Contaminated Soil Work Plan

Whittier Head of the Bay Electrical Project

E2214130

July 2, 2024

Prepared for:
Darvin Thornton
Chugach Electric Association, Inc.
PO Box 196300
Anchorage, Alaska 99519-6300

MSE Midnight Sun ENVIRONMENTAL, LLC
560 E 34th Ave, Suite 102
Anchorage, AK 99503
(907) 344-3244

This page intentionally left blank.

TABLE OF CONTENTS

LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and total xylenes
CEA	Chugach Electric Association, Inc.
CoC	chain-of-custody
CY	cubic yards
DRO	diesel-range organics
EPA	United States Environmental Protection Agency
GRO	gasoline-range organics
L	liter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliters
MSE	Midnight Sun Environmental, LLC
Oz	ounce
PAH	polycyclic aromatic hydrocarbons
PID	photoionization detector
ppmv	parts per million by volume
QA/QC	quality assurance/quality control
RRO	residual-range organics
SIM	selective ion monitoring
SM	standard method
SW	solid waste
TLC	Teflon® lined screw caps
TLS	Teflon® lined septa sonically bonded to screw caps
US	United States
UST	underground storage tank
VOC	volatile organic compounds

1.0 Introduction

Midnight Sun Environmental, LLC (MSE) has prepared this comprehensive contaminated soil and groundwater work plan on behalf of Chugach Electric Association, Inc. (CEA) to detail the management and sampling associated with the excavation of potentially contaminated soil that may be encountered during the Whitter Head of the Bay Electrical Project in Whittier, Alaska (Attachment A, Figure 1). A contractor from CEA will be responsible for the materials stockpile and the segregation of soil excavated on-site. MSE will be responsible for analytical sampling, reporting, and managing stockpiled soil in accordance with this work plan. This work plan has been developed in accordance with Alaska Department of Environmental Conservation (ADEC) Title 18 of the Alaska Administrative Code (AAC) Chapter 75, *Oil and Other Hazardous Substances Pollution Control* (18 AAC 75) (ADEC 2023), and the ADEC *Field Sampling Guidance* (ADEC 2022). Attachments to this work plan include Figures (Attachment A) and Field Forms (Attachment B).

2.0 Project Overview

For this project, a CEA-approved electrical line contractor will be installing utilities on behalf of CEA along Tank Farm Road to the new Head of the Bay project in Whittier, Alaska (Attachment A, Figure 1). The project consists of extending a 35kV distribution circuit from existing overhead lines along Tank Farm Road to the new Head of the Bay facility. In addition, the electrical line contractor will install three vaults to a depth of approximately 12 feet below ground surface (bgs). To execute the project, the electrical line contractor will need to excavate potentially contaminated soil to properly install vaults and underground electrical equipment (Attachment A, Figure 2). The project consists of 20,300 square feet of trenching, installing three new vaults, six new poles, and the addition of new connections and conductors.

The line extension work will occur over an eight-week timeframe in 2024. Excavated soils will either be stockpiled next to the excavation whenever sufficient room is present or moved to a stockpile location adjacent to the nearest vault. Most of the excavated material is likely to be reused as backfill material. However, soils that are unsuitable for use as backfill material will be stockpiled onsite for analytical testing. The remaining soils that have been verified by laboratory analysis as not containing contamination above ADEC soil cleanup levels will be spread to a level grade within the construction area. Soil displaying evidence of contamination will remain on site and be placed on a liner and covered with Visqueen until the appropriate disposal method can be determined. Details pertaining to the management of excavated soils are presented in Section 7.0. Dewatering is not anticipated during construction and is not covered in this work plan. Depth to groundwater varies depending on location within the project area and tidal influence, but groundwater is at an estimated 16 to 27 feet according to the 2023 High Groundwater Monitoring Report developed by CES RESCON, LLC. If groundwater is encountered during construction activities, fill material will be added to the excavation area to the extent practicable. If the groundwater requires dewatering for excavation and construction activities, CEA will obtain an ADEC Dewatering Permit (AKG002000). A map of depth to groundwater levels is included in Attachment A.

3.0 ADEC Listed Contaminated Sites in the Project Area

The ADEC Contaminated Sites Database identifies three sites in the immediate project area (Table 1; Attachment A, Figure 2). Two contaminated sites with a status of cleanup complete are within a quarter of a mile of the project footprint. There is one active contaminated site (Hazard ID 1314) with an active petroleum groundwater plume within the project area.

The Defense Fuel Support Point contaminated site (ID: 1314) has had spills and releases occur from former tanks, pipelines, and during fuel handling operations which were the primary source of contamination in the subsurface in the project area. A total of 26 tanks are known to have been at the site. The tank farm included 13 large aboveground storage tanks (ASTs) containing various fuel products including **diesel fuel, leaded and unleaded gasoline, aviation gasoline, JP-4, JP-5, and arctic-grade diesel fuel**.

Between 1983 and 1995, the majority of the fuel spills have been recorded at the valves of the former large ASTs due to failed gaskets or valves. Based on the known releases, it is reasonable to assume that similar valve failures have occurred during the earlier history of the tank farm. The tank farm consists of 85 acres and contains 19 ASTs and six underground storage tanks (USTs). 13 ASTs had a total storage capacity of 688,095 barrels (28,899,990 gallons). Six smaller ASTs had collectively stored up to 572 barrels (24,024 gallons). Five USTs held 643 barrels (27,006 gallons) and a sixth UST had a capacity of 12 barrels (504 gallons). The pipeline that connected Whittier to Anchorage Fuel Terminal was completed in the fall of 1967. On November 1, 1996, the Whittier facility ceased operating. Removal action of fuel-contaminated soils occurred in 2005 and 2010 with soils transported for off-site thermal remediation taking place in Anchorage, long-term monitoring of the groundwater is ongoing.

The 2023 High Groundwater Monitoring Report identified contaminants in groundwater including diesel range organics (DRO) (at monitoring well VE-40 & MW-34), gasoline range organics (GRO) (at monitoring well BS-06), and naphthalene (monitoring well BS-06 & MW-68R). All other analytes were below ADEC groundwater cleanup levels. A map of all groundwater monitoring wells is in Attachment A.

Table 1: ADEC Listed Contaminated Sites in the Project Area

Hazard ID	Site Name	File Number	Status	Distance from project	Contact Information
1314	Defense Fuel Support Point Whittier	2114.38.011	Active	0.0 Miles	Brian Watts (907) 269-4702 brian.watts@alaska.go
25647	Whittier Small Boat Harbor Dredge Stockpile	2114.38.020	Cleanup complete	0.45 Miles	(907) 465-5229 dec.icunit@alaska.gov
2602	ADOT&PF Whittier RR Tunnel Pr.52374	2114.38.009	Cleanup complete	0.5 Miles	(907) 465-5229 dec.icunit@alaska.gov

4.0 Sampling and Analysis Plan

This sampling plan has been prepared to guide and document the sampling requirements and procedures to be undertaken during project activities. Sampling requirements include field-screening potentially contaminated soil with a photoionization detector (PID) and collecting soil samples for laboratory analysis. Methods and procedures for collecting soil samples, including preparing them for laboratory analyses, are described in the following subsections. All sampling procedures will be conducted in accordance with the ADEC *Field Sampling Guidance* (ADEC 2022).

Approximately 1,700 feet of new underground electrical line will be installed by trenching and boring

(Attachment A, Figure 2 and Plan Sheets). Soil management will be dependent upon material suitability for backfill. Based on previous investigations in the area, much of the removed material is likely to be suitable for backfill.

Excavated soil will either be stockpiled next to the excavation whenever sufficient room is present or placed in stockpiles located next to the nearest vault. Most of the excavated material is likely to be reused as backfill material. However, soils that are unsuitable for use as backfill material will be stockpiled onsite for analytical testing. The remaining soils that have been verified by laboratory analysis as not containing contamination above ADEC soil cleanup levels will be spread within the project area to a level grade. Following analytical testing, CEA will determine the appropriate disposal of excess soils displaying evidence of contamination in accordance with the field screening methods included in this work plan. This soil will remain on site and be placed on a liner and covered with Visqueen until the appropriate disposal method can be determined. If grossly contaminated soil or groundwater is encountered during this project, CEA's contractor will stop work and MSE will contact DEC about the discovery per spill reporting requirements in 18 AAC 75.300.

Field-Screening Project Soils

An ADEC-Qualified Environmental Professional will conduct field screening and sampling of excavated soils during this project. Field screening of soils will be performed using the heated headspace method, and applied whenever soils are to be used for the top 24 inches of backfill in gravel-surfaced areas. Emphasis will be placed on areas identified or suspected of containing hydrocarbon or volatile organic compounds (VOC)-impacted soil (petroleum, oil, lubricants, and solvents). Visual observation and PID screening will be provided throughout the project for hydrocarbons and other contaminants in excavated project soils. Field screening will be conducted using a PID as outlined in the methodology below. Soils suspected clean will be those exhibiting no visual contamination and having PID results below 5.0 parts per million by volume (ppmv). Soils exhibiting visual contamination and/or field-screening values at or above 5.0 ppmv will be considered suspect for contamination.

Stockpiled Soil Field Screening

Soil will be stockpiled on a liner next to the excavation whenever space allows. This will minimize the amount of soil handling required, as most of the excavated material will likely be suitable for backfill. Excavated soils will be brought to the Interim Stockpile Area due to any of the following: lack of space next to the excavation pit; soils are deemed unsuitable for use as backfill material; soils cannot be stockpiled due to high water content, and/or; soils are considered excess, once backfilling is complete. Soils within the Interim Stockpile Area will be stockpiled in a maximum of 100 cubic yard (CY) piles, and field screened and sampled in accordance with the ADEC *Field Sampling Guidance* (ADEC 2022). For each 100 CY stockpile, 10 field-screening samples (1 per 10 CY) will be collected and analyzed for VOCs using the heated headspace method, and two primary field samples will be collected from the areas of highest PID readings for laboratory analysis. Details regarding stockpiled soil sampling are presented in the following sections.

Field Screening Methodology

The following heated headspace field screening procedure will be used as adopted from the ADEC *Field Sampling Guidance* Manual (ADEC 2022) and the PID MiniRAE 2000 Portable VOC Monitor PGM-7600 Operation and Maintenance Manual:

- The PID will be calibrated according to the manufacturer's specifications prior to use in the field. The PID will be checked for calibration daily (by conducting a bump test), prior to use, using 100 ppmv isobutylene gas. The calibration readings will be documented in the field notes.
- Should the bump test indicate the PID has fallen outside of calibration parameters (±10% of expected calibration concentration), the PID will be field-calibrated in accordance with the manufacturer's specifications.
- Partially fill (one-third to one-half) a glass jar or re-sealable Ziploc® bag with the sample to be analyzed. The total capacity of the jar or bag may not be less than eight ounces (oz) (approximately 250 milliliters [mL]), but the container must not be so large as to allow vapor diffusion and stratification effects to significantly affect the sample.
- Collect the sample from freshly uncovered soil if the sample is collected from an excavation. Collect a sample from a minimum of 24 inches below the surface if collected from a soil stockpile.
- If a jar is used, quickly cover the top with clean aluminum foil or a jar lid. Use screw tops, strong rubber bands, or other methods that will tightly seal the jar. If a re-sealable Ziploc® bag is used, it must be quickly sealed shut.
- From the time of collection, allow headspace vapors to develop in the container for at least 10 minutes but no longer than one hour.
- Shake or agitate containers for 15 seconds at the beginning and end of the headspace development period to assist volatilization. Temperatures of the headspace must be warmed to at least 40 degrees Fahrenheit (°F) (Approximately 5 degrees Celsius [°C]).
- After headspace development, insert the instrument sampling probe to a point about one-half the headspace depth. The container opening must be minimized, and care must be taken to avoid the uptake of water droplets and soil particulates.
- After probe insertion, record the highest meter reading. This normally will occur between two and five seconds after probe insertion.
- Document all field screening results in the field record or logbook.
- Do NOT reuse soil from the headspace sample in subsequent laboratory samples or analyses; separate samples from undisturbed, freshly exposed soil are to be collected and used for laboratory analyses.

Soils that are not used as backfill material will require analytical laboratory sampling prior to determining their final disposition. Field screening samples and associated laboratory samples will be collected in accordance with Table 2a, as adopted from the ADEC *Field Sampling Guidance* document (ADEC 2022).

Table 2a: Excavated Soil Sample Collection Guide

By volume (CY)	Number of Screening Samples	Associated Number of Laboratory Samples
0 - 10	5	1
11 - 50	5	2
51 - 100	1 per 10 CY	3
More than 100	1 per 10 CY, or as the ADEC determines necessary	3 samples, plus one (1) sample for each additional 200 CY, or portion thereof as ADEC determines necessary.

Soil Sampling Protocols

Once excavation and backfill are complete the soil stockpiles will be field screened for VOCs, and soil samples will be collected for laboratory analysis in accordance with Table 2a above. Soil samples will be submitted for laboratory analysis as presented in the following sections. Soil sampling procedures will be in accordance with applicable provisions of 18 AAC 75 (ADEC 2023) and the ADEC *Field Sampling Guidance* (ADEC 2022). Soil samples will be analyzed for the following:

- GRO by Alaska Method 101 (AK101);
- DRO/RRO by AK102/103;
- VOCs by Environmental Protection Agency (EPA) Solid Waste (SW) Method 8260C;
- Lead by EPA Method 6010C/1311; and
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 Selective Ion Monitoring (SIM).

Soil samples collected for laboratory analyses will be collected using clean stainless-steel spoons or disposable sampling scoops and new nitrile glove and placed into laboratory-supplied method-specific containers. Samples for GRO and VOC analyses will be collected first, from undisturbed soil, to prevent loss of volatiles prior to collecting nonvolatile soil samples. Samples for GRO and VOC analyses will be placed into 4 oz. amber glass, methanol-preserved containers with Teflon® lined septated lids. Samples for DRO/RRO, PAH, and metals analyses will be placed in 4 oz. unpreserved amber glass jars with Teflon® lined screw caps. Samples will be chilled to below 6°C and transported with proper chain-of-custody (CoC) procedures as indicated in the sections below.

Soil samples for PAH analyses will be collected at the rate of 10% per sampling event, or one sample per stockpile, whichever is greater. Soil samples collected for metals analysis will be analyzed for lead analysis by EPA method 6010C.

Stockpiled Soil Sampling

Soils that are stockpiled next to the excavation that is suspected of being contaminated (either visually or based on PID results) will be used as backfill to the greatest extent possible (within the area of origin) and will not be sampled for laboratory analysis prior to use as backfill material. Soils with PID readings below 5.0 ppmv will be considered suitable for use as the final 24 inches of backfill material where applicable (within the area of origin, and meeting soil backfill criteria). Excess material present after backfilling trenches will be either transported to the Interim Stockpile Area and sampled or sampled in place at the rate presented in Table 2a prior to final disposition determination. Material that is transported from the excavation to the Interim Stockpile Area will be placed in maximum pile sizes of 100 CY and sampled in accordance with Table 2a. Soil stockpiles will use liners in accordance with 18 AAC 75.370(a)(4) Table D Bottom liner Specifications for appropriate liner types.

Sample Handling

Field Documentation

Field documentation will include sample identification labels, photographs, laboratory analysis requests, and permanently bound field logs. A field logbook will be maintained by the MSE field team lead (Qualified Environmental Professional) to record a detailed description of all field activities and samples collected. Pages will not be removed from any data logbook for any reason. Any corrections will be made by drawing a single line through the original entry so that the original entry can still be read. Corrections will be written alongside the crossed-out entry and will be dated and initialed. Entries to the field logbooks will include the following items as applicable:

- Project name/Site ID/Client/Page Number;

- Date;
- Weather, site conditions and other salient observations;
- Full name of on-site personnel, affiliations, and project title e.g., team leader (including all visitors);
- Daily objectives;
- Time and location of activities;
- Field observations and comments;
- Deviations from the ADEC-approved site-specific work plan;
- Photo log (photographic name, roll or frame number, description of photograph, date and time);
- Site sketches with reference to the north direction, sample and field screening locations and depths, and on-site groundwater flow direction;
- Survey and location (latitude and longitude coordinates when possible);
- All field measurements (e.g. leak check results, geochemical parameters, field screening results);
- Daily equipment calibrations and maintenance;
- Sample record (sample identification, date, time, media, number of samples, and location);
- Cleanup or remediation activities (system performance, system calibration or maintenance record, excavation activities, and volume of material removed); and
- Waste tracking (when, how much, destination).

Sample Labeling

Each sample container will be sealed and labeled immediately after collection. Sample labels will be completed using waterproof ink and will be affixed firmly onto the sample containers. The following information will be included on sample container labels:

- Project name;
- Unique identifying alphanumeric assigned to the sample for laboratory analysis;
- Date and time of collection;
- Sampler's name or initials;
- Requested laboratory analysis; and
- Preservative, as applicable.

Duplicate samples will be given a unique identification and time so the laboratory cannot identify the quality control purpose of the sample. Trip blanks will be labeled accordingly. After a sample is collected, the sample identification, date and time of sample collection, location, and any field screening measurements will be recorded in the field logbook and/or field forms.

Sample Shipping

A CoC record will be completed and shipped with the samples. Custody seals will be placed over the lid/cooler edge whenever a cooler must be shipped and is not directly delivered to the laboratory. A CoC record will accompany the cooler(s) in which the samples are packed. When transferring samples, the individuals relinquishing and receiving coolers will sign, date, and note the time on the CoC record.

Samples will be packaged carefully to avoid breakage or contamination and shipped/delivered to the laboratory at proper temperatures. The lids of the sample container will not be mixed, and each lid will remain with the original container. Samples will be kept cool, under 6°C to preserve chemical constituents. All coolers will contain a temperature blank that the laboratory will use to document the sample temperatures.

5.0 Applicable Cleanup Levels

Data generated for this project will be used to determine the presence of contaminants at or above levels that present a hazard to human health or the environment. Table 3 below displays the target analytes and the applicable ADEC soil cleanup levels that will be applied to the data.

Table 3: Applicable ADEC Soil Cleanup Levels

Analyte	Analytical Methods	ADEC Cleanup Levels for soils (mg/kg)[1]
GRO	AK101	260
DRO	AK102	230
RRO	AK103	9700
Benzene	SW8260C	0.022
Toluene		6.7
Ethylbenzene		0.13
Total Xylenes		1.5
Remaining VOCs		Varies with parameter (refer to Table B1 in 18 AAC 75)
PAHs	8270SIM	Varies with parameter (refer to Table B1 in 18 AAC 75)
Lead[2]	EPA 6010/1311	400

Notes:
AK = Alaska Method SIM = selective ion monitoring SW = Solid Waste Method
mg/kg = milligrams per kilogram mg/L = milligrams per liter -- = not sampled for
[1] Soil cleanup levels are based on 18 AAC 75.341 Method Two Soil Cleanup Levels identified in Table B1 (Migration to Groundwater or Over 40-inch Zone) and Table B2 (Over 40-inch Zone, Migration to Groundwater). The most stringent cleanup levels were used.
[2] Lead cleanup level is for direct contact. No ADEC migration to groundwater cleanup level for Lead is presented in 18 AAC 75.

6.0 Quality Assurance and Quality Control

Quality control samples will be collected to assess potential errors introduced during sample collection, handling, and analyses. As part of the field quality assurance/quality control (QA/QC) program, field duplicate samples and trip blanks will be collected and analyzed. QC samples will include:

- One trip blank for each cooler containing volatile sample fractions (GRO/VOCs); and
- One duplicate field sample for every 10 samples collected for laboratory analysis.

Trip blanks are a clean sample of a matrix that is provided by the analytical laboratory, which accompanies field-sampling containers during field activities and shipping. One trip blank is required per cooler. Exceeding allowable tolerance limits for trip blanks suggests that contamination was introduced during shipping and field handling procedures.

Field Quality Control

Field duplicate samples will be collected at a rate of one per 10 primary samples collected. Field duplicates are collected in order to provide a QA/QC check of the laboratory analyses, wherein all primary and duplicate sample results must be similar within a set tolerance in order to consider all sample analytical results accurate. Field duplicate samples must be:

- Submitted as blind samples to the approved laboratory for analysis;
- Given unique sample numbers (or identifiers) and sample collection time; and
- Adequately documented in the field record or logbook.

Quality control field sampling requirements are outlined in Table 4.

Table 4: Quality Control Field Sample Collection Requirements

Minimum Field QC Samples	Applicability	Allowable Tolerance
Field Duplicate (Minimum of one per every 10 field samples for each matrix sampled, for each day in the field, for each target analyte, minimum of one)	All soil samples collected on the same day	Relative percent differences less than 50% for soil
VOC Trip Blank – Soil (One trip blank per preservation method per set of 20; a minimum of one per analysis and cooler)	All soil samples being analyzed for GRO, BTEX, or VOCs	Less than the practical quantitation limit
Temperature Blank or Cooler Temperature (minimum one per cooler)	All soil and water samples	Less than 6°C

Sample Containers, Holding Times, and Preservation

Table 5 summarizes sample analysis methods, containers, preservation, and holding times for soil samples, as reflected in the ADEC 2022 *Field Sampling Guidance*.

Table 5: Analytical Methods, Containers, Preservation and Holding Times for Soil Samples

Parameter	Analytical Method	Container	Preservation/Holding Time
GRO	AK101	4 oz. amber glass, TLS	Methanol preservative, 0°C to 6°C / 28 days
DRO/RRO	AK102/103	4 oz. amber glass, TLC	0°C to 6°C/ 14 days to extraction, 40 days to analysis of extract
VOCs	8260D	4 oz. amber glass, TLS	Methanol preservative, 0°C to 6°C / 14 days
PAHs	8270E or 8310	4 oz. amber glass, TLC	0°C to 6°C/ 14 days to extraction, 40 days to analysis of extract
Lead	6010D or 6020B or 7000 Series	100 mL Wide mouth HDPE or amber glass jar(3), TLC	None / 6 (7) months

Notes:

Oz. = ounce
AK = Alaska Method
TLC = Teflon® lined screw caps
SW = solid waste method
TLS = Teflon® lined septa sonically bonded to screw caps
SIM = selective ion monitoring

Data Reduction, Validation and Reporting

Validation and review of all analytical data will be performed by a qualified professional experienced in data validation and review procedures. All data will be validated and reviewed in accordance with appropriate EPA procedural guidance documents and ADEC regulatory guidance documents. Reference documents include EPA's *National Functional Guidelines for Organic Superfund Methods Data Review* (EPA 2020), EPA's *National Functional Guidelines for Inorganic Superfund Data Review* (EPA 2020) and ADEC's *Division of Spill Prevention and Response Contaminated Sites Program, Guidelines for Data Reporting* (ADEC 2022).

7.0 Investigation Derived Waste and Soil Management

Investigation-derived wastes associated with this project include wastes associated with field sampling, including nitrile gloves, paper towels, and disposable sampling equipment (stainless steel sampling spoons or plastic sampling scoops). All investigation-derived waste will be placed in trash bags and disposed of with municipal waste.

Excavated Soil Management

Excavated soil produced during project activities will be temporarily staged in the Interim Stockpile Area or in stockpiles next to the excavation whenever space and excavated material composition allow. Excavated soils will be field-screened using a PID and sampled in accordance with Section 5.0. Soil analytical results will be compared to applicable soil cleanup levels listed in 18 AAC 75 (ADEC 2023). In excavation pits, suspected contaminated soil (PID results of five ppmv or greater) that is deemed suitable for reuse will be used first for backfill to the greatest extent possible (within the area of origin). The top 24 inches of backfill material in gravel-surfaced areas will be composed of either soil with PID results of less than five ppmv (from the area of origin), or clean imported material in accordance with technical guidance (ADEC 2018). Overburden surface soil will be placed at the same depth it was excavated to the best extent practicable. Significantly contaminated soil (i.e. fuel saturated) will not be placed back into the excavated area. ADEC will be contacted if significantly contaminated soil is encountered. The collection of soil samples for laboratory analysis will only occur when soil is not used as backfill material, and prior to being transported.

Once sample results are received, stockpiles will be spread onsite with ADEC approval or left in place pending disposal by the CEA.

Contaminated Soil Management

Soil that is considered contaminated (PID readings of five ppmv or greater) will be used as backfill material to the maximum extent possible in accordance with ADEC *Managing Petroleum-Contaminated Soil, Water, or Free Product during Public Utility and Right-of-Way Construction and Maintenance Projects Technical Memorandum* (2018). Contaminated material will be placed in the excavated area from which it came to a depth of 24 inches bgs in gravel-surfaced areas. Excess contaminated soil will be stockpiled onsite for determination of final treatment and disposition by CEA. Prior to transport for disposal or treatment, ADEC approval will be obtained, and an ADEC *Transport, Treatment, & Disposal Approval Form for Contaminated Media* will be completed (Attachment B). Soils that cannot be thermally treated will remain in place and placed in 100 CY (maximum) stockpiles on bermed 20-mil liners for future disposition.

Uncontaminated Soil Management

Soil that is determined to be uncontaminated based on soil sampling analytical results being either non-detect or detected below applicable ADEC cleanup levels will stay within the project area.

Project Soil Stockpile Areas

Interim Stockpile Area

There will be an estimated three Interim Stockpile Areas within the project location. Each Interim Stockpile Area will be located adjacent to an installed vault resulting in three stockpiles. Each Interim Stockpile Area will be approximately 20 feet by 20 feet in size. Soils placed in the Interim Stockpile Areas will be placed on a bermed minimum 20-mil petroleum-resistant liner or asphalt (provided the asphalt is impermeable, with no cracks or potholes, etc.)in case the soil is stockpiled for more than 180 days. Soils placed within the Interim Stockpile Area will be placed in a maximum of 100 CY stockpiles and marked with a survey lath labeled with the date of excavation and project stationing location of origin (i.e. soils generated 7/13/2024 from Sta. 10+00 to 10+50). Stockpiles will be covered with 6-mil polyethylene sheeting at the end of each workday. The stockpile cover will be secured to avoid potential for the liner to detach or transport soil due to wind or other events and to prevent precipitation from coming into contact with the soil.

8.0 Reporting

Once project activities are completed, a soil management report will be compiled summarizing field activities, field screening, and sampling results, photographs, and field notes. Additionally, details pertaining to soil stockpiled in the interim stockpile will be reported. Additionally, this report will include figures showing the project area and stockpile soil locations, tabulated analytical sampling results, and summaries of waste management activities with the volumes or weights of soil managed at off-site facilities. This report will be provided to CEA for distribution to ADEC following the completion of the project.

9.0 References

ADEC 2018. *Managing Petroleum-Contaminated Soil, Water, or Free Product during Public Utility and Right-of-Way Construction and Maintenance Projects Technical Memorandum*. March.

ADEC 2022. *Alaska Department of Environmental Conservation Division of Spill Prevention and Response Contaminated Sites Program, Guidelines for Data Reporting.* August.

ADEC 2022. *Field Sampling Guidance*. January.

ADEC 2023. Contaminated Sites Database Entry. Site Report: Defense Fuel Support Point Whittier. ADEC File Number 2114.38.011, Hazard ID 1314. https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/1314. Accessed 2024.

ADEC 2023. *Title 18 Alaska Administrative Code 75; Oil and Other Hazardous Substances Pollution Control*. January 1.

CES-RESCON, LLC 2024.Former Defense Fuels Support Point Whittier, Alaska 2023 High Groundwater Monitoring Report. February.

United States (US) EPA 2020. National Functional Guidelines for *Organic Superfund Methods Data Review.* November.

US EPA 2020. *National Functional Guidelines for Inorganic Superfund Data Review.* November.

ATTACHMENT A – FIGURES

Figure 1 - Site Location

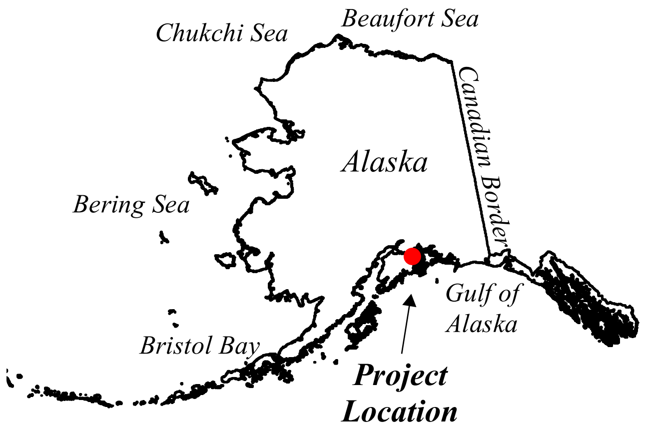
Figure 2 - Project Overview

Figure 3 - High Groundwater Potentiometric Surface

Figure 4 - Plan Sheets (1-10)

Whittier Head of Bay Eletrical Project Whittier, Alaska

Figure 1
Site Location Map



Midnight Sun ENVIRONMENTAL, LLC

DATE : June 2024

PROJECT NO.: E2214130

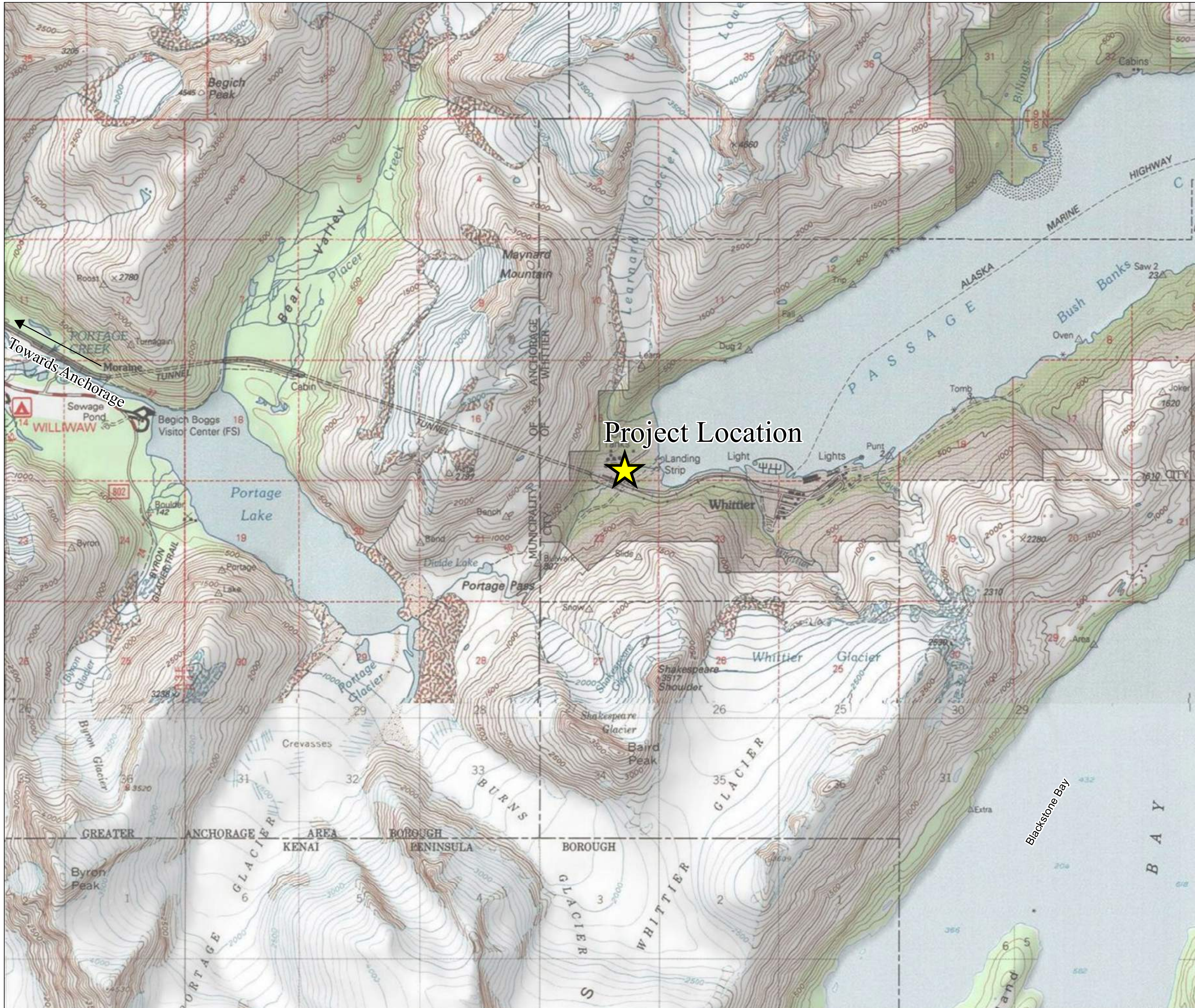
GIS ANALYST: Kelly Kennedy

Miles: 0 0.5 1 2 3

Kilometers: 0 1 2 4 6

560 E 34th Ave Suite 102
Anchorage, Alaska 99503
(907) 344-3244
www.midnightsunenvironmental.com

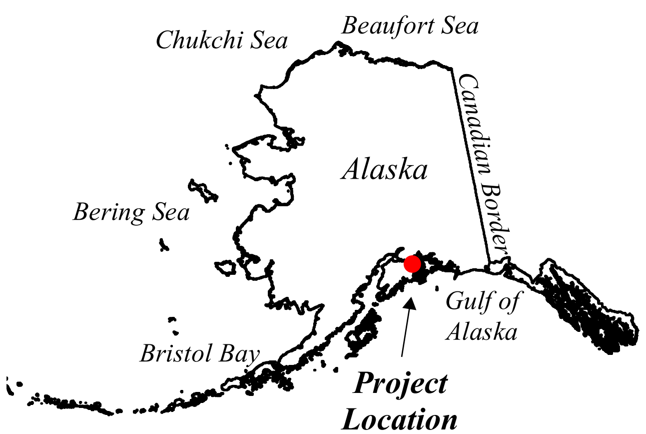
N W E S



Whittier Head of Bay Eletrical Project Whittier, Alaska

Figure 2

Project Overview Map



Midnight Sun ENVIRONMENTAL, LLC

DATE : June 2024

PROJECT NO.: E2214130

GIS ANALYST: Kelly Kennedy

Legend

Utility Installation

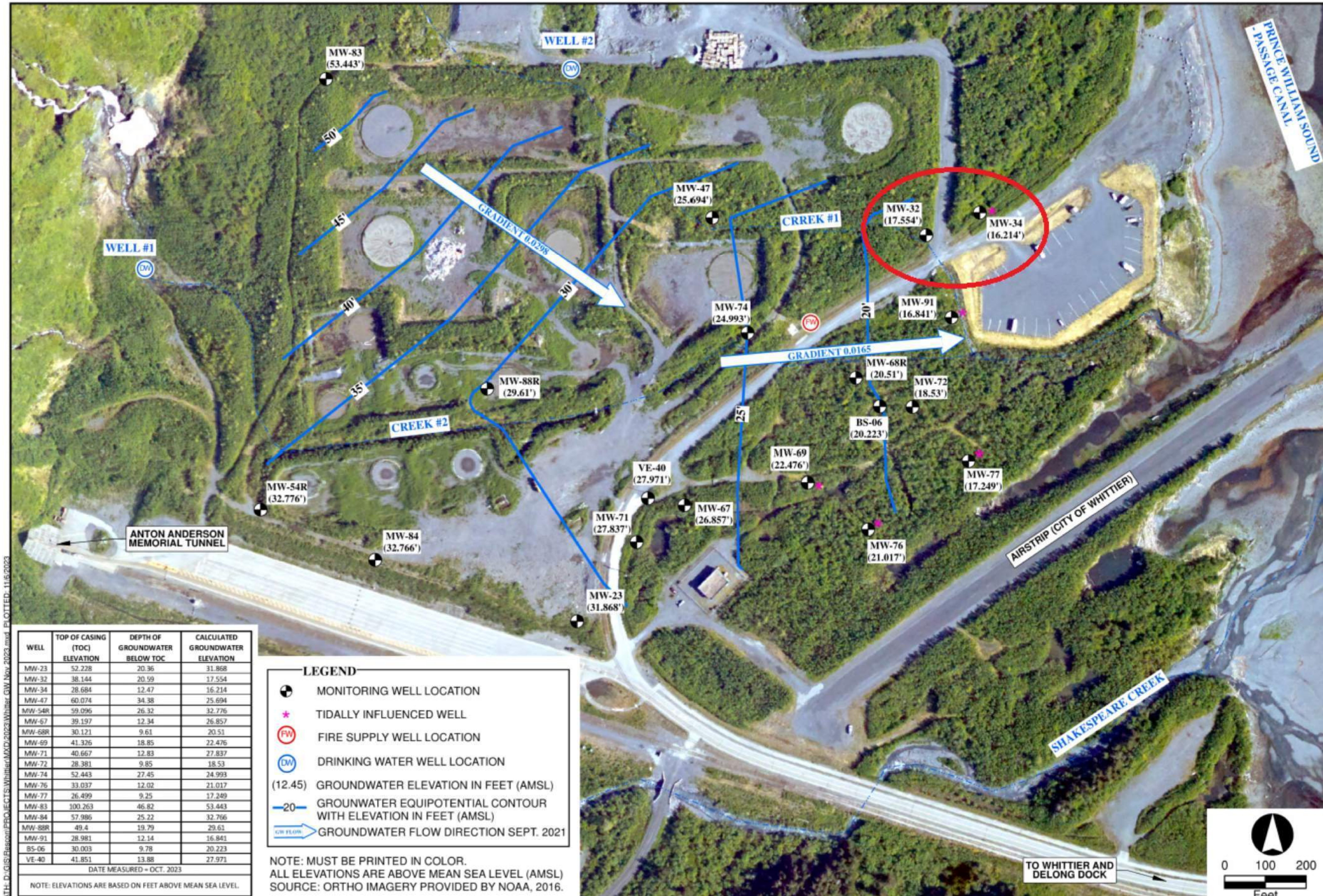
- Trench Line
- Vault
- Pole

Contaminated Sites

- Cleanup Complete
- Active
- Petroleum Plume

N E S W

Service Layer Credits: Alaska Department of Environmental Conservation - Contaminated Sites Program



WELL	TOP OF CASING (TOC) ELEVATION	DEPTH OF GROUNDWATER BELOW TOC	CALCULATED GROUNDWATER ELEVATION
MW-23	52.228	20.36	31.868
MW-32	38.144	20.59	17.554
MW-34	28.684	12.47	16.214
MW-47	60.074	34.38	25.694
MW-54R	59.096	26.32	32.776
MW-67	39.197	12.34	26.857
MW-68R	30.121	9.61	20.51
MW-69	41.326	18.85	22.476
MW-71	40.667	12.83	27.837
MW-72	28.381	9.85	18.53
MW-74	52.443	27.45	24.993
MW-76	33.037	12.02	21.017
MW-77	26.499	9.25	17.249
MW-83	100.263	46.82	53.443
MW-84	57.986	25.22	32.766
MW-88R	49.4	19.79	29.61
MW-91	28.981	12.14	16.841
BS-06	30.003	9.78	20.223
VE-40	41.851	13.88	27.971
DATE MEASURED = OCT. 2023			
NOTE: ELEVATIONS ARE BASED ON FEET ABOVE MEAN SEA LEVEL.			

LEGEND

- MONITORING WELL LOCATION
- * TIDALLY INFLUENCED WELL
- FW FIRE SUPPLY WELL LOCATION
- DW DRINKING WATER WELL LOCATION
- (12.45) GROUNDWATER ELEVATION IN FEET (AMSL)
- —20— GROUNWATER EQUIPOTENTIAL CONTOUR WITH ELEVATION IN FEET (AMSL)
- GW FLOW GROUNDWATER FLOW DIRECTION SEPT. 2021

NOTE: MUST BE PRINTED IN COLOR.
ALL ELEVATIONS ARE ABOVE MEAN SEA LEVEL (AMSL)
SOURCE: ORTHO IMAGERY PROVIDED BY NOAA, 2016.

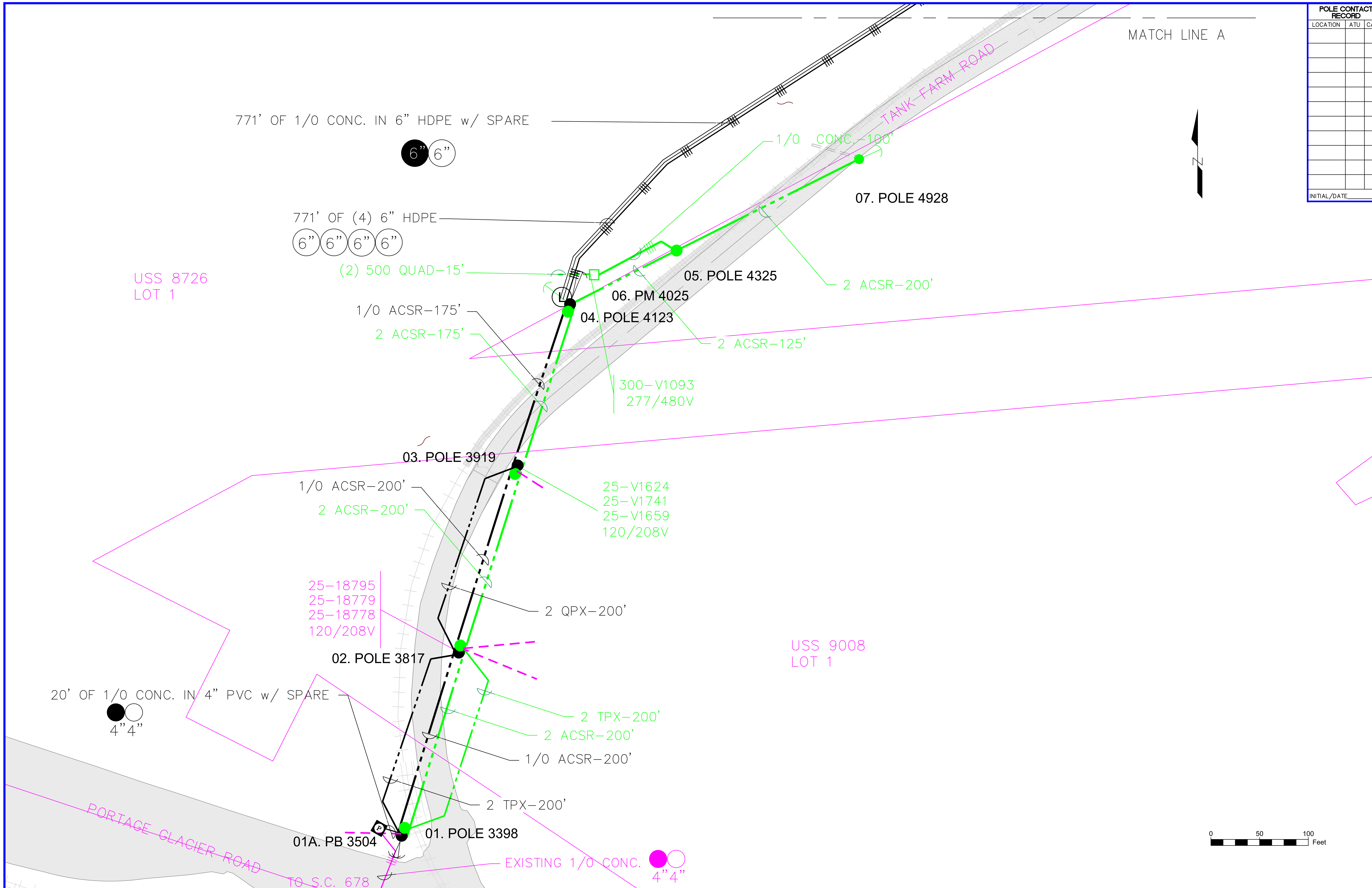
PATH: D:\GIS\Rescon\PROJECTS\Whittier\MXD\2023\Whittier GW Nov 2023.mxd PLOTTED: 11/6/2023

FIGURE

2023 HIGH GROUNDWATER POTENTIOMETRIC SURFACE

DATE: 11/6/2023

CHKD: R.M.B.



POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE

CONDUCTOR DATA

Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet
Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.................................... 278-3121
STATEWIDE.................................... 800-478-3121
AT&T ALASCOM INC. 264-8465
ALASKA RAILROAD UTILITIES.................................... 265-2457
ALYESKA CABLE TV (GIRDWOOD).......................... 783-2982
KULIS AIR BASE.................................... 249-1499
MILITARY PETROLEUM FUEL LINES.......................... 552-2334
OR 552-5342
STATE STORM DRAINS & STREET LIGHTS................ 333-2411

CONSTRUCTION LEGEND

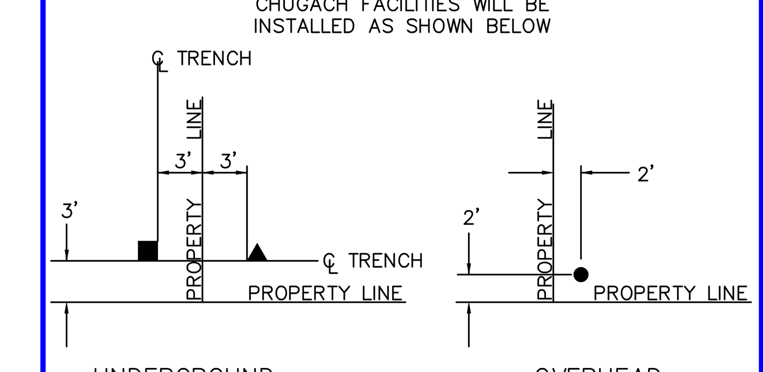
NEW — EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT w/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED
CHUGACH FACILITIES WILL BE
INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	JM 8/27/24	

ENG. STAMP

CHUGACH
POWERING ALASKA'S FUTURE

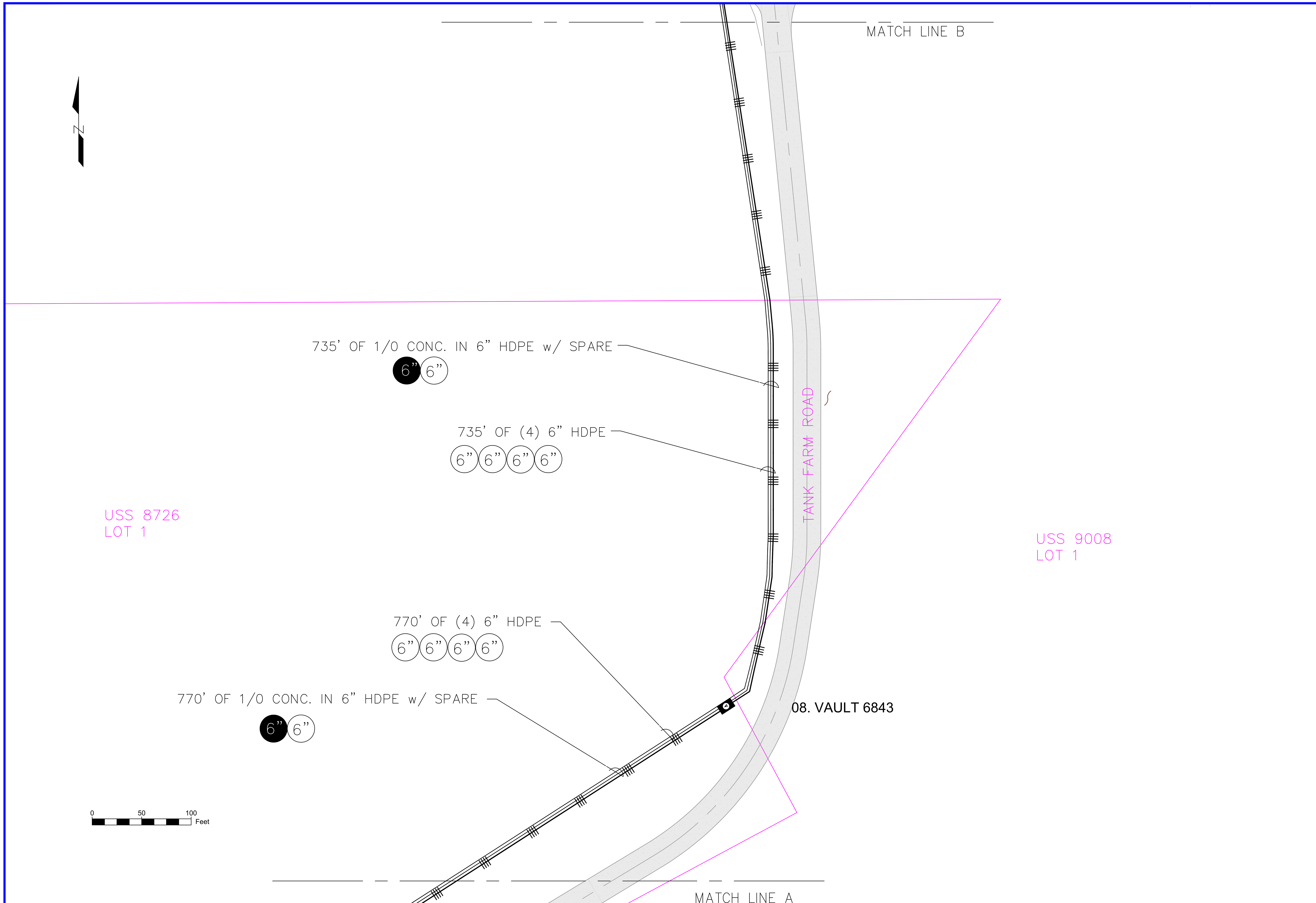
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
ELECTRICAL

W.O. NO.:
C.W.P. REF. NO.:
E2214130

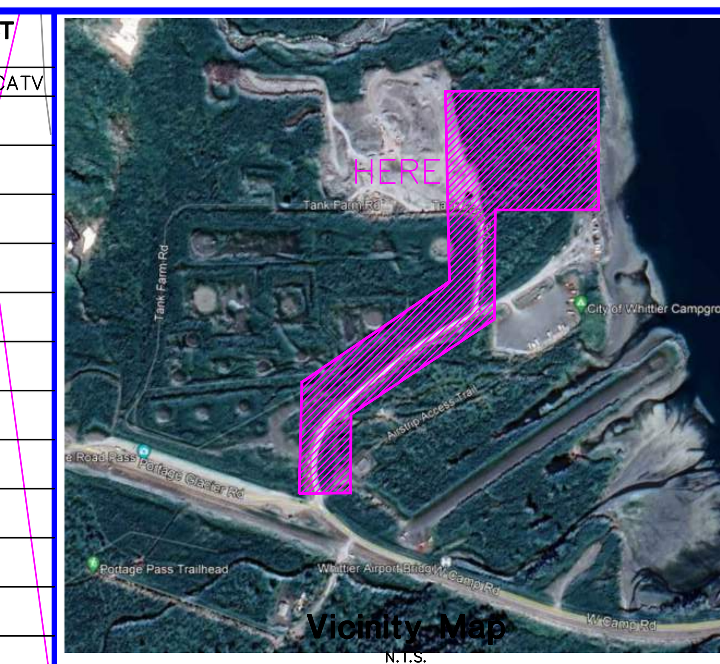
SHEET 1 OF 10



POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE



CONDUCTOR DATA

Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet
Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)

ANCHORAGE AREA	278-3121
STATEWIDE	800-478-3121
AT&T ALASCOM INC.	264-8465
ALASKA RAILROAD UTILITIES	265-2457
ALYESKA CABLE TV (GIRDWOOD)	783-2982
KULIS AIR BASE	249-1499
MILITARY PETROLEUM FUEL LINES	552-2334 OR 552-5342
STATE STORM DRAINS & STREET LIGHTS	333-2411

CONSTRUCTION LEGEND

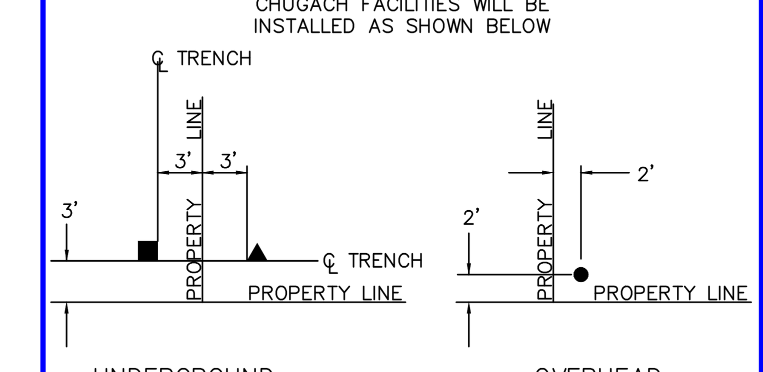
NEW / EXISTING

- PADMOUNT TRANSFORMER
- PEDESTAL
- POWER POLE
- STREET LIGHT
- WARNING POST
- 1ø U.G. PRI. CONDUCTOR
- 3ø U.G. PRI. CONDUCTOR
- U.G. SECONDARY CONDUCT.
- U.G. STREET LIGHT CONDUCT.
- 1ø O.H. CONDUCTOR
- 3ø O.H. CONDUCTOR
- JUNCTION BOX
- SPLICE POINT
- SPARE CONDUIT
- CONDUIT W/ CONDUCTOR
- SWITCH CABINET

R.O.W. LEGEND

- R.O.W. LINE
- CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER

DESIGNER/PROJECT ENGINEER: E. COOK   W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	8/27/24	

ENG. STAMP

CHUGACH
POWERING ALASKA'S FUTURE

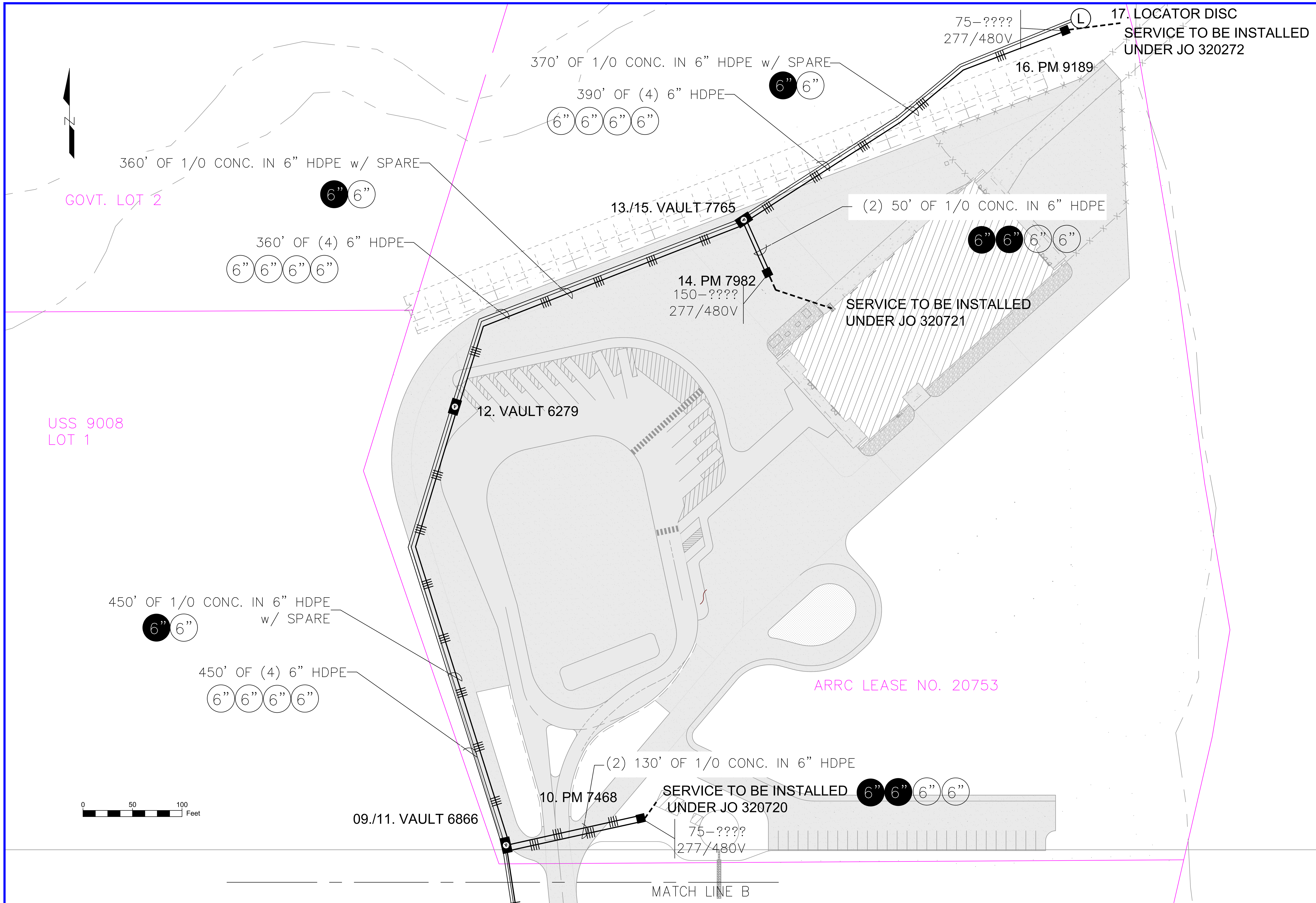
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
ELECTRICAL

W.O. NO.:
C.W.P. REF. NO.:
E2214130

SHEET 2 OF 10



POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE

CONDUCTOR DATA

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.................................. 278–3121
STATEWIDE.................................. 800–478–3121
AT&T ALASCOM INC. 264–8465
ALASKA RAILROAD UTILITIES.................................. 265–2457
ALYESKA CABLE TV (GIRDWOOD)......................... 783–2982
KULIS AIR BASE.. 249–1499
MILITARY PETROLEUM FUEL LINES......................... 552–2334
OR 552–5342
STATE STORM DRAINS & STREET LIGHTS................. 333–2411

CONSTRUCTION LEGEND

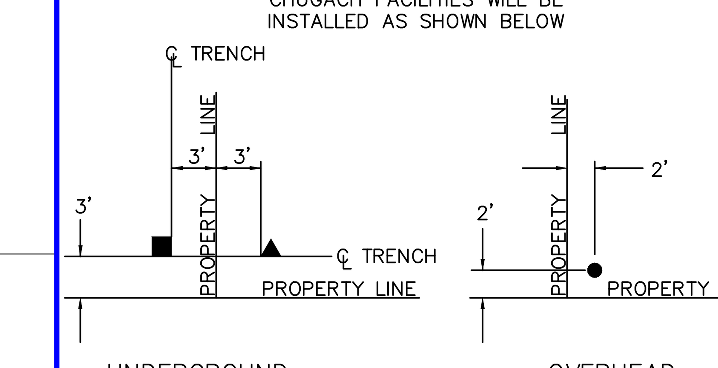
NEW — EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED
CHUGACH FACILITIES WILL BE
INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	Jm 8/27/24	

ENG. STAMP

CHUGACH
POWERING ALASKA'S FUTURE

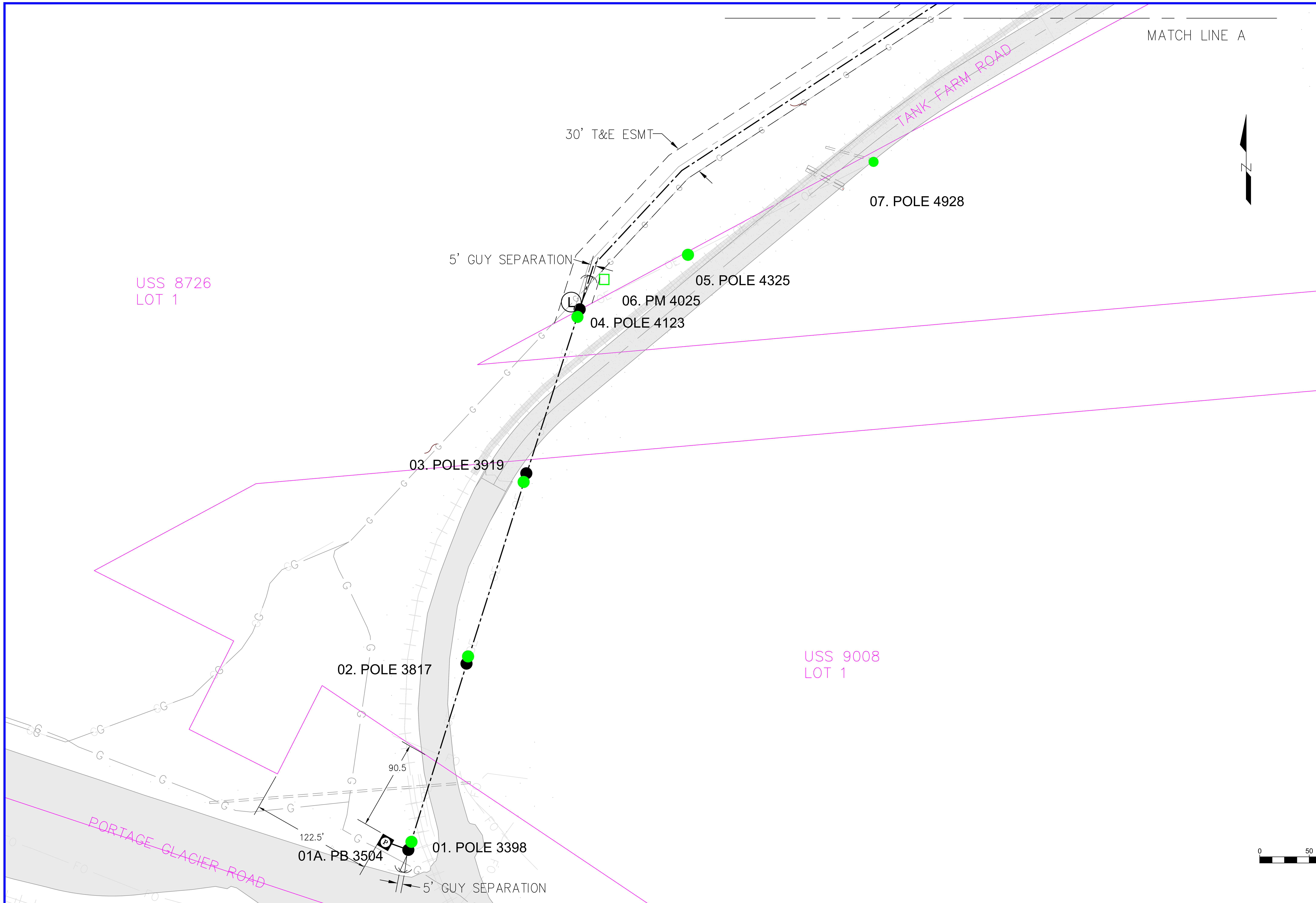
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804–15
FEEDER: PTSS 322
ELECTRICAL

W.O. NO.:
C.W.P. REF. NO.:
E2214130

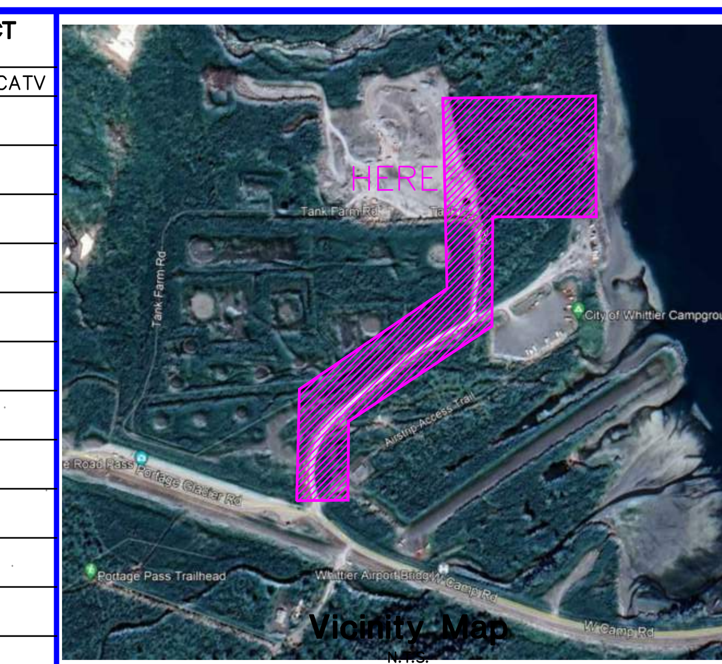
SHEET 3 OF 10



POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE__________



CONDUCTOR DATA

Manuf. ____	Manuf. ____
Manuf. Date ____	Manuf. Date ____
Volt Rating ____	Volt Rating ____
Insul. Type ____	Insul. Type ____
Insul. Size ____	Insul. Size ____
Cond. Size/Type ____	Cond. Size/Type ____
Quantity in Feet ____	Quantity in Feet ____
Manuf. ____	Manuf. ____
Manuf. Date ____	Manuf. Date ____
Volt Rating ____	Volt Rating ____
Insul. Type ____	Insul. Type ____
Insul. Size ____	Insul. Size ____
Cond. Size/Type ____	Cond. Size/Type ____
Quantity in Feet ____	Quantity in Feet ____

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)

ANCHORAGE AREA	278–3121
STATEWIDE	800–478–3121
AT&T ALASCOM INC.	264–8465
ALASKA RAILROAD UTILITIES	265–2457
ALYESKA CABLE TV (GIRDWOOD)	783–2982
KULIS AIR BASE	249–1499
MILITARY PETROLEUM FUEL LINES	552–2334 OR 552–5342
STATE STORM DRAINS & STREET LIGHTS	333–2411

CONSTRUCTION LEGEND

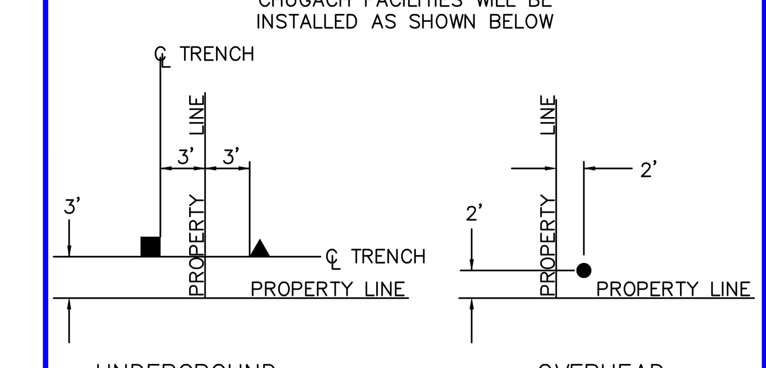
NEW — EXISTING

- PADMOUNT TRANSFORMER
- PEDESTAL
- POWER POLE
- STREET LIGHT
- WARNING POST
- 1Ø U.G. PRI. CONDUCTOR
- 3Ø U.G. PRI. CONDUCTOR
- U.G. SECONDARY CONDUCT.
- U.G. STREET LIGHT CONDUCT.
- 1Ø O.H. CONDUCTOR
- 3Ø O.H. CONDUCTOR
- J JUNCTION BOX
- SPLICE POINT
- SPARE CONDUIT
- CONDUIT W/ CONDUCTOR
- S SWITCH CABINET

R.O.W. LEGEND

- R.O.W. LINE
- CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER

DESIGNER/PROJECT ENGINEER: E. COOK W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	JM 8/27/24	

ENG. STAMP

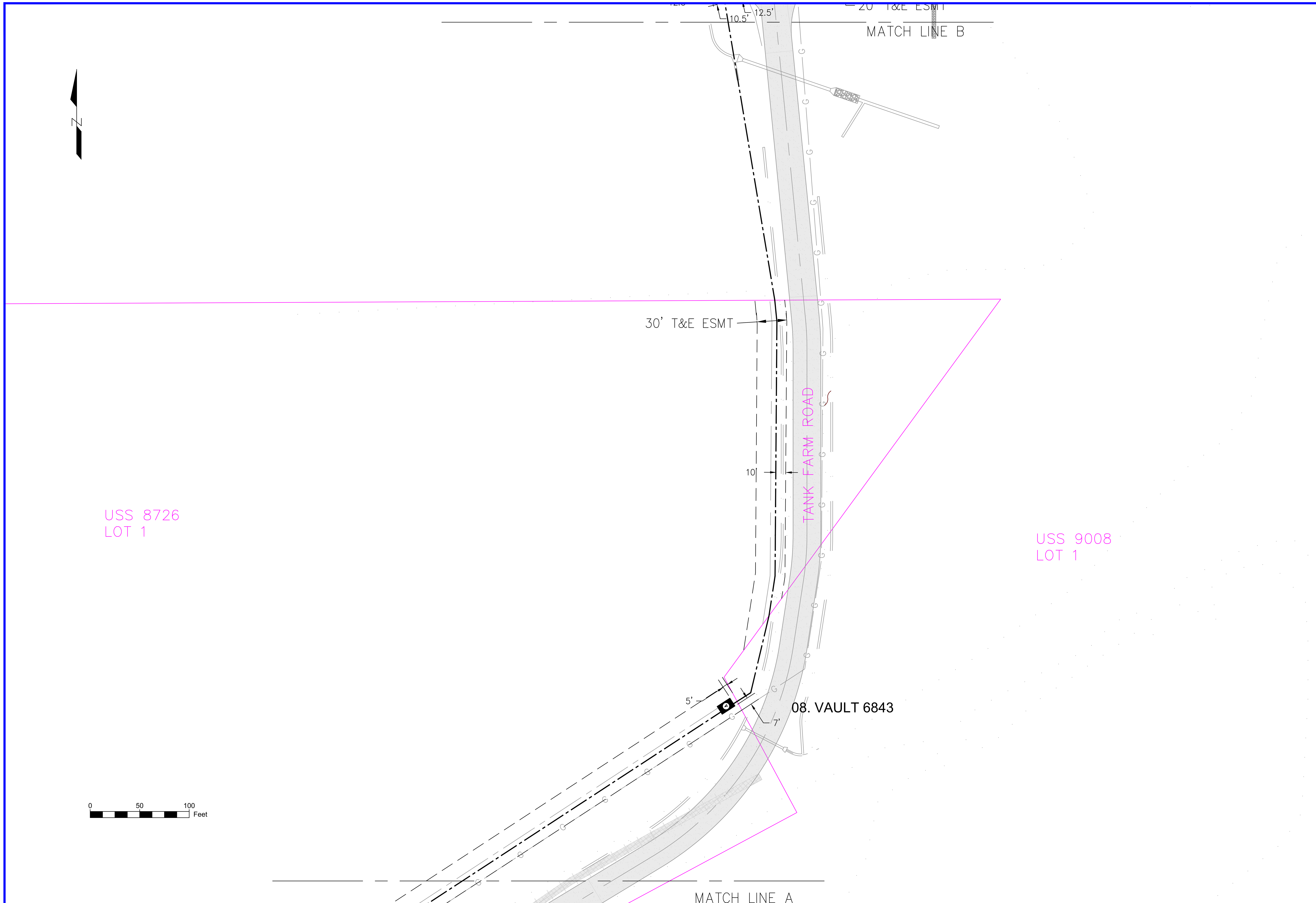
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

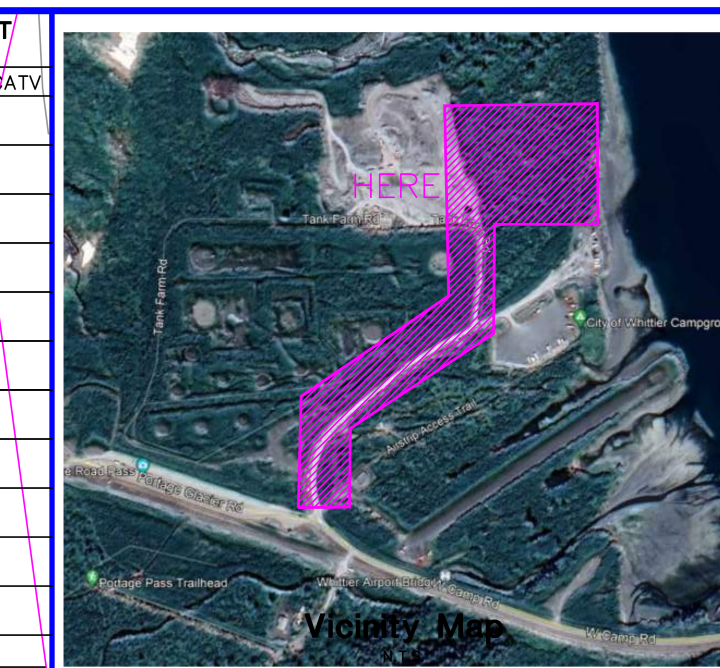
DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804–15
FEEDER: PTSS 322
RIGHT–OF–WAY

W.O. NO.: E2214130
C.W.P. REF. NO.:



POLE CONTACT RECORD		
LOCATION	ATU	CATV
INITIAL/DATE		



CONDUCTOR DATA

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.......... 278-3121
STATEWIDE.......... 800-478-3121
AT&T ALASCOM INC. 264-8465
ALASKA RAILROAD UTILITIES.......... 265-2457
ALYESKA CABLE TV (GIRDWOOD).......... 783-2982
KULIS AIR BASE.......... 249-1499
MILITARY PETROLEUM FUEL LINES.......... 552-2334
OR 552-5342
STATE STORM DRAINS & STREET LIGHTS.......... 333-2411

CONSTRUCTION LEGEND

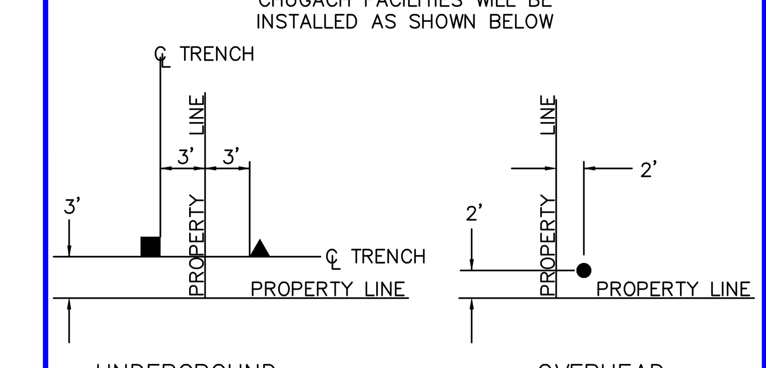
NEW | EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	JM 8/27/24	

ENG. STAMP

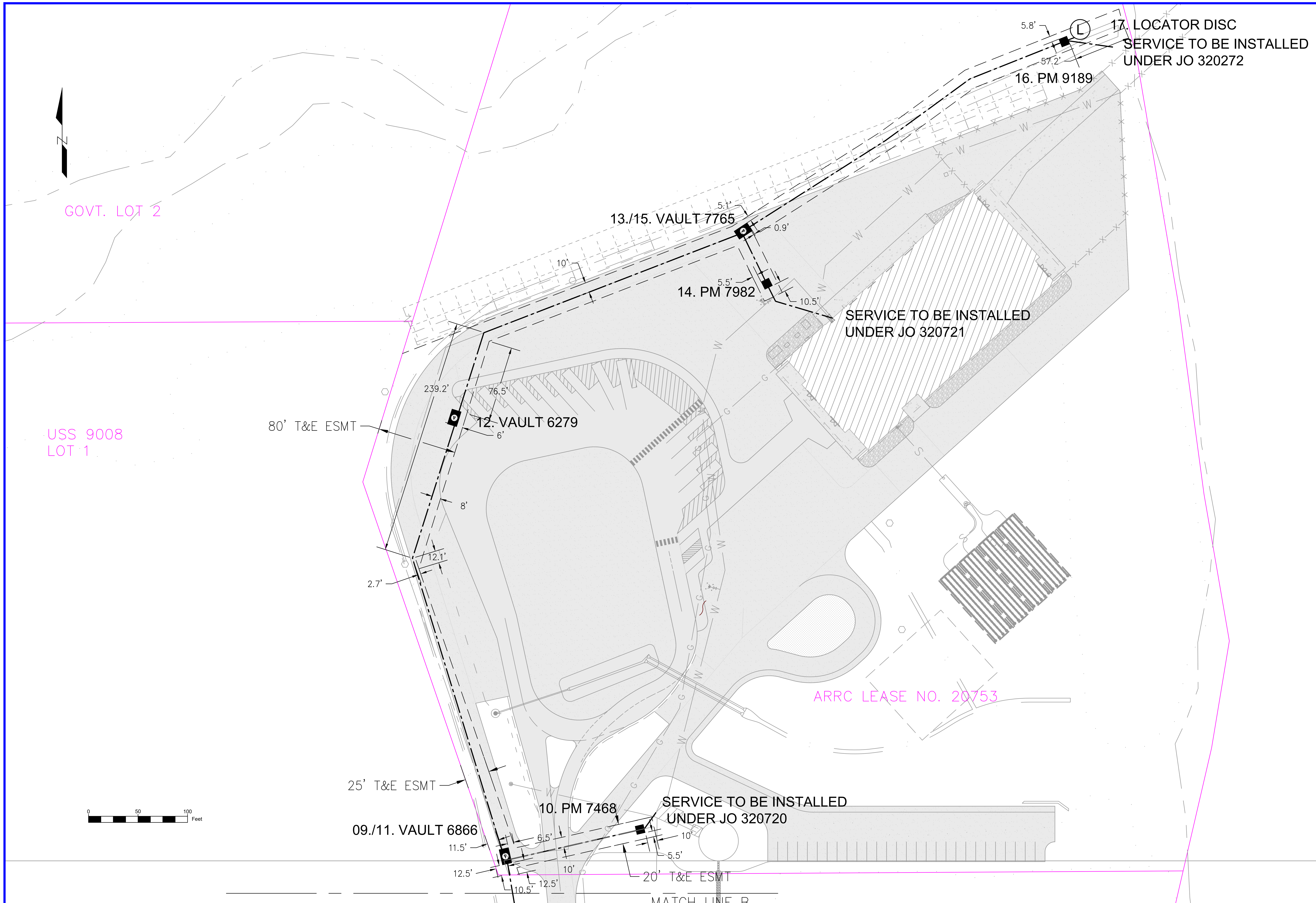
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
RIGHT-OF-WAY

W.O. NO.: E2214130
C.W.P. REF. NO.:

SHEET 5 OF 10



POLE CONTACT RECORD		
LOCATION	ATU	CATV

INITIAL/DATE

CONDUCTOR DATA

Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet
Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.......... 278–3121
STATEWIDE.......... 800–478–3121
AT&T ALASCOM INC. 264–8465
ALASKA RAILROAD UTILITIES.......... 265–2457
ALYESKA CABLE TV (GIRDWOOD).......... 783–2982
KULIS AIR BASE.......... 249–1499
MILITARY PETROLEUM FUEL LINES.......... 552–2334
OR 552–5342
STATE STORM DRAINS & STREET LIGHTS.......... 333–2411

CONSTRUCTION LEGEND

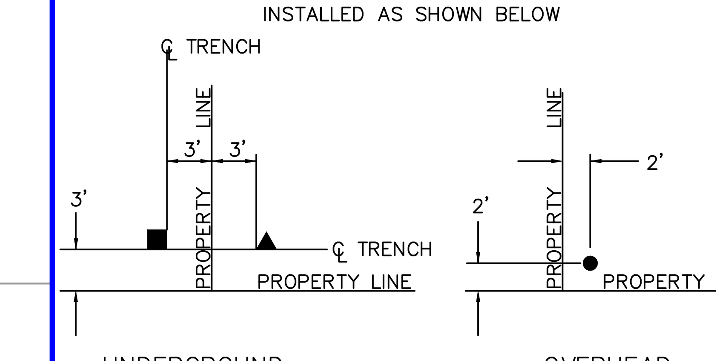
NEW — EXISTING

- PADMOUNT TRANSFORMER
- PEDESTAL
- POWER POLE
- STREET LIGHT
- WARNING POST
- 1ø U.G. PRI. CONDUCTOR
- 3ø U.G. PRI. CONDUCTOR
- U.G. SECONDARY CONDUCT.
- U.G. STREET LIGHT CONDUCT.
- 1ø O.H. CONDUCTOR
- 3ø O.H. CONDUCTOR
- JUNCTION BOX
- SPLICE POINT
- SPARE CONDUIT
- CONDUIT W/ CONDUCTOR
- SWITCH CABINET

R.O.W. LEGEND

- R.O.W. LINE
- CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK
W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	[signature] 8/27/24	

ENG. STAMP

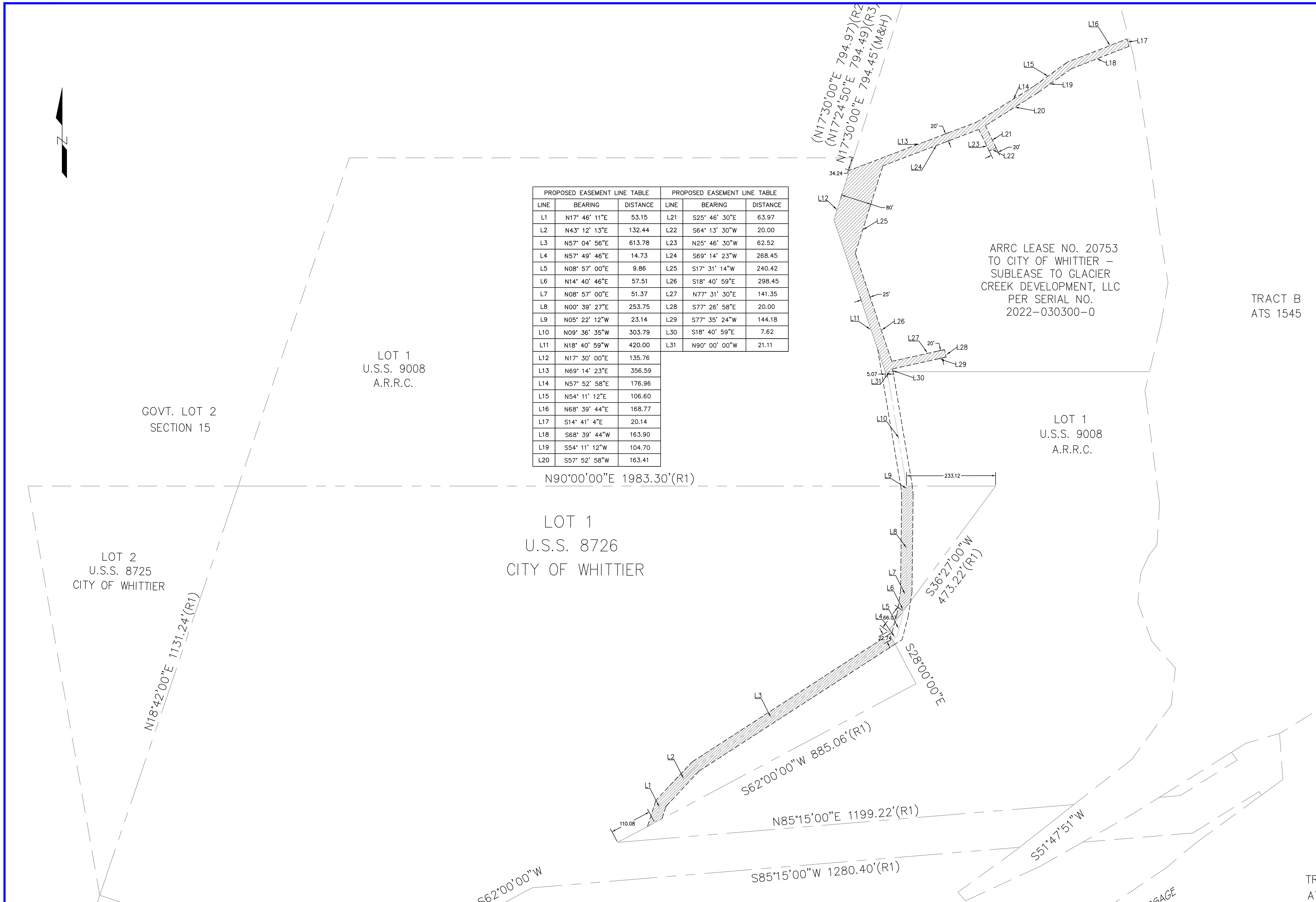
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
RIGHT-OF-WAY

W.O. NO.:
C.W.P. REF. NO.:
E2214130

SHEET 6 OF 10

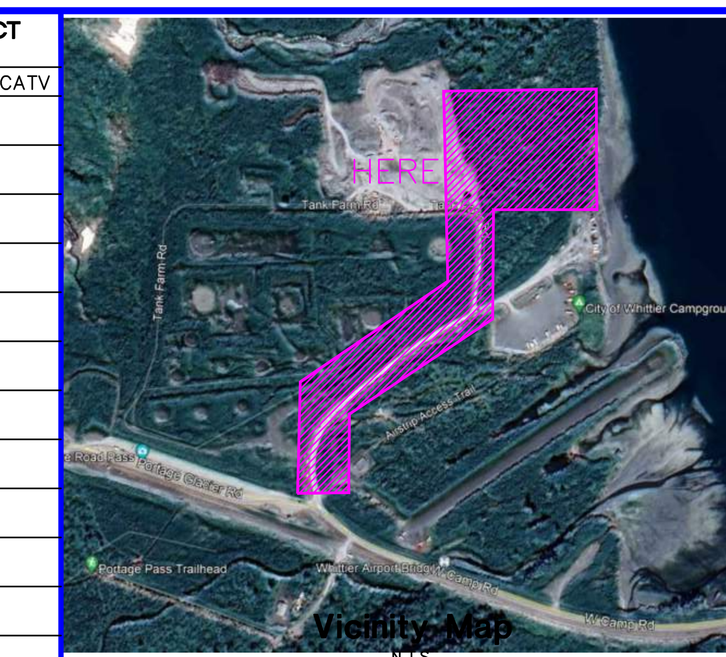


PROPOSED EASEMENT LINE TABLE			PROPOSED EASEMENT LINE TABLE		
LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	N17° 46' 11"E	53.15	L21	S25° 46' 30"E	63.97
L2	N43° 12' 13"E	132.44	L22	S64° 13' 30"W	20.00
L3	N57° 04' 56"E	613.78	L23	N25° 46' 30"W	62.52
L4	N57° 49' 46"E	14.73	L24	S69° 14' 23"W	268.45
L5	N08° 57' 00"E	9.86	L25	S17° 31' 14"W	240.42
L6	N14° 40' 46"E	57.51	L26	S18° 40' 59"E	298.45
L7	N08° 57' 00"E	51.37	L27	N77° 31' 30"E	141.35
L8	N00° 39' 27"E	253.75	L28	S77° 26' 58"E	20.00
L9	N05° 22' 12"W	23.14	L29	S77° 35' 24"W	144.18
L10	N09° 36' 35"W	303.79	L30	S18° 40' 59"E	7.62
L11	N18° 40' 59"W	420.00	L31	N90° 00' 00"W	21.11
L12	N17° 30' 00"E	135.76			
L13	N69° 14' 23"E	356.59			
L14	N57° 52' 58"E	176.96			
L15	N54° 11' 12"E	106.60			
L16	N68° 39' 44"E	168.77			
L17	S14° 41' 4"E	20.14			
L18	S68° 39' 44"W	163.90			
L19	S54° 11' 12"W	104.70			
L20	S57° 52' 58"W	163.41			

POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE________



CONDUCTOR DATA

Manuf.______ Manuf.______
Manuf. Date______ Manuf. Date______
Volt Rating______ Volt Rating______
Insul. Type______ Insul. Type______
Insul. Size______ Insul. Size______
Cond. Size/Type______ Cond. Size/Type______
Quantity in Feet______ Quantity in Feet______

Manuf.______ Manuf.______
Manuf. Date______ Manuf. Date______
Volt Rating______ Volt Rating______
Insul. Type______ Insul. Type______
Insul. Size______ Insul. Size______
Cond. Size/Type______ Cond. Size/Type______
Quantity in Feet______ Quantity in Feet______

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.......... 278–3121
STATEWIDE.......... 800–478–3121
AT&T ALASCOM INC. 264–8465
ALASKA RAILROAD UTILITIES.......... 265–2457
ALYESKA CABLE TV (GIRDWOOD).......... 783–2982
KULIS AIR BASE.......... 249–1499
MILITARY PETROLEUM FUEL LINES.......... 552–2334 OR 552–5342
STATE STORM DRAINS & STREET LIGHTS.......... 333–2411

CONSTRUCTION LEGEND

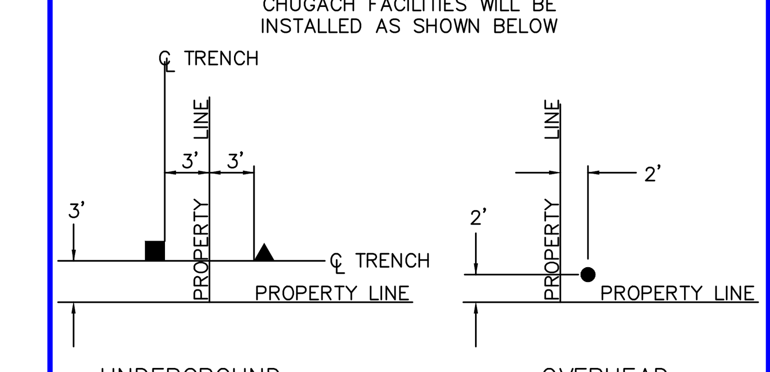
NEW — EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	8/27/24	

ENG. STAMP

POWERING ALASKA'S FUTURE

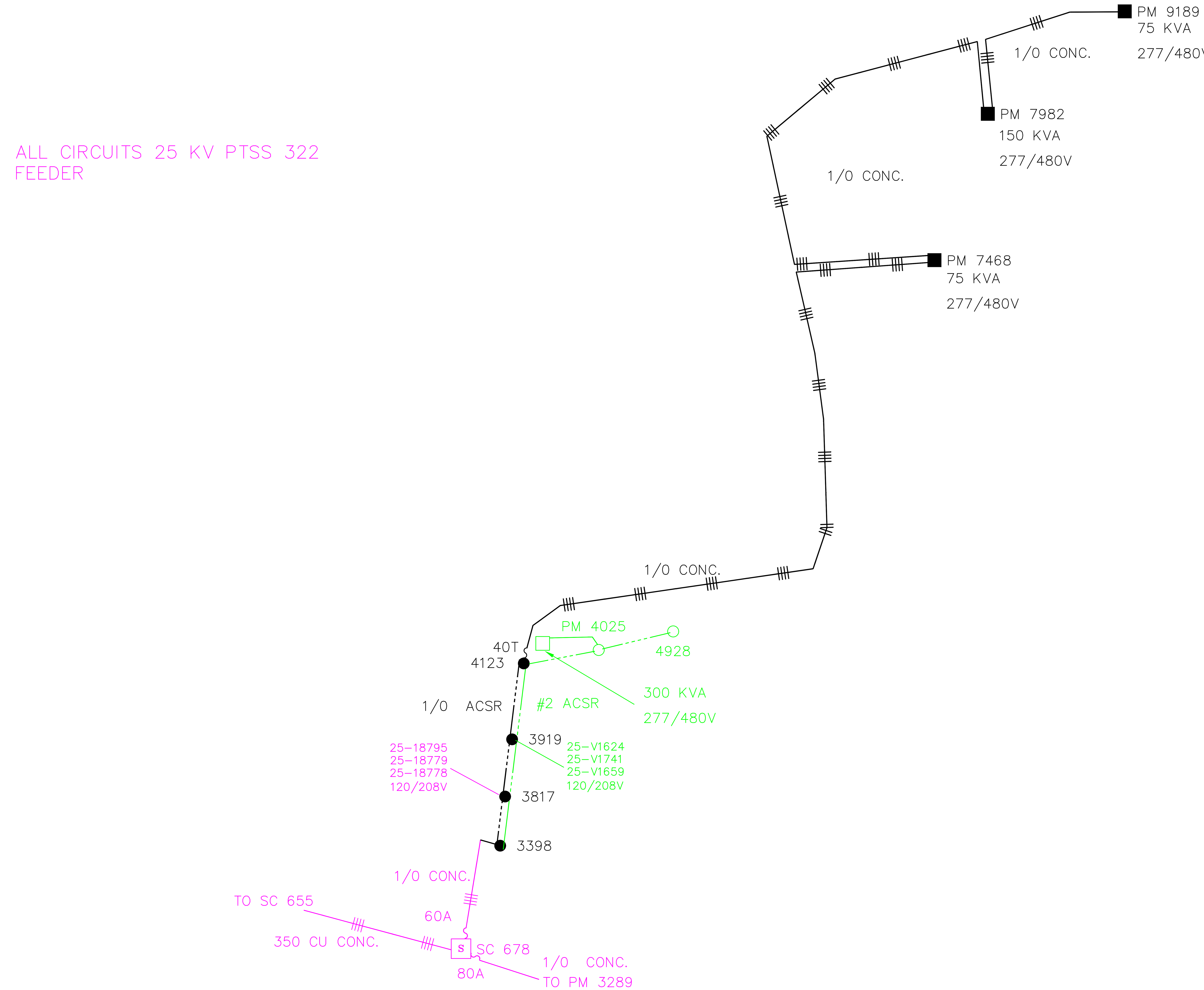
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
SURVEY

W.O. NO.: E2214130
C.W.P. REF. NO.:

SHEET 7 OF 10



POLE CONTACT RECORD		
LOCATION	ATU	CATV

INITIAL/DATE

CONDUCTOR DATA

Manuf. / Manuf. Date / Volt Rating / Insul. Type / Insul. Size / Cond. Size/Type / Quantity in Feet (×4)

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA 278-3121
STATEWIDE 800-478-3121
AT&T ALASCOM INC. 264-8465
ALASKA RAILROAD UTILITIES 265-2457
ALYESKA CABLE TV (GIRDWOOD) 783-2982
KULIS AIR BASE 249-1499
MILITARY PETROLEUM FUEL LINES 552-2334
OR 552-5342
STATE STORM DRAINS & STREET LIGHTS 333-2411

CONSTRUCTION LEGEND

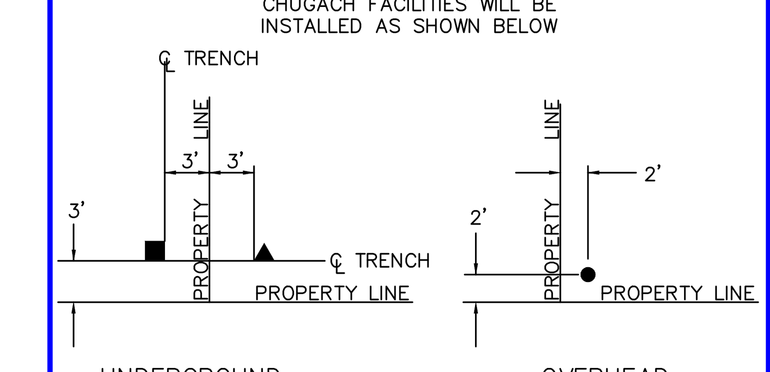
NEW — EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK
W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	8/27/24	

ENG. STAMP

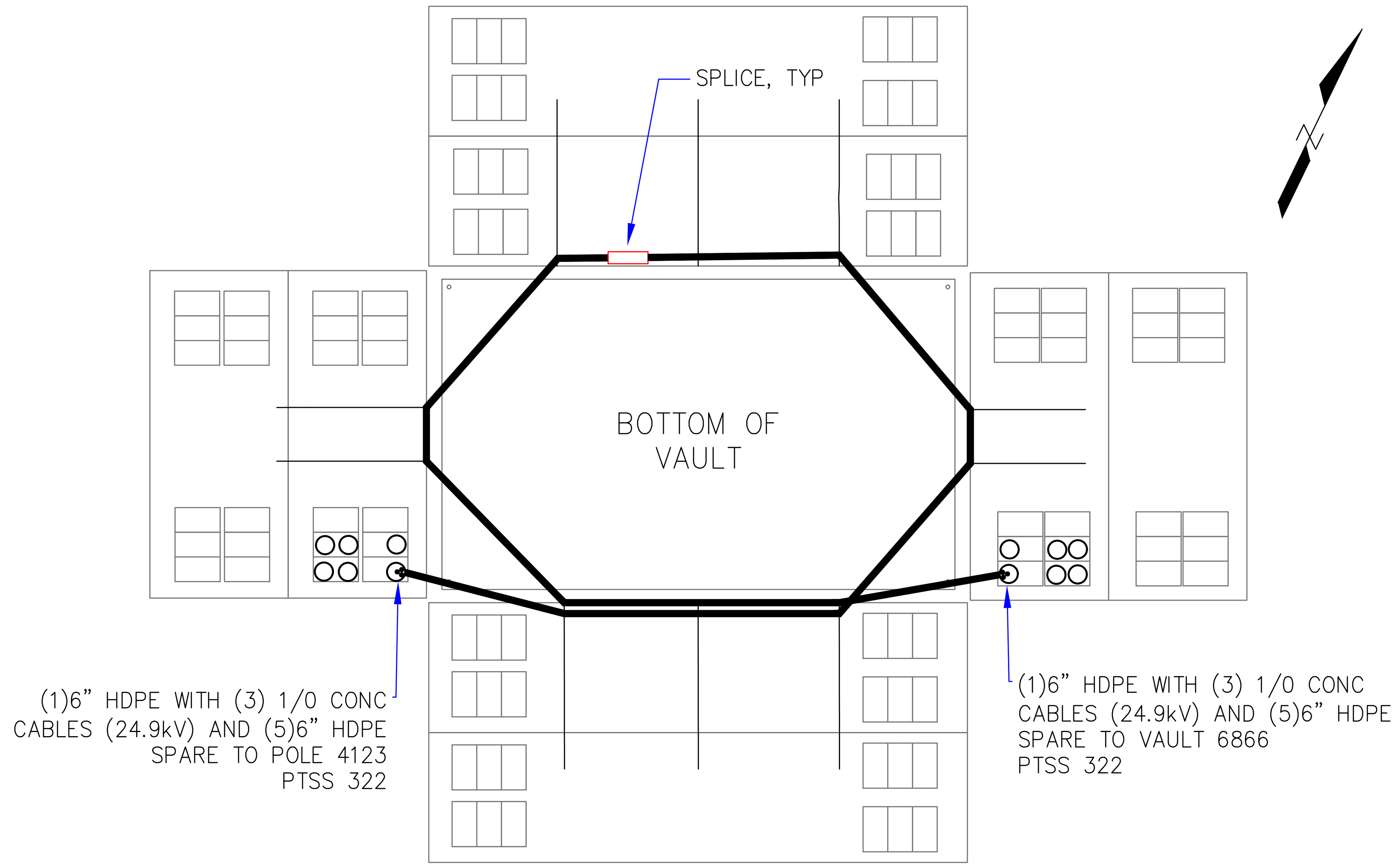
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

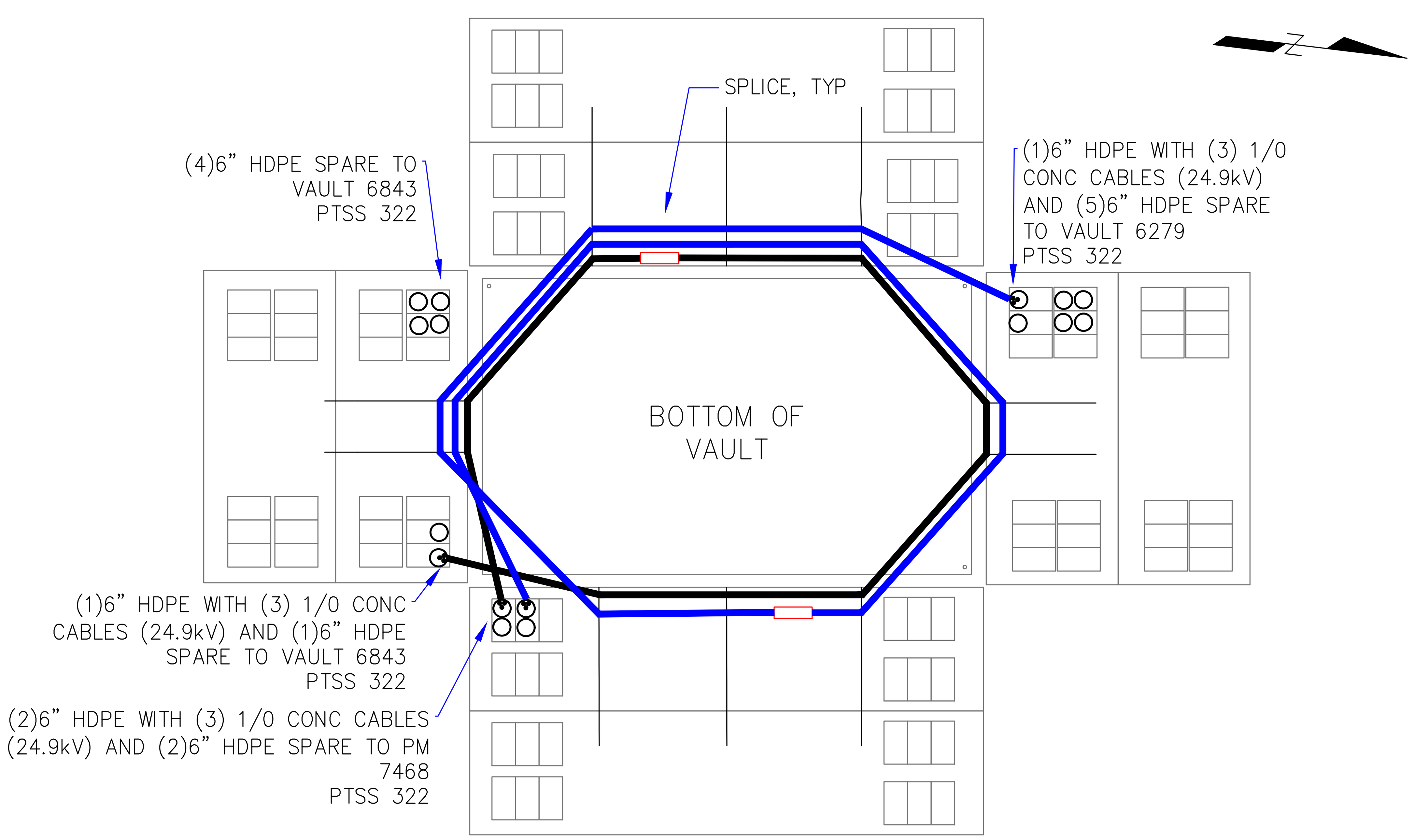
DRAWING NAME:
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
PRIMARY CIRCUIT DIAGRAM

W.O. NO.:
C.W.P. REF. NO.:
E2214130

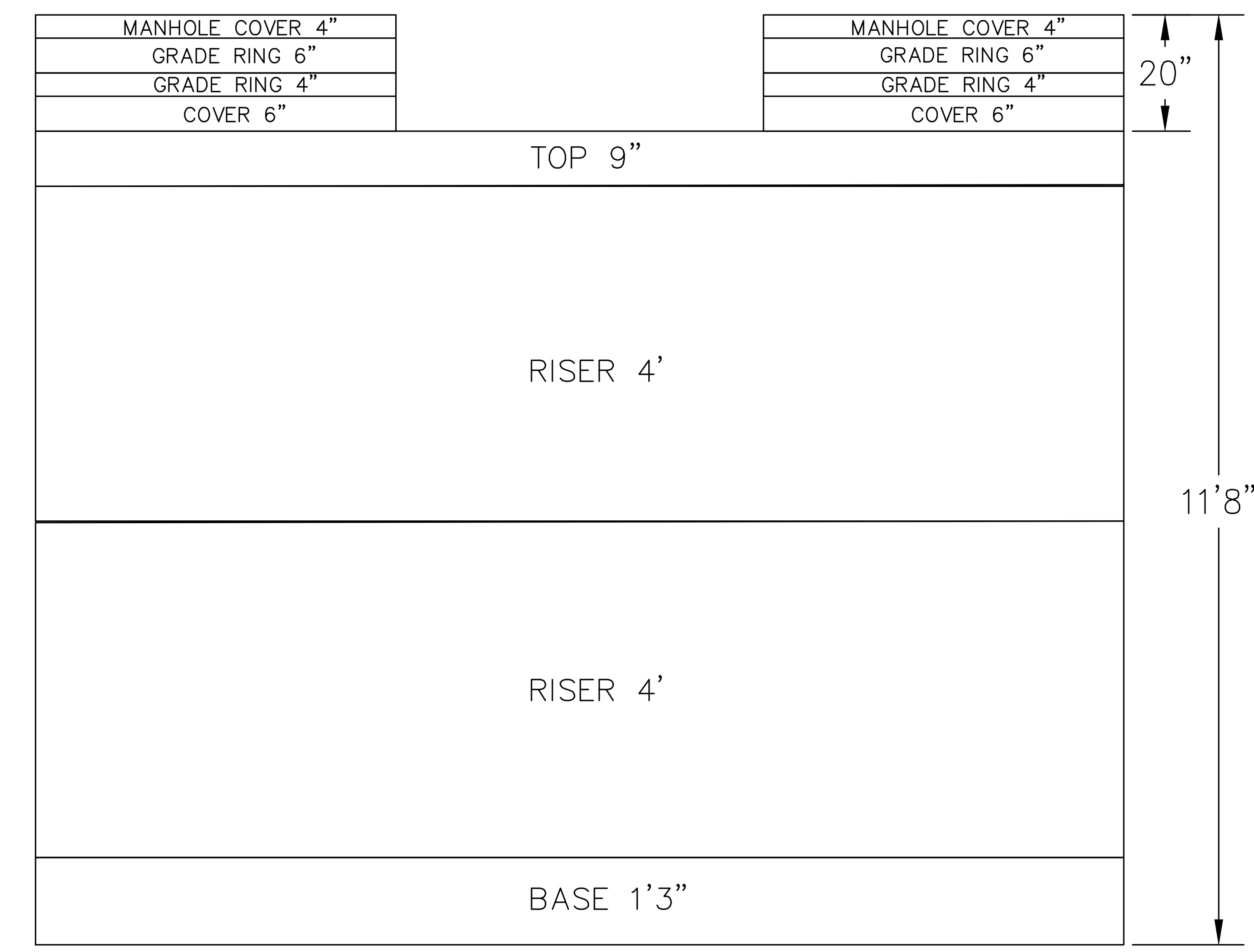
SHEET 8 OF 10



VAULT 6843
SUMH-814



VAULT 6866
SUMH-814



SUMH-814

POLE CONTACT RECORD		
LOCATION	ATU	CATV

INITIAL/DATE________

N.T.S.

CONDUCTOR DATA

Manuf.
Manuf. Date
Volt Rating
Insul. Type
Insul. Size
Cond. Size/Type
Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA 278-3121
STATEWIDE 800-478-3121
AT&T ALASCOM INC. 264-8465
ALASKA RAILROAD UTILITIES 265-2457
ALYESKA CABLE TV (GIRDWOOD) 783-2982
KULIS AIR BASE 249-1499
MILITARY PETROLEUM FUEL LINES .... 552-2334 OR 552-5342
STATE STORM DRAINS & STREET LIGHTS 333-2411

CONSTRUCTION LEGEND

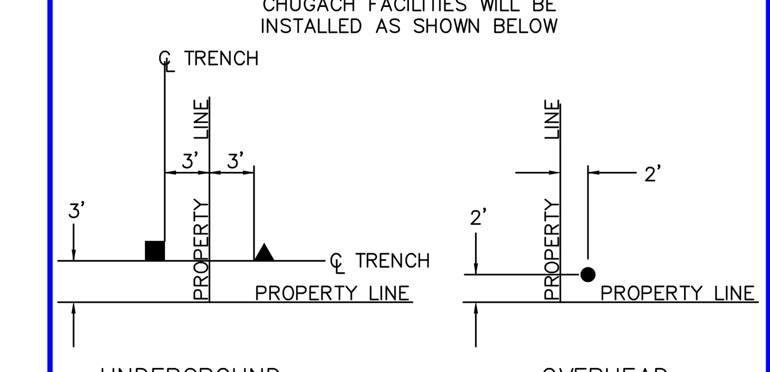
NEW — EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK — W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	8/27/24	

ENG. STAMP

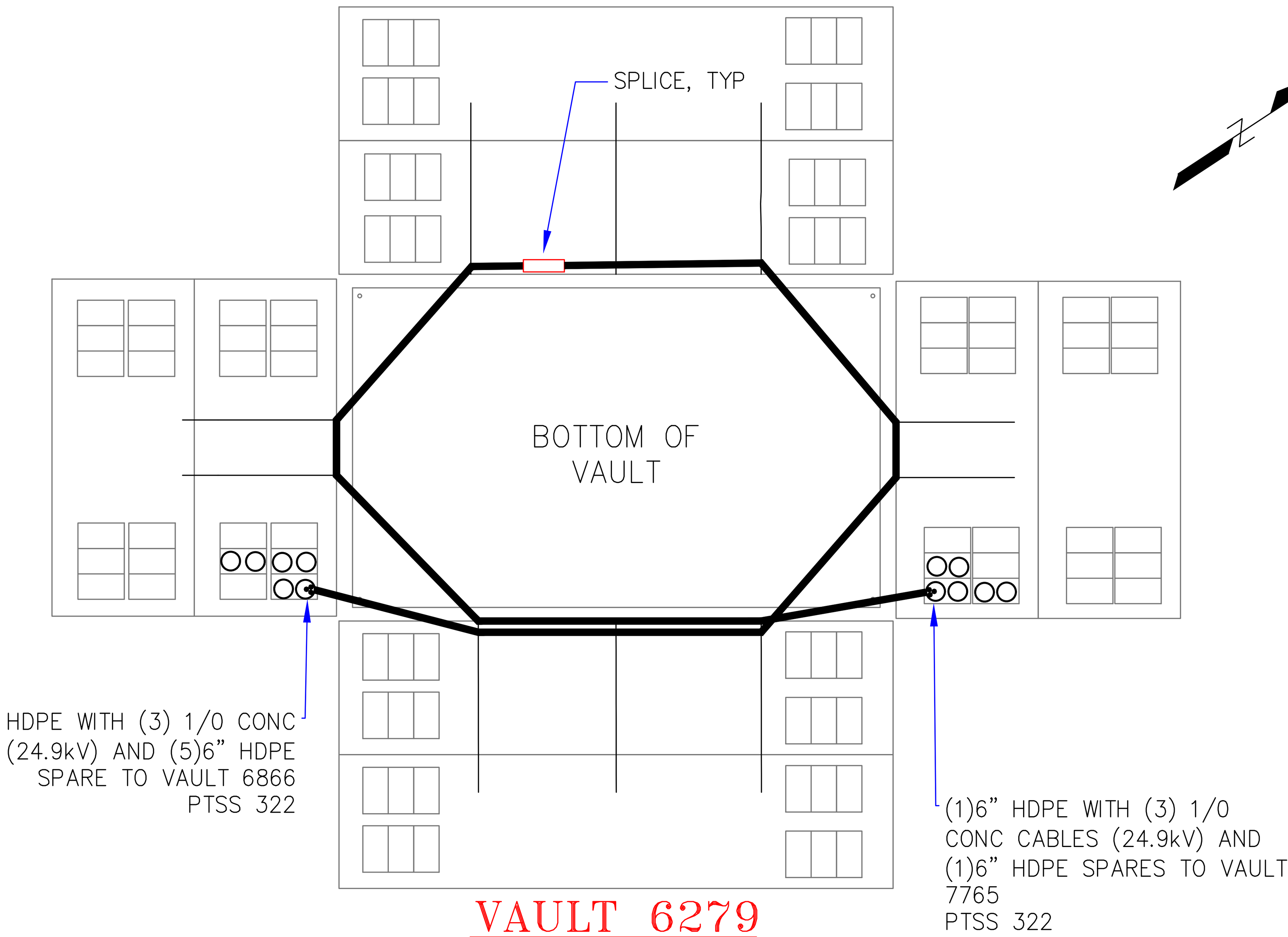
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

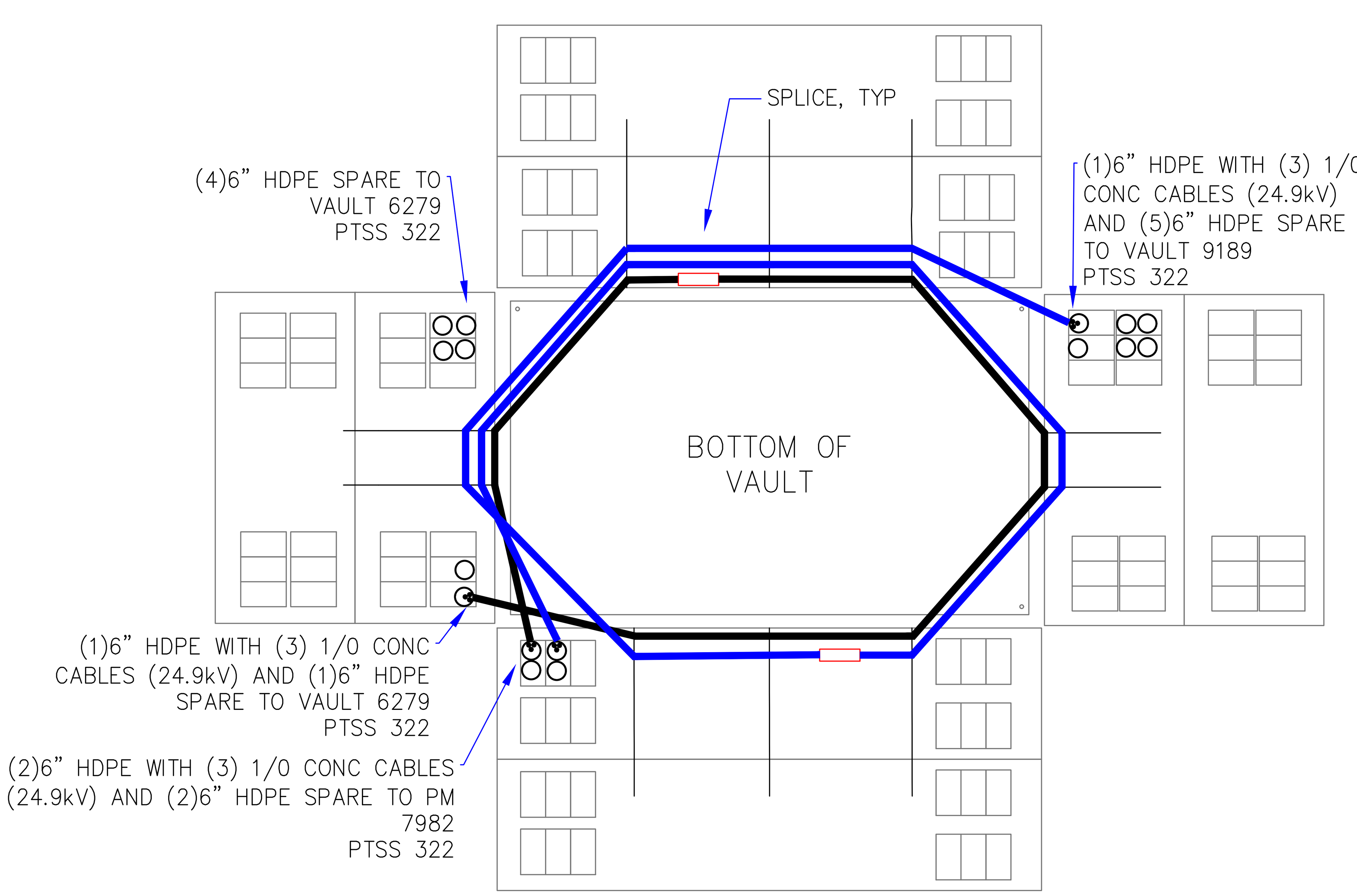
DRAWING NAME:
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
VAULT DIAGRAM

W.O. NO.:
C.W.P. REF. NO.:
E2214130

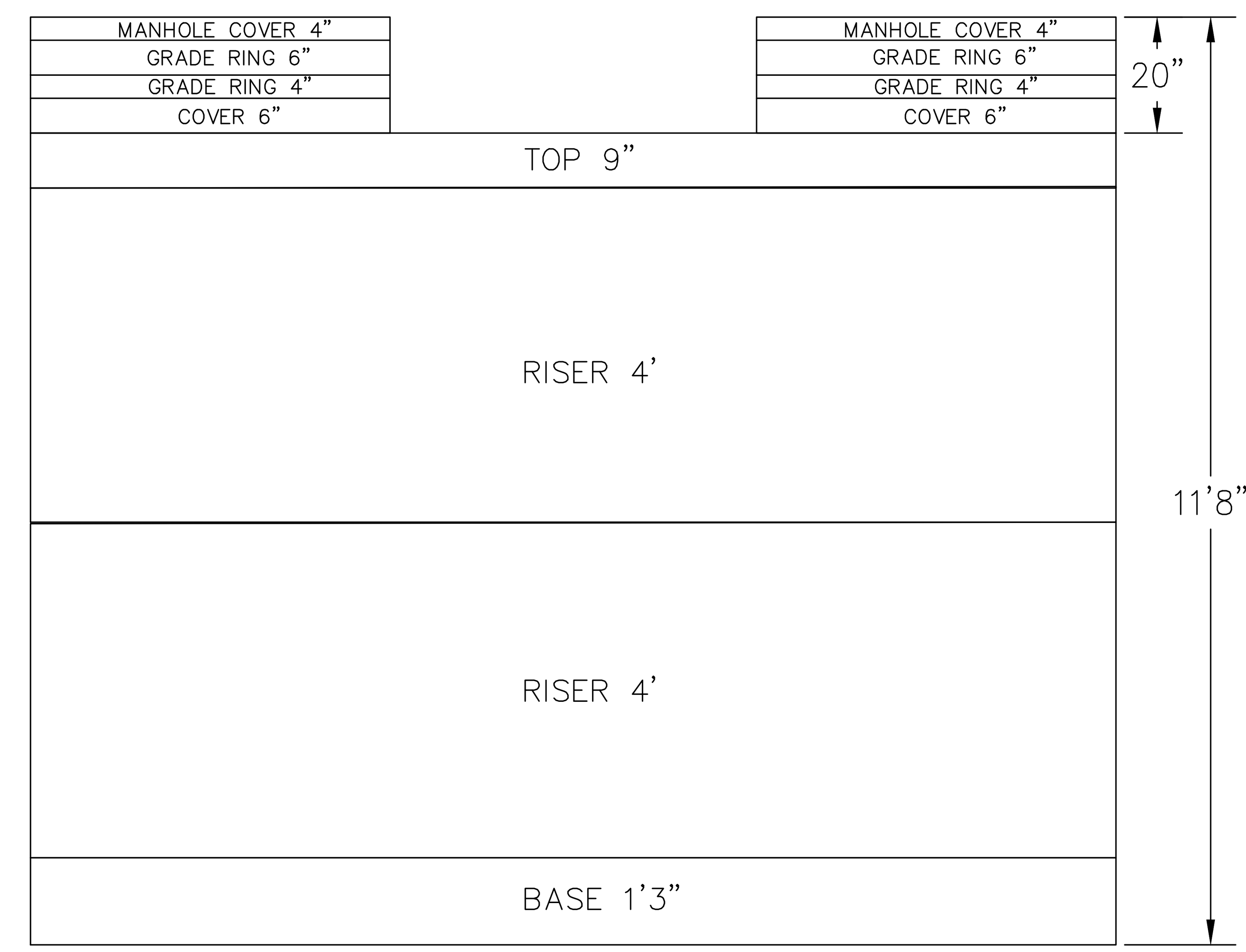
SHEET 9 OF 10



VAULT 6279
SUMH-814



VAULT 7765
SUMH-814



SUMH-814

POLE CONTACT RECORD

LOCATION	ATU	CATV

INITIAL/DATE________

Vicinity Map
N.T.S.

CONDUCTOR DATA

Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet
Manuf.	Manuf.
Manuf. Date	Manuf. Date
Volt Rating	Volt Rating
Insul. Type	Insul. Type
Insul. Size	Insul. Size
Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet

CALL BEFORE YOU DIG!

LOCATE CALL CENTER OF ALASKA (LCCA)
ANCHORAGE AREA.................... 278-3121
STATEWIDE.................... 800-478-3121
AT&T ALASCOM INC. 264-8465
ALASKA RAILROAD UTILITIES.................... 265-2457
ALYESKA CABLE TV (GIRDWOOD).................... 783-2982
KULIS AIR BASE.................... 249-1499
MILITARY PETROLEUM FUEL LINES.................... 552-2334
OR 552-5342
STATE STORM DRAINS & STREET LIGHTS.................... 333-2411

CONSTRUCTION LEGEND

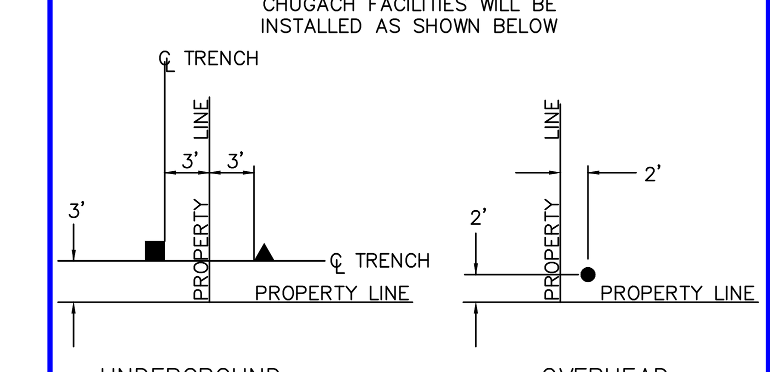
NEW | EXISTING

PADMOUNT TRANSFORMER
PEDESTAL
POWER POLE
STREET LIGHT
WARNING POST
1ø U.G. PRI. CONDUCTOR
3ø U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.
1ø O.H. CONDUCTOR
3ø O.H. CONDUCTOR
J JUNCTION BOX
SPLICE POINT
SPARE CONDUIT
CONDUIT W/ CONDUCTOR
S SWITCH CABINET

R.O.W. LEGEND

R.O.W. LINE
CENTERLINE OF TRENCH

UNLESS OTHERWISE NOTED CHUGACH FACILITIES WILL BE INSTALLED AS SHOWN BELOW



Typical Staking
N.T.S.

PROJECT: HEAD OF THE BAY WHITTIER
DESIGNER/PROJECT ENGINEER: E. COOK   W.O. #: E2214130

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	8/27/24	

ENG. STAMP

POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
VAULT DIAGRAM

W.O. NO.: E2214130
C.W.P. REF. NO.:

SHEET 10 OF 10

This page intentionally left blank.

ATTACHMENT B – Field Form

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites and Prevention Preparedness and Response Programs

Contaminated Media Transport and Treatment or Disposal Approval Form

HAZARD ID # or SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL

CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION

CURRENT PHYSICAL LOCATION OF MEDIA	SOURCE OF THE CONTAMINATION (DAY TANK, FIRE TRAINING PIT, LUST, ETC.)

CONTAMINANTS OF CONCERN	ESTIMATED VOLUME	DATE(S) GENERATED

POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*

COMMENTS OR OTHER IMPORTANT INFORMATION

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**

***Note, disposal of polluted soil in a landfill requires prior approval from the landfill operator and ADEC Solid Waste Program.**

Name of the Person Requesting Approval (printed) Title/Association

Signature Date Phone Number

---DEC USE ONLY---

Based on the information provided, ADEC approves transport of the above mentioned material. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight receipts of the loads transported and a post treatment analytical report, if disposed of at an approved treatment facility. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

DEC Project Manager Name (printed) Project Manager Title

Signature Date Phone Number

ATTACHMENT C – MSE Resumes

MSE Midnight Sun ENVIRONMENTAL, LLC
560 East 34th Avenue, Suite 102 Anchorage, AK 99503 907-344-3244

Brian F. Kovol, R.E.M.

President/Program Manager

EDUCATION:

M.S., Biology, University of Alaska, Anchorage 1999

B.S., Biology, San Diego State University 1995

REGISTRATION/TRAINING:

Registered Environmental Manager 11949

Certified Erosion & Sediment Control Lead AGC-19-0428

Federal Railroad Administration 214 Trained

OSHA HAZWOPER 40 hr/8hr Supervisor

ADEC Qualified Sampler

Certified Wetlands Biologist

EMPLOYMENT HISTORY:

Midnight Sun Environmental LLC – Vice President/Principal Scientist *(10/2012-Present)* Project Manager for permitting, remediation and natural resource services in Alaska and Pacific.

Restoration Science & Engineering, LLC – Environmental Group Manager *(5/2009-10/2012)* Environmental and Permitting Compliance Group Manager for Alaska and Colorado.

Tryck Nyman Hayes, Inc. – Environmental Division Manager *(01/2008-05/2009)* Division Manager for Permitting, Natural Resource and Remediation projects in Alaska and Pacific Northwest.

URS Corporation – Project Manager/Senior Biologist *(05/1999-01/2008)* Project Manager and Senior Permit Specialist for projects in Alaska, Washington, California, Nevada, and Utah.

Dames & Moore Group – Project Biologist /Environmental Specialist *(04/1997-05/1999)* Project Biologist and NEPA Specialist for major capital projects in Alaska.

USACE, Environmental Resources Department – Environmental Specialist *(09/1996-04/1997)* Environmental specialist responsible for environmental resource and NEPA reviews at Alaska ports, harbors, and airports.

Native American Fish & Wildlife Society – Environmental Specialist *(09/1995-09/1996)* Environmental Specialist responsible for providing contaminated sites and permitting support for Alaska Tribes

Global Change Research Group – Research Scientist *(02/1992-09/1995)*

Environmental Management Consultants, Inc. – Environmental Specialist *(08/1988-02/1992)* Environmental Specialist responsible for environmental compliance on Vandenberg AFB.

Overview

Mr. Kovol is the President and Principal Scientist for Midnight Sun Environmental, LLC in Anchorage, Alaska. Brian has >30 years of environmental permitting and compliance experience in Alaska, and throughout the United States. Brian has managed environmental planning, permitting, and compliance activities on a diverse array of projects from oil & gas development, mining, heavy rail infrastructure, to commercial wind energy developments. He has been responsible principal-in-charge for several site investigation and remediation projects in urban and rural Alaska. His expertise involves assessing and remediating contaminated sites, remote fieldwork logistics and planning, project management, field sampling, technical writing, and analytical laboratory data review. In addition to heading the contaminated sites department at MSE, Brian conducts spill response activities, permitting and compliance applications, inspections, and sampling. A select list of Brian's projects relevant to this project is presented below:

Project Specific Experience

Alaska Railroad Yard Water Upgrade Contaminated Sites Testing and Disposal. Project Manager for permit compliance, environmental sampling and disposal of contaminated soil excavated in the ARRC Terminal Reserve Yard associated with the upgrading of water lines. MSE obtained all necessary permits for the project, wrote the Contaminated Soil and Groundwater Work Plan, conducted all soil and groundwater sampling required by local, state and federal authorities, and produced a final report documenting soil and groundwater management.

Clean Water Act Compliance and Monitoring, Joint Base Elmendorf-Richardson (JBER), AK, US Army Corps of Engineers. Project Manager for compliance and update of MS4, MSGP, and AWWU permit for JBER, Alaska. This project involves in part analytical sampling of all industrial storm water outfalls, 20 manholes and 3 metering stations to meet Alaska Pollution Discharge Elimination System requirements. Project is renewable for up to four years after the initial year.

Department of Military and Veterans Affairs (DMVA) State of Alaska Environmental Baseline Surveys Master Contract, Alaska. Brian was the program manager for the DMVA master term services contract to perform environmental site assessments, EBS documents, and EBS updates throughout the state of Alaska. Brian managed this multi-year project for DMVA owned Federal Scout Readiness Centers and JBER facilities in order to determine the ECOP. During the contract term he oversaw the development of 16 EBS documents throughout the state of Alaska with 3 encompassing large tracts including Camp Carroll, Camp Denali and Bryant Army Airfield. Each facility required PID testing as part of the project reporting.

ANTHC Orca Street Phase I/II ESA and Hazardous Material Building Survey (HMBS). Brian was the project manager for the development of two Phase I ESA documents with lease and asbestos testing as part of a HMBS. The first ESA was completed for 131 Orca Street and the second for 222 & 242 Orca Street as part of a land transfer from the Indian Health Service to ANTHC.

Spruce Park Trailer Court Assessment and Monitoring, Anchorage, AK, Private Client, Project Manager. Assisted private client with determining current site status of contaminated site in Anchorage, Alaska. Duties included site assessment and conducting research of previous reports conducted at the site, as well as determining a path forward to achieve compliance with ADEC regulations.

Cape Kudugnak Formerly Used Defense Site, Atka Island, BD/DR, CON/HTRW Removal, and Site Inspection Reporting, USACE, Technical Writer. Brian assisted the prime contractor on this project with producing a final report document requesting site closure through USACE and ADEC. Assistance included reviewing project details, tasks performed, logbooks and analytical results, and summarizing information into a results, conclusions and recommendations section.

Cordova Clinic Phase I/II ESA and Ground Penetrating Radar (GPR) Study. Brian managed Phase I ESA as well as Phase II macro-core drilling and analytical sampling for a new medical clinic located in a historic community landfill for the Native Village of Eyak. GPR was used to identify subsurface anomalies to guide drilling and to determine the lateral and vertical extent of the landfill.

ANTHC Golovin Washeteria Phase I ESA and HMBS. Brian prepared a HMBS for lead and asbestos and Phase I ESA of two washeterias in Golovin, Alaska for the ANTHC which involved collecting samples for asbestos and lead-based paint and creating an inventory of hazardous materials present at both facilities, as well as reporting findings and results to the client. A combined Phase I ESA and HMBS report was prepared for the property.

Seward Coal Loading Facility Multi-Sector General Permit Update, Seward, AK, Usibelli Coal Mine/Aurora Energy. Responsible for updating the Seward Coal Loading Facility's Storm Water Pollution Prevention Plan to comply with the 2015 Multi-Sector General Permit (MSGP) for Industrial Storm Water Dischargers. This project involved conducting a site visit and updating the facility's storm water discharge plan. MSE is currently supporting quarterly compliance monitoring efforts.

Fort Wainwright Rail Head Facility Design Build. Brian was the Environmental Manager responsible for project permits, design and implementation of the Storm Water Pollution Prevention Plan, Sampling and Analysis Plan and Environmental Protection Plan for the construction of a four-spur rail loading facility consisting of approximately two miles of new track connecting to the existing ARRC Fairbanks Eielson Branch to support rapid deployment of the Stryker brigade to tidewater ports and training area. The project involved PID testing and sampling for petroleum and chemicals of concern.

Matanuska Electric Association (MEA) Electrical Generation Station to Hospital Substation Double Circuit 115kV Transmission Line Replacement. Brian was the Environmental Manager for the replacement of an existing distribution line with a 115kV double circuit transmission line - extending from the Eklutna Generation Station to MEA's Hospital Substation near Mat-Su Regional Medical Center. This project traverses >10 miles of public and private property. Brian ensured compliance with existing permits as well as the SWPPP during construction. As part of this project Brian responded to a 50-gallon spill of oil to water and supervised emergency response and cleanup activities.

Eagle Contracting Phase I/II, Remediation cleanup. This project involved preparation of a Phase I ESA with Phase II sampling associated with two above ground storage tanks (ASTs) located on the property. MSE developed a Phase II remediation and contaminated soil sampling and analysis plan which detailed the excavation, management, and sampling of hydrocarbon impacted soil. MSE conducted the field screening using photoionization detector (PID) instrumentation and procedures in accordance with the ADEC Field Sampling Guidance. Following removal of the ASTs, MSE monitored excavation of hydrocarbon impacted soil and conducted confirmation sampling. Soils generated during excavation activities were field screened and sampled in accordance with the requirements and procedures outlined in the Work Plan and ADEC Field Sampling Guidance. Once excavation activities were complete, MSE provided a final sampling report withing four weeks of the receipt of the sample results and ADEC considered the site "Cleanup Complete". Soil impacted by hydrocarbon contamination were land farmed at a nearby property.

Tank Demolition and Contaminated Soil Removal Work Plan, Nome, AK, USACE, Technical Writer. Brian assisted in the completion of a draft work plan for the demolition of a 1,000,000-gallon formerly underground fuel storage tank and the excavation/treatment/disposal of 30,000 tons of fuel-contaminated soil. The project is a multi-million-dollar project anticipated to be completed over a five-year period. The work plan preparation included creating a landfarm work plan to guide landfarming operations and maintenance activities as part of the soil remediation for the project.

Fire Island Wind (FIW) Energy Development - Anchorage, AK. Brian worked with FIW personnel to plan, permit and develop this 35.2-megawatt renewable energy project. This complex, multi-phase project included three major components: (1) on island facilities, (2) a submarine cable, and (3) a cross-town transmission line. Brian prepared the Phase I ESA for the entirety of Fire Island, the projects SWPPPs, Spill Prevention Control and Countermeasure plans, and remediation activities required through known contaminated sites both on Fire Island and Anchorage mainland. Brian ensured compliance throughout construction as the designated Environmental Site Manager.

Groundwater Characterization and Monitoring, Tyonek, AK, Apache Alaska Corporation, Project Manager. Brian assisted with completing a drilling waste permit application, meeting with ADEC to approve the groundwater monitoring plan, wrote the site-specific health and safety plan and work plan. Project duties include organizing logistics for equipment and field supplies to and from the site, leading field crews in conducting site groundwater gradient characterization activities, determining estimated groundwater flow direction in the field to place monitoring wells, overseeing the installation of monitoring wells on site, developing and sampling groundwater monitoring wells, analyzing analytical data and writing sampling reports.

Dowling Substation Transformer Oil Spill Emergency Response, Anchorage, AK, Confidential Client, Field Team Lead. During utility work at the Dowling Substation, a fin on a transformer was damaged resulting in the spill of potentially PCB-contaminated mineral oil. As incident commander, Brian responded to the spill immediately and advised the client on procedures for spill containment and management, and coordinated cleanup efforts with the property owner, client and ADEC. Through immediate action, the spill and affected soil were fully remediated, and the site was closed with the ADEC Spill Prevention and Response department with No Further Action.

Tudor Road Complex Contaminated Soil Excavation Characterization, Anchorage, AK, Brian managed the excavation and characterization of contaminated soil during a utility upgrades project at the State of Alaska Department of Transportation and Public Facilities (DOT & PF) Tudor Road Complex. Project activities included coordinating with the client and the ADEC regulator for the site, performing field screening and segregating of soils, sampling soils for contaminants of concern, and reporting project activities and analytical results to ADEC.

Beans Café Underground Storage Tank Investigation, Anchorage, AK. Project manager for and assisted with coordinating field efforts, leading the excavation of contaminated soil, site characterization and sampling, analytical data review and validation, corresponding with the site regulator and the client, report writing, and compiling an administrative record for the client. Additional continued site characterization activities included the installation, development and sampling of groundwater monitoring wells on the property, as well as monitoring well decommissioning and site closure.

Depot Drive Alaska Railroad Relocation Contaminated Soil and Water Workplan. Brian oversaw the development of the ADEC approved workplan for construction of new underground utilities for Chugach Electric Association (CEA). The project involved testing and disposal of unused contaminated soil and discharge of contaminated water into the municipal wastewater system.

East Cable Terminal Reactor Spill Cleanup. Brian managed the preparation of a JBER approved workplan for segregation and testing of hydrocarbon impacted soil during replacement upgrades completed by CEA of the reactor near six-mile lake.

Annie Collie

Project Scientist

Education

B.A., 2014, Natural Resource Management with a minor in Global Environmental Sustainability

Areas of Expertise

Strom Water Management
ADEC Contaminated Sites Sampling
NEPA/Impacts Assessment
Project Permitting
GIS

Registration/Certification

Alaska Certified Erosion and Sediment Control Lead #ABC-18-0093
OSHA HAZWOPER 24 hour
Leave No Trace Trainer Certified
Alaska Avalanche Level 1 Certification
Anchorage Waterways Council Board Member
Municipality of Anchorage University Community Council Executive Board Member

Employment History

Midnight Sun Environmental LLC – Project Scientist *(4/2018-Present)* Permitting, NEPA compliance, and natural resource studies in Alaska

SGS Anchorage – Environmental Laboratory Technician *(5/2016- 11/2017)*

Environmental testing, compliance, and data entry.

ACZ Laboratories – Geochemistry Laboratory Analyst *(7/2015 – 10/2016)*
Environmental soil and water analysis for state and federal compliance.

Colorado State University Engineering Research Center- Hydraulic Research Laboratory Technician and Supervisor (10/2014 – 6/2015)
River erosion control research and river model construction and maintenance.

Big Thompson Conservation District – District Technician (4/2014 – 10/2014)

District Technician for erosion and invasive species control projects for rural Colorado farmers.

Overview

Annie Collie is a Project Scientist with Midnight Sun Environmental, LLC (MSE) in Anchorage, Alaska. Annie has over 6 years of experience managing environmental projects in the state of Alaska. Annie is an Alaska Department of Conservation (ADEC) qualified environmental professional and qualified sampler. Prior to working with MSE, Annie has worked in numerous environmental laboratories as a supervisor, an analyst, and chemist. Her role with the MSE team involves managing projects that require environmental due diligence documents, federal and state permitting, contaminated sites and remediation, field sampling, and analytical laboratory data review. Annie's field experience includes marine mammal monitoring, wetland delineations, avian and shorebird surveys, and complex water and soil sampling. Annie has managed multiple projects located in remote Alaska sites. A select list of Annie's projects is presented below:

Project Experience

Department of Military and Veteran Affairs (DMVA) Alaska Army National Guard (AKARNG) Environmental Site Assessments (ESA), Environmental Baseline Surveys (EBS), and Updates Western Rural Alaska Villages and Joint Base Richardson, AK

Annie managed this multiyear contract which included producing EBS's, ESAs, and EBS updates for AKARNG owned sites located throughout remote Alaska villages and Joint Base Richardson (JBER). MSE developed EBSs for three enclaves (each over 200 acres) on JBER including Camp Carroll, Bryant Army Airfield, and Camp Denali. In addition, Annie managed the development of EBSs for 13 Federal Scout Readiness Centers (FSRC) throughout the state of Alaska. The FSRC buildings were located in Noatak, Akiak, Kotlik, Togiak, Gambell, Stebbins, Teller, Kipnuk, Napaskiak, Noorvik, Shaktoolik, Shishmaref, and Tuntutuliak. The documents were prepared and written in accordance with requirements set forth in current ASTM and DMVA Department of Defense (DoD) standards. The sites were researched, and any obtainable records were reviewed for historical contamination, facility materials, and site-specific concerns. MSE conducted site visits which required verifying the existing condition of the site and confirmed locations of current buildings or debris and potential spills on the property. During the site visits, MSE personnel took field screening sampling with a photo-ionizing detector (PID) in compliance with ADEC Field Sampling Guidance, aerial photos with a commercial drone, and recorded observations. Data was compiled into the final EBS documents which included an exhaustive description of findings, environmental conditions, and a summary of recommendations regarding the ASTM D5746-98 Standard Classification Environmental Condition of Property (ECOP) area types. Annie managed the documents that summarized the findings in draft and final EBS documents and submitted them to DMVA for approval. All of the DMVA projects were completed on time and within budget.

Phase I and Phase II ESA with Site Remediation, Sampling, and Ground Penetrating Radar (GPR)- Alaska.

Annie has managed and prepared Phase I and Phase II ESA Reports for over 30 clients throughout the state of Alaska. Clients have included commercial properties, Native owned companies and communities, hospitals, real estate agents, government agencies, and private entities. The properties have included commercial real estate, private operations, community centers, and more. For the Phase I documents, Annie reviewed historical state and federal data to determine the likelihood of contaminated soil on the property and completed recommendations for further guidance at the properties. Once the draft was completed, Annie submitted the ESA documents to clients to review and submitted the final document within two weeks of receiving comments. If found necessary, Annie conducted soil sampling and/or GPR studies in accordance with ADEC field sampling guidance and client approval. In addition to soil sampling, Annie works with clients to receive contaminated soil transportation and disposal approval along with ADEC No Further Action Designation for the site.

Chugach Electric Association (CEA) Soil and Water Sampling, and Remediation, Anchorage, AK.

Annie has developed numerous contaminated soil and water management plans for CEA construction projects since 2018. Annie has also helped with plan execution including monitoring contaminated soil removal, analytical testing, and data review in accordance with ADEC contaminated site guidelines. All analytical sampling was reviewed following ADEC Quality Assurance (QA) and Quality Control (QC) guidelines. Annie has led the remediation efforts to meet the ADEC standards in order for sites to have a "clean up complete" status. In addition, Annie has prepared and executed numerous ADEC and AWWU approved dewatering plans for CEA owned and maintained construction sites.

Eagle Contracting Phase I, Phase II, and Phase III ESA, Cordova, AK.

Annie prepared and managed the Phase I Draft and Final Reports for a commercial property in Cordova, Alaska. This report and investigation included reviewing historical state and federal data in accordance with ASTM Practice E1527 and the U.S. EPA All Appropriate Inquiry Final Rule, 40 CFR Part 312. The Phase I ESA document indicated the property had likely contamination from two above ground storage tanks (ASTs) located on the property. MSE developed a Phase II remediation and contaminated soil sampling and analysis plan which detailed the excavation, management, and sampling of hydrocarbon impacted soil in accordance with ADEC Title 18 of the Alaska Administrative Code (AAC) Chapter 75, Oil and Other Hazardous Substances Pollution Control (18 AAC 75) (ADEC 2021). MSE conducted the field screening using PID instrumentation and procedures in accordance with the ADEC Field Sampling Guidance. The ASTs were removed from the site after August 2021. MSE monitored excavation of hydrocarbon impacted soil and conducted confirmation sampling. Soils generated during excavation activities were field screened and sampled in accordance with the requirements and procedures outlined in the Work Plan and ADEC Field Sampling Guidance. Once excavation activities were complete, MSE provided a final sampling report withing four weeks of the receipt of the sample results and ADEC considered the site "Cleanup Complete". MSE also managed the final treatment for the contaminated soil by preparing an ADEC approved landfarm plan and monitoring sampling.

Cordova Community Clinic Phase I and Limited Phase II ESA and Ground Penetrating Radar (GPR), Cordova, AK.

Annie prepared the Phase I and Limited Phase II ESA Draft and Final Reports for the Cordova Community Clinic. This report and investigation included reviewing historical state and federal data in accordance with ASTM Practice E1527 and the U.S. EPA All Appropriate Inquiry Final Rule, 40 CFR Part 312. Through interviews and historical photos, MSE identified that the property was previously a community landfill. The landfill was suspected to have metal debris, wood pilings, and gravel fill. In order to confirm the landfill, MSE utilized GPR throughout the project area. The GPR helped determine the best locations to drill to confirm buried debris. Following the GPR survey, MSE worked with drillers to take core samples throughout the property. The core samples were field screened and sent to the laboratory for analytical results. MSE conducted the field screening using photoionization detector (PID) instrumentation and procedures in accordance with the ADEC Field Sampling Guidance. All results were summarized in the Final Phase I and Limited Phase II ESA document.

United States Coast Guard (USCG) Soda Ash Drinking Water Sampling- Kodiak, AK.

Annie managed drinking water sampling of the soda ash system for the United States Coast Guard (USCG) Base Kodiak located in Kodiak, Alaska. The sampling is conducted in order to establish the quality of drinking water and the effectiveness of modified soda ash mixing and the delivery system recently installed at Base Kodiak. Annie took analytical samples for lead and copper first, second, and third draw, zinc, alkalinity, and total coliform. Annie also conducts field sampling for pH, temperature, and chlorine. After analysis was complete, Annie developed a concise sample report in excel and submitted to USCG and reviewed analytical laboratory data.

Storm Water Pollution Prevention Plan (SWPPP) Administration, Alaska Certified Erosion and Sediment Control (AK CESCL) Instructor, and SWPPP Inspector

Annie has worked on large and small construction projects as the erosion and sediment control lead, SWPPP writer, permit acquisition and lead environmental compliance inspector for compliance under the Alaska Pollutant Elimination Discharge System and the Alaska Construction General Permit. Annie is also an AK CESCL certified Instructor and hosts the two-day training with the AK CESCL course for numerous clients throughout the state of Alaska.

This page intentionally left blank.