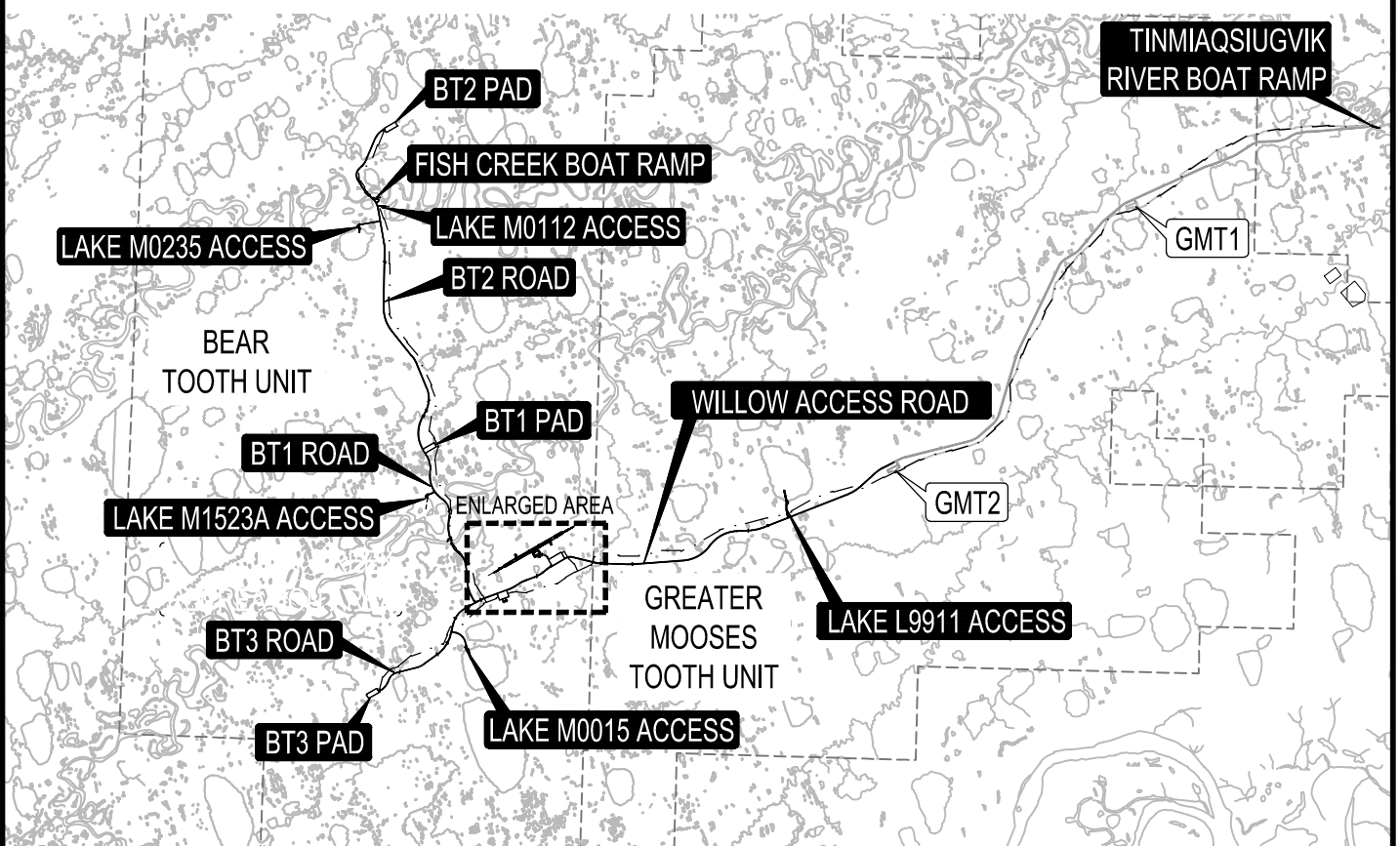
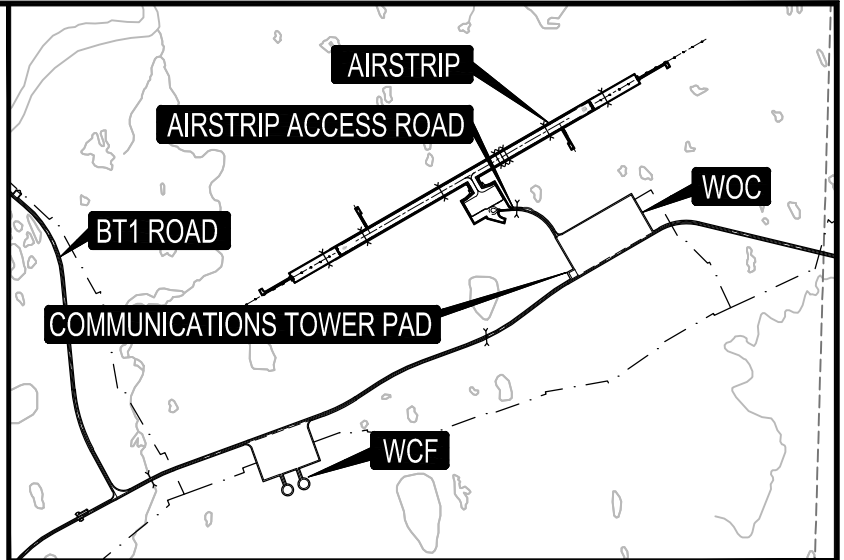


Attachment A:
Updates to Permit Figures
Sheets 6, 36-38, and 124



0 2 MI

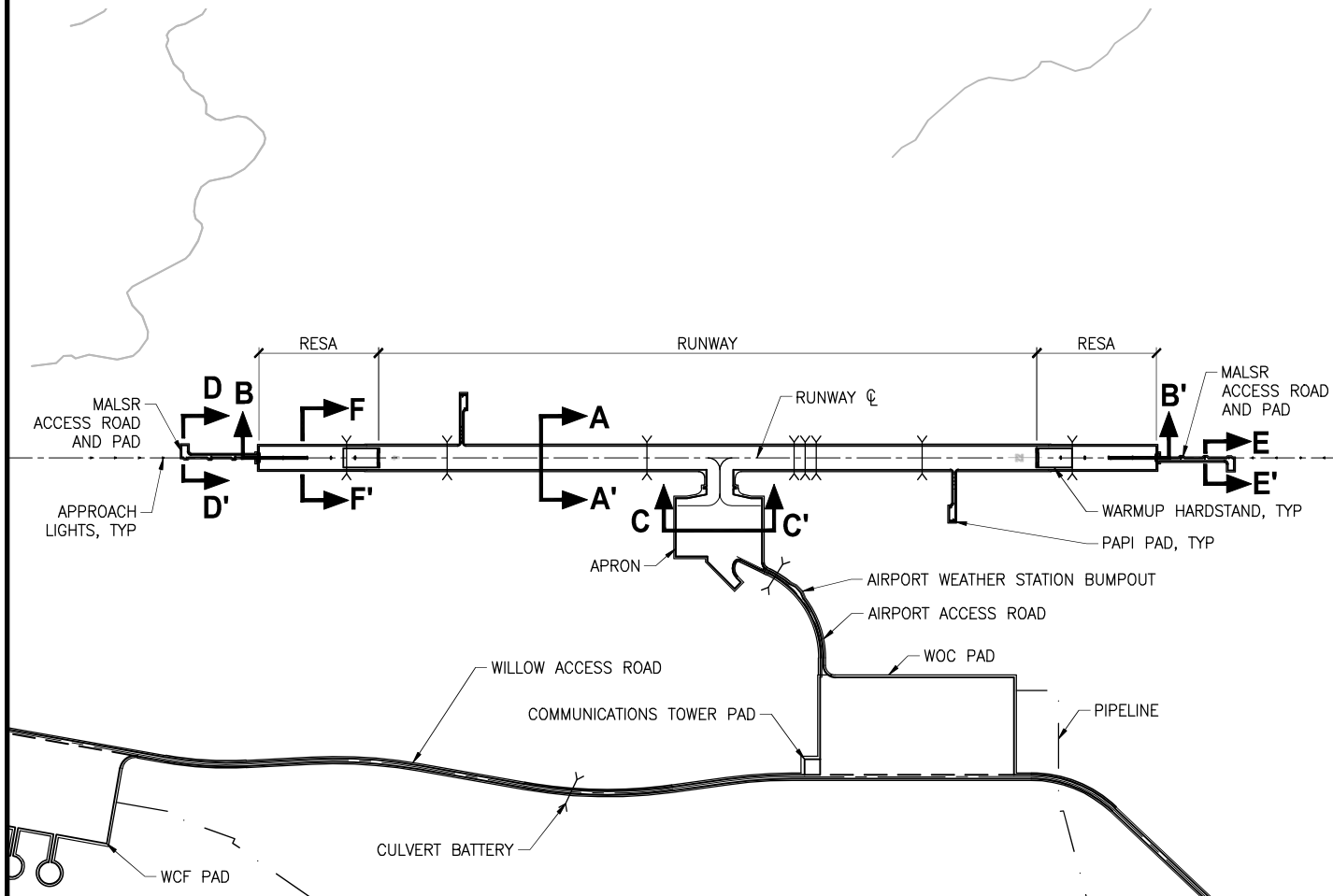
WILLOW AREA FACILITY OVERVIEW

P | N | D
ENGINEERS, INC.

ConocoPhillips
Alaska, Inc.

REFERENCE: POA-2018-00190
APPLICANT: CPAI
PROPOSED: WILLOW ROAD, PAD,
BRIDGE, & PIPELINE
CONSTRUCTION

AT: ALASKA
SHEET **6** of **124** 9/4/2024



- NOTES:
 1. SEE SHEET 37 FOR APRON PLAN.
 2. SEE SHEETS 38 AND 124 FOR AIRPORT TYPICAL SECTIONS.



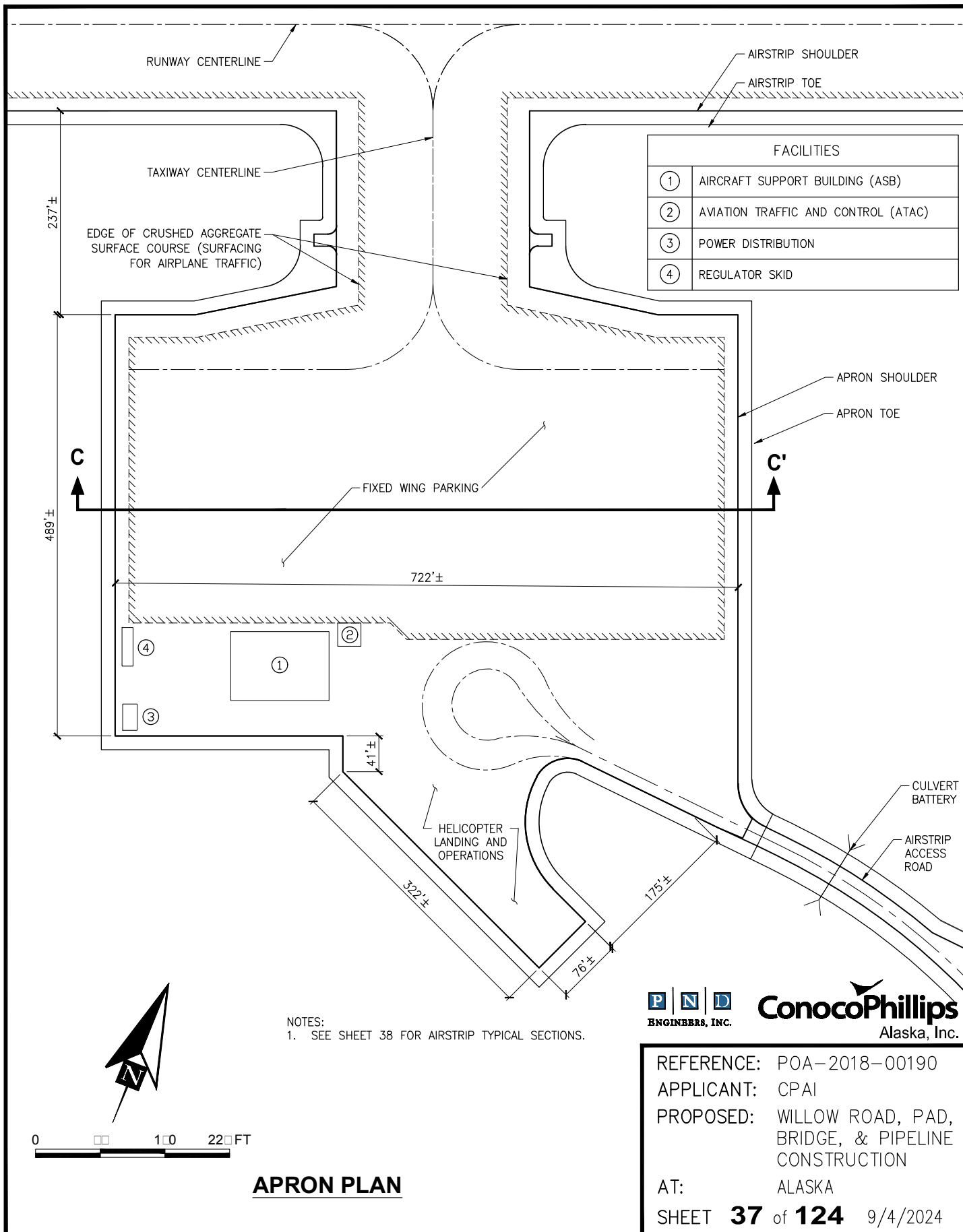
0 100 1000 2200 FT

AIRSTRIP PLAN

P | N | D
 ENGINEERS, INC.

ConocoPhillips
 Alaska, Inc.

REFERENCE: POA-2018-00190
 APPLICANT: CPAI
 PROPOSED: WILLOW ROAD, PAD,
 BRIDGE, & PIPELINE
 CONSTRUCTION
 AT: ALASKA
 SHEET **36** of **124** 9/4/2024



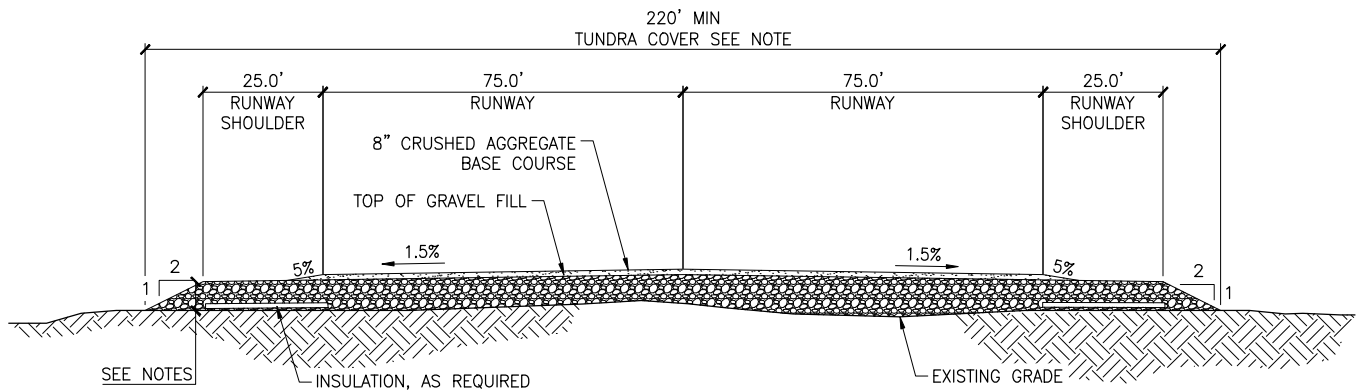
0 10 22 FT

P N D
ENGINEERS, INC.

ConocoPhillips
Alaska, Inc.

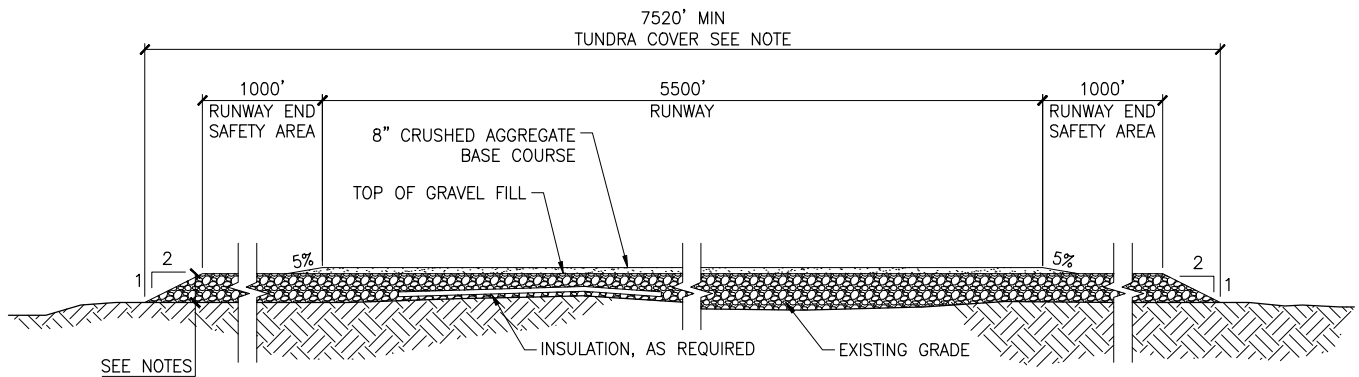
REFERENCE: POA-2018-00190
APPLICANT: CPAI
PROPOSED: WILLOW ROAD, PAD,
BRIDGE, & PIPELINE
CONSTRUCTION

AT: ALASKA
SHEET **37** of **124** 9/4/2024



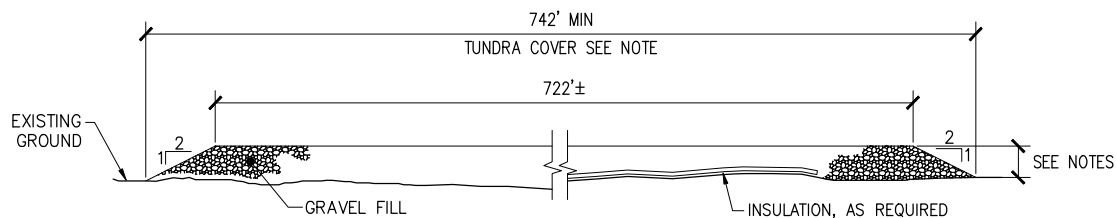
RUNWAY TRANSVERSE SECTION A-A'

NTS



RUNWAY LONGITUDINAL SECTION B-B'

NTS



APRON SECTION C-C'

NTS

NOTE:

1. FILL FOOTPRINT WILL VARY BASED UPON TOPOGRAPHY & ROAD ELEVATION.
2. 3 FT MINIMUM DEPTH OF FILL WHERE INSULATION IS PROVIDED.
3. 5 FT MINIMUM DEPTH OF FILL WHERE INSULATION IS NOT PROVIDED.
4. SEE SHEET 124 FOR ADDITIONAL SECTIONS

AIRSTRIp SECTIONS

P | N | D
ENGINEERS, INC.

ConocoPhillips
Alaska, Inc.

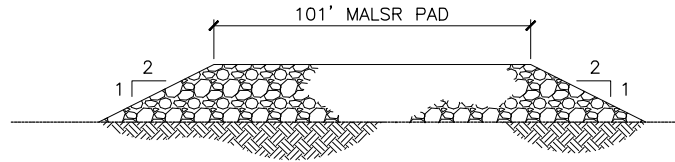
REFERENCE: POA-2018-00190

APPLICANT: CPAI

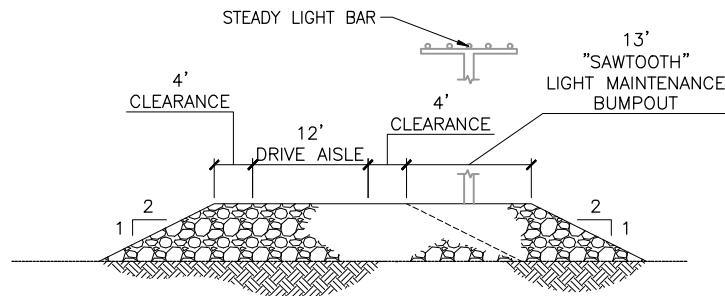
PROPOSED: WILLOW ROAD, PAD,
BRIDGE, & PIPELINE
CONSTRUCTION

AT: ALASKA

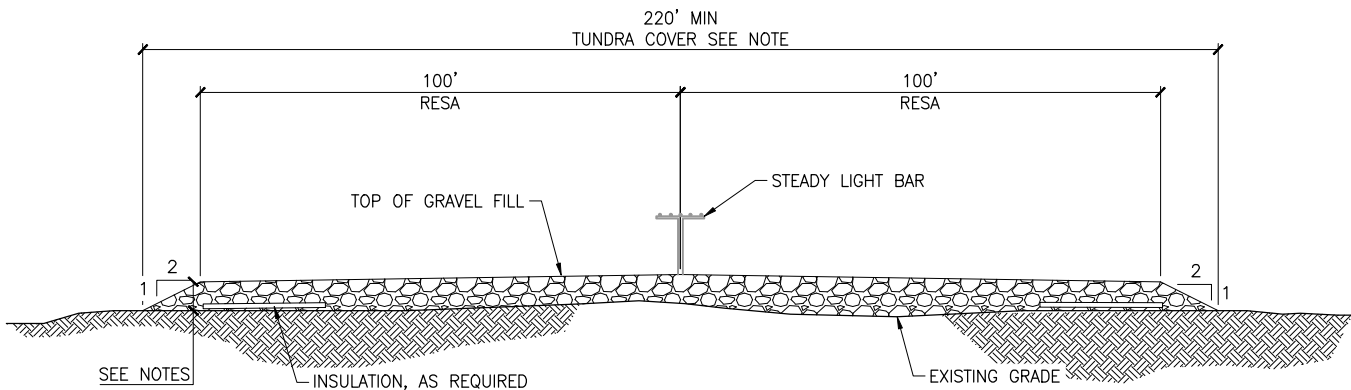
SHEET **38** of **124** 9/4/2024



MALSR PAD SECTION D-D'



MALSR ROAD SECTION E-E'



RESA SECTION F-F'

NTS

NOTE:

1. FILL FOOTPRINT WILL VARY BASED UPON TOPOGRAPHY & ROAD ELEVATION.
2. 3 FT MINIMUM DEPTH OF FILL WHERE INSULATION IS PROVIDED.
3. 5 FT MINIMUM DEPTH OF FILL WHERE INSULATION IS NOT PROVIDED.

AIRSTRIp MALSR AND RESA SECTIONS



ConocoPhillips
Alaska, Inc.

REFERENCE: POA-2018-00190
APPLICANT: CPAI
PROPOSED: WILLOW ROAD, PAD,
BRIDGE, & PIPELINE
CONSTRUCTION
AT: ALASKA
SHEET **124** of **124** 9/4/2024

Attachment B:
Updates to Tables 6-1 and 6-3 of Willow Development Project Description Revision 4

Table 6-1. Footprint of Project Components and Fill Requirements in WOTUS

Component	Fill Type	Footprint (acres) ^a	WOTUS Footprint (acres) ^a	Fill Quantity (cy) ^a	Notes/Assumptions
Drillsites (3)	Gravel	53.7	53.7	773,000	Based on three drillsites with average thickness of 9 to 10 feet with 2H:1V side slopes.
WCF	Gravel	22.8	22.8	346,000	Based on average thickness of 10 feet with 2H:1V side slopes.
WOC	Gravel	31.2	31.2	487,000	Based on average thickness of 10 feet with 2H:1V side slopes.
Valve Pads (4)	Gravel	1.3	1.1	16,000	Based on four pads with average thickness of 7 feet with 2H:1V side slopes.
Water Source Access Pads (5)	Gravel	8.2	8.2	80,000	Based on five pads with average thickness of 7 to 10 feet with 2H:1V side slopes.
Pipeline Pads (3)	Gravel	1.6	1.6	19,000	Based on three pads with average thickness of 8 feet with 2H:1V side slopes.
Communications Tower Pad	Gravel	0.5	0.5	5,000	Based on average thickness of 7 feet with 2H:1V side slopes.
KRU CPF2 Expansion	Gravel	1.0	0.7	13,000	Based on 8-foot thickness.
KRU Staging Pad Upgrades	Gravel	0.0	0.0	43,700	Upgrades within existing footprint to ensure minimum thickness of 5 feet.
Gravel Roads ^b	Gravel	183.6	180.9	1,582,000	Based on average road surface width of 24 to 32 feet and average thickness of 7 feet with 2H:1V side slopes; includes water-source access and airstrip access roads.
Vehicle Turnouts (5)	Gravel	1.9	1.9	20,000	Five subsistence tundra access road turnouts every 2.5 to 3.0 miles with average thickness of 7 feet.
Airstrip, Apron and Safety Areas	Gravel	54.3	54.3	620,000	Based on average thickness of 6 to 8 feet with 2H:1V side slopes. Includes RESAs and MALSR Access
Oliktok Dock Upgrades	Gravel	0.0	0.0	5,200	Upgrades within existing footprint to raise dock surface approximately 6 feet.
KRU Road Upgrades ^c	Gravel	7.8	5.9	106,200	Upgrades to existing roads to increase thickness, widen curves, install pipeline casings, and add four vehicle turnouts.
Tiṇmiaqsiuḡvik Boat Ramp and Access Road	Gravel	1.8	1.8	18,000	Boat ramp and 0.1-mile access road from GMT1/MT6 access road.
Judy Creek Boat Ramp and Access Road	Gravel	2.0	0.5	20,000	Boat ramp and 0.1-mile access road from BT1 access road.

Table 6-1. Footprint of Project Components and Fill Requirements in WOTUS

Component	Fill Type	Footprint (acres) ^a	WOTUS Footprint (acres) ^a	Fill Quantity (cy) ^a	Notes/Assumptions
Fish Creek Boat Ramp and Access Road	Gravel	2.1	0.5	21,000	Boat ramp and 0.1-mile access road from BT2 access road.
Gravel Mine Site Berms	Overburden	29.7	29.7	286,000	Based on minimum thickness of 5 feet with 3H:1V side slopes.
VSMs and Piles	Sand slurry	0.8	0.8	12,800	Approximately 11,800 total VSMs.
Totals^d	Gravel	373.8	365.6	4,175,100	
	Overburden	29.7	29.7	286,000	
	Sand slurry	0.8	0.8	12,800	
	Total fill^d	404.2	396.1	4,473,900	

^a Values are approximate and subject to change.

^b Total acreage value differs from values reported in the Willow Master Development Plan Supplemental Environmental Impact Statement documents as 0.8 acre of bridges has been removed from the gravel road footprint.

^c Specific areas for placement of fill have not yet been identified. However, fill placement is assumed to occur in WOTUS adjacent to existing infrastructure.

^d Values may not sum to totals because of rounding.

Notes: BT: Bear Tooth; CPF2: Central Processing Facility 2; cy: cubic yards; GMT1/MT6: Greater Mooses Tooth 1/Mooses Tooth 6; H: horizontal; KRU: Kuparuk River Unit; OHW: ordinary high water; V: vertical; VSM: vertical support member; WCF: Willow Central Processing Facility; WOC: Willow Operations Center; WOTUS: Waters of the United States.

Table 6-3. Footprint in WOTUS by NWI Code

NWI Code ^a	Description	Fill Footprint (acres) ^b	Excavation Footprint (acres) ^b
PEM1/SS1B	Palustrine seasonally saturated persistent emergent/broad-leaved deciduous shrub meadow	151.8	87.7
PEM1/SS1D	Palustrine continuously saturated persistent emergent/broad-leaved deciduous shrub meadow	113.7	20.7
PEM1/SS1E	Palustrine seasonally flooded-saturated persistent emergent/broad-leaved deciduous shrub meadow	0.3	–
PEM1/SS1F	Palustrine semi-permanently flooded persistent emergent/broad-leaved deciduous shrub meadow	2.6	–
PEM1D	Palustrine continuously saturated persistent emergent meadow	0.2	–
PEM1E	Palustrine seasonally flooded-saturated persistent emergent meadow	1.7	–
PEM1F	Palustrine semi-permanently flooded persistent emergent meadow	83.6	6.6
PEM1H	Palustrine permanently flooded persistent emergent marsh	6.0	–
PEM2H	Palustrine permanently flooded non-persistent emergent marsh	0.6	–
PSS1/EM1B	Palustrine seasonally saturated broad-leaved deciduous shrub/persistent emergent scrub	8.0	–
PSS1/EM1D	Palustrine continuously saturated broad-leaved deciduous/persistent emergent scrub	0.3	–
PSS1/USB	Palustrine seasonally saturated broad-leaved deciduous shrub/unconsolidated shore	1.4	–
PSS1B	Palustrine seasonally saturated broad-leaved deciduous shrub scrub	7.6	–
PSS1C	Palustrine seasonally flooded broad-leaved deciduous shrub scrub	1.0	–
PSS1D	Palustrine continuously saturated persistent emergent meadow	4.8	–
PSS3/EM1B	Palustrine seasonally saturated broad-leaved evergreen shrub/persistent emergent scrub	1.1	–
PSS3/EM1D	Palustrine continuously saturated broad-leaved evergreen shrub/persistent emergent scrub	1.6	–
PSS3B	Palustrine seasonally saturated broad-leaved evergreen scrub	4.4	–
PUBH	Palustrine permanently flooded unconsolidated bottom pond	4.0	–
L1UBH	Lacustrine permanently flooded limnetic unconsolidated bottom lake	0.0	–
R2UBH	Riverine permanently flooded lower perennial stream	0.3	–
R2USC	Riverine seasonally flooded unconsolidated shore	0.3	–
Unidentified ^c		0.8	–
Total^d		396.1	115.0

^a Source: FGDC 2013.

^b Values are approximate and subject to change.

^c Footprint in waters of the United States by NWI code not known. Includes approximately 11,800 vertical support members (0.8 acre) throughout the Project area.

^d Values may not sum to totals because of rounding.

Note: NWI: National Wetlands Inventory.

Attachment C:
Comparison of Willow Permit to Proposed Modification Figures

**Willow Development
MOD 3 - MOD 4
Comparison**

Airstrip and WOC

Willow Development

- MOD 4 Gravel Footprint
- Permitted Footprint
- Pipeline
- Boundaries
- NPR-A (BLM)



ConocoPhillips
Alaska

September 4, 2024

Layout: Willow_MOD3_MOD4_Comparison
Project: Willow_MOD3_MOD4_Comparison_12.aprx

