30	ACCESS ROAD AND NANUSHUK PIPELINE SHT 5 OF 8
31	ACCESS ROAD AND NANUSHUK PIPELINE SHT 6 OF 8
32	NANUSHUK PIPELINE SHT 7 OF 8

SHEET INDEX CONT'D	
33	NANUSHUK PIPELINE SHT 8 OF 8
34	TYPICAL ROAD SECTIONS
35	TYPICAL ROAD TURNOUT
36	ROAD TURNOUTS WITH TUNDRA ACCESS RAMPS
37	CROSS DRAINAGE CULVERT CROSS SECTIONS
38	TYPICAL SINGLE/MULTIPLE CULVERT BATTERY SECTIONS
39	TYPICAL FISH PASSAGE CULVERT CROSS SECTIONS
40	NANUSHUK PIPELINE GUIDED PIPE SUPPORT
41	NANUSHUK PIPELINE ANCHOR PIPE SUPPORT
42	DS1 PIPELINE GUIDED PIPE SUPPORT
43	DS1 PIPELINE ANCHOR PIPE SUPPORT
44	DS2 PIPELINE GUIDED PIPE SUPPORT
45	DS2 PIPELINE ANCHOR PIPE SUPPORT
46	DS3 PIPELINE GUIDED PIPE SUPPORT
47	DS3 PIPELINE ANCHOR PIPE SUPPORT
48	MC7903 FRESHWATER PIPELINE
49	MC7903 WATER INTAKE AND PUMP HOUSE PAD
50	MC7903 WATER INTAKE AND PUMP HOUSE PAD SECTIONS
51	TYPICAL PROPOSED ROAD PIPELINE CROSSING
52	TYPICAL EXISTING ROAD PIPELINE CROSSING
53	TYPICAL BURIED ELECTRICAL AND FIBER OPTIC CABLE AT PIPELINE CROSSING
54	TYPICAL NANUSHUK PIPELINE CROSSING OVER EXISTING PIPELINES
55	PIPELINE RIVER CROSSING
56	KACHEMACH RIVER BRIDGE
57	KACHEMACH RIVER BRIDGE PIER SECTIONS
58	MILUVEACH RIVER BRIDGE
59	MILUVEACH RIVER BRIDGE PIER SECTIONS
60	SCREEDING FOOTPRINT
61	FILL ACREAGE AND VOLUMES

SHEET INDEX

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **2** of **61** 8-24-18

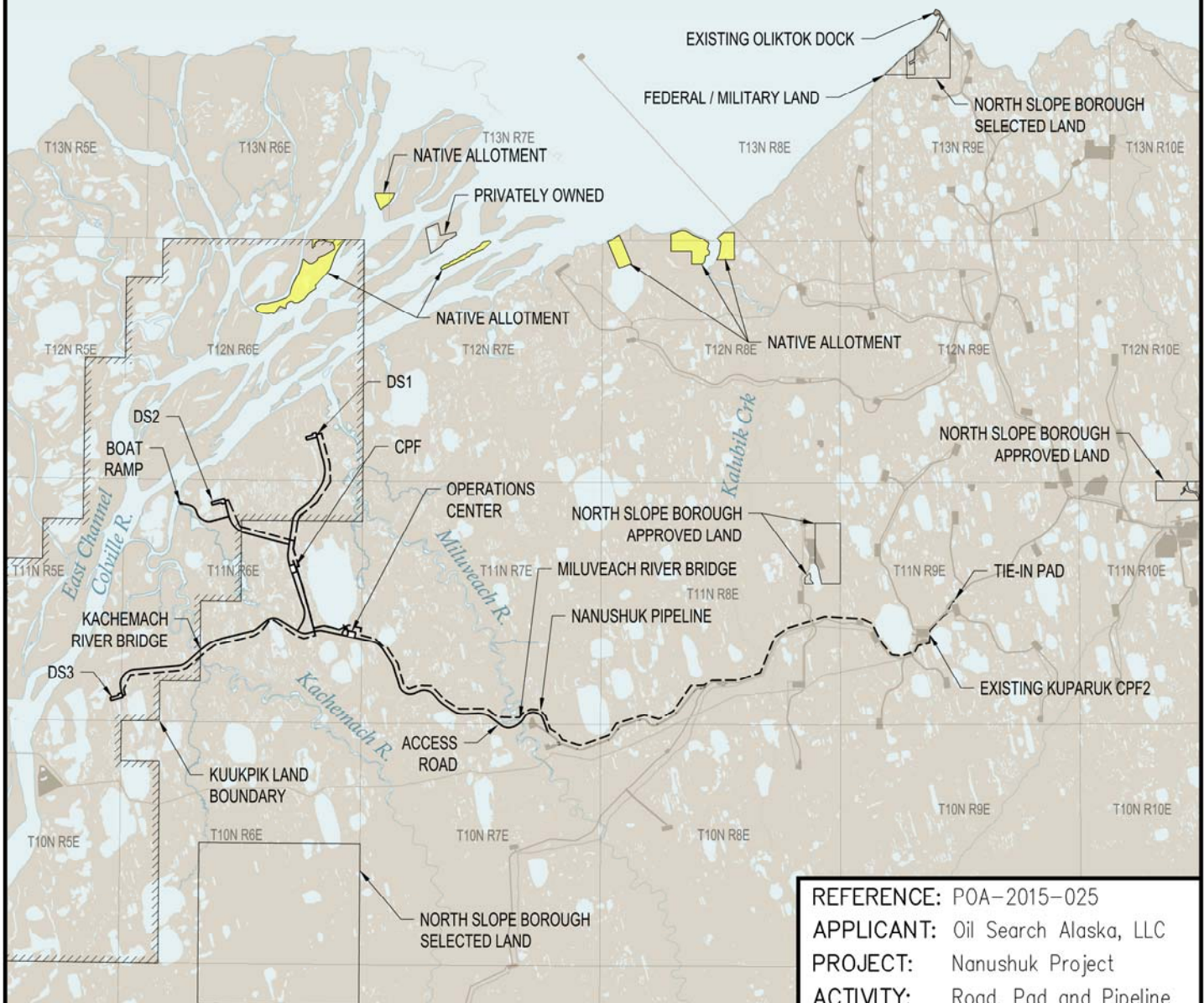
LEGEND



0 2 4 6 MI

- PROPOSED GRAVEL ROAD
- - - PROPOSED PIPELINE
- PROPOSED PAD
- EXISTING PAD/FACILITY
- EXISTING ROAD
- EXISTING PIPELINE
- NATIVE ALLOTMENT
- /// KUKUKPIK LANDS BOUNDARY

NOTE:
LAND NOT SPECIFICALLY LABELED IS
STATE OF ALASKA LAND.



ADJACENT LAND OWNERSHIP

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **3** of **61** 8-24-18

ADJACENT LAND OWNERSHIP CONTACT INFORMATION

KUUKPIK VILLAGE CORPORATION
P.O. BOX 89187
NUIQSUT, AK 99789
(907) 480-6220
ATTN: JOE NUKAPIGAK

NORTH SLOPE BOROUGH
P.O. BOX 69
BARROW, AK 99723
ATTN: HARRY OLEMAUN

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND & WATER
3700 AIRPORT WAY
FAIRBANKS, AK 99709
ATTN: JEANNE PROULX

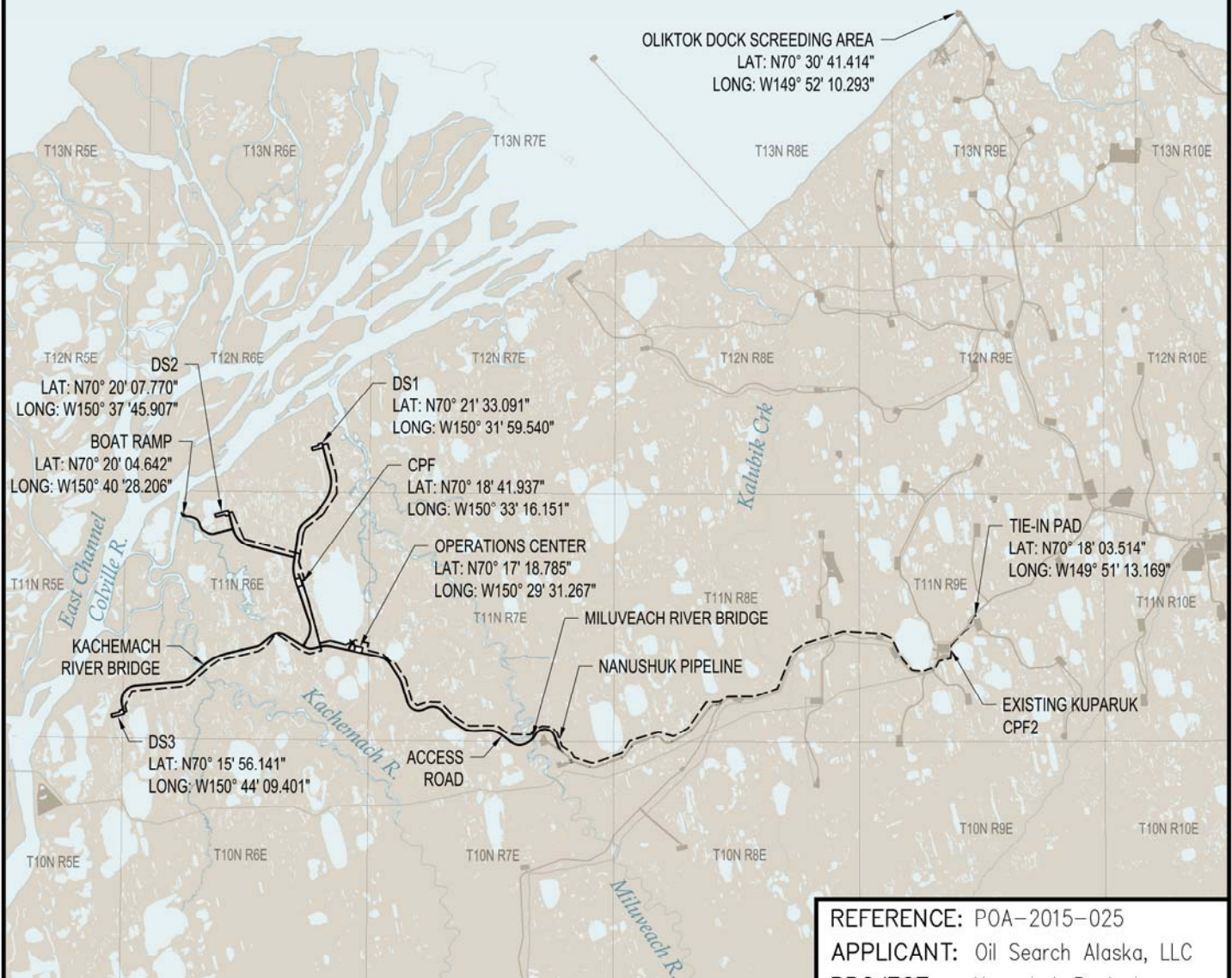
REFERENCE: POA-2015-025
APPLICANT: Oil Search Alaska, LLC
PROJECT: Nanushuk Project
ACTIVITY: Road, Pad and Pipeline
Construction
AT: North Slope Borough, AK
SHEET **4** of **61** 10-2-18

LEGEND



- PROPOSED GRAVEL ROAD
- - - PROPOSED PIPELINE
- PROPOSED PAD
- EXISTING PAD/FACILITY
- EXISTING ROAD
- EXISTING PIPELINE

0 2 4 6 MI



PROJECT OVERVIEW

REFERENCE: POA-2015-025

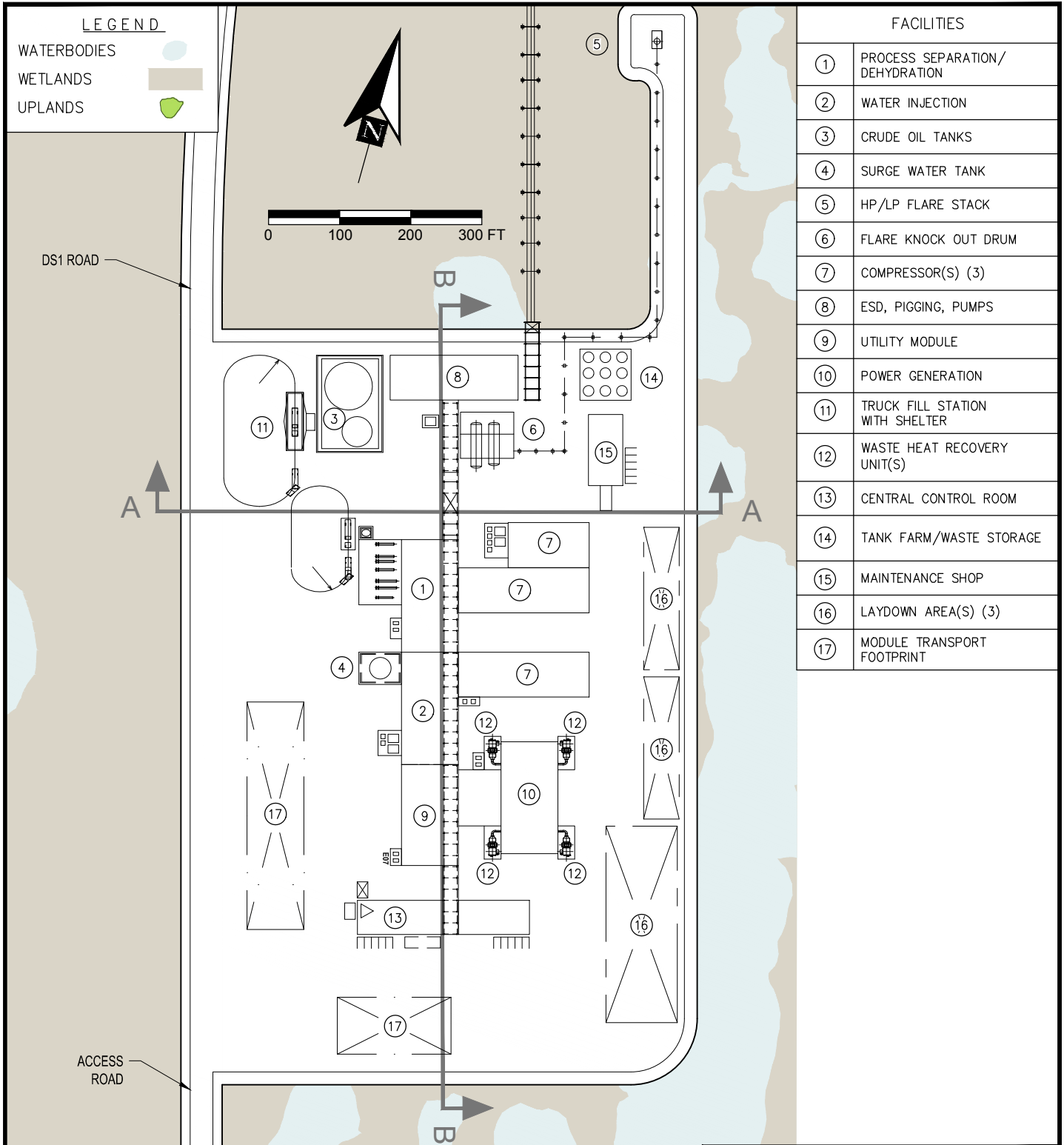
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **5** of **61** 8-24-18



FACILITIES	
①	PROCESS SEPARATION/ DEHYDRATION
②	WATER INJECTION
③	CRUDE OIL TANKS
④	SURGE WATER TANK
⑤	HP/LP FLARE STACK
⑥	FLARE KNOCK OUT DRUM
⑦	COMPRESSOR(S) (3)
⑧	ESD, PIGGING, PUMPS
⑨	UTILITY MODULE
⑩	POWER GENERATION
⑪	TRUCK FILL STATION WITH SHELTER
⑫	WASTE HEAT RECOVERY UNIT(S)
⑬	CENTRAL CONTROL ROOM
⑭	TANK FARM/WASTE STORAGE
⑮	MAINTENANCE SHOP
⑯	LAYDOWN AREA(S) (3)
⑰	MODULE TRANSPORT FOOTPRINT

NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 7 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

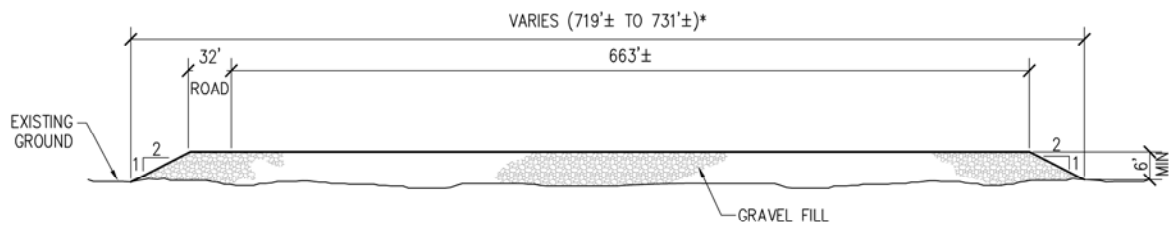
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

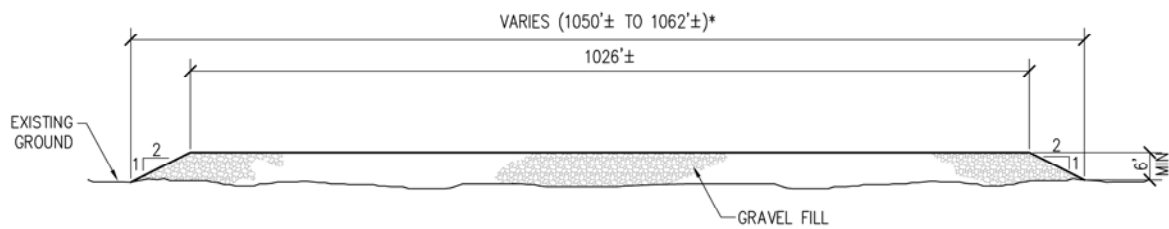
SHEET **6** of **61** 8-24-18

CENTRAL PROCESSING FACILITY (CPF) PAD LAYOUT



SECTION A-A

NTS



SECTION B-B

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

CENTRAL PROCESSING FACILITY (CPF) **PAD SECTIONS**

REFERENCE: POA-2015-025

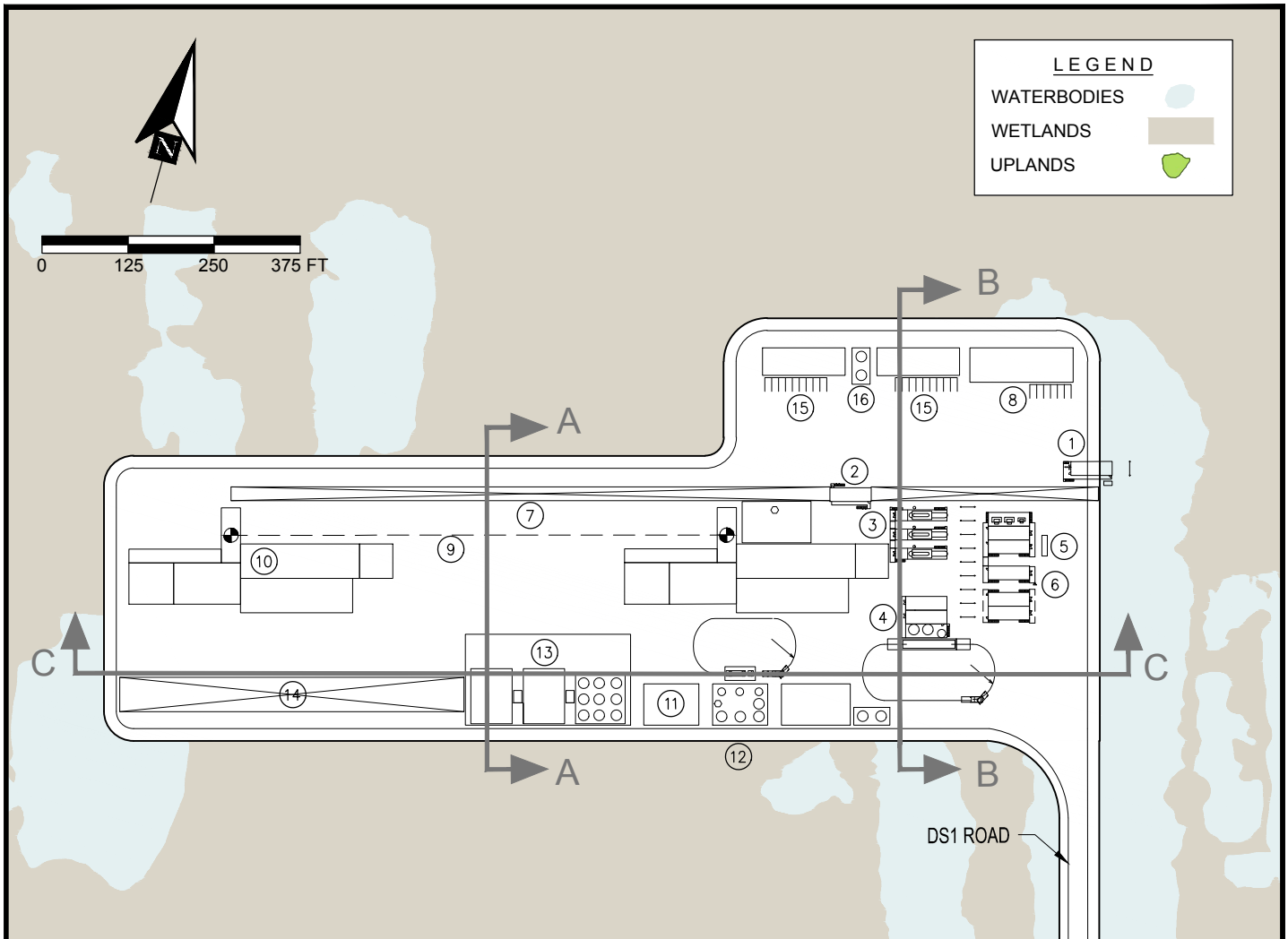
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **7** of **61** 8-24-18



PLAN

FACILITIES					
①	PIGGING MODULE	⑦	PIPE RACK(S)	⑫	TANK FARM
②	ESD/METERING MODULE	⑧	COLD STORAGE/EMERGENCY RESPONSE	⑬	WELL STIMULUS EQUIPMENT
③	PRODUCTION HEATER MODULE (3)	⑨	WELL ROW	⑭	DRILLING LAYDOWN AREA
④	BULK STORAGE TANK PLATFORM	⑩	DRILL RIG COMPONENTS FOOTPRINT	⑮	TEMPORARY CAMP(S)
⑤	REIM	⑪	DRILL RIG SHOP	⑯	WASTE/WATER TANKS
⑥	COMMUNICATIONS TOWER				

NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 9 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

DS1 LAYOUT

REFERENCE: POA-2015-025

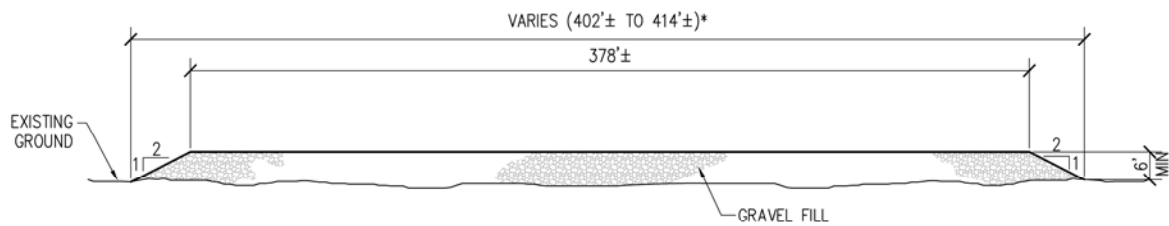
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

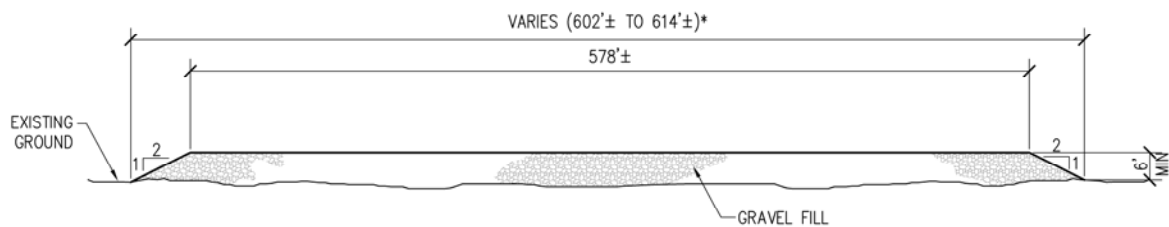
AT: North Slope Borough, AK

SHEET **8** of **61** 8-24-18



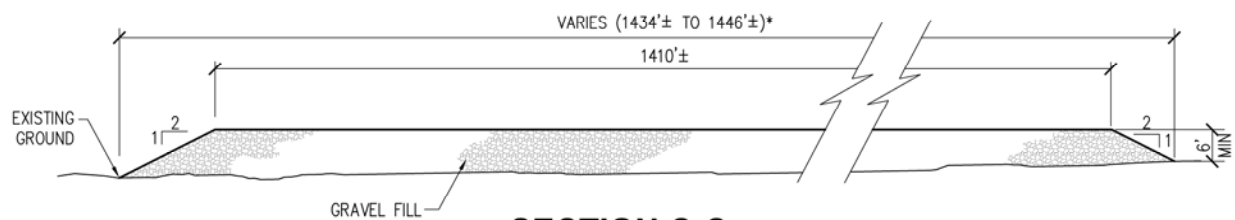
SECTION A-A

NTS



SECTION B-B

NTS



SECTION C-C

NTS

***NOTE:**
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

DS1 PAD SECTIONS

REFERENCE: POA-2015-025

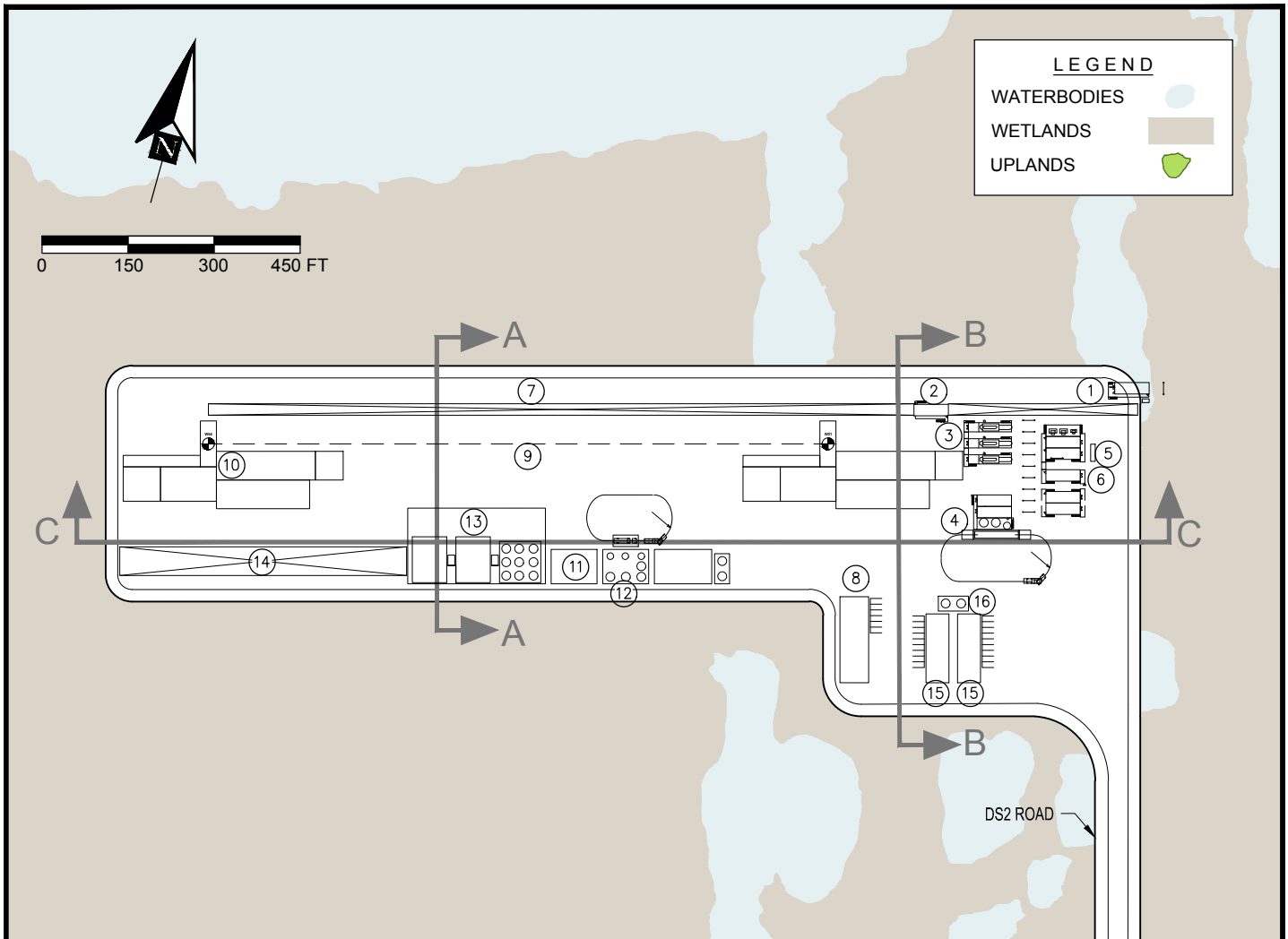
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **9** of **61** 8-24-18



PLAN

FACILITIES					
①	PIGGING MODULE	⑦	PIPE RACK(S)	⑫	TANK FARM
②	ESD/METERING MODULE	⑧	COLD STORAGE/EMERGENCY RESPONSE	⑬	WELL STIMULUS EQUIPMENT
③	PRODUCTION HEATER MODULE (3)	⑨	WELL ROW	⑭	DRILLING LAYDOWN AREA
④	BULK STORAGE TANK PLATFORM	⑩	DRILL RIG COMPONENTS FOOTPRINT	⑮	TEMPORARY CAMP(S)
⑤	REIM	⑪	DRILL RIG SHOP	⑯	WASTE/WATER TANKS
⑥	COMMUNICATIONS TOWER				

NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 11 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

DS2 LAYOUT

REFERENCE: POA-2015-025

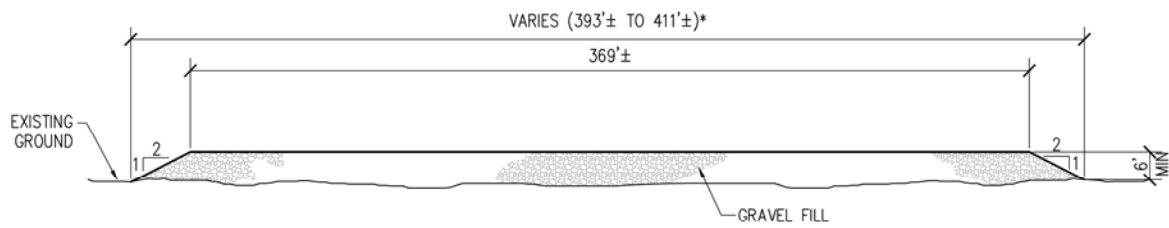
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

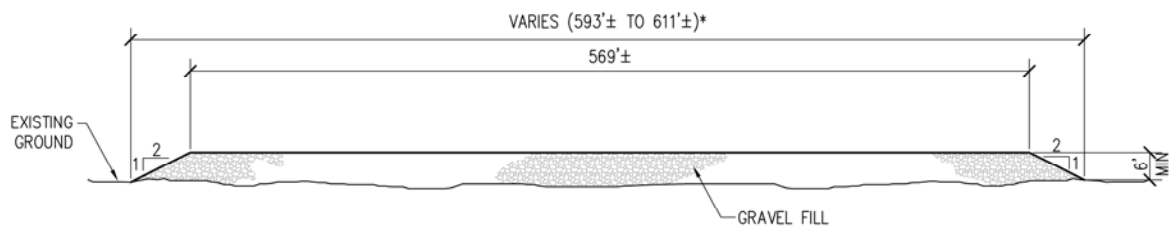
AT: North Slope Borough, AK

SHEET **10** of **61** 8-24-18



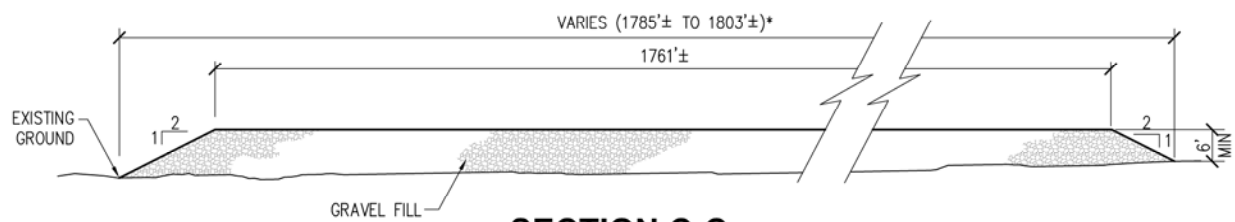
SECTION A-A

NTS



SECTION B-B

NTS



SECTION C-C

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

DS2 PAD SECTIONS

REFERENCE: POA-2015-025

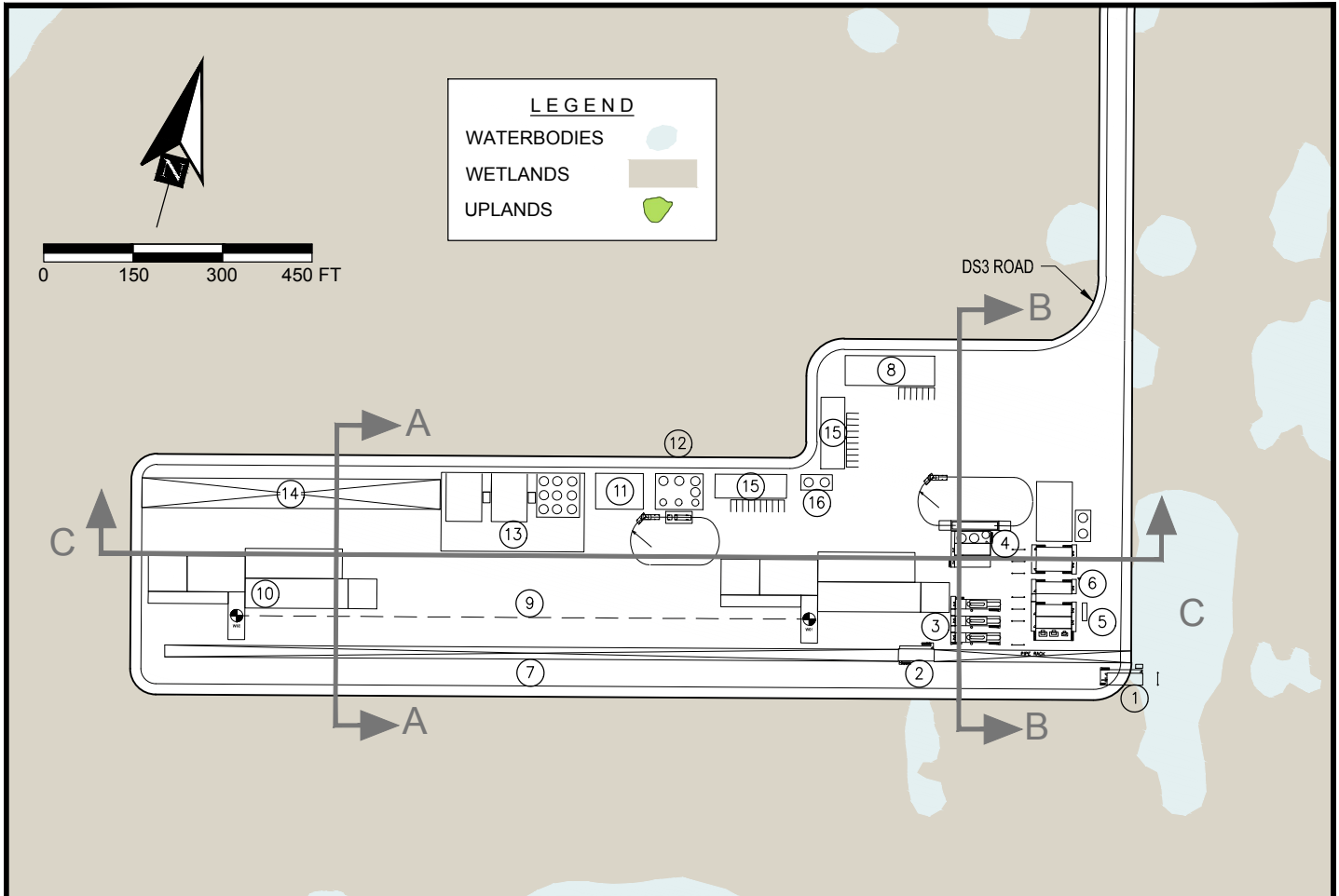
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **11** of **61** 8-24-18



PLAN

FACILITIES					
①	PIGGING MODULE	⑦	PIPE RACK(S)	⑫	TANK FARM
②	ESD/METERING MODULE	⑧	COLD STORAGE/EMERGENCY RESPONSE	⑬	WELL STIMULUS EQUIPMENT
③	PRODUCTION HEATER MODULE (3)	⑨	WELL ROW	⑭	DRILLING LAYDOWN AREA
④	BULK STORAGE TANK PLATFORM	⑩	DRILL RIG COMPONENTS FOOTPRINT	⑮	TEMPORARY CAMP(S)
⑤	REIM	⑪	DRILL RIG SHOP	⑯	WASTE/WATER TANKS
⑥	COMMUNICATIONS TOWER				

NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 13 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

DS3 LAYOUT

REFERENCE: POA-2015-025

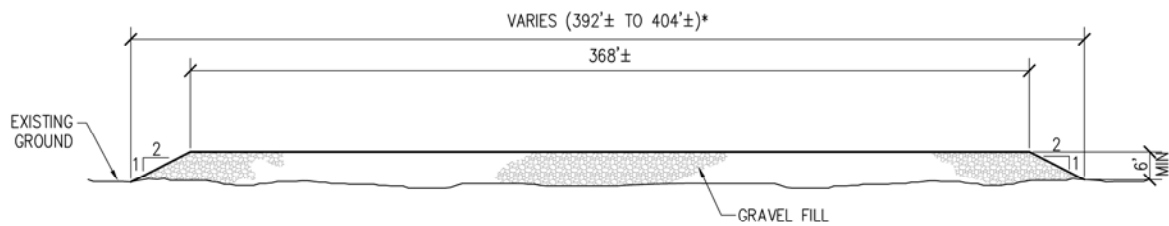
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

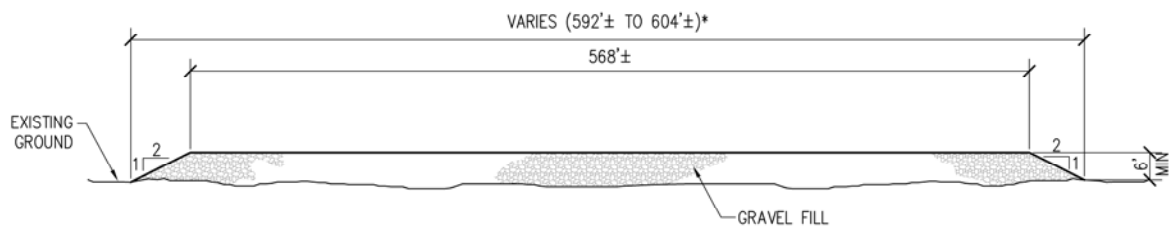
AT: North Slope Borough, AK

SHEET **12** of **61** 8-24-18



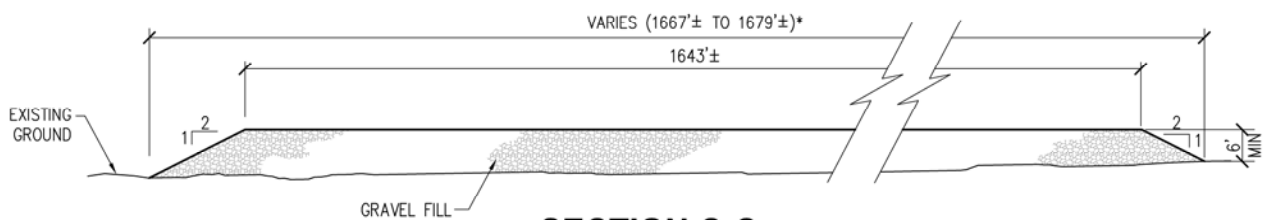
SECTION A-A

NTS



SECTION B-B

NTS



SECTION C-C

NTS

***NOTE:**
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

DS3 PAD SECTIONS

REFERENCE: POA-2015-025

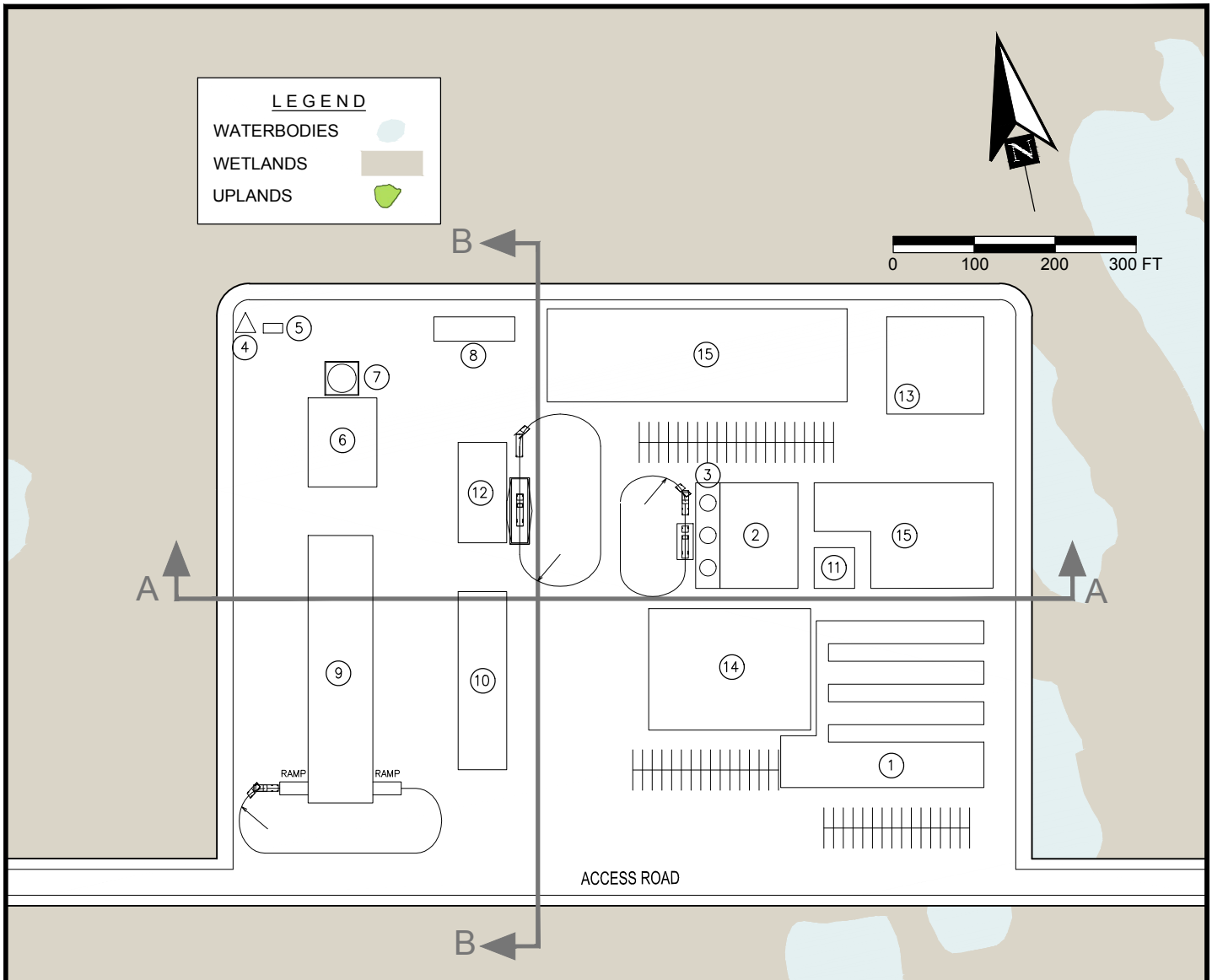
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **13** of **61** 8-24-18



FACILITIES			
①	CAMP/OPERATIONS CENTER	⑨	MAINTENANCE/WARM STORAGE
②	WATER TREATMENT	⑩	COLD STORAGE
③	WATER STORAGE TANKS	⑪	WASTE WATER TREATMENT
④	COMMUNICATIONS TOWER	⑫	FUELING STATION
⑤	COMMUNICATIONS MODULE	⑬	HELICOPTER PAD
⑥	STANDBY GENERATORS (3)/SWITCHGEAR	⑭	CONSTRUCTION CAMP/OFFICES
⑦	FUEL STORAGE TANK	⑮	TEMPORARY CONSTRUCTION LAYDOWN AREA(S) (2)
⑧	SPILL EQUIPMENT/HAZMAT HANDLING MODULE		

NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 15 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

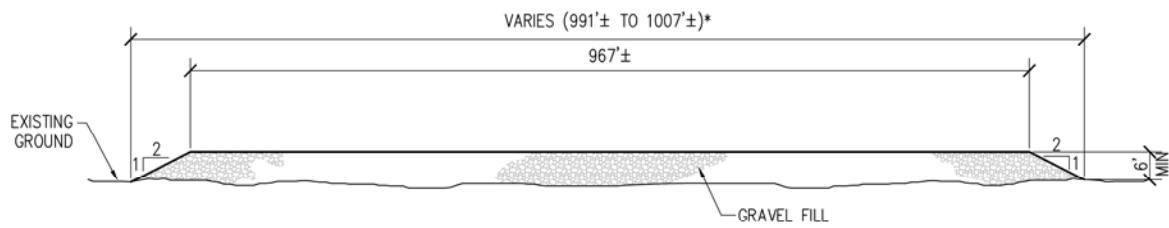
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

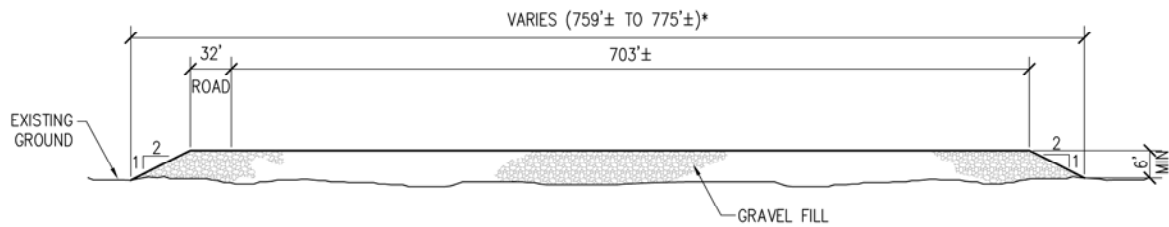
SHEET **14** of **61** 8-24-18

OPERATIONS CENTER LAYOUT



SECTION A-A

NTS



SECTION B-B

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

OPERATIONS CENTER PAD SECTIONS

REFERENCE: POA-2015-025

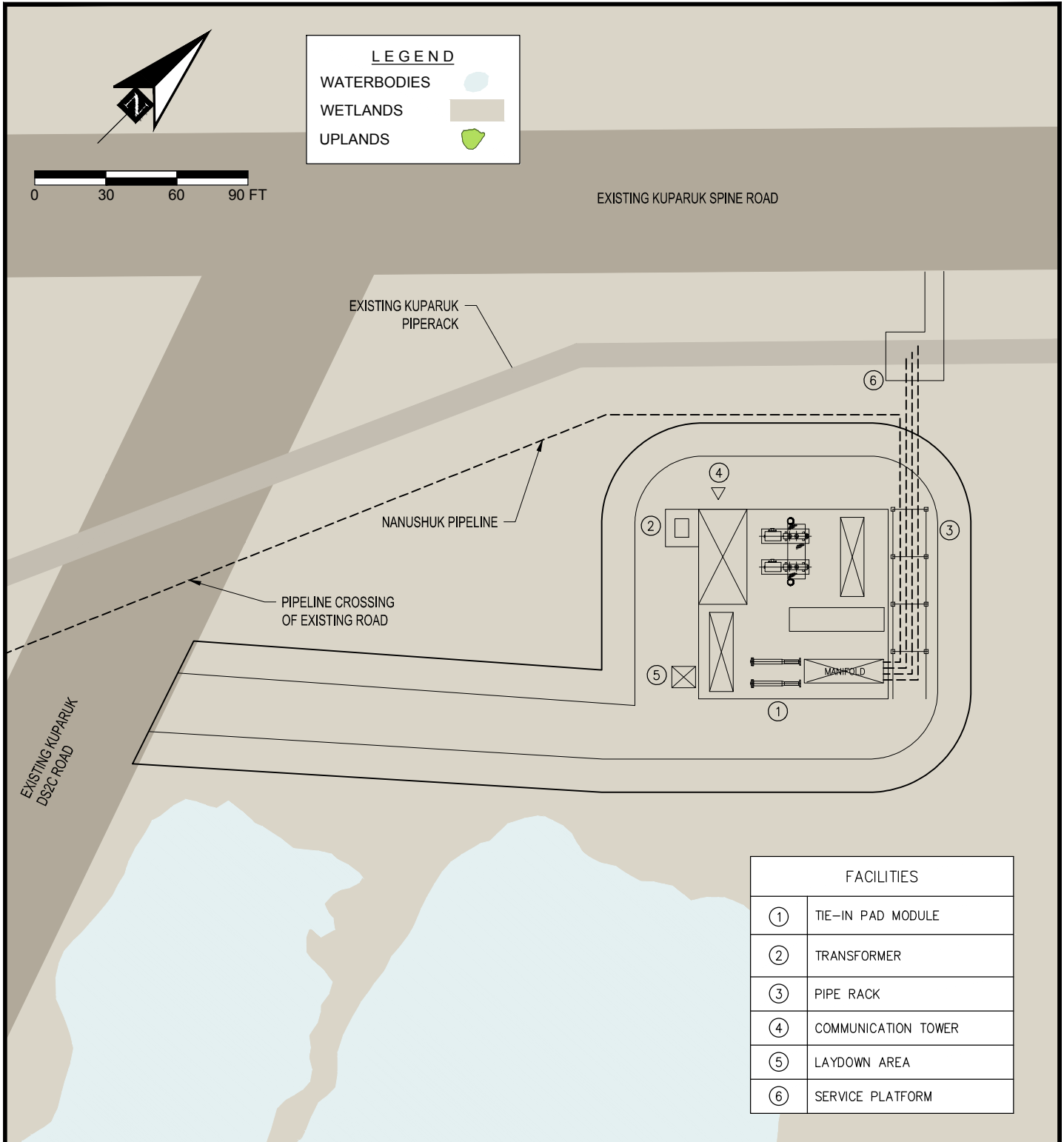
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **15** of **61** 8-24-18



NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 17 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.

TIE-IN PAD LAYOUT

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

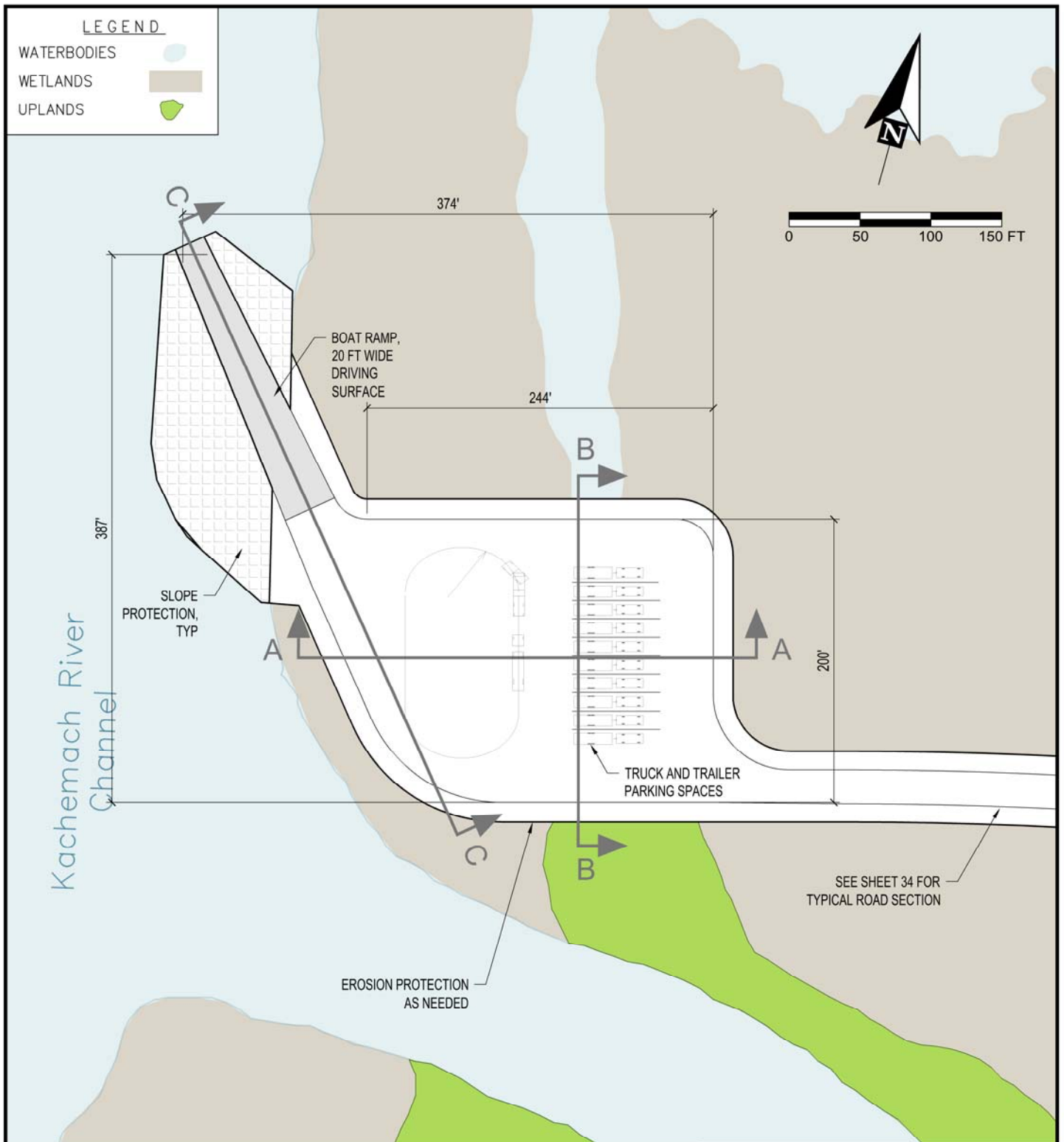
AT: North Slope Borough, AK

SHEET **16** of **61** 8-24-18



REFERENCE: POA-2015-025
 APPLICANT: Oil Search Alaska, LLC
 PROJECT: Nanushuk Project
 ACTIVITY: Road, Pad and Pipeline
 Construction
 AT: North Slope Borough, AK
 SHEET **17** of **61** 8-24-18

TIE-IN PAD SECTIONS



NOTES:

1. MINIMUM GRAVEL DEPTH 6.0' WITH 2:1 FILL SLOPES.
2. SEE SHEET 19 FOR PAD SECTIONS.
3. BASEMAP SOURCE: HDR2016
4. ACTUAL LAYOUT PENDING FINAL DESIGN.
5. EROSION PROTECTION MAY INCLUDE JUTE MAT W/ SEEDED VEGETATION OR RIPRAP EROSION PROTECTION ALONG SIDESLOPES AS NEEDED, DEPENDING ON FLOOD ELEVATION AND WATER VELOCITY.

BOAT RAMP

REFERENCE: POA-2015-025

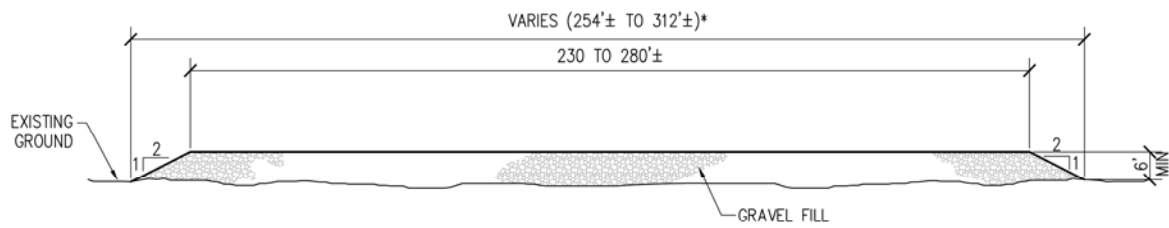
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

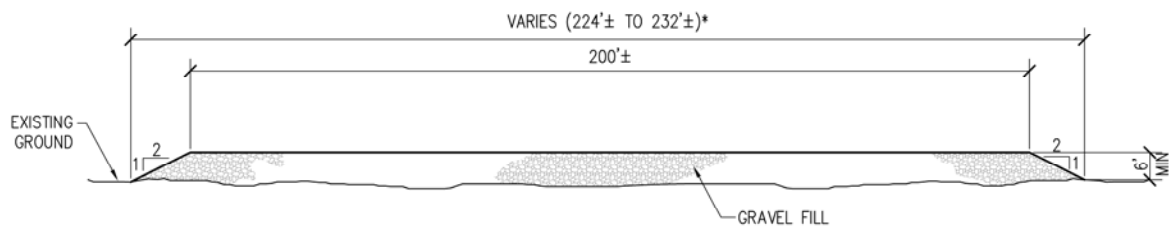
AT: North Slope Borough, AK

SHEET **18** of **61** 9-28-18



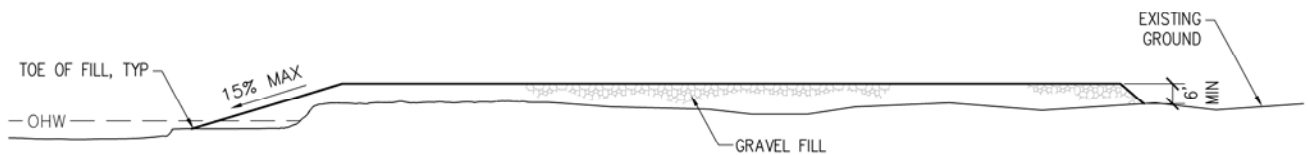
SECTION A-A

NTS



SECTION B-B

NTS



SECTION C-C

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

BOAT RAMP SECTIONS

REFERENCE: POA-2015-025

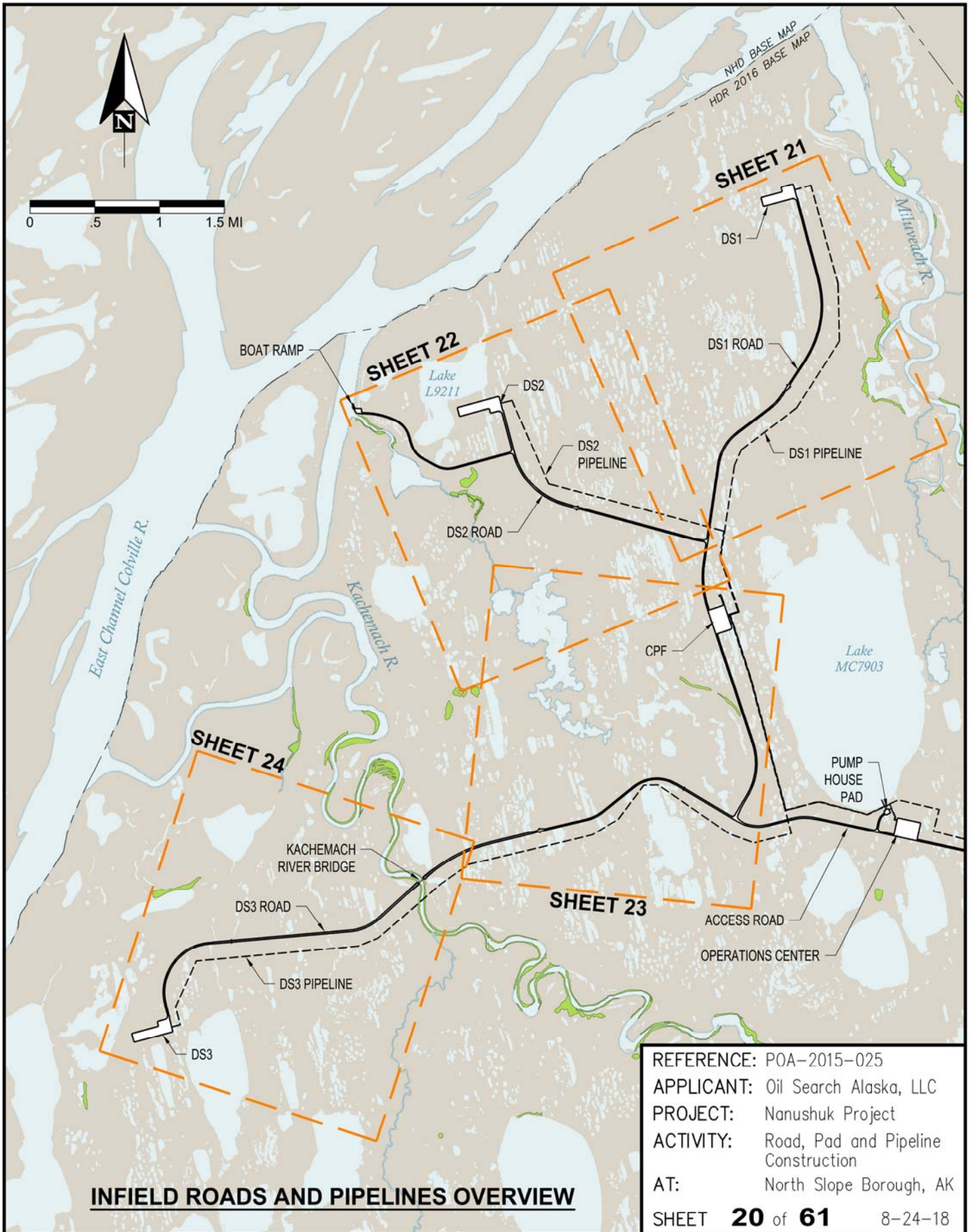
APPLICANT: Oil Search Alaska, LLC

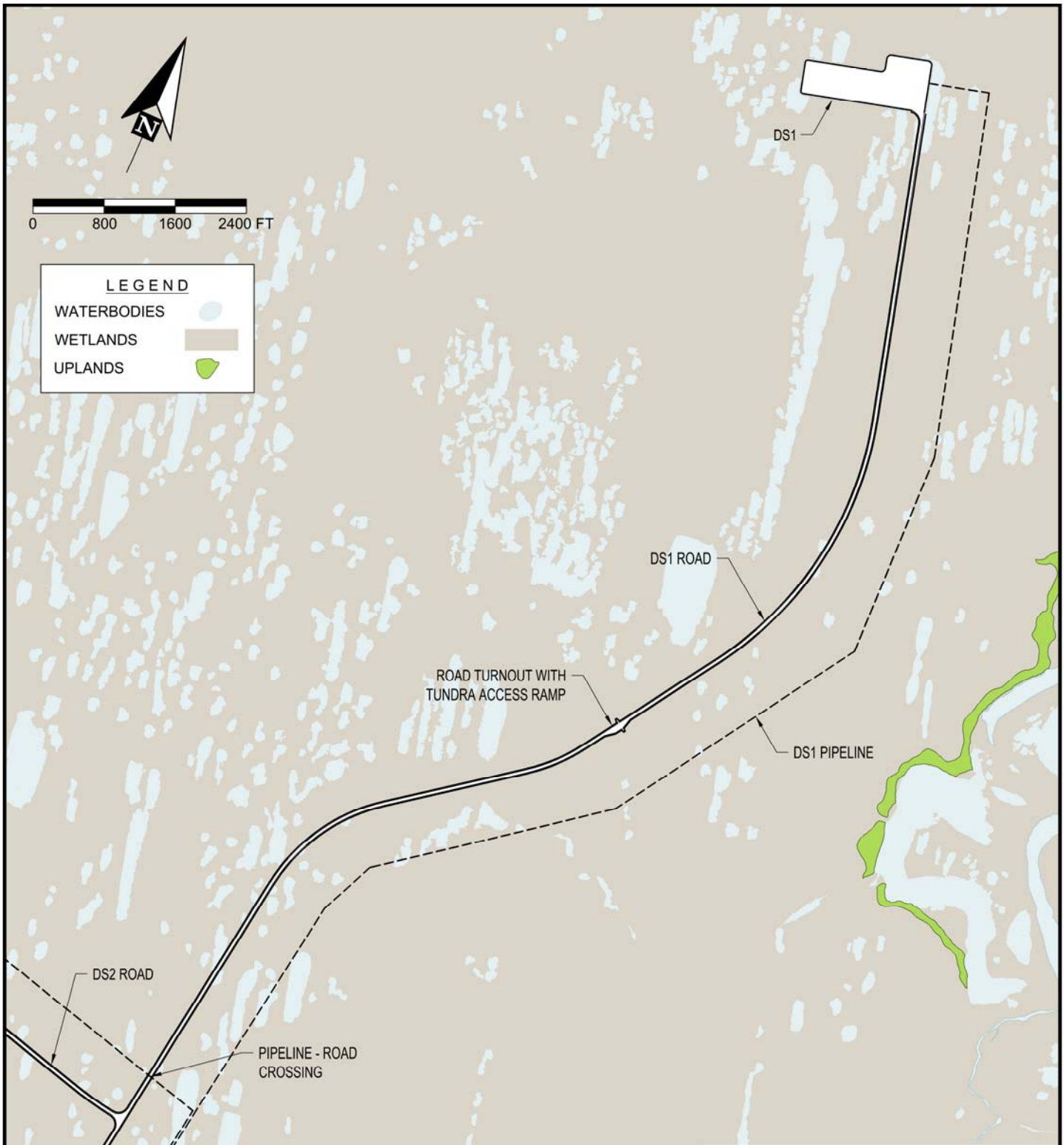
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **19** of **61** 8-24-18





NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

INFIELD ROADS AND PIPELINES SHT 1 of 4

REFERENCE: POA-2015-025

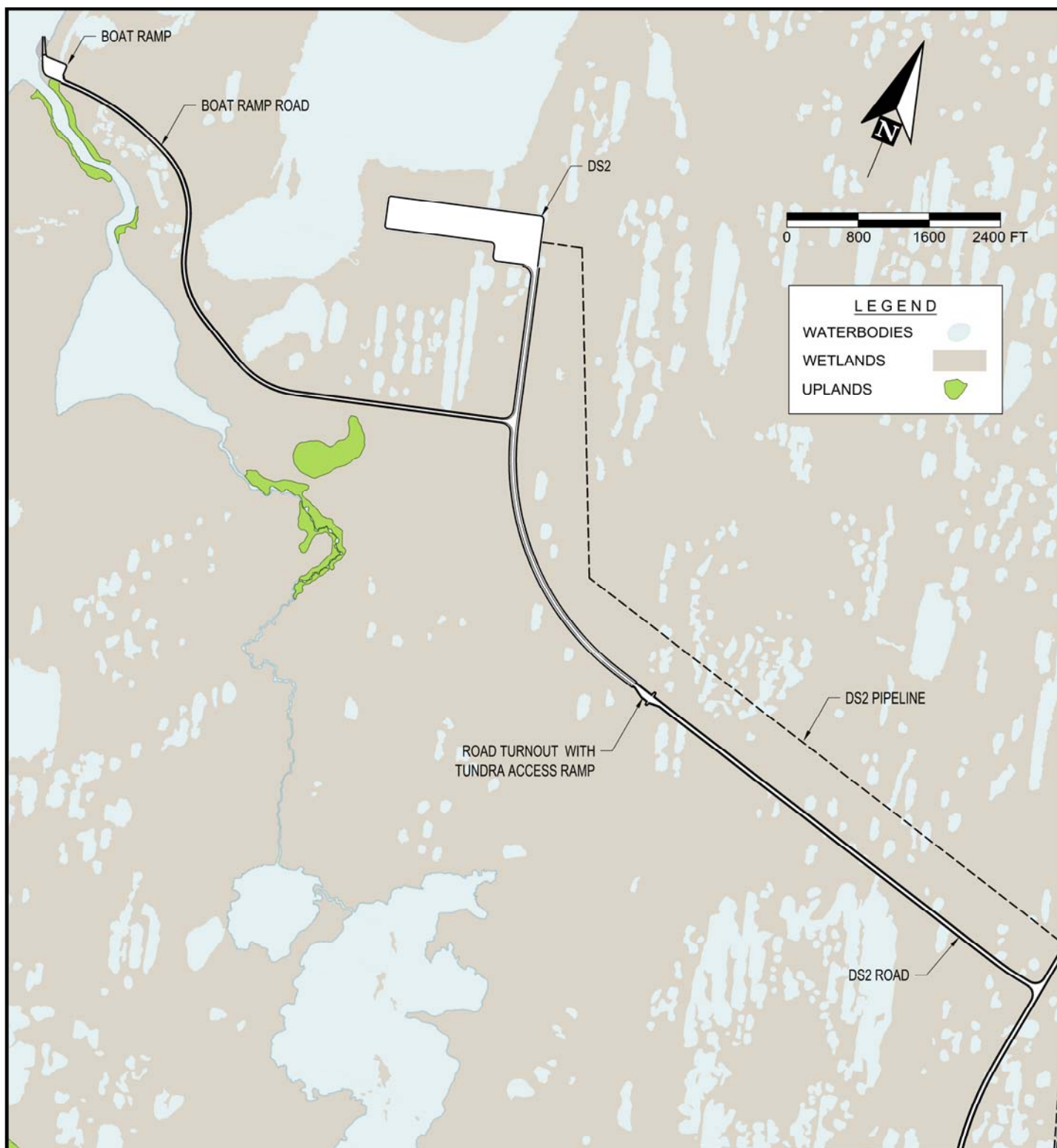
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **21** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

INFIELD ROADS AND PIPELINES SHT 2 of 4

REFERENCE: POA-2015-025

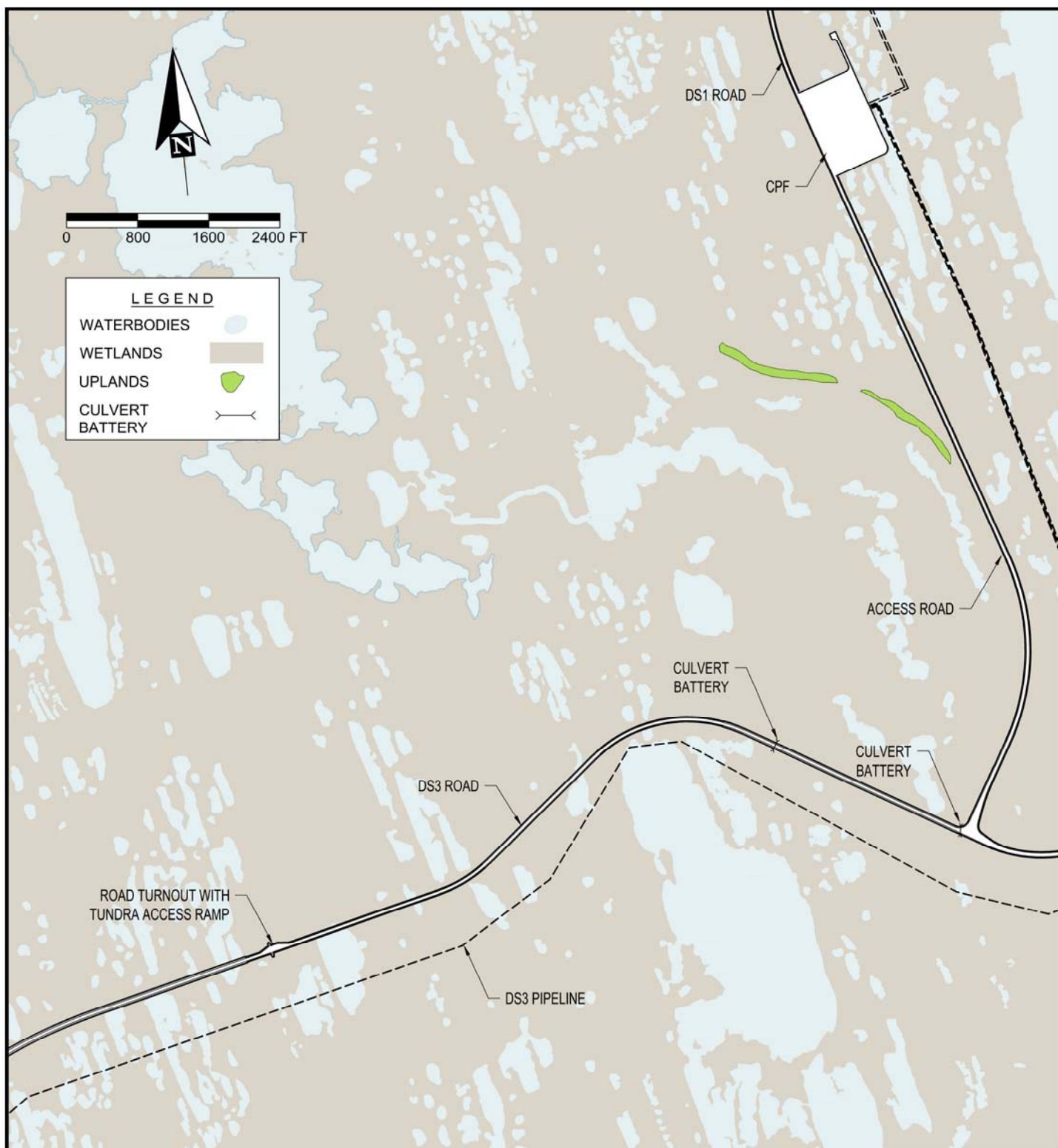
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **22** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.
3. CULVERT BATTERY LOCATIONS ARE PRELIMINARY. SITES TO BE INVESTIGATED DURING A SUMMER FIELD PROGRAM.

INFIELD ROADS AND PIPELINES SHT 3 of 4

REFERENCE: POA-2015-025

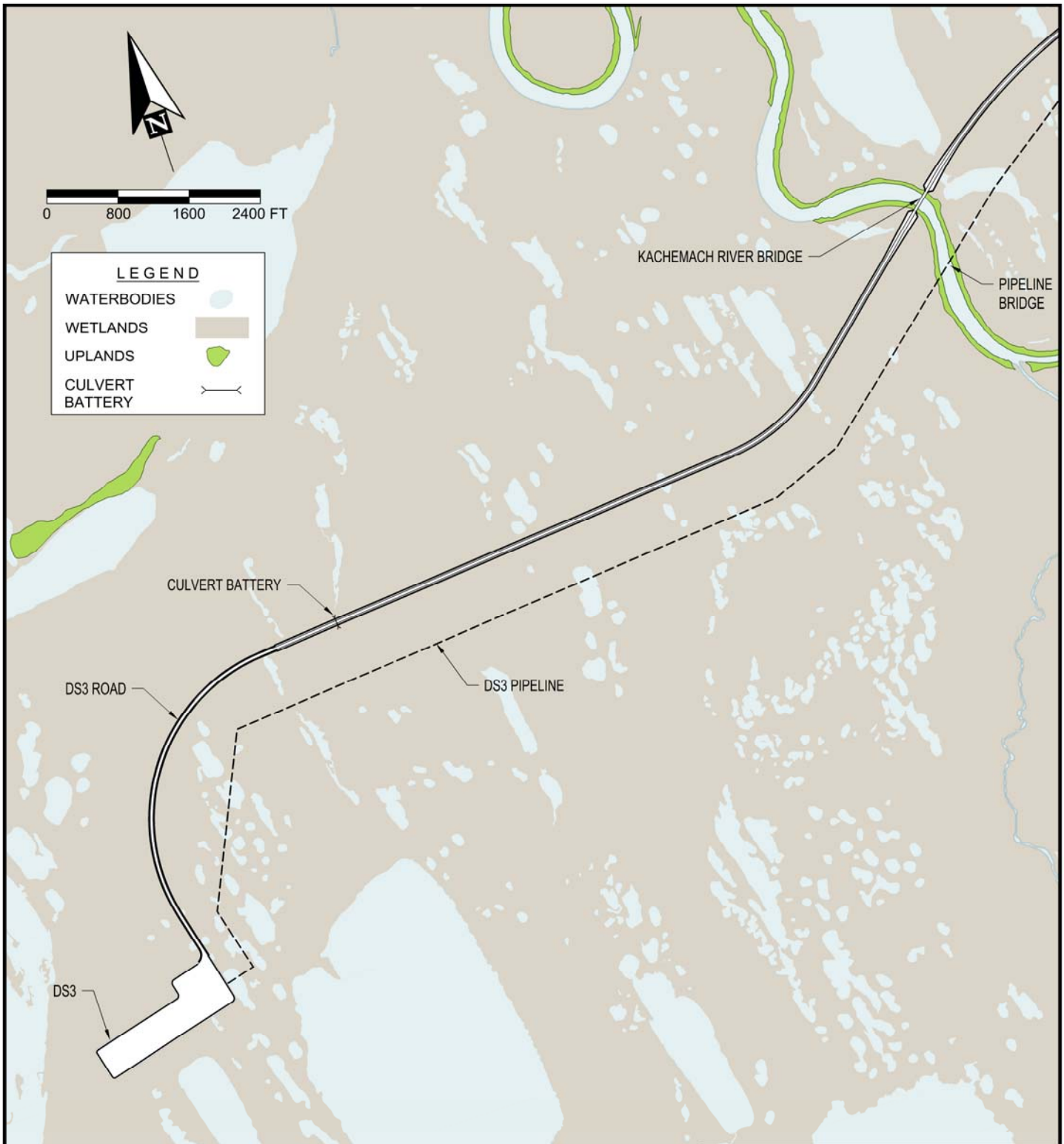
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **23** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.
3. CULVERT BATTERY LOCATIONS ARE PRELIMINARY. SITES TO BE INVESTIGATED DURING A SUMMER FIELD PROGRAM.

INFIELD ROADS AND PIPELINES SHT 4 of 4

REFERENCE: POA-2015-025

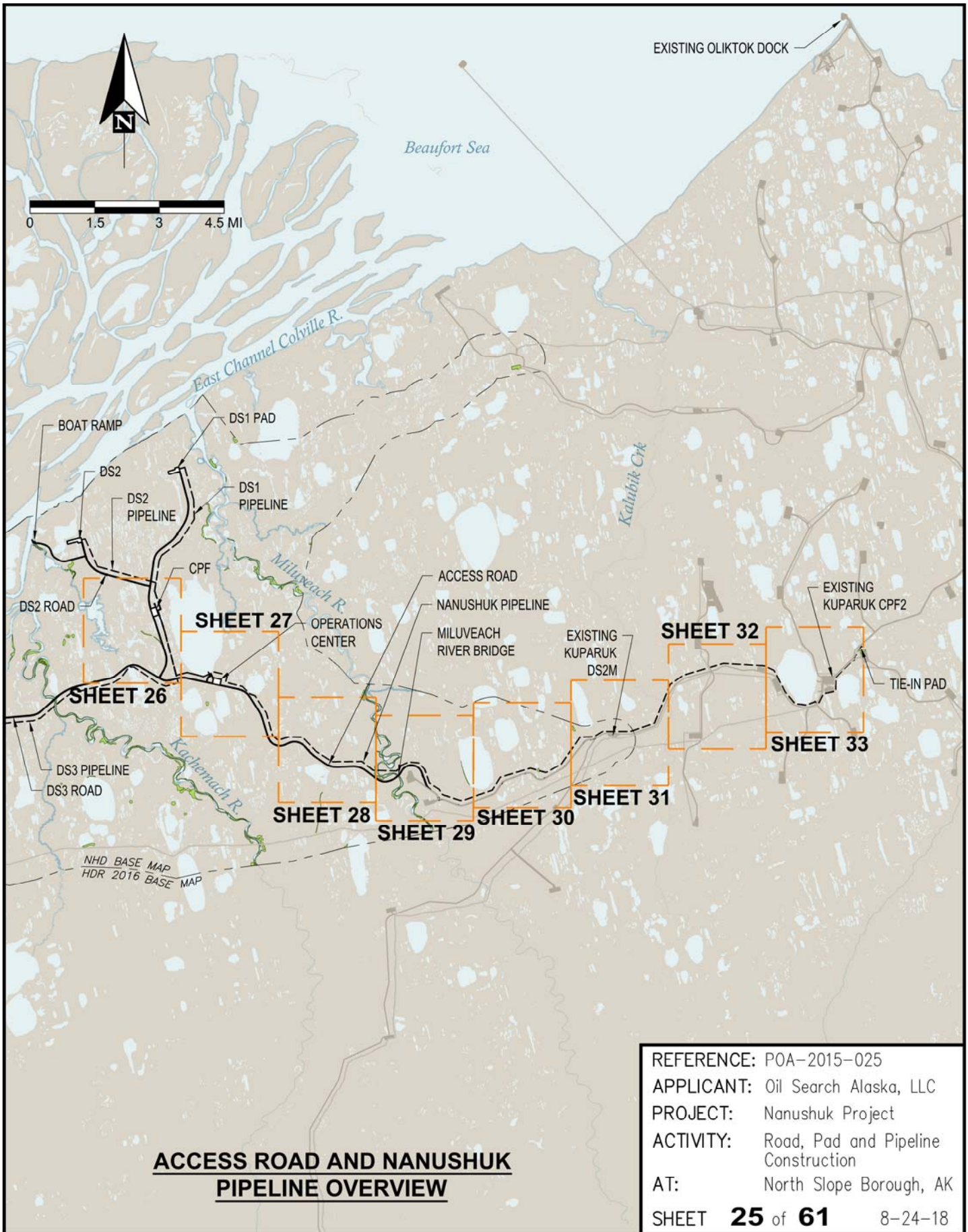
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

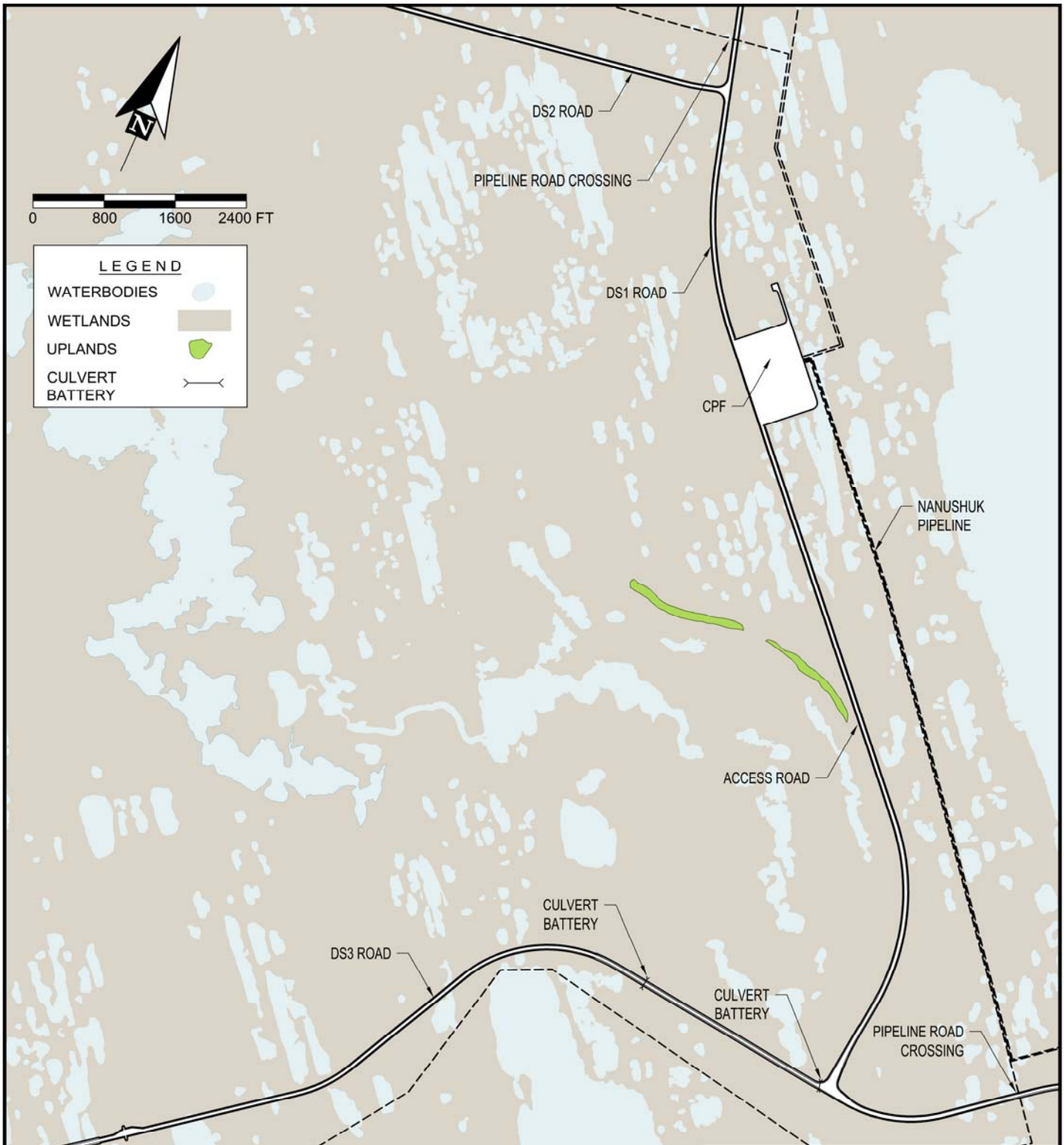
ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **24** of **61** 8-24-18



**ACCESS ROAD AND NANUSHUK
PIPELINE OVERVIEW**



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.
3. CULVERT BATTERY LOCATIONS ARE PRELIMINARY. SITES TO BE INVESTIGATED DURING A SUMMER FIELD PROGRAM.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 1 of 8

REFERENCE: POA-2015-025

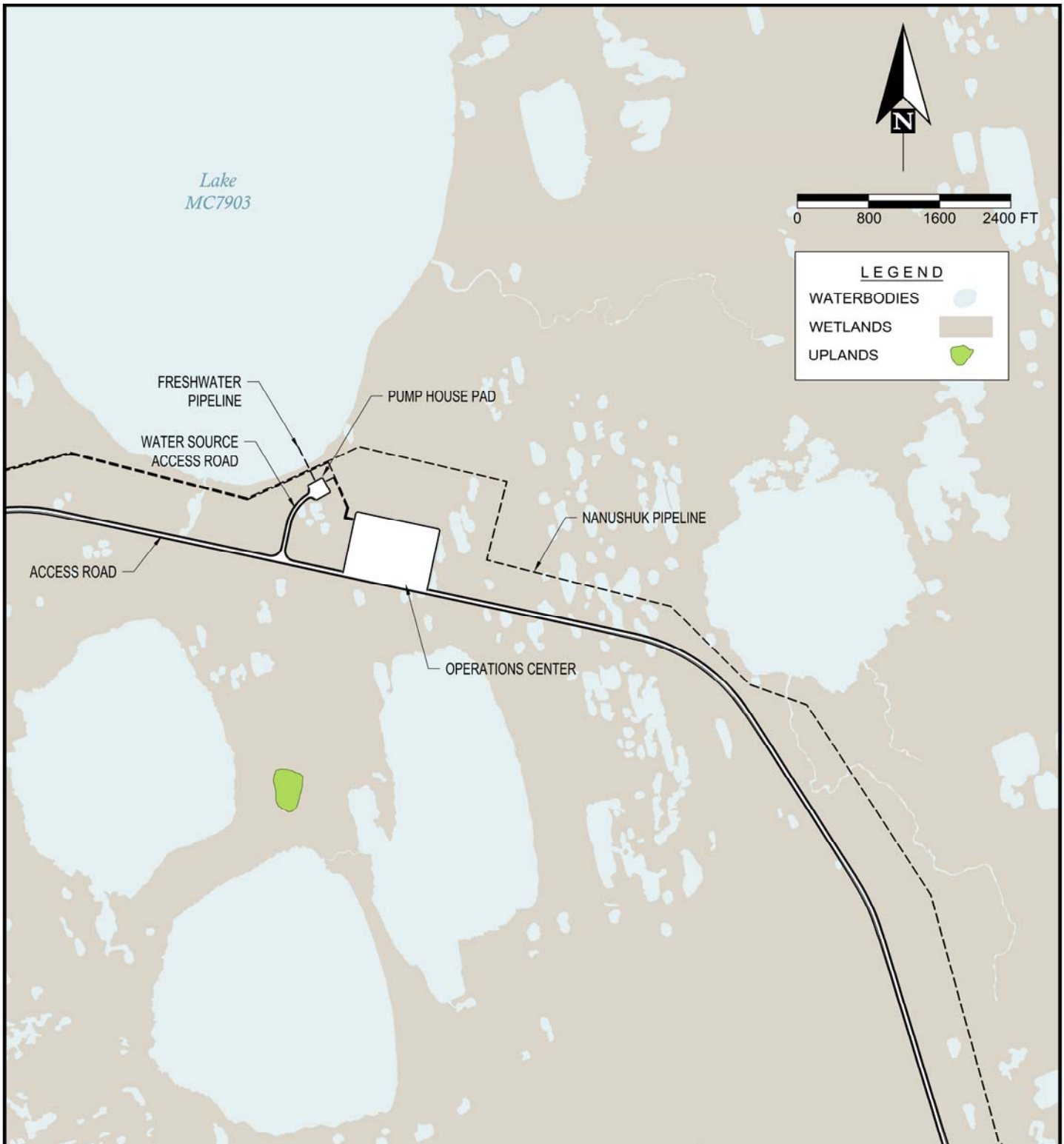
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **26** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 2 of 8

REFERENCE: POA-2015-025

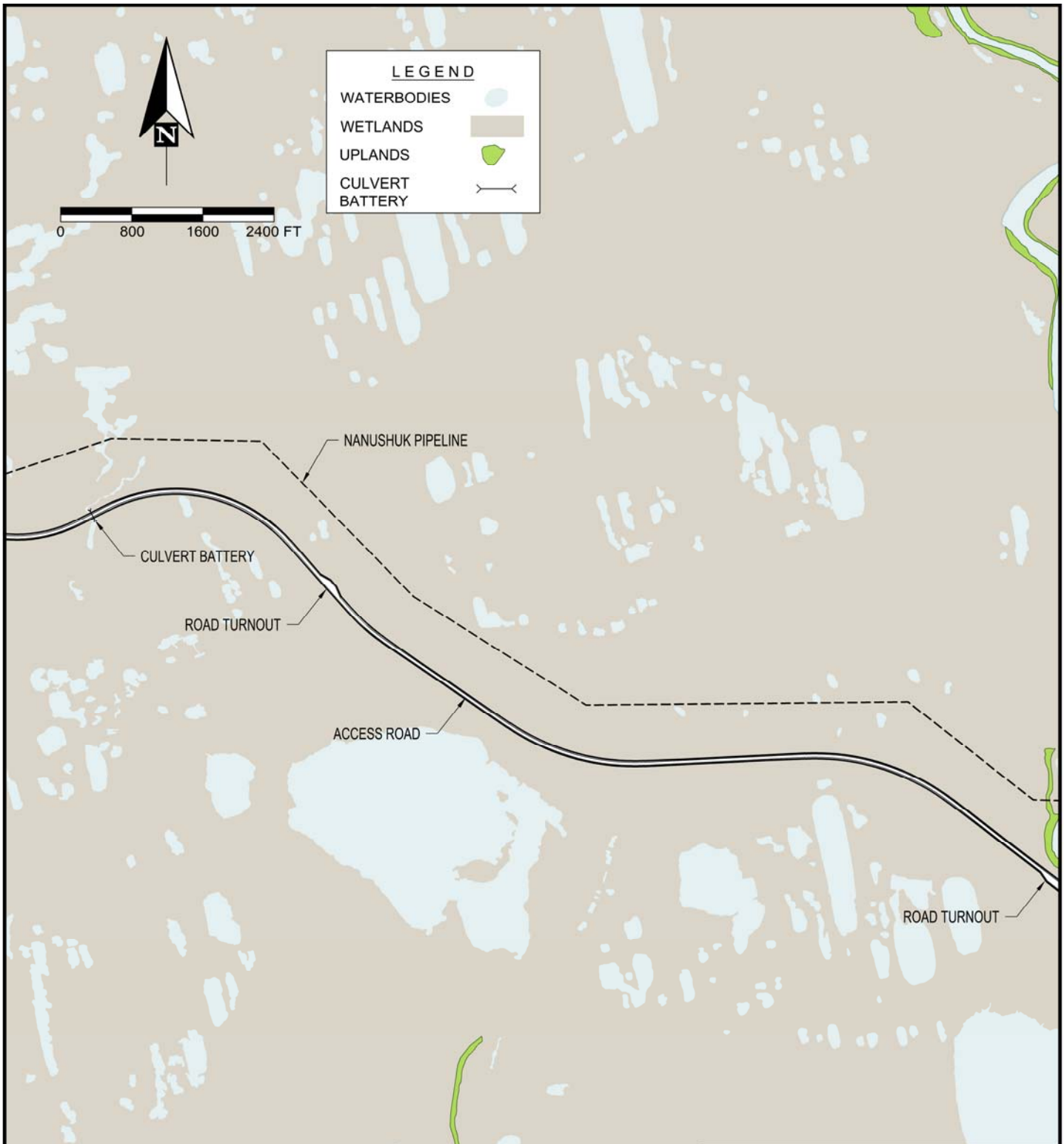
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **27** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.
3. CULVERT BATTERY LOCATIONS ARE PRELIMINARY. SITES TO BE INVESTIGATED DURING A SUMMER FIELD PROGRAM.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 3 of 8

REFERENCE: POA-2015-025

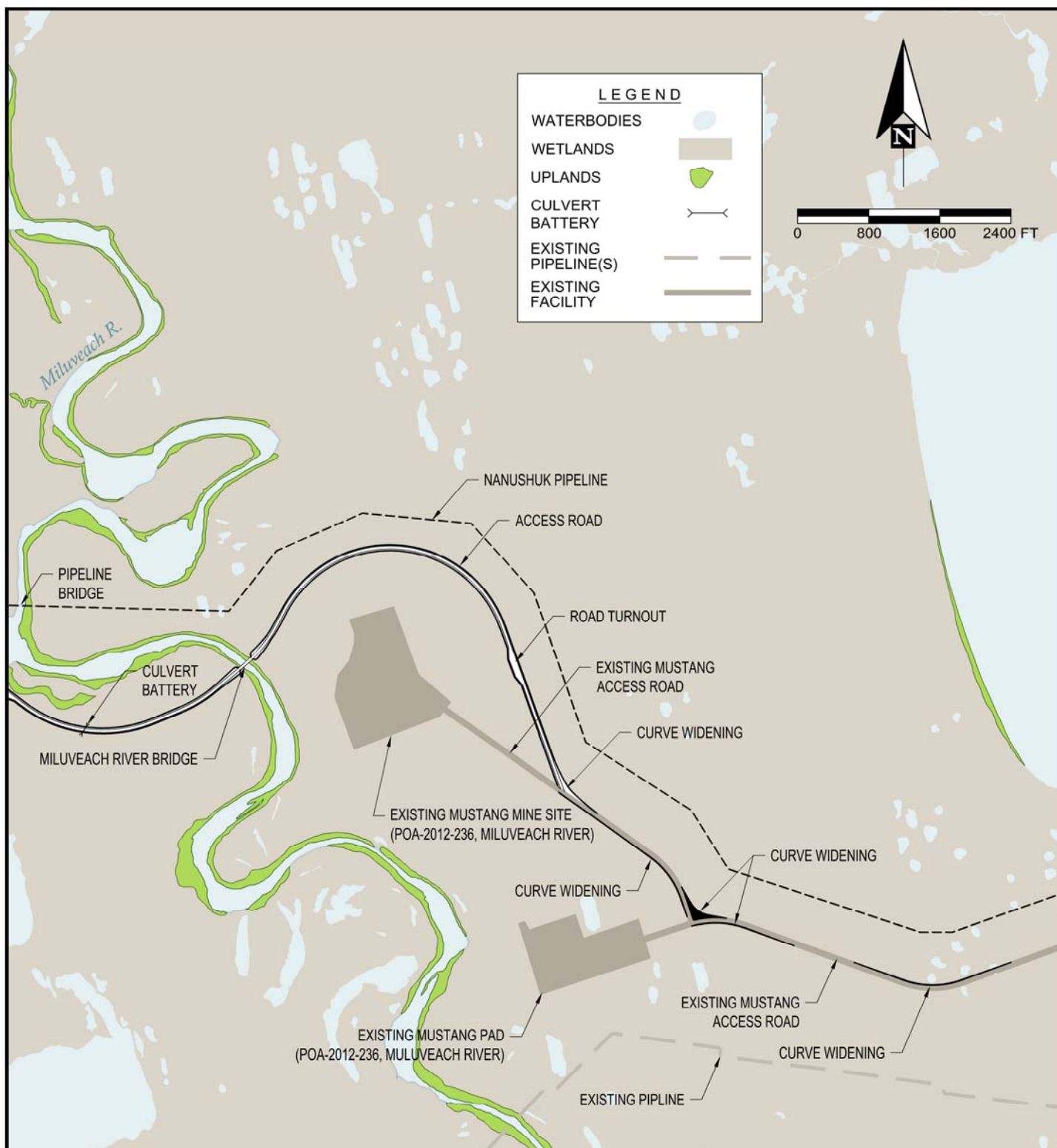
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **28** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.
3. CULVERT BATTERY LOCATIONS ARE PRELIMINARY. SITES TO BE INVESTIGATED DURING A SUMMER FIELD PROGRAM.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 4 of 8

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **29** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 5 of 8

REFERENCE: POA-2015-025

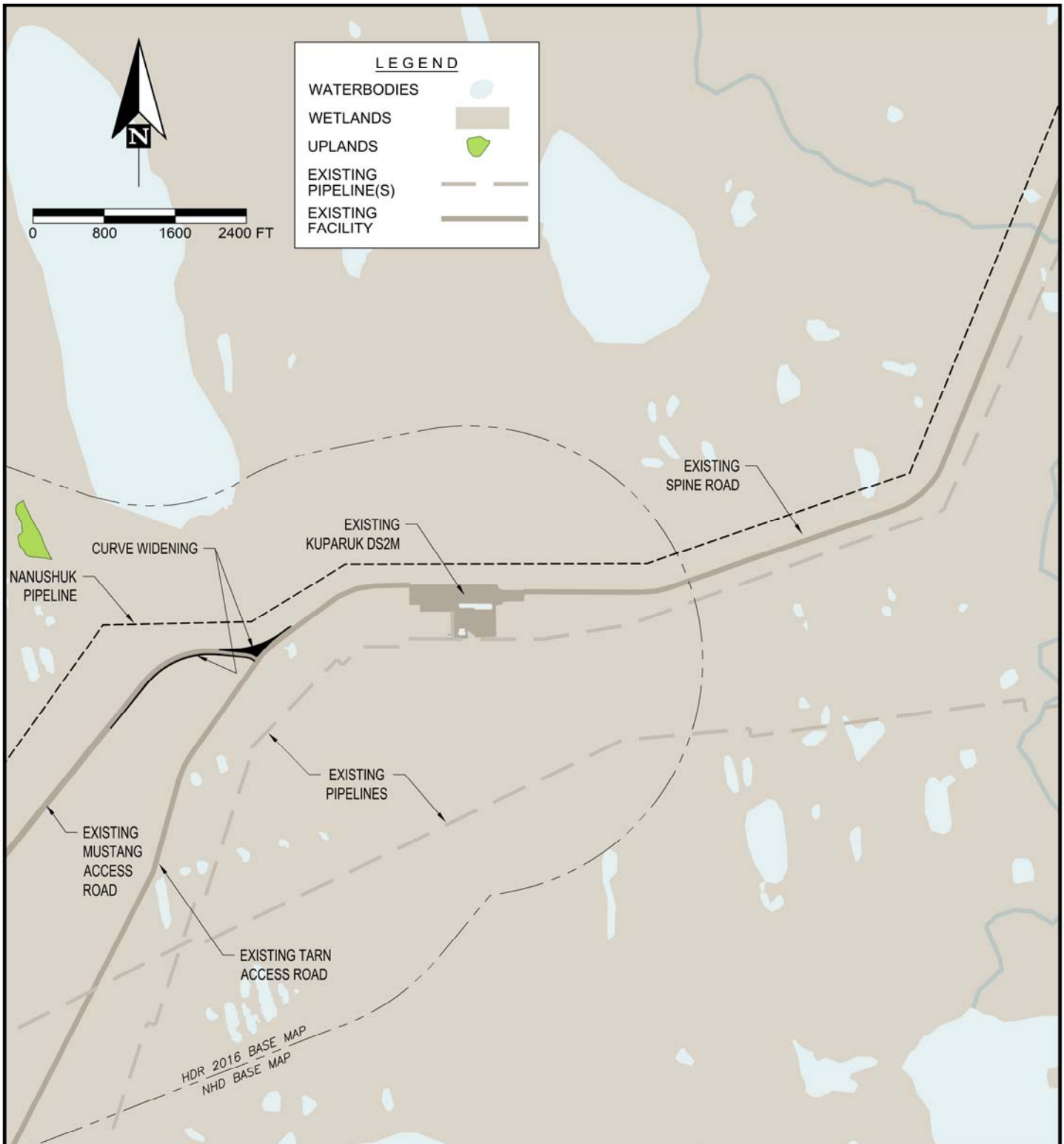
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **30** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: HDR 2016 JURISDICTIONAL MAPPING AND NHD.
2. CROSS DRAINAGE CULVERTS WILL BE INSTALLED EVERY 500' ON AVERAGE. CULVERT LOCATIONS, SIZES AND QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

ACCESS ROAD AND NANUSHUK PIPELINE
SHT 6 of 8

REFERENCE: POA-2015-025

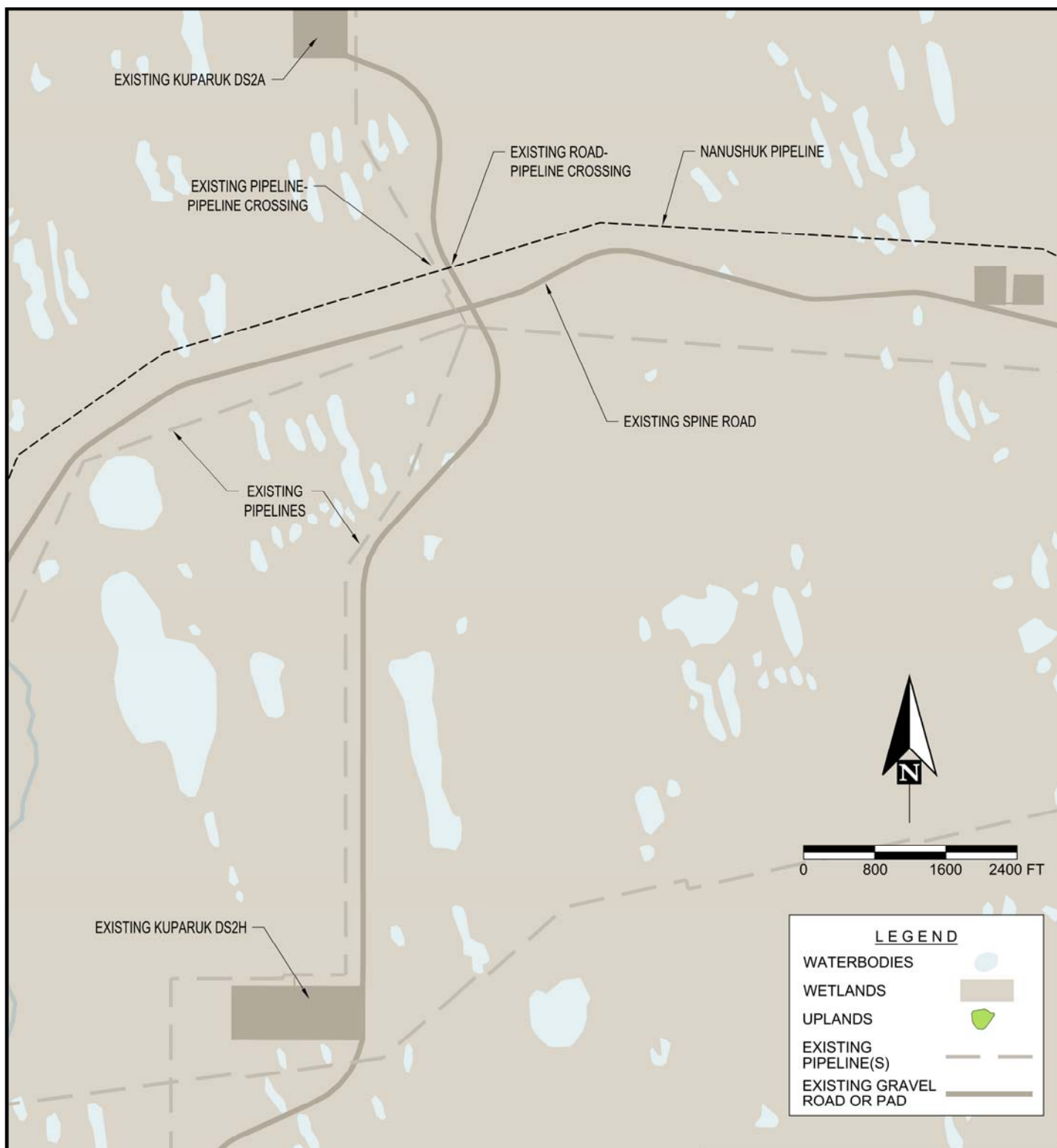
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **31** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: NHD BASEMAP.

NANUSHUK PIPELINE SHT 7 of 8

REFERENCE: POA-2015-025

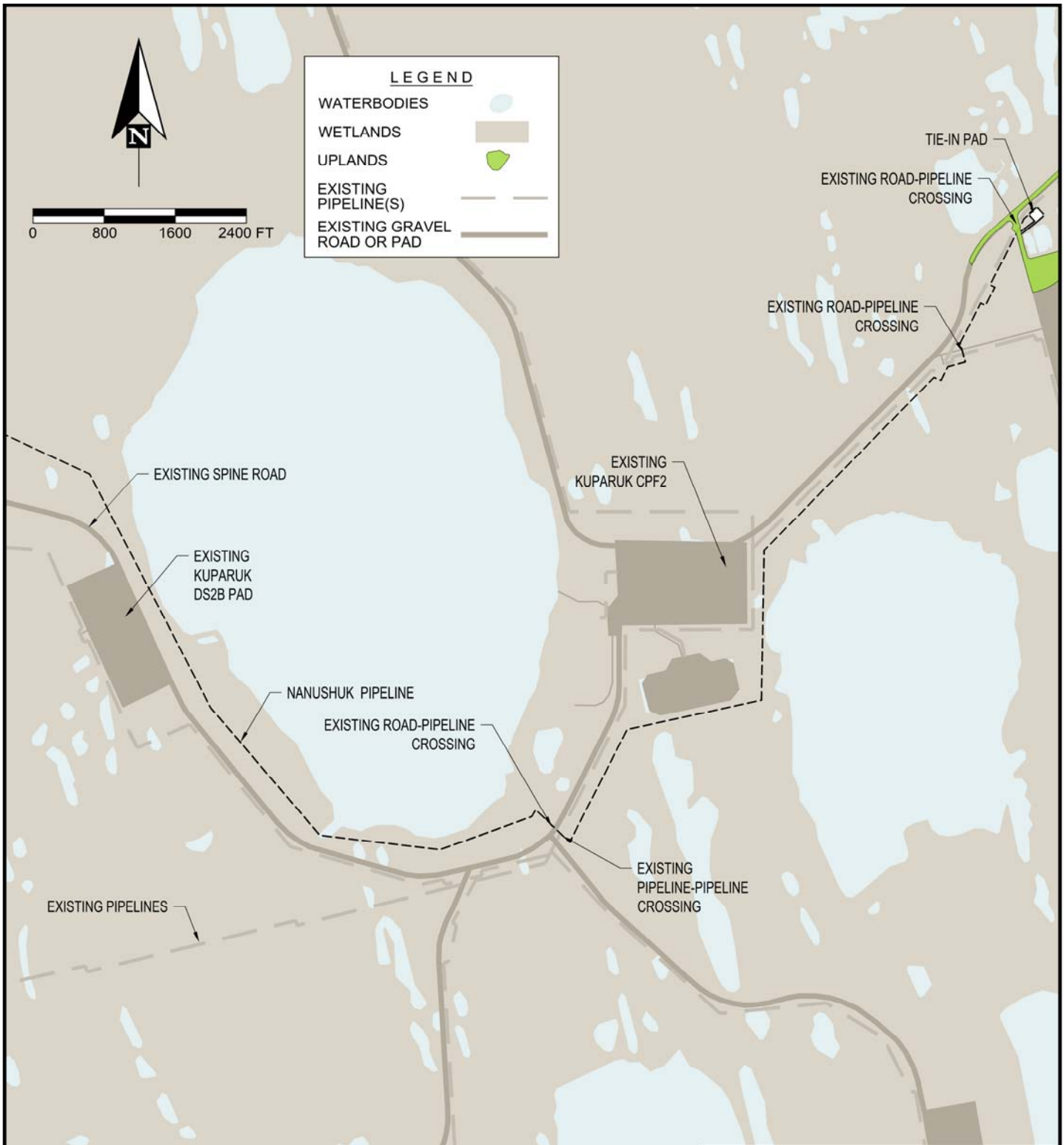
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **32** of **61** 8-24-18



NOTES:

1. BASEMAP SOURCE: NHD BASEMAP.

NANUSHUK PIPELINE SHT 8 of 8

REFERENCE: POA-2015-025

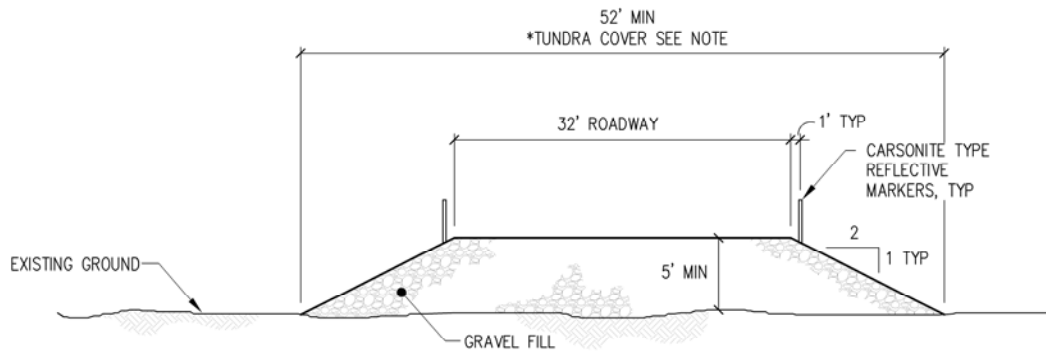
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

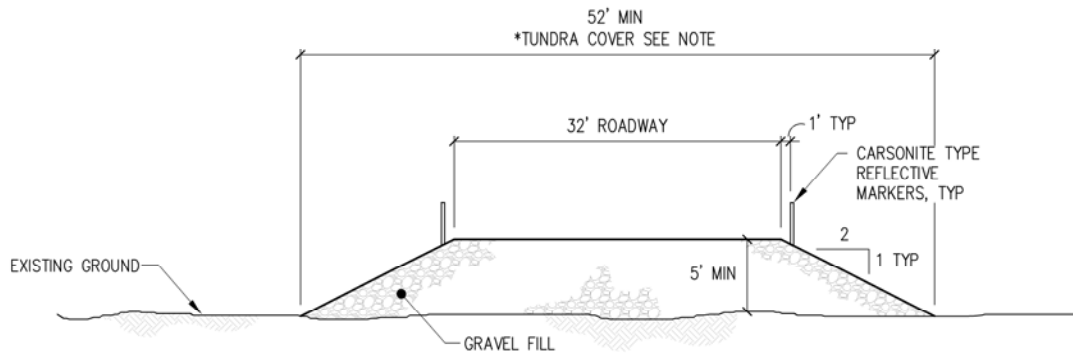
AT: North Slope Borough, AK

SHEET **33** of **61** 8-24-18



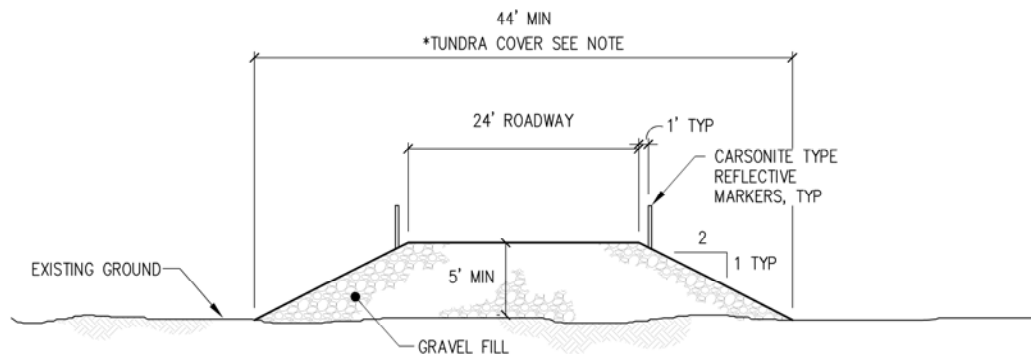
TYPICAL GRAVEL ACCESS ROAD SECTION

NTS



TYPICAL GRAVEL INFIELD ROAD SECTION

NTS



TYPICAL GRAVEL BOAT RAMP & WATER SOURCE ACCESS ROAD SECTION

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS WILL
VARY BASED UPON SITE CONDITIONS.

TYPICAL ROAD SECTIONS

REFERENCE: POA-2015-025

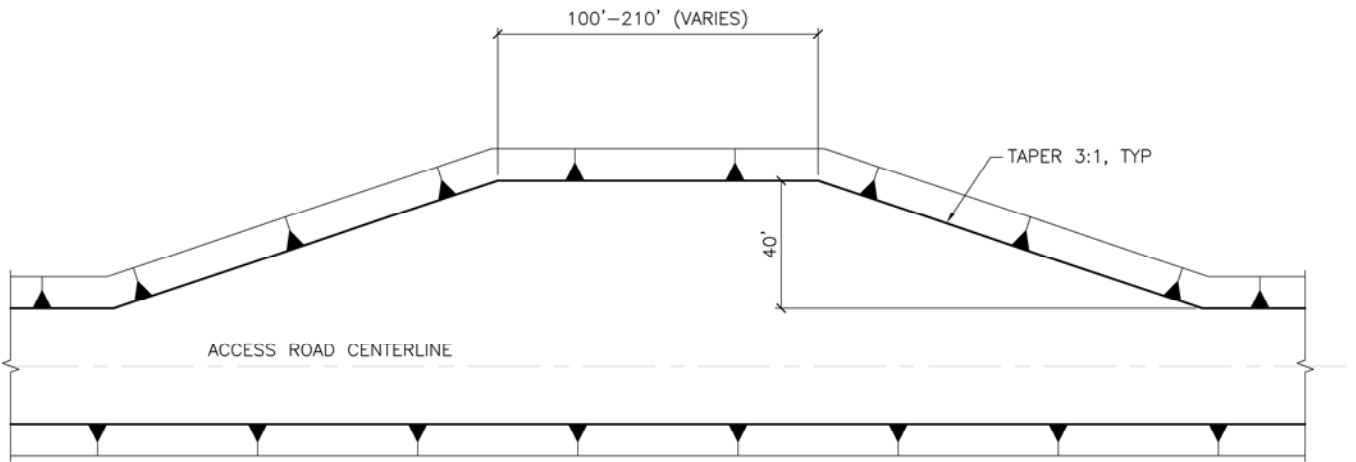
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

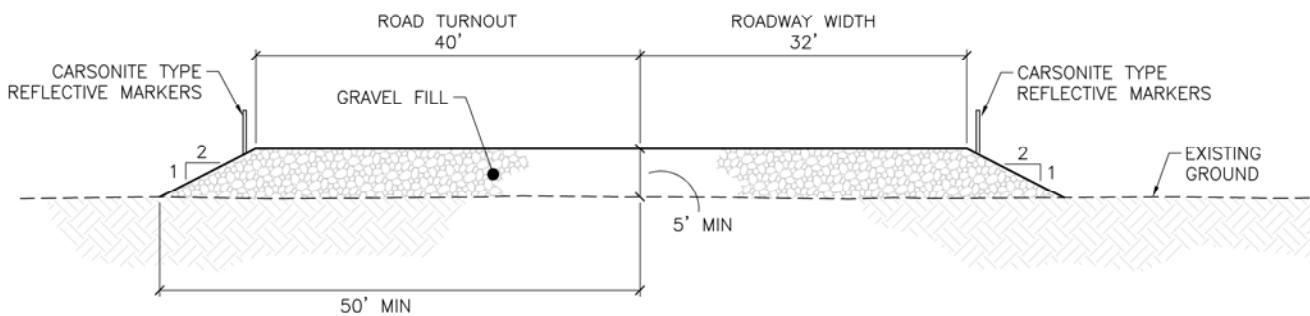
ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **34** of **61** 8-24-18



PLAN
NTS

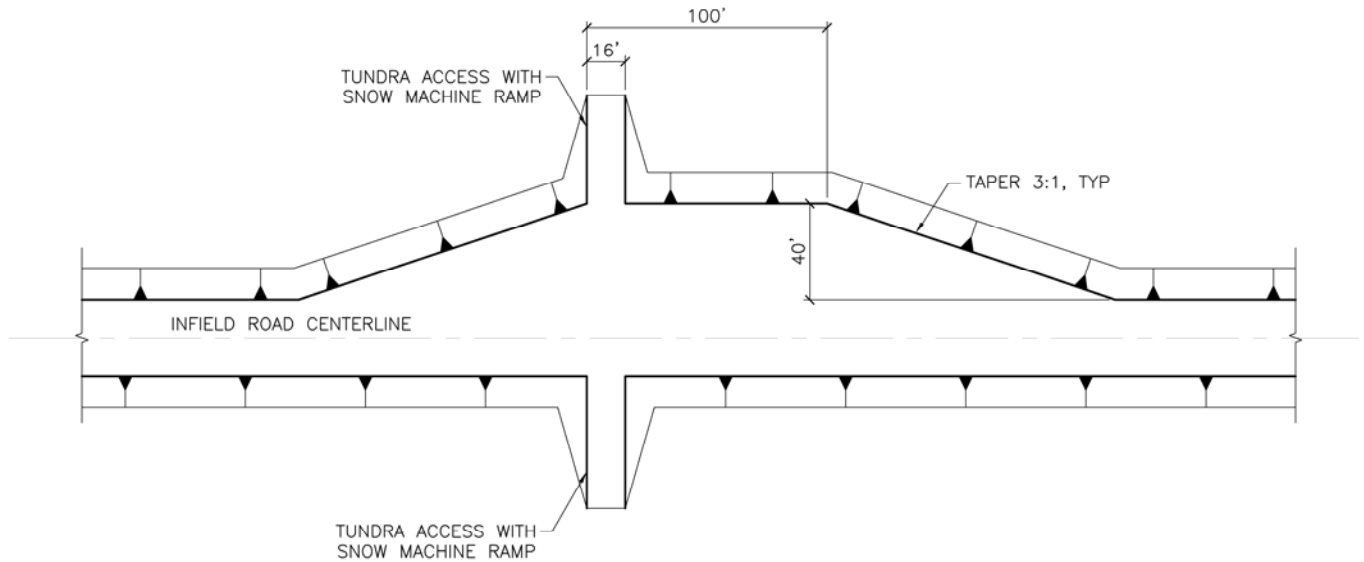


TYPICAL TRANSVERSE SECTION
NTS

NOTE:
GRAVEL EMBANKMENT WIDTH WILL
VARY BASED UPON LOCAL
TOPOGRAPHY.

TYPICAL ROAD TURNOUT

REFERENCE: POA-2015-025
APPLICANT: Oil Search Alaska, LLC
PROJECT: Nanushuk Project
ACTIVITY: Road, Pad and Pipeline
Construction
AT: North Slope Borough, AK
SHEET **35** of **61** 8-24-18



ROAD TURNOUT WITH TUNDRA ACCESS RAMP PLAN

NTS

NOTE:
GRAVEL EMBANKMENT WIDTH WILL
VARY BASED UPON LOCAL
TOPOGRAPHY.

ROAD TURNOUTS WITH TUNDRA ACCESS RAMPS

REFERENCE: POA-2015-025

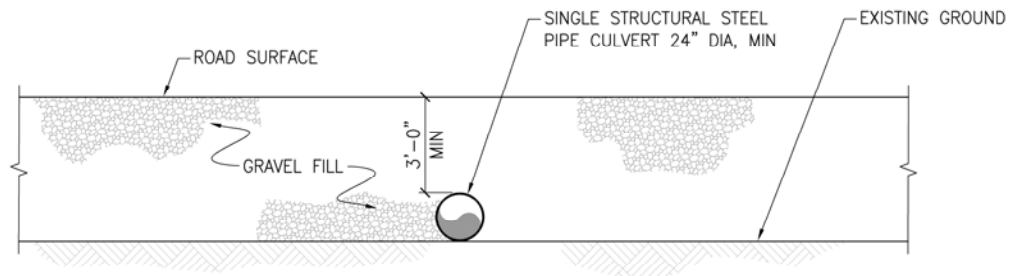
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

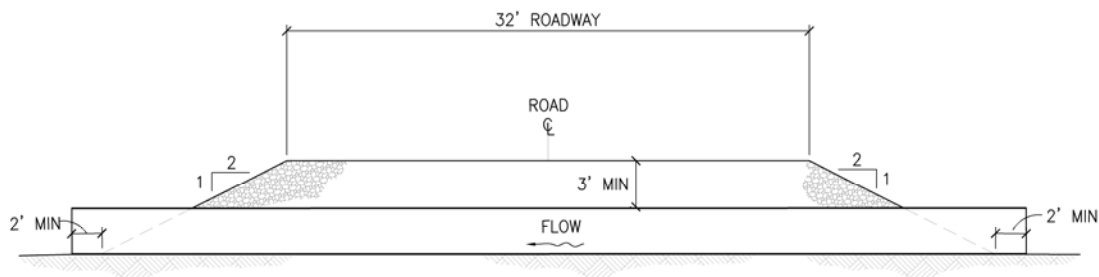
ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **36** of **61** 8-24-18



CROSS DRAINAGE CULVERT ELEVATION

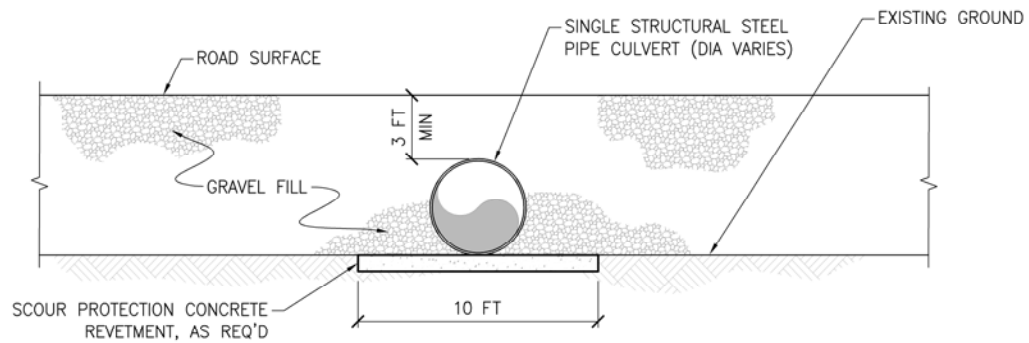


CROSS DRAINAGE CULVERT SECTION

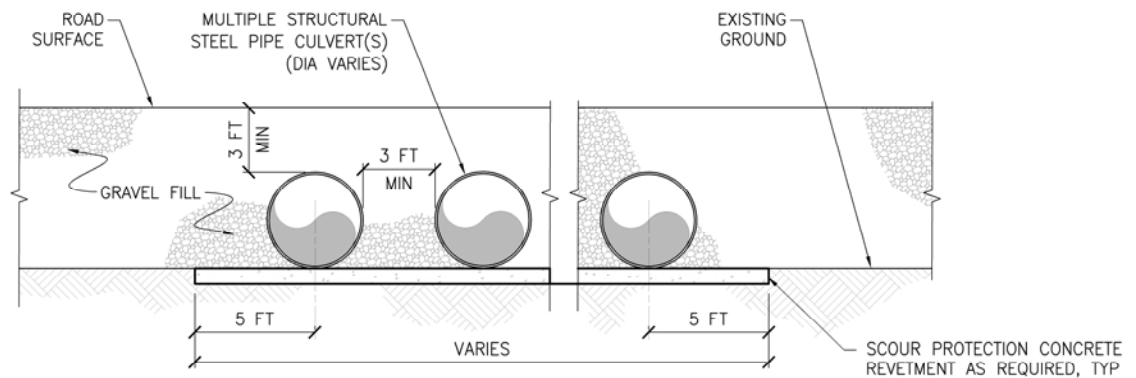
NOTE:
AS A GENERAL GUIDELINE, CROSS-DRAINAGE CULVERTS WILL BE SITED AN AVERAGE OF APPROXIMATELY EVERY 500 FEET ALONG THE ALIGNMENT DURING INITIAL DESIGN EFFORTS, ALTHOUGH EXACT PLACEMENT OF CULVERTS WILL DEPEND ON ACTUAL IN-FIELD LOCAL DRAINAGE PATTERNS.

CROSS DRAINAGE CULVERT CROSS SECTIONS

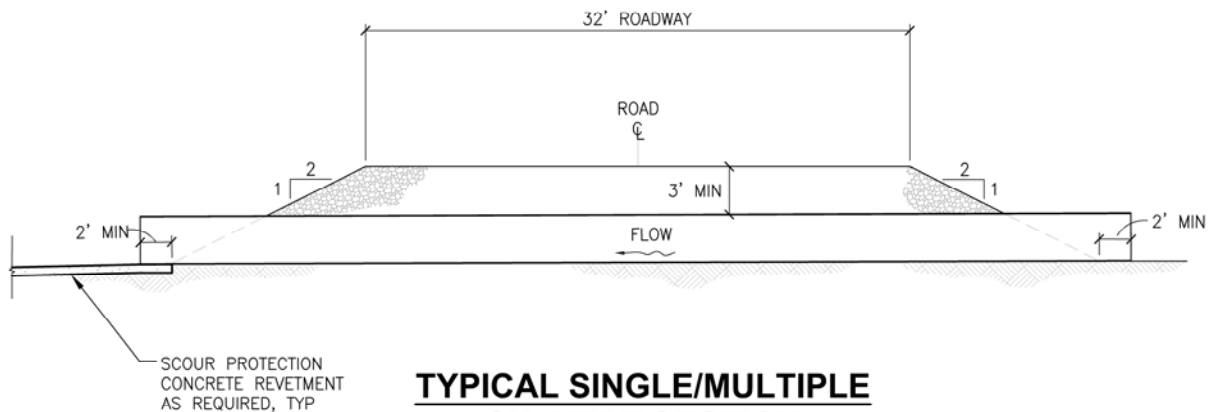
REFERENCE: POA-2015-025
APPLICANT: Oil Search Alaska, LLC
PROJECT: Nanushuk Project
ACTIVITY: Road, Pad and Pipeline Construction
AT: North Slope Borough, AK
SHEET **37** of **61** 8-24-18



TYPICAL SINGLE CULVERT ELEVATION



TYPICAL CULVERT BATTERY ELEVATION



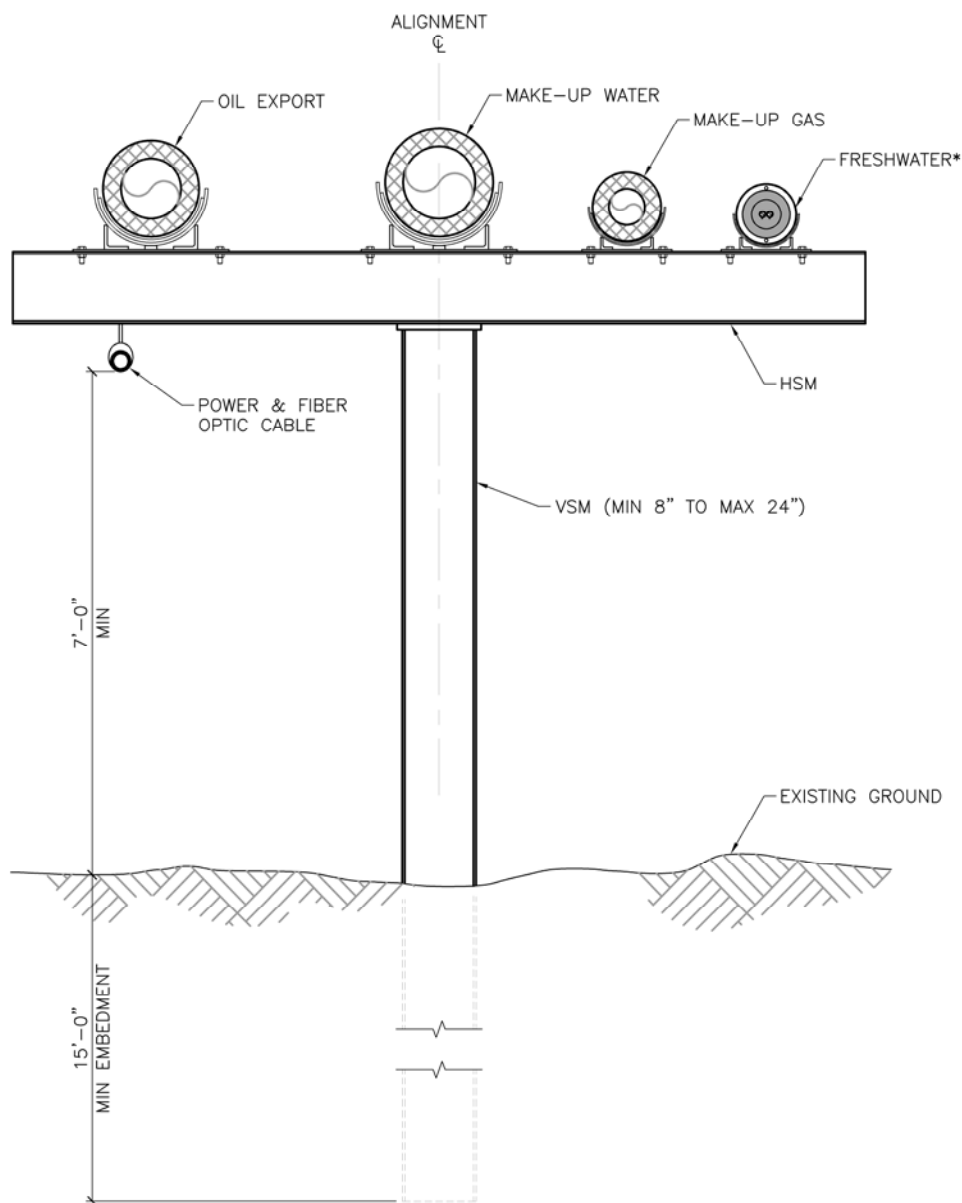
TYPICAL SINGLE/MULTIPLE CULVERT SECTION

TYPICAL SINGLE/ MULTIPLE CULVERT BATTERY SECTIONS

REFERENCE: POA-2015-025
 APPLICANT: Oil Search Alaska, LLC
 PROJECT: Nanushuk Project
 ACTIVITY: Road, Pad and Pipeline Construction
 AT: North Slope Borough, AK
 SHEET **38** of **61** 8-24-18



REFERENCE: POA-2015-025
 APPLICANT: Oil Search Alaska, LLC
 PROJECT: Nanushuk Project
 ACTIVITY: Road, Pad and Pipeline
 Construction
 AT: North Slope Borough, AK
 SHEET **39** of **61** 8-24-18



*NOTE:
FRESHWATER PIPELINE TO BE INSTALLED
BETWEEN THE CPF AND OPERATIONS
CENTER PAD ONLY.

NANUSHUK PIPELINE GUIDED PIPE SUPPORT

REFERENCE: POA-2015-025

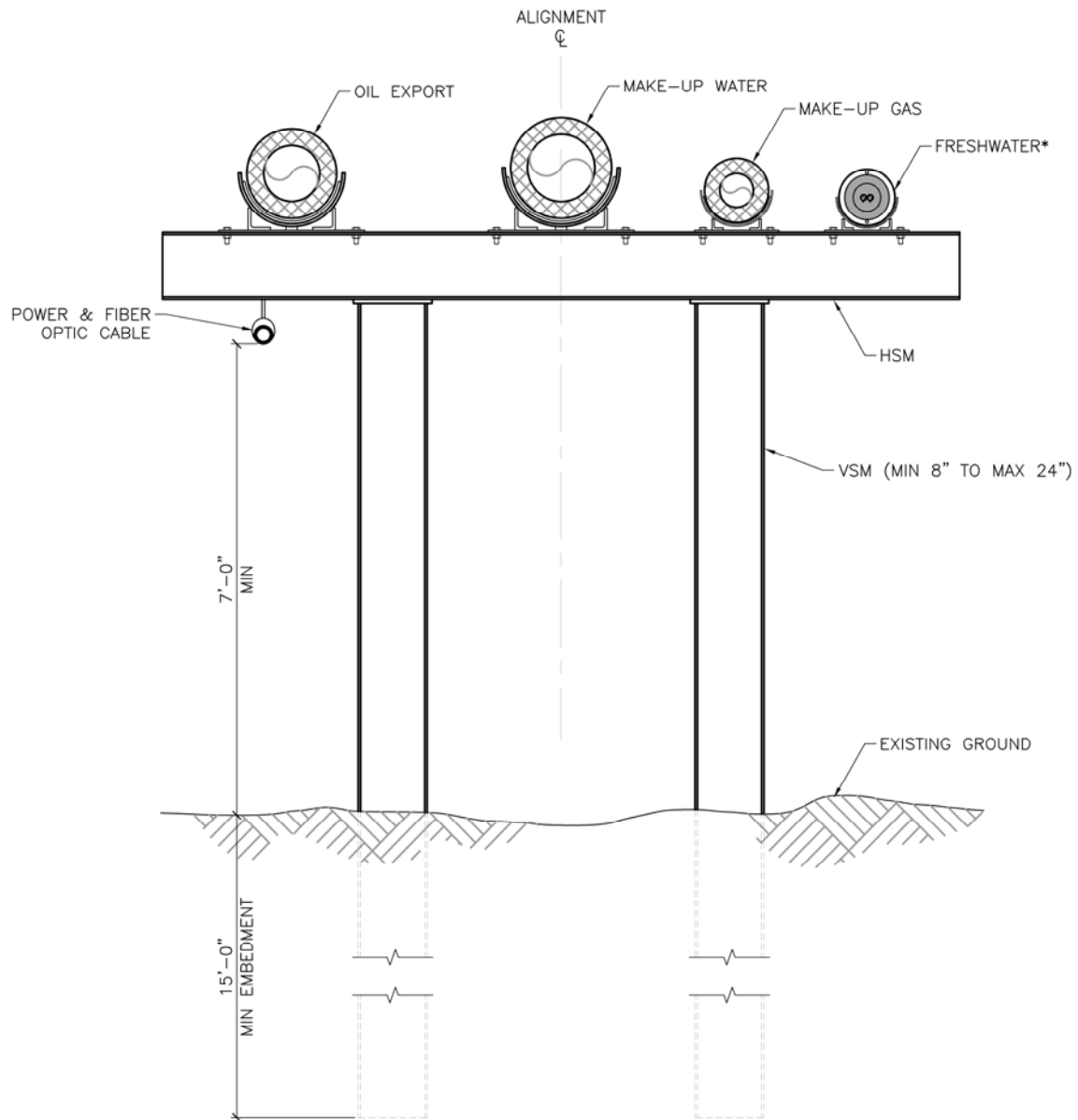
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **40** of **61** 8-24-18



*NOTE:
FRESHWATER PIPELINE TO BE INSTALLED
BETWEEN THE CPF AND OPERATIONS
CENTER PAD ONLY.

NANUSHUK PIPELINE ANCHOR PIPE SUPPORT

REFERENCE: POA-2015-025

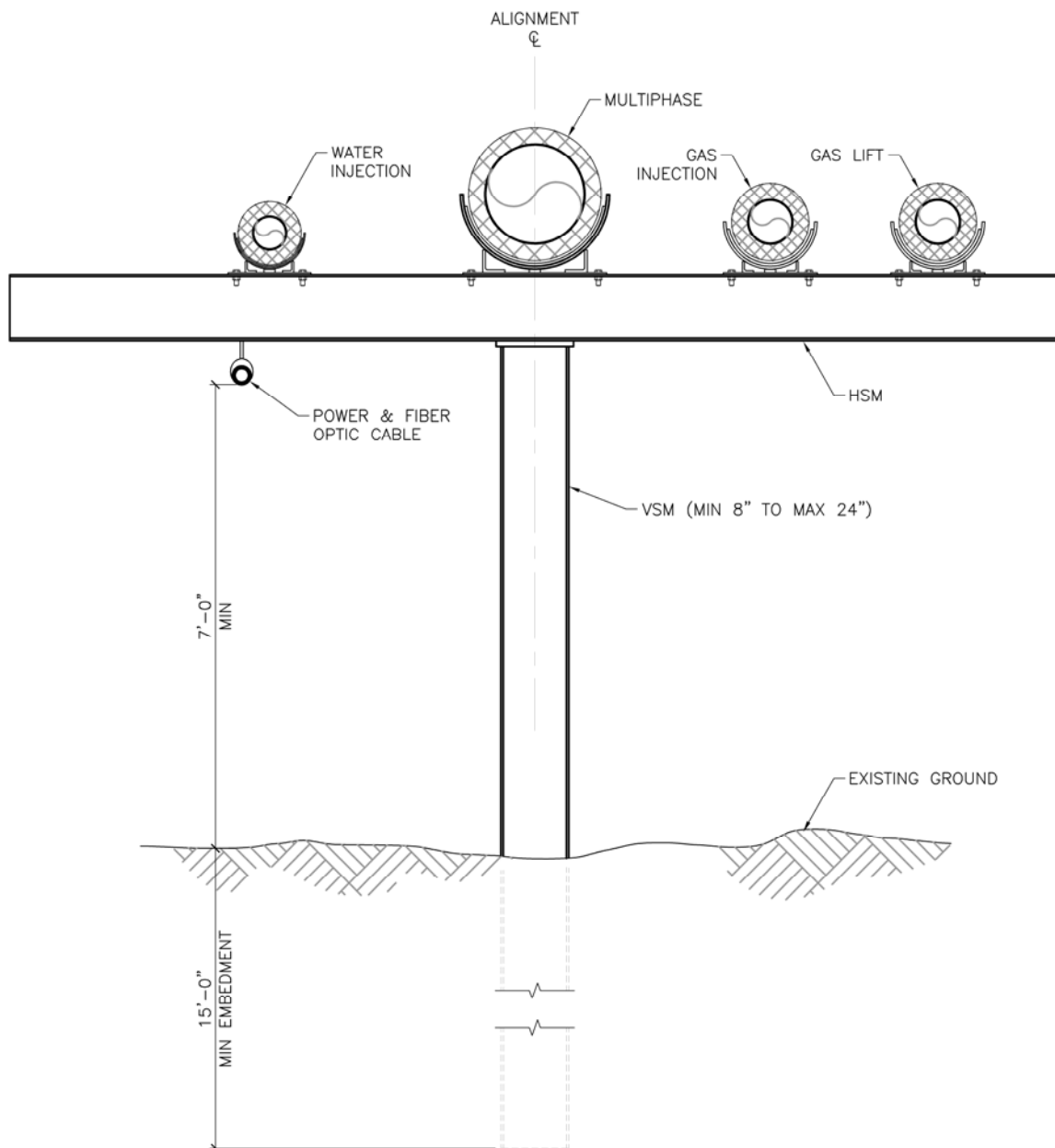
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **41** of **61** 8-24-18



DS1 PIPELINE GUIDED PIPE SUPPORT

REFERENCE: POA-2015-025

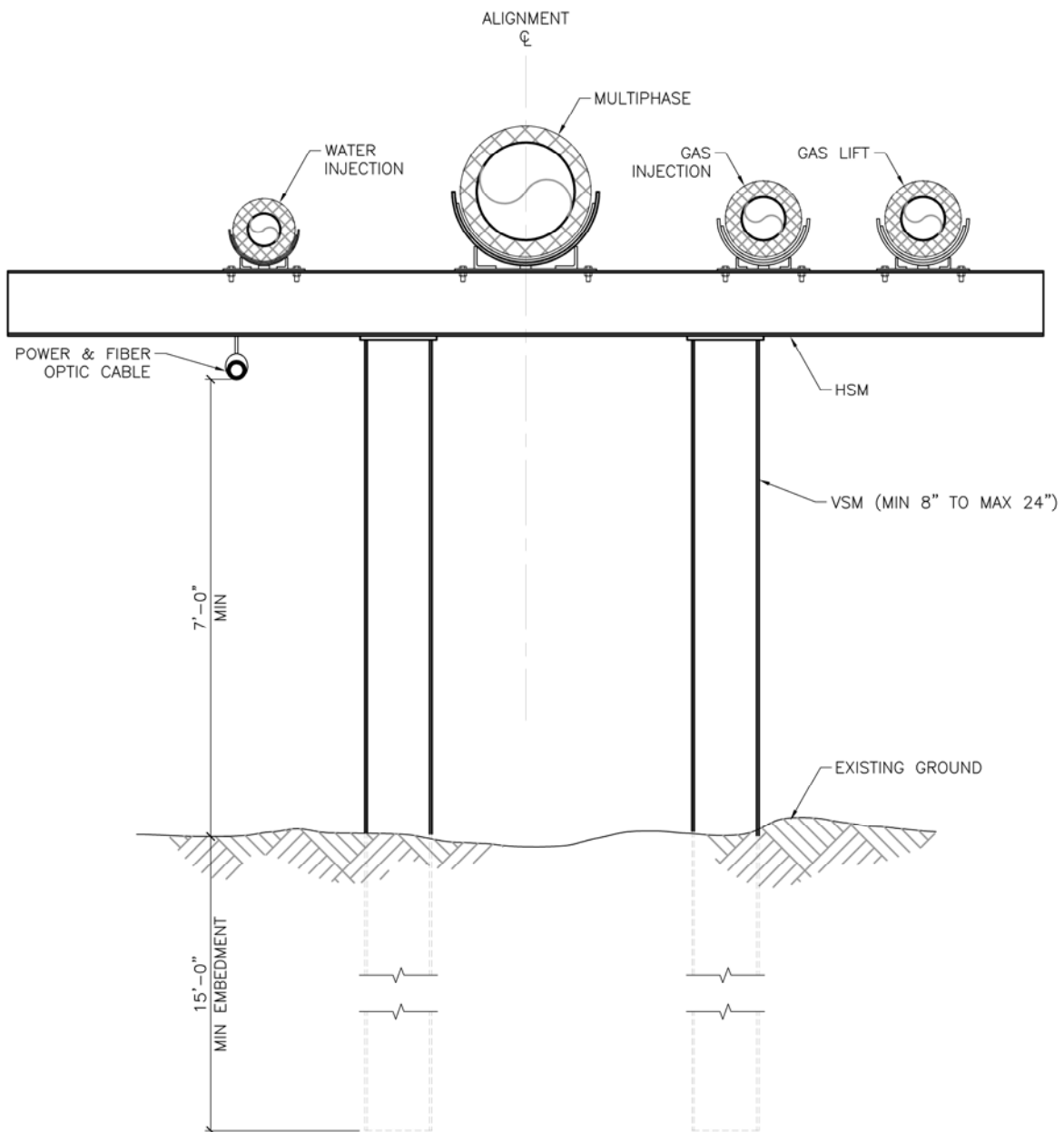
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **42** of **61** 8-24-18



DS1 PIPELINE ANCHOR PIPE SUPPORT

REFERENCE: POA-2015-025

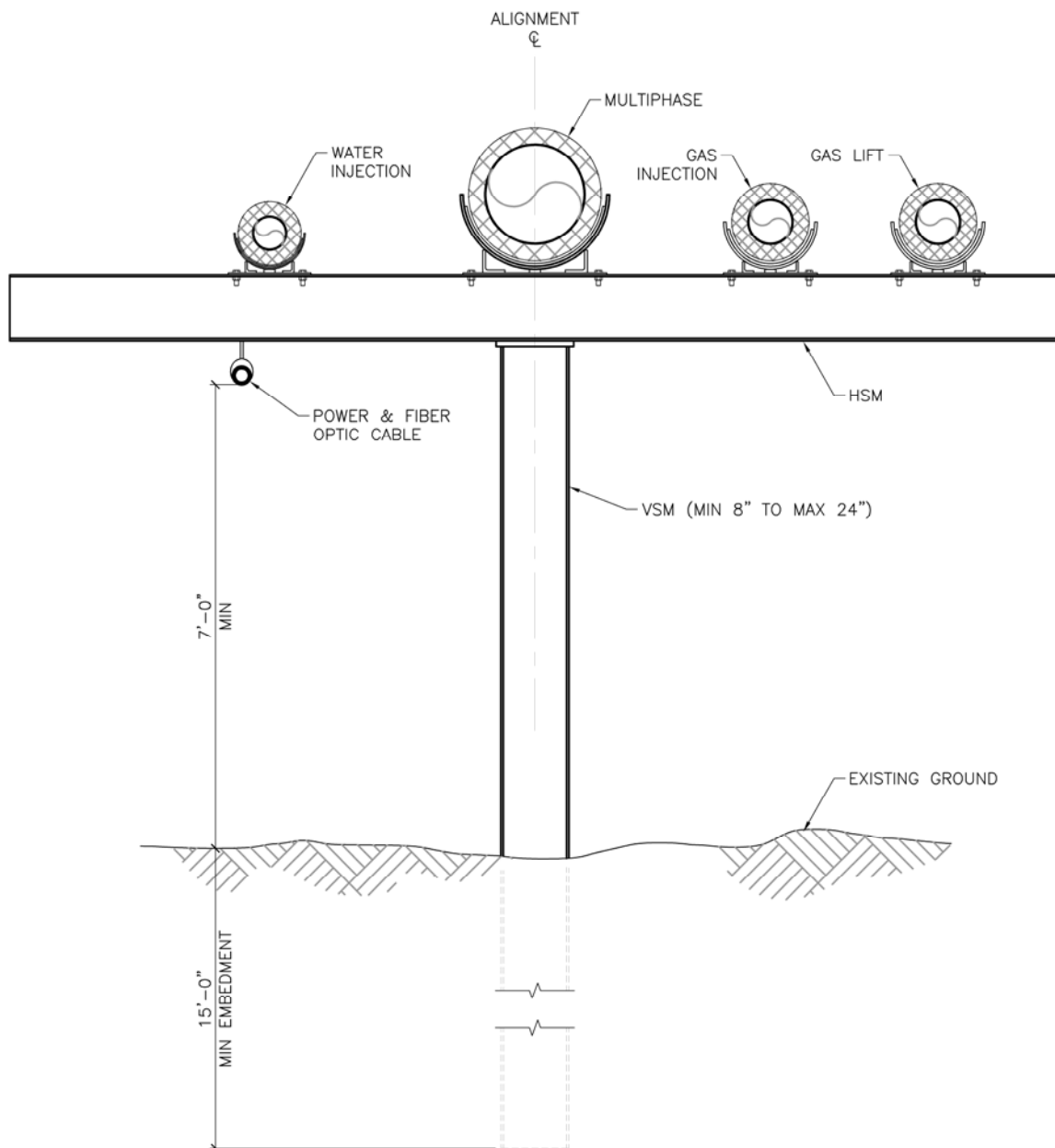
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **43** of **61** 8-24-18



DS2 PIPELINE GUIDED PIPE SUPPORT

REFERENCE: POA-2015-025

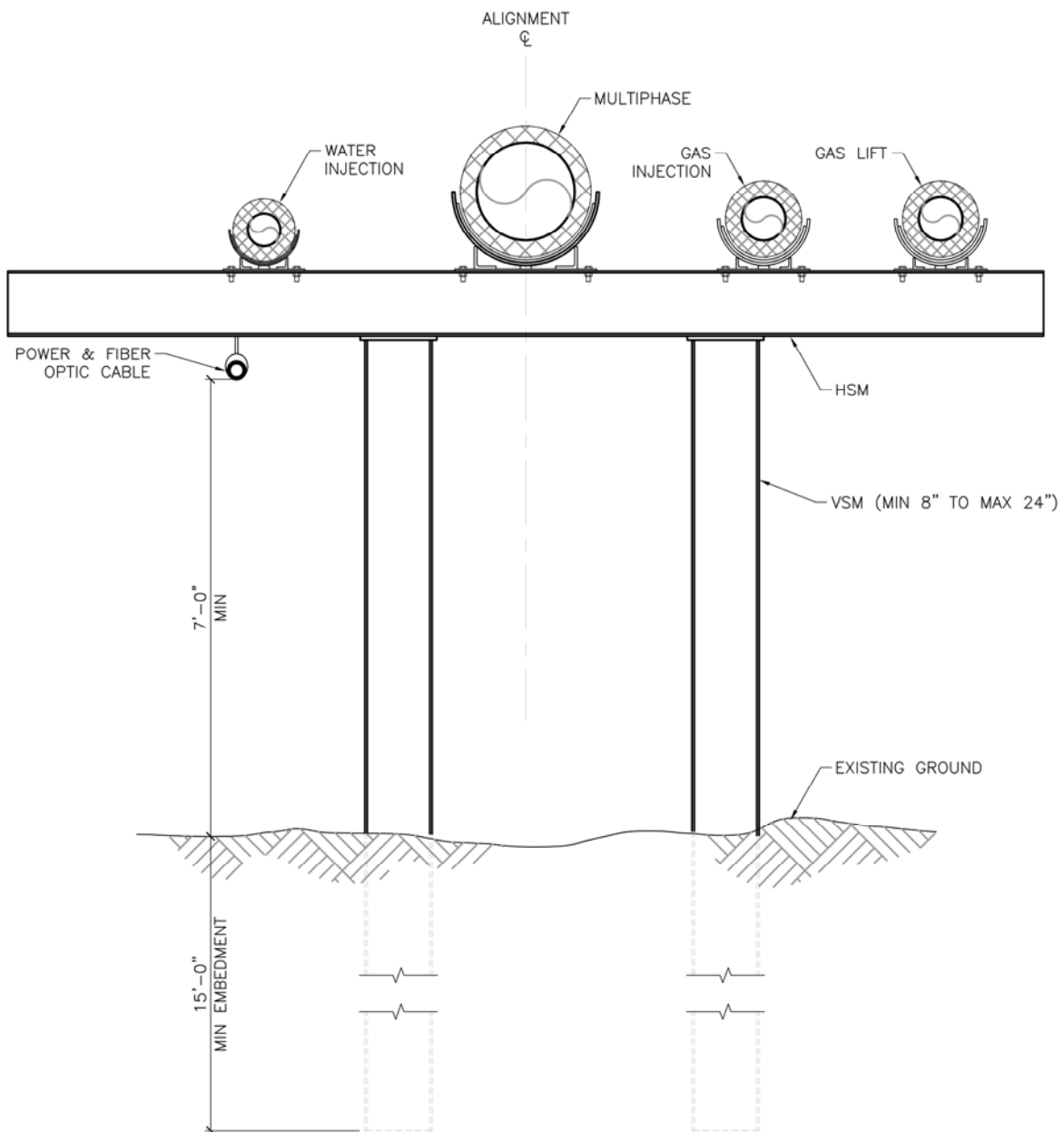
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **44** of **61** 8-24-18



DS2 PIPELINE ANCHOR PIPE SUPPORT

REFERENCE: POA-2015-025

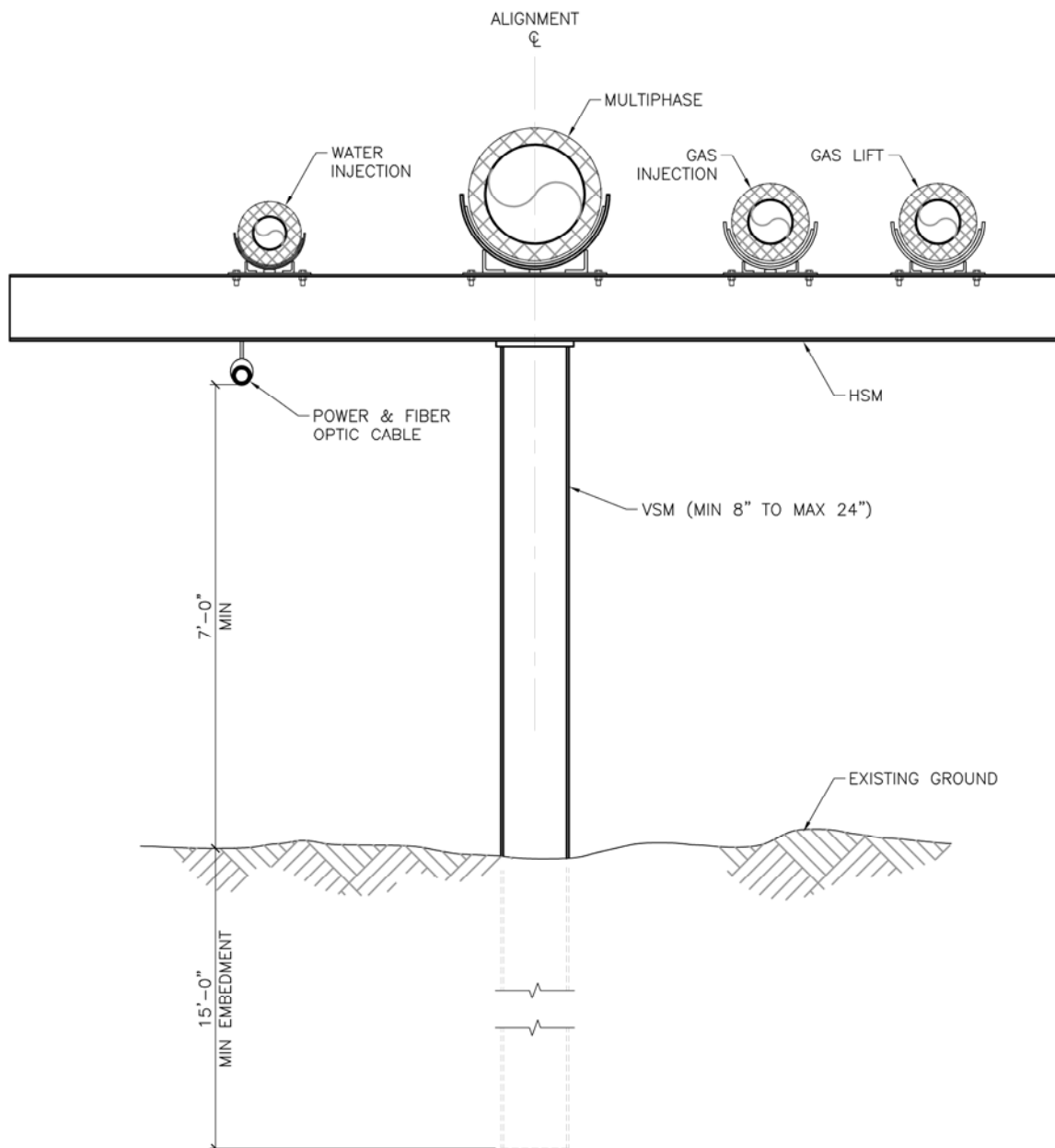
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **45** of **61** 8-24-18



DS3 PIPELINE GUIDED PIPE SUPPORT

REFERENCE: POA-2015-025

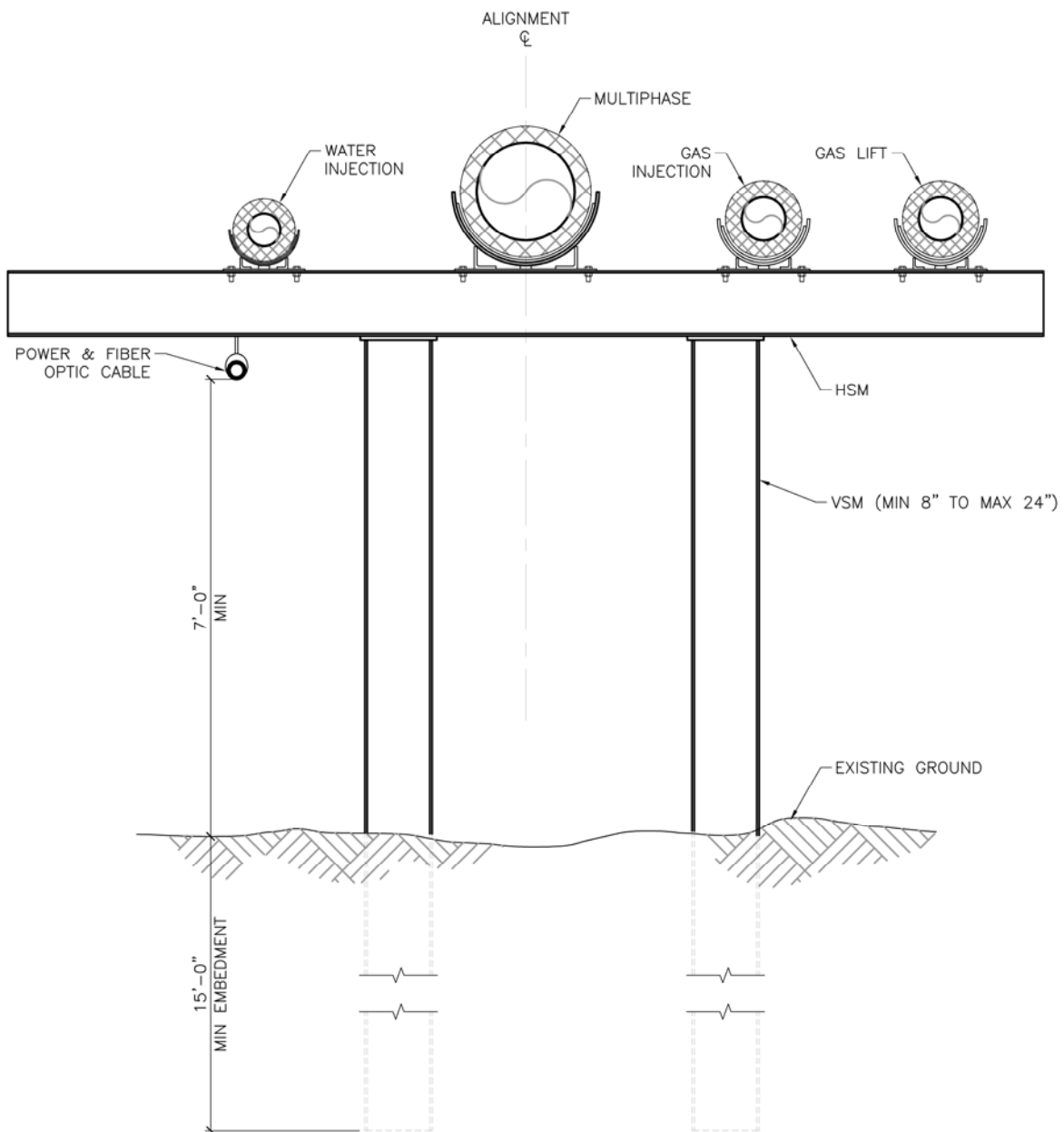
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

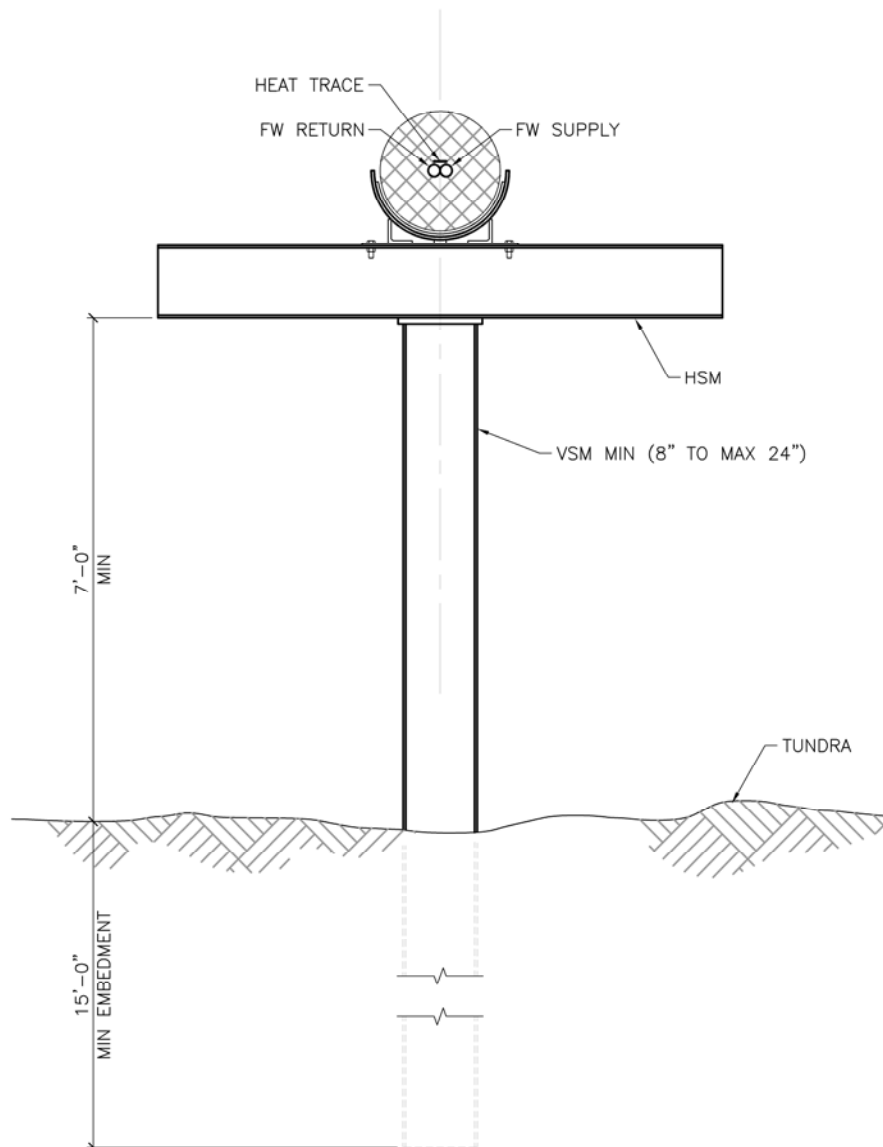
AT: North Slope Borough, AK

SHEET **46** of **61** 8-24-18



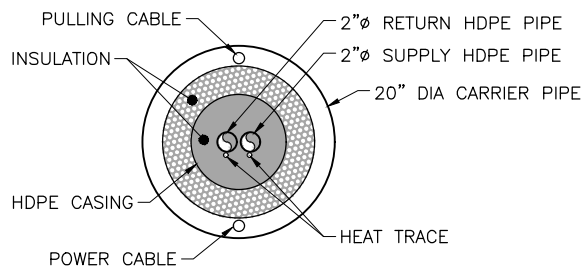
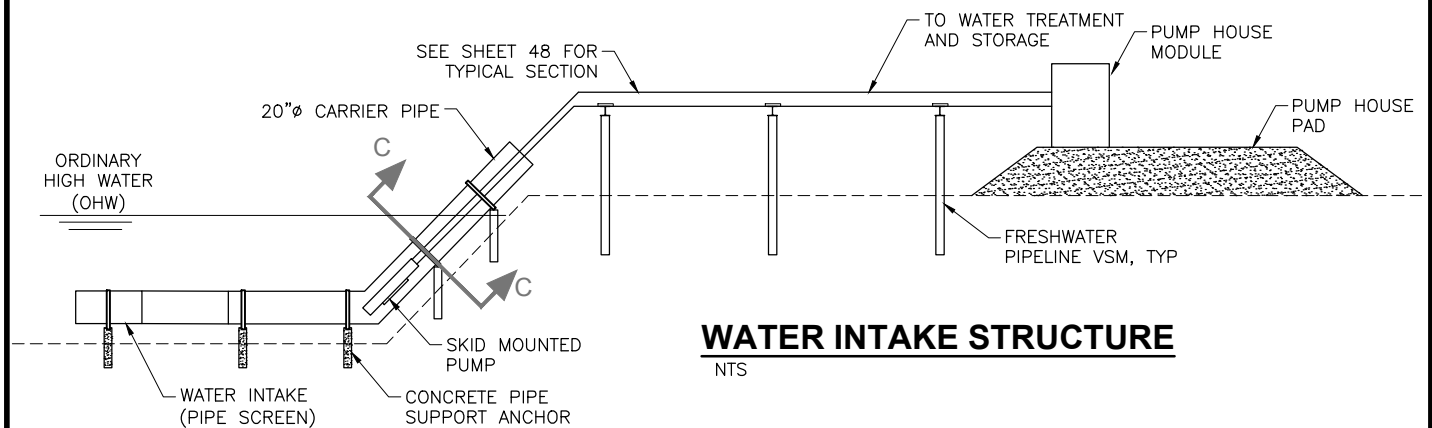
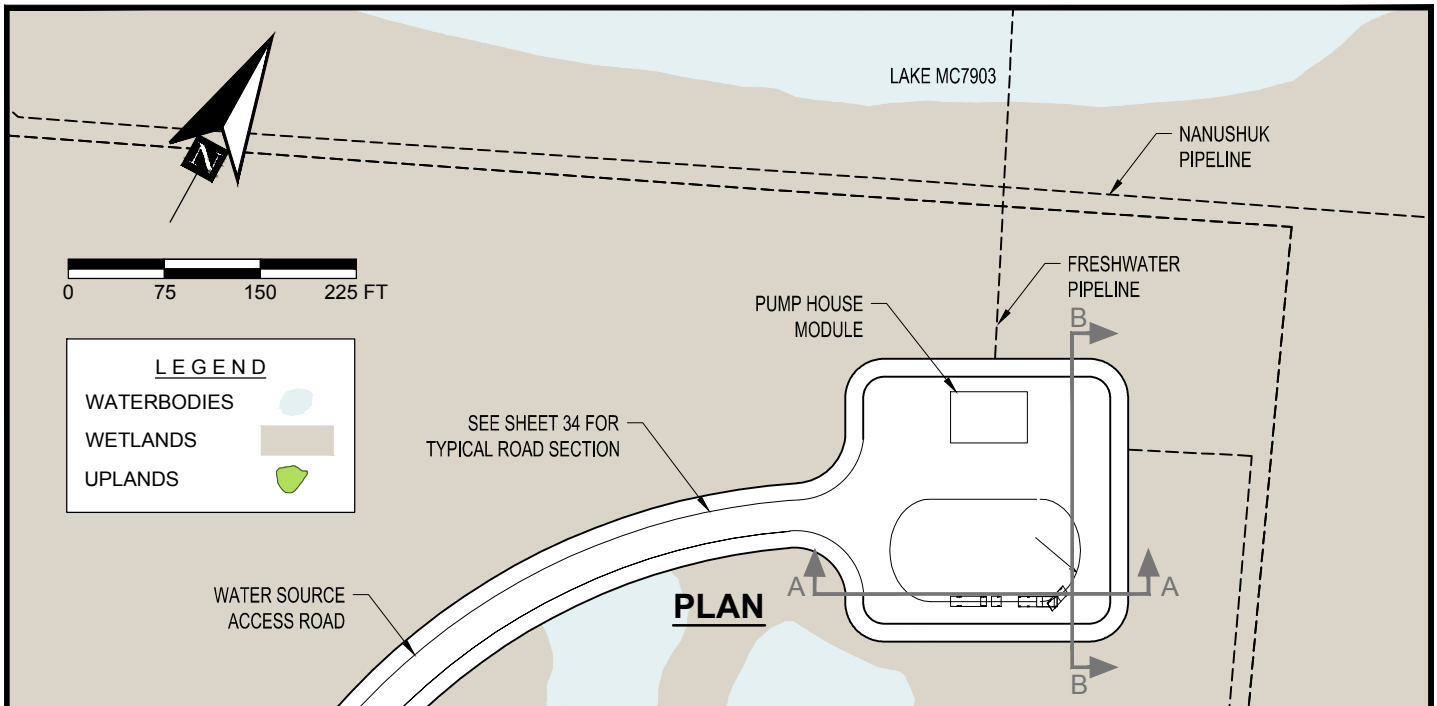
DS3 PIPELINE ANCHOR PIPE SUPPORT

REFERENCE: POA-2015-025
 APPLICANT: Oil Search Alaska, LLC
 PROJECT: Nanushuk Project
 ACTIVITY: Road, Pad and Pipeline Construction
 AT: North Slope Borough, AK
 SHEET **47** of **61** 8-24-18



MC7903 FRESHWATER (FW) PIPELINE

REFERENCE: POA-2015-025
 APPLICANT: Oil Search Alaska, LLC
 PROJECT: Nanushuk Project
 ACTIVITY: Road, Pad and Pipeline
 Construction
 AT: North Slope Borough, AK
 SHEET **48** of **61** 8-24-18



MC7903 WATER INTAKE AND PUMP HOUSE PAD

REFERENCE: POA-2015-025

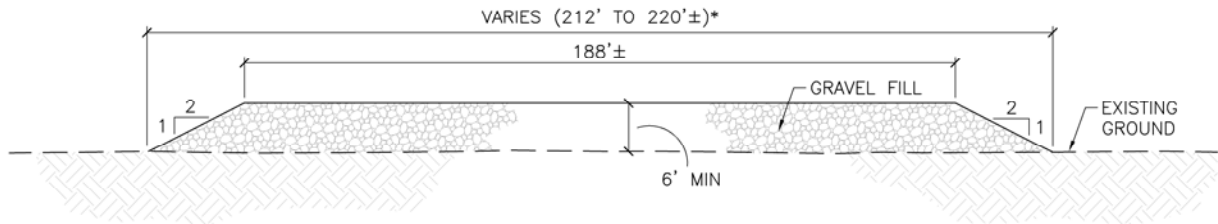
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

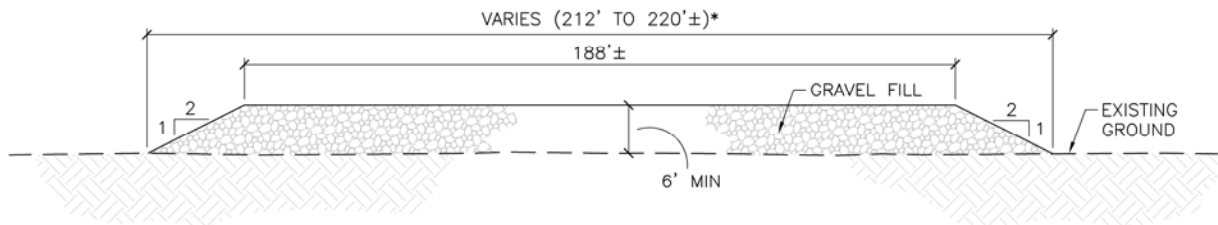
AT: North Slope Borough, AK

SHEET **49** of **61** 8-24-18



SECTION A-A

NTS



SECTION B-B

NTS

*NOTE:
MAX TOE TO TOE DIMENSIONS ARE
ESTIMATED. ACTUAL DIMENSIONS
WILL VARY BASED UPON SITE
CONDITIONS.

MC7903 WATER INTAKE AND PUMP HOUSE PAD **SECTIONS**

REFERENCE: POA-2015-025

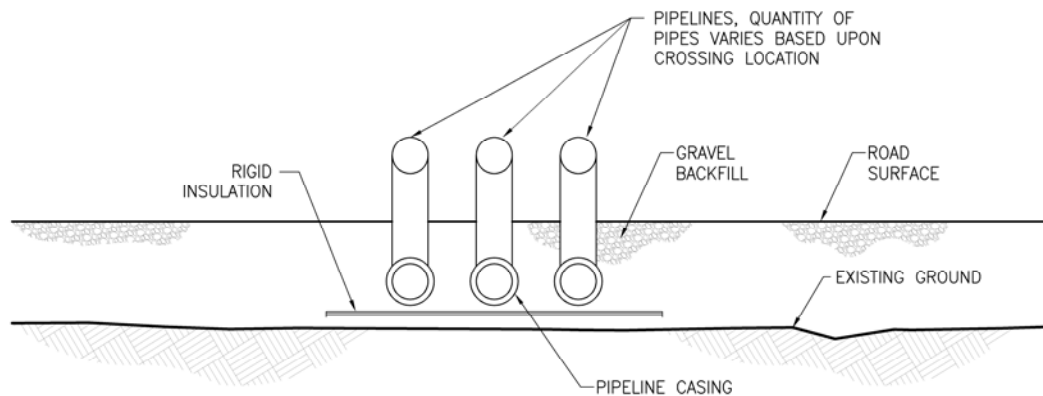
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

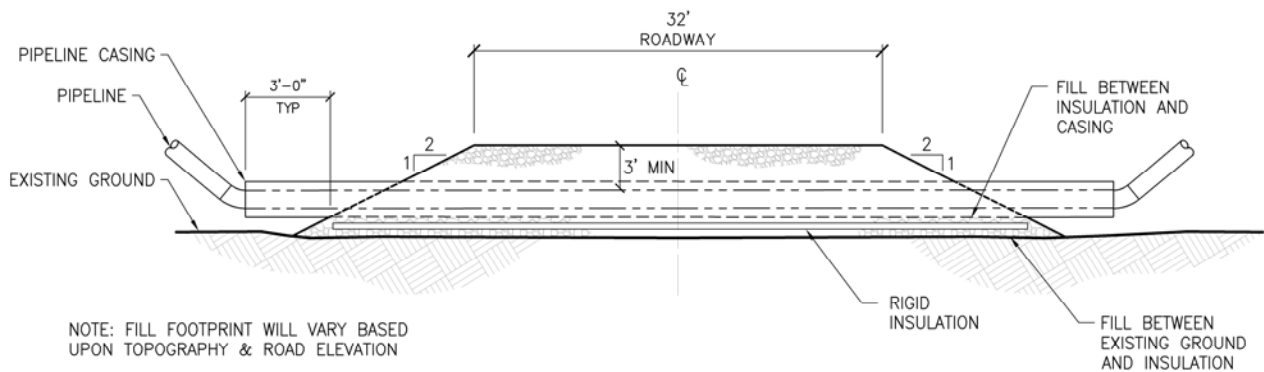
AT: North Slope Borough, AK

SHEET **50** of **61** 8-24-18



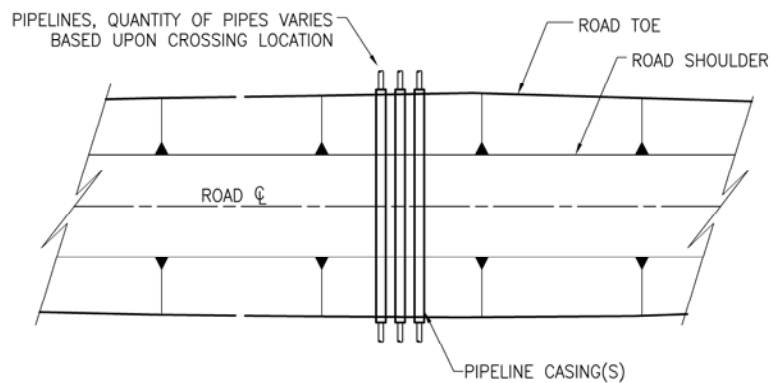
PROPOSED ROAD PIPELINE CROSSING PROFILE

NTS



PROPOSED ROAD PIPELINE CROSSING SECTION

NTS



PROPOSED ROAD PIPELINE CROSSING PLAN

NTS

TYPICAL PROPOSED PIPELINE ROAD CROSSING

REFERENCE: POA-2015-025

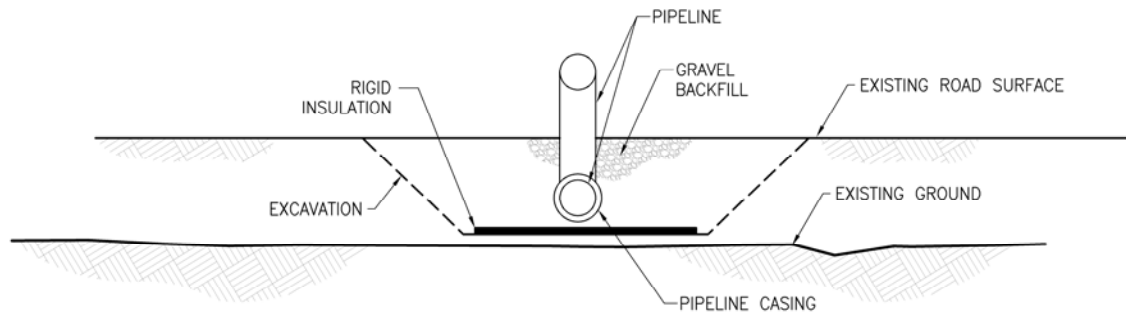
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

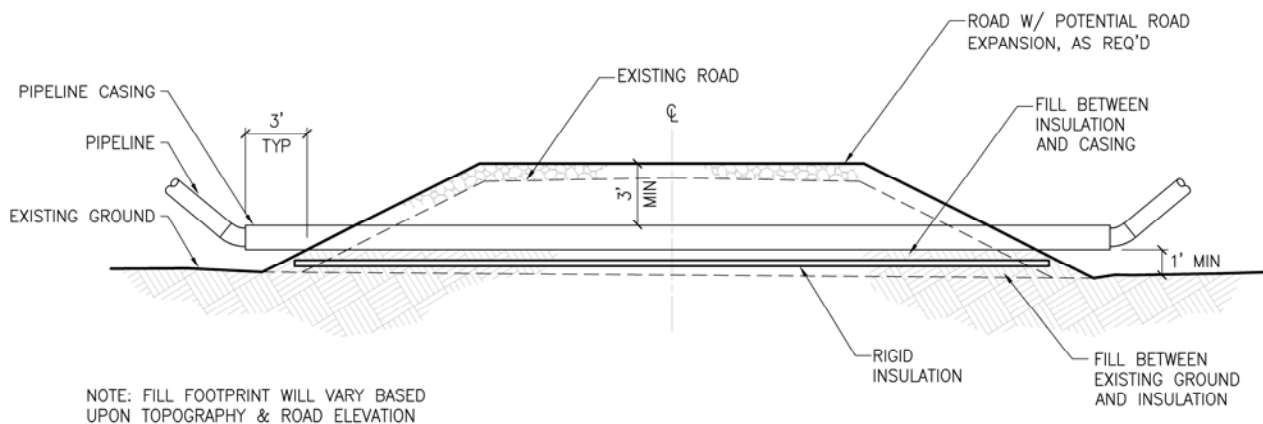
AT: North Slope Borough, AK

SHEET **51** of **61** 8-24-18



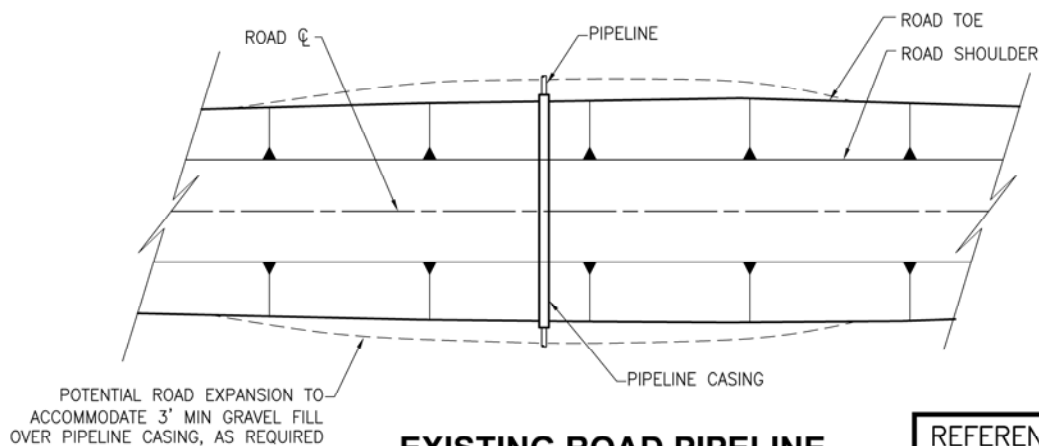
EXISTING ROAD PIPELINE CROSSING PROFILE

NTS



EXISTING ROAD PIPELINE CROSSING SECTION

NTS



EXISTING ROAD PIPELINE CROSSING PLAN

NTS

TYPICAL EXISTING ROAD PIPELINE CROSSING

REFERENCE: POA-2015-025

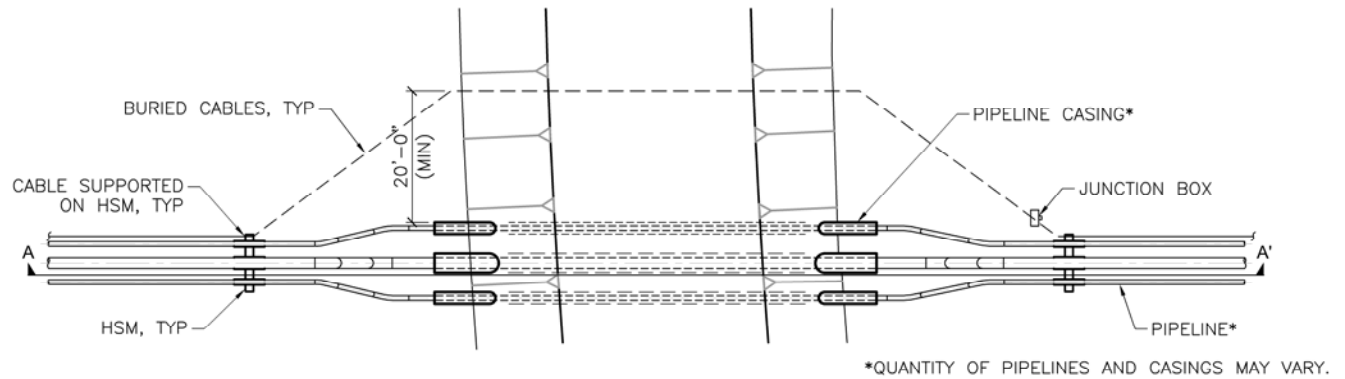
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

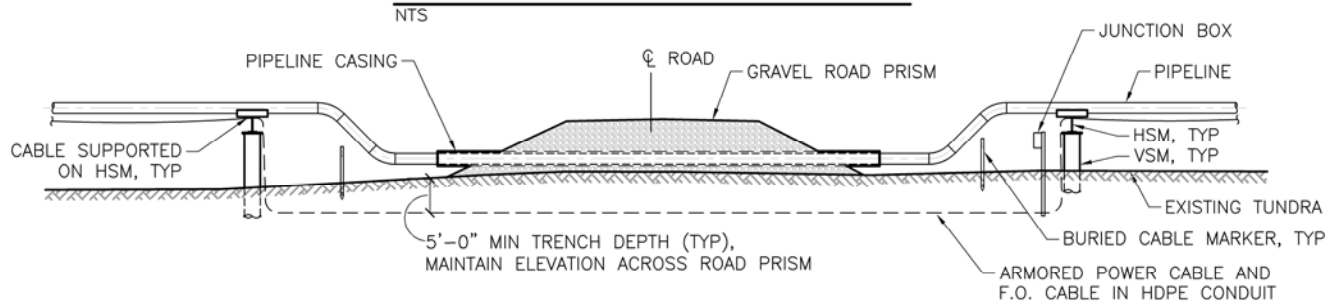
ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

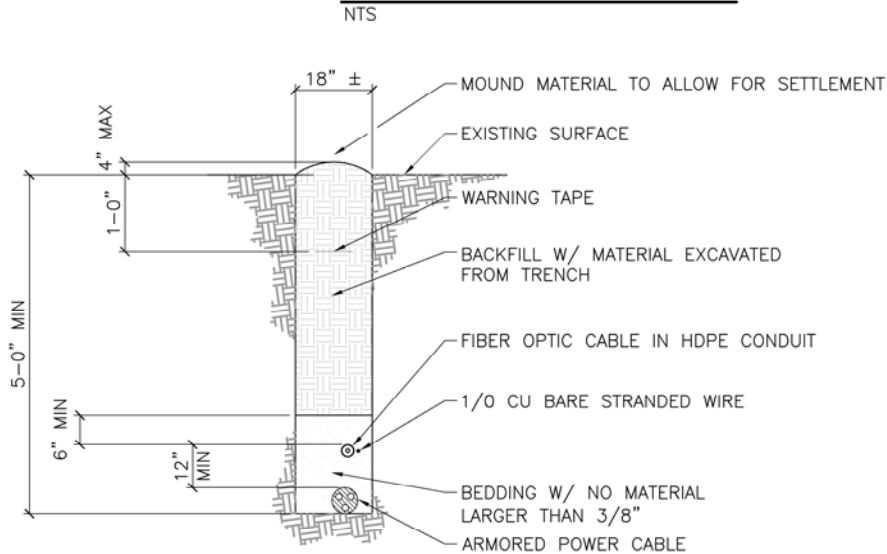
SHEET **52** of **61** 8-24-18



TYPICAL BURIED ELECTRICAL AND FIBER OPTIC CABLE AT PIPELINE CROSSING - PLAN



TYPICAL BURIED ELECTRICAL AND FIBER OPTIC CABLE AT PIPELINE CROSSING



TRENCH DETAIL

NTS

NOTES:

1. PLACE CABLE ROUTE MARKER EVERY 50 FT ALONG TRENCH ALIGNMENT.

TYPICAL BURIED ELECTRICAL AND FIBER OPTIC CABLE AT PIPELINE CROSSING

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

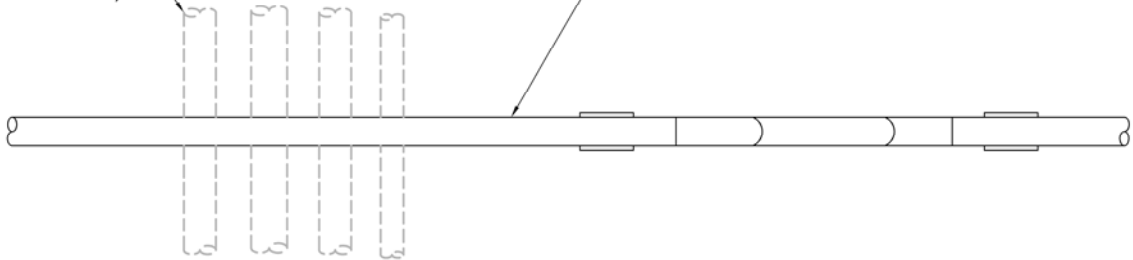
ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **53** of **61** 8-24-18

EXISTING PIPELINES
(NUMBER OF PIPES AND
CONFIGURATION VARIES)

NANUSHUK PIPELINE



PLAN

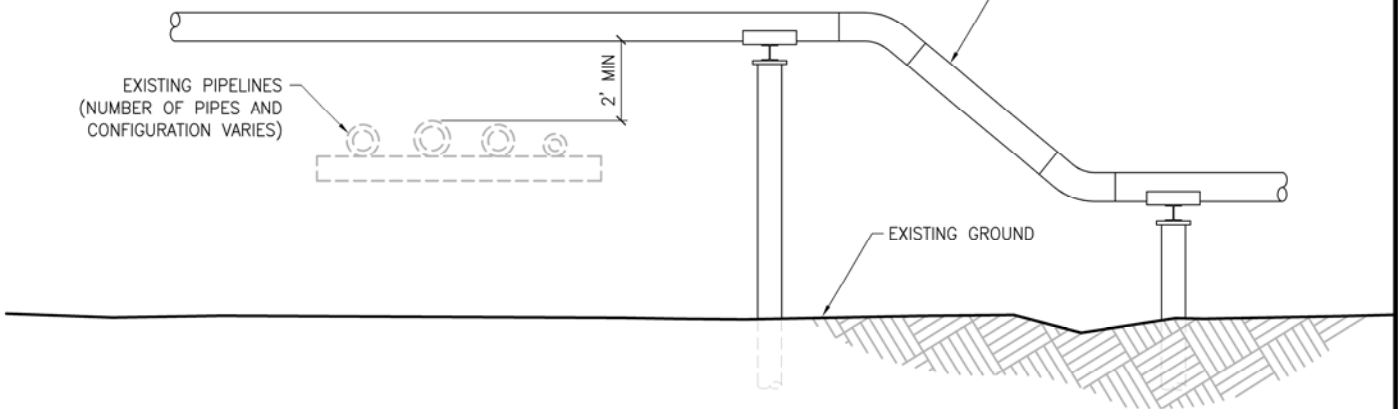
NTS

EXISTING PIPELINES
(NUMBER OF PIPES AND
CONFIGURATION VARIES)

NANUSHUK PIPELINE

2' MIN

EXISTING GROUND



ELEVATION

NTS

TYPICAL NANUSHUK PIPELINE CROSSING OVER EXISTING PIPELINES

REFERENCE: POA-2015-025

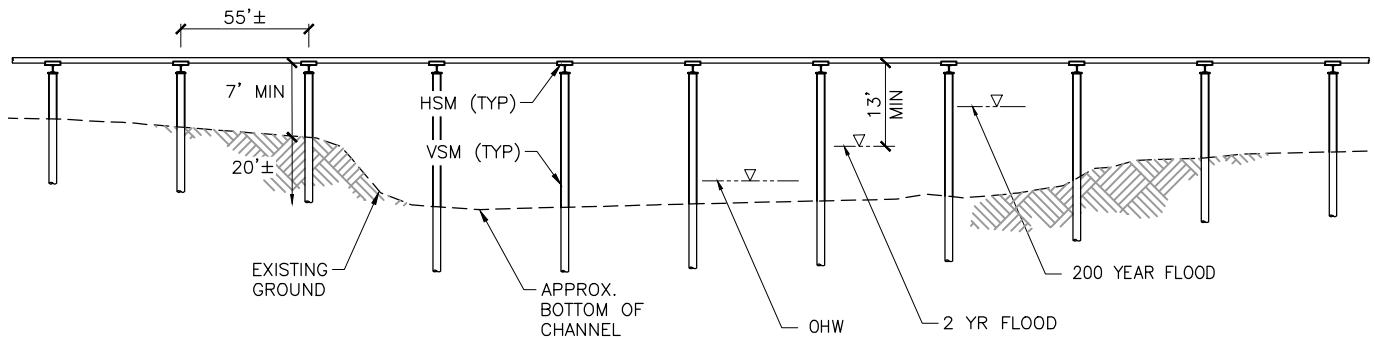
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

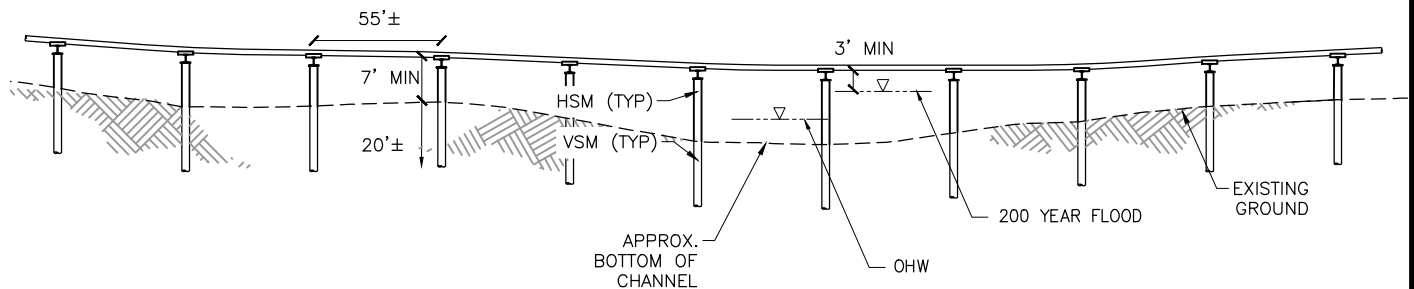
SHEET **54** of **61** 8-24-18



KACHEMACH RIVER PIPELINE CROSSING

NOTE:

1. KACHEMACH BRIDGE LOW CHORD ELEVATION WILL BE A MINIMUM OF THIRTEEN (13) FEET ABOVE THE 2-YEAR FLOOD, THREE (3) FEET ABOVE HIGHEST PREDICTED ELEVATION OF THE 200-YEAR FLOOD, OR THE MAXIMUM OBSERVED STATE ELEVATION PLUS THREE (3) FEET, WHICHEVER IS GREATER.



MILUVEACH RIVER PIPELINE CROSSING

NOTES:

1. MILUVEACH BRIDGE BOTTOM OF PIPE ELEVATION WILL BE A MINIMUM THREE (3) FEET ABOVE THE HIGHEST OF THE PREDICTED ELEVATION FROM THE 200-YEAR FLOOD OR STORM SURGE, OR THE HIGHEST RECORDED HISTORICAL WATER SURFACE ELEVATION.
2. PIPELINE CROSSING PROFILES ARE BASED UPON TOPOGRAPHIC SURVEY DATA.
3. PILE EMBEDMENT DEPTHS, DIAMETERS, AND SPACING MAY VARY DEPENDING UPON SITE CONDITIONS AND FINAL DESIGN CONSIDERATIONS.

PIPELINE RIVER CROSSING

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

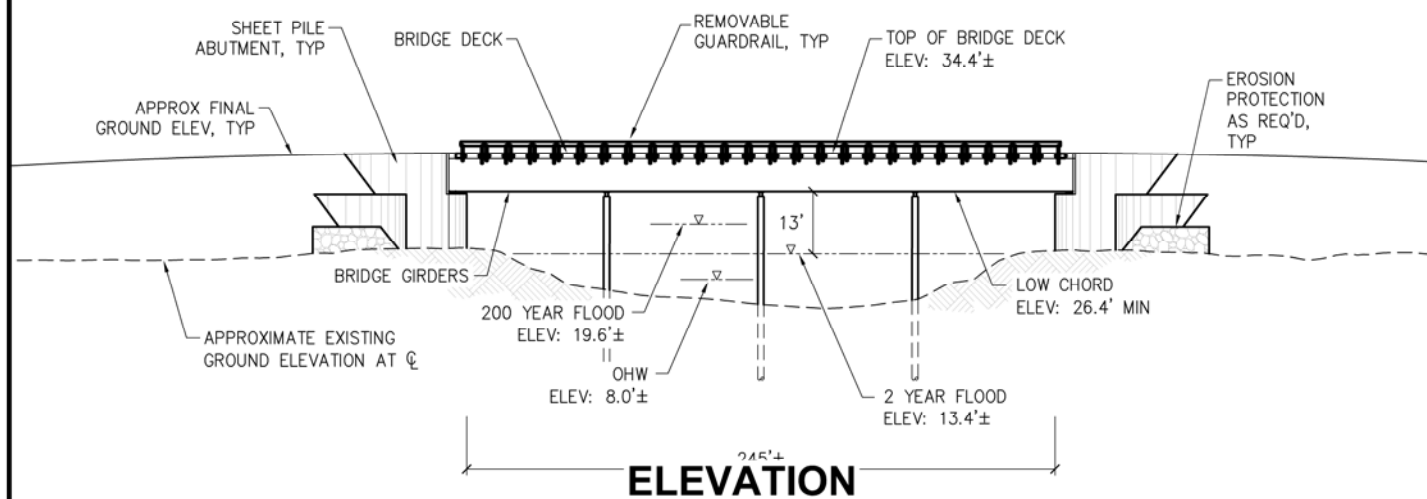
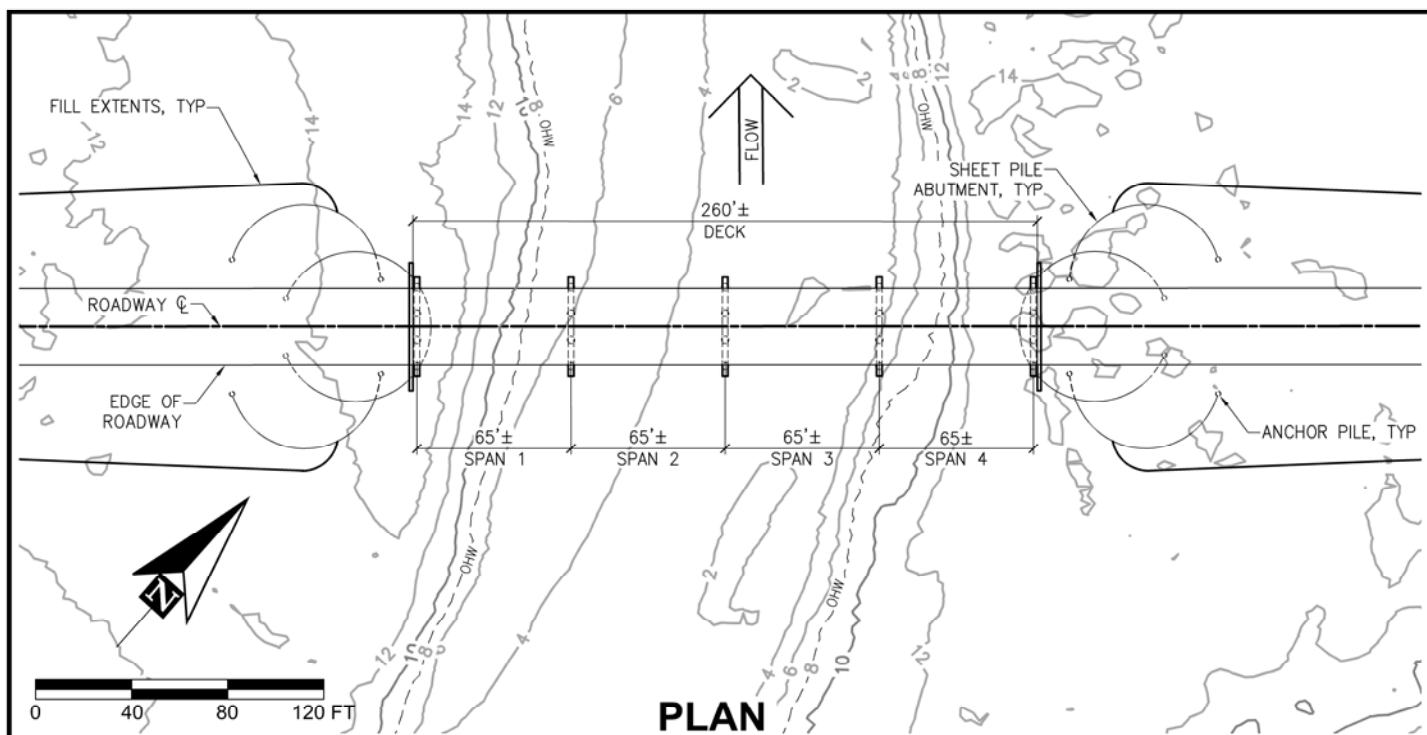
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **55** of **61**

10-2-18



NOTES:

1. VERTICAL SCALE SHOWN 2X HORIZONTAL SCALE.
2. BRIDGE CROSSING PROFILES ARE BASED UPON TOPOGRAPHIC SURVEY DATA. VERTICAL DATUM IS NAVD 88.
3. BRIDGE LOW CHORD ELEVATION WILL BE A MINIMUM OF THIRTEEN (13) FEET ABOVE THE 2-YEAR FLOOD, THREE (3) FEET ABOVE HIGHEST PREDICTED ELEVATION OF THE 200-YEAR FLOOD, OR THE MAXIMUM OBSERVED STATE ELEVATION PLUS THREE (3) FEET, WHICHEVER IS GREATER.
4. FLOOD ELEVATIONS ARE PRELIMINARY. FINAL FLOOD ELEVATIONS ARE PENDING A DETAILED FLOOD ANALYSIS TO BE PERFORMED DURING THE DETAILED DESIGN PHASE OF THE PROJECT.
5. ORDINARY HIGH WATER (OHW) ELEVATIONS ARE PRELIMINARY. VALUES WERE APPROXIMATED FROM NON-VEGETATED CHANNEL WIDTH AND TOPOGRAPHIC SURVEY DATA.
6. SIDE SLOPES TO BE SEEDDED AS REQUIRED. SEED SHALL CONSIST OF NATIVE PLANT SPECIES WITH BIODEGRADABLE EROSION PROTECTION.

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

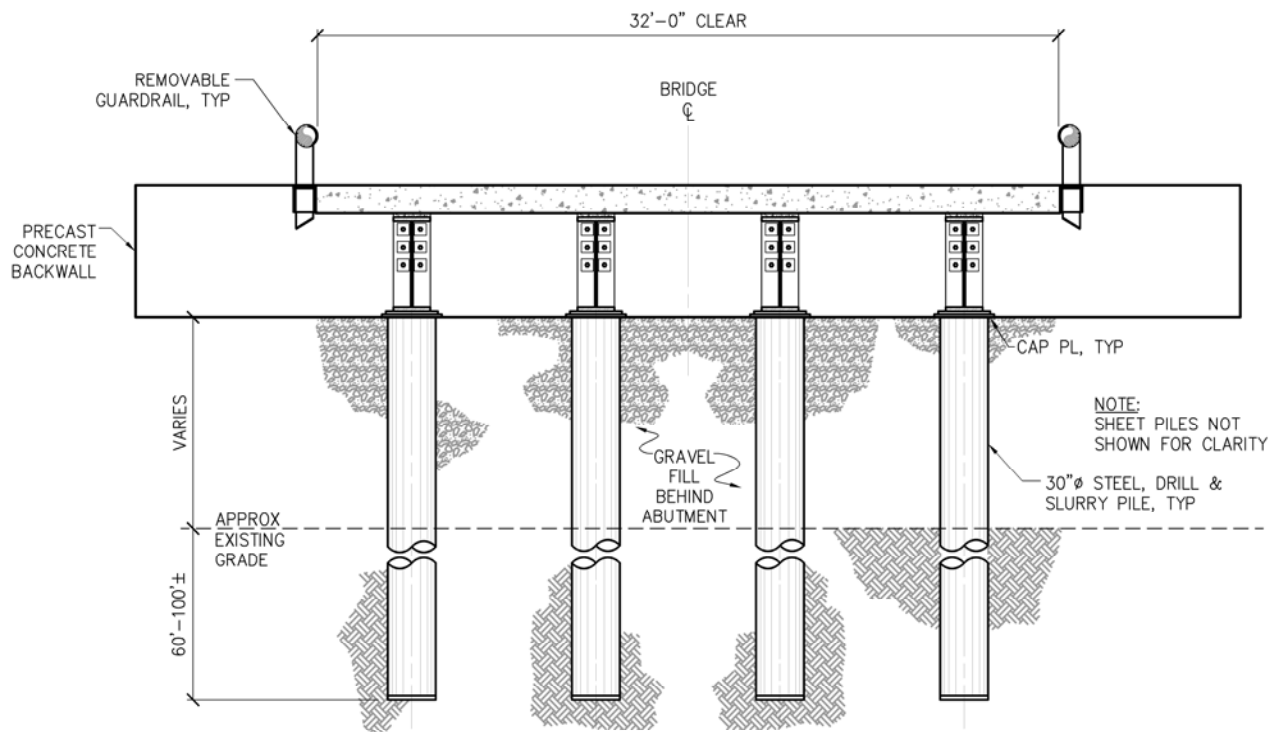
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

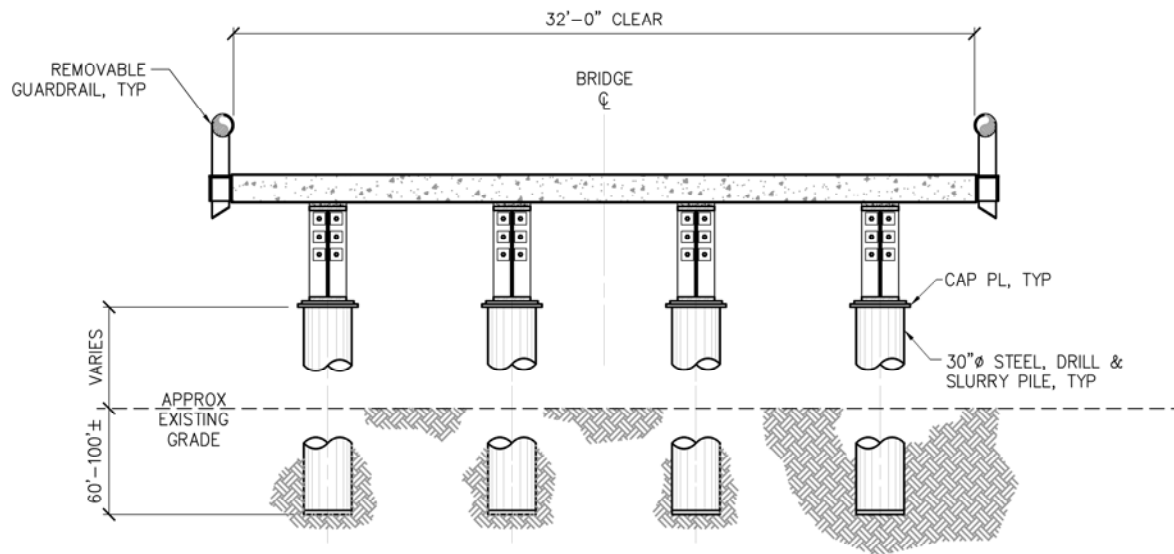
AT: North Slope Borough, AK

SHEET **56** of **61** 8-24-18

KACHEMACH RIVER BRIDGE



TYPICAL SECTION AT ABUTMENT



TYPICAL SECTION AT PIER

KACHEMACH RIVER BRIDGE PIER SECTIONS

REFERENCE: POA-2015-025

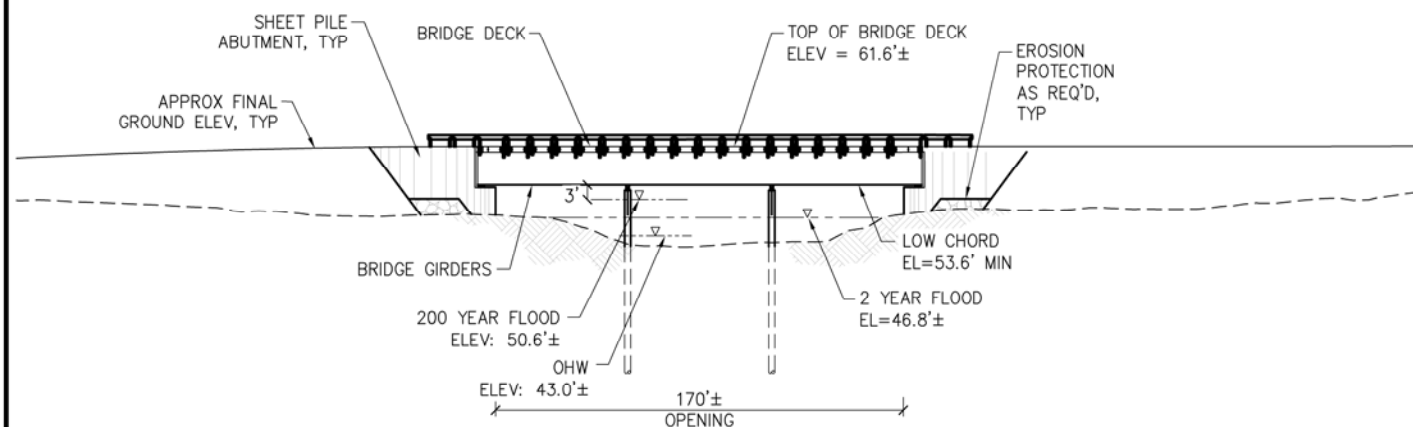
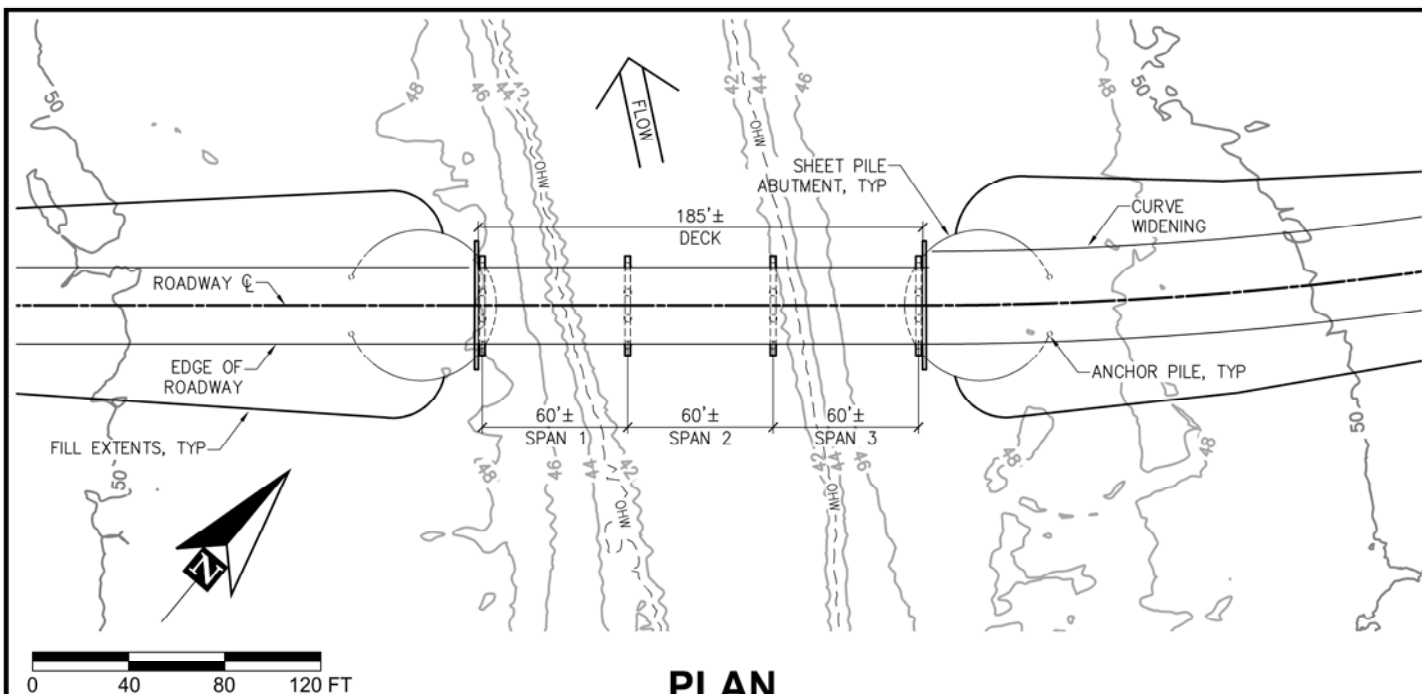
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **57** of **61** 8-24-18



NOTES:

1. VERTICAL SCALE SHOWN 2X HORIZONTAL SCALE.
2. BRIDGE CROSSING PROFILES ARE BASED UPON TOPOGRAPHIC SURVEY DATA. VERTICAL DATUM IS NAVD 88.
3. BRIDGE LOW CHORD ELEVATION WILL BE A MINIMUM OF THREE (3) FEET ABOVE HIGHEST PREDICTED ELEVATION OF THE 200-YEAR FLOOD OR THE MAXIMUM OBSERVED STATE ELEVATION PLUS THREE (3) FEET, WHICHEVER IS GREATER.
4. FLOOD ELEVATIONS ARE PRELIMINARY. FINAL FLOOD ELEVATIONS ARE PENDING A DETAILED FLOOD ANALYSIS TO BE PERFORMED DURING THE DETAILED DESIGN PHASE OF THE PROJECT.
5. ORDINARY HIGH WATER (OHW) ELEVATIONS ARE PRELIMINARY. VALUES WERE APPROXIMATED FROM NON-VEGETATED CHANNEL WIDTH AND TOPOGRAPHIC SURVEY DATA.
6. SIDE SLOPES TO BE SEEDDED AS REQUIRED. SEED SHALL CONSIST OF NATIVE PLANT SPECIES WITH BIODEGRADABLE EROSION PROTECTION.

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

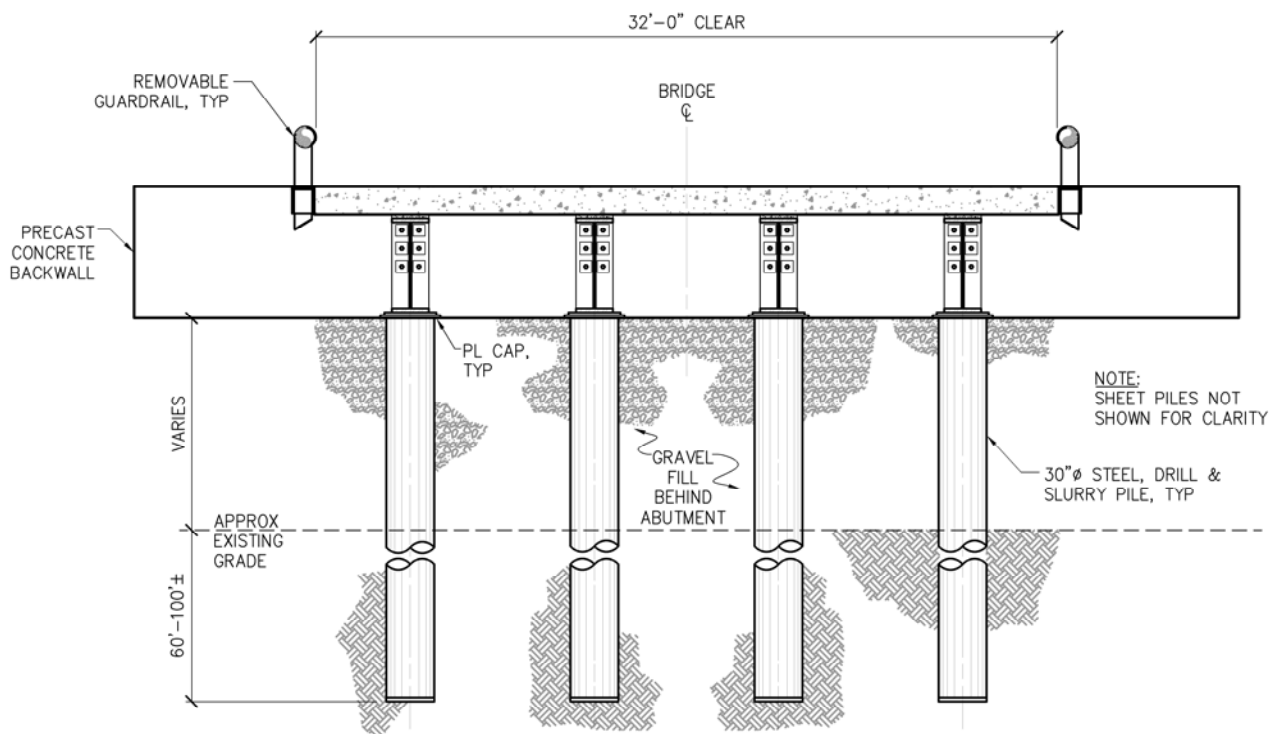
PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

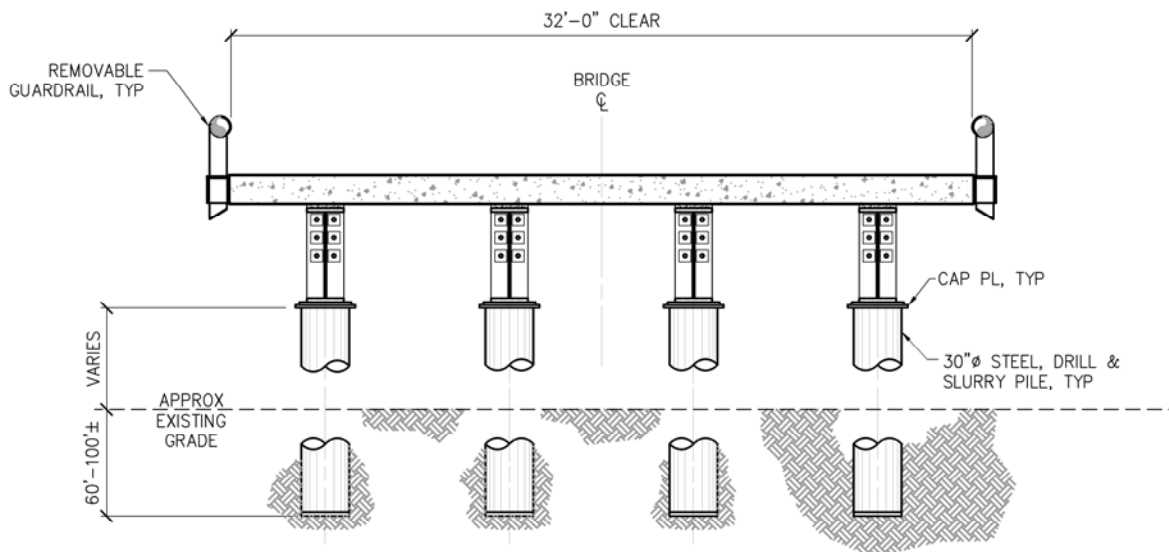
AT: North Slope Borough, AK

SHEET **58** of **61** 8-24-18

MILUVEACH RIVER BRIDGE



TYPICAL SECTION AT ABUTMENT



TYPICAL SECTION AT PIER

MILUVEACH RIVER BRIDGE PIER SECTIONS

REFERENCE: POA-2015-025

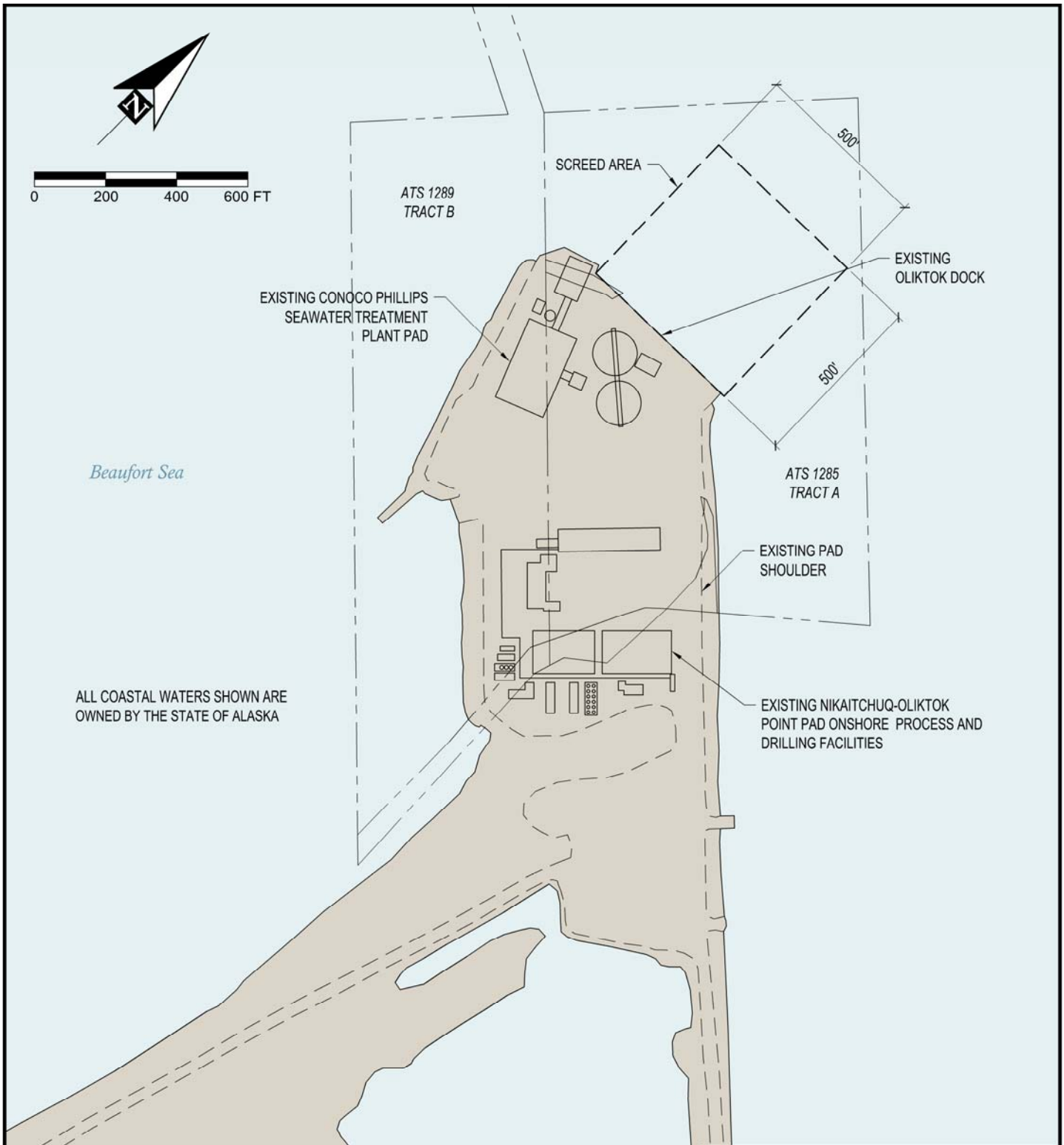
APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **59** of **61** 8-24-18



SCREENING FOOTPRINT

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline
Construction

AT: North Slope Borough, AK

SHEET **60** of **61** 8-24-18

FEATURE	LENGTH (MI)	GRAVEL FILL (CY)	FOOTPRINT (ACRES)
GRAVEL PADS			
DS1 PAD	—	224,000±	16.2±
DS2 PAD	—	312,000±	19.5±
DS3 PAD	—	249,000±	18.0±
CPF	—	241,000±	17.1±
OPERATIONS CENTER	—	259,000±	16.4±
TIE-IN PAD	—	7,000±	0.8±
PUMP HOUSE PAD	—	12,000±	1.1±
BOAT RAMP (INCLUDES FILL BELOW OHW, SEE OPPOSITE TABLE)	—	21,000±	2.0±
GRAVEL ROADS			
ACCESS ROAD	9.5±	599,000±	72.7±
DS1 ROAD	3.5±	203,000±	25.0±
DS2 ROAD	2.1±	186,000±	17.3±
DS3 ROAD	5.2±	439,000±	42.5±
WATER SOURCE ACCESS ROAD	0.2±	8,000±	0.9±
BOAT RAMP ACCESS ROAD	1.4±	65,000±	8.3±
MUSTANG ROAD UPGRADES	4.7±	31,000±	3.0±
TOTAL	26.6±	2,856,000±	260.8±

FEATURE	VALUE	UNIT
BRIDGE AND CULVERTS		
MILUVEACH RIVER BRIDGE*	170±	LF
KACHEMACH RIVER BRIDGE*	245±	LF
CULVERTS**	235± MIN	EA

* BRIDGE LENGTHS REPRESENT OPENING WIDTHS, MEASURED FROM FACE-OF-ABUTMENT TO FACE-OF-ABUTMENT.

** CULVERTS TO BE INSTALLED EVERY 500' ON AVERAGE. ADDITIONAL CULVERTS WILL BE ADDED AS NEEDED. LENGTHS, DIAMETERS, QUANTITIES TO BE DETERMINED DURING A SUMMER FIELD SURVEY PRIOR TO CONSTRUCTION.

FEATURE	VALUE	UNIT
BOAT RAMP		
FOOTPRINT BELOW OHW	0.7±	AC
GRAVEL FILL BELOW OHW	6,000±	CY

FEATURE	VSM (TOTAL)* (EA)	SINGLE HOLE AREA 30" OD (SF)	TOTAL VSM AREA HOLE AREA (SF, AC)	TOTAL VSM SLURRY VOL (CY)	TOTAL VSM STEEL (LF)
VSM AND SLURRY:					
DS1 PIPELINE	540±	4.9±	2,650± SF, 0.1± AC	1,500±	11,900±
DS2 PIPELINE	400±	4.9±	2,000± SF, 0.1± AC	1,100±	8,800±
DS3 PIPELINE	1,040±	4.9±	5,100± SF, 0.1± AC	2,850±	22,900±
NANUSHUK PIPELINE	3,070±	4.9±	15,100± SF, 0.3± AC	8,400±	67,550±
STAND ALONE FRESHWATER PIPELINE MC7903 TO OPERATIONS CENTER	30±	4.9±	150± SF, 0.0± AC	100±	700±
TOTAL	5,080±	—	25,000± SF, 0.6± AC	13,950± CY	111,850 (LF)

* APPROXIMATE

FEATURE	FOOTPRINT (AC)	FILL QUANTITY (CY)	NOTES/DIMENSIONS
SCREEDING FOOTPRINT	5.7±	—	500 FT BY 500 FT SCREEDING AREA TO DEPTH OF 8.0 TO 8.5 MLLW
POWER/FIBER OPTIC CABLE TRENCHING	0.1±	500±	APPROX 300 FT LONG BY 18 INCH WIDE BY 5 FT DEEP TRENCH @ EA PIPELINE ROAD CROSSING. TOTAL OF 6 PIPELINE ROAD CROSSINGS
TOTAL AREA OF IMPACT	5.8±	500±	

NOTES:

- VSM AREA IS BASED ON THE LARGEST SIZE VSM FOR THE PROJECT. ACTUAL VSM SIZED WILL RANGE FROM 8 INCH OUTSIDE DIAMETER TO 24 INCH OUTSIDE DIAMETER.

FILL ACREAGE AND VOLUMES

REFERENCE: POA-2015-025

APPLICANT: Oil Search Alaska, LLC

PROJECT: Nanushuk Project

ACTIVITY: Road, Pad and Pipeline Construction

AT: North Slope Borough, AK

SHEET **61** of **61** 8-24-18

