

Storm Water Pollution Prevention Plan For

Whittier Head of the Bay Electrical Project
Tank Farm Rd
Whittier, Alaska 99693

Operator(s)

Chugach Electric Association, Inc.
5601 Electron Dr
Anchorage, Alaska 99518
(907) 762-4609

SWPPP Contact(s)

Midnight Sun Environmental, LLC
Annie Collie
560 E 34th Ave, Ste 102
Anchorage, Alaska, 99503
(907) 344-3244
Annie@midnightsunenv.com

SWPPP Preparation Date

5/29/2024

Estimated Project Dates

Start of Construction

TBD

Completion of Construction

10/31/2024

APDES Project or Permit Authorization Number:

OPERATOR PLAN AUTHORIZATION/CERTIFICATION/DELEGATION

(To be signed by Responsible Corporate Officer)

I state that based on my review, this SWPPP meets the minimum requirements of the Construction General Permit and that **Contractor TBA** has day-to-day operational control of the project site. **Midnight Sun Environmental, LLC (MSE)** is responsible for the inspections and documentation of the SWPPP. **Contractor TBA** is responsible for the application of the Best Management Practices (BMPs) and their maintenance at the site. **Chugach Electric Association, Inc. (CEA)** will notify all subcontractors of the requirement of this SWPPP. **CEA** has operational control over the project specifications, including the ability to make changes to the project specifications.

I hereby designate **TBA**, SWPPP Administrator as my authorized representative. This designee is responsible for the overall operations of the site and will be responsible for the implementation of the Storm Water Pollution Prevention Plan, compliance with the Construction General Permit, selecting and implementing additional Best Management Practices as conditions warrant, and signing all inspection reports required.

I certify under penalty of law that this document and all attachments were prepared under the direction of **CEA** in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Chugach Electric Association, Inc.

Signature

Date

Printed Name

Title

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- B. BMP Details
- C. Project Schedule
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 - Endangered Species
 - Other Permits or Requirements
- E. Delegation of Authority, Subcontractor Certifications
- F. Permit Conditions:
 - Copy of Signed Notice of Intent
 - Copy of Letter from ADEC Authorizing Coverage, with ADEC NOI Tracking Number
 - Copy of 2021 Construction General Permit
- G. Grading and Stabilization Records
- H. Spill Plan and Reporting Requirements
- I. Training Records
- J. Corrective Action Log
- K. Inspection Records

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1.0 PERMITTEE (5.3.1)

1.1 Operator(s)/Contractor(s)

Operator Information			
Organization: Contractor TBD		Name:	
Title:			
Phone:	Fax (optional):	Email:	
Mailing Address:	Street (PO Box):		
	City:	State:	Zip:
Area of Control			

Owner/Operator Information			
Organization: Chugach Electric Association, Inc.		Name: Jake Moe, P.E.	
Title: Construction Manager			
Phone: 907-762-4720	Fax (optional):	Email: Jake_Moe@chugachelectric.com	
Mailing Address:	Street (PO Box): 5601 Electron Dr.		
	City: Anchorage	State: Alaska	Zip: 99518
Area of Control	Operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.		

1.2 Subcontractors

Subcontractor Information			
Organization: Midnight Sun Environmental, LLC		Name: Brian Kovol	
Title: Principal Scientist			
Phone: (907) 344-3244	Fax (optional):	Email: Brian@midnightsunenv.com	
Mailing Address:	Street (PO Box): 560 E 34th Ave, Ste 102		
	City: Anchorage	State: Alaska	Zip: 99503
Area of Control	Midnight Sun Environmental, LLC has been delegated to perform SWPPP inspections on-site and is responsible for notifying CEA about required corrective actions.		

Subcontractor Information			
Organization:		Name:	
Title:			
Phone:	Fax (optional):	Email:	
Mailing Address:	Street (PO Box):		
	City:	State:	Zip:

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Area of Control	
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Subcontractor Information					
Organization:		Name:		Title:	
Phone:		Fax (optional):		Email:	
Mailing Address:		Street (PO Box):			
		City:		State:	
Area of Control					

2.0 STORM WATER CONTACTS (5.3.2)

<u>Qualified Personnel</u>	<u>Responsibility</u>
Storm Water Lead Chugach Electric Association, Inc. Jake Moe 5601 Electron Dr Anchorage, Alaska 99518 (907) 762-4720 Jake_Moe@chugachelectric.com	Authority to stop and/or modify construction activities as necessary to comply with the SWPPP and the terms and conditions of the permit.
SWPPP Preparer and Inspector Midnight Sun Environmental, LLC Kelly Kennedy 560 E 34th Ave, Ste 102 Anchorage, Alaska 99503 (907) 344-3244 Kelly@midnightsunenv.com AK CESCL# MSE-24-0001 EXP: 3/14/2027	Possess the skills to assess conditions at the construction site that could impact storm water quality. Familiar with Part 5 as a means to implement the permit. Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
Storm Water Inspector Alternative Midnight Sun Environmental, LLC Jovana Karapandzic 560 E 34th Ave, Ste 102 Anchorage, Alaska 99503 (907) 344-3244 Jovana@midnightsunenv.com AK CESCL# MSE-23-0038 EXP: 10/19/2026	Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
SWPPP Inspector Alternative Midnight Sun Environmental, LLC Annie Collie 560 E 34th Ave, Ste 102 Anchorage, Alaska 99503 (907) 344-3244 Annie@midnightsunenv.com AK CESCL# ASA-24-0014 EXP: 3/14/2027	Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.
SWPPP Inspector Alternative Midnight Sun Environmental, LLC Brian Kovol 560 E 34th Ave, Ste 102 Anchorage, Alaska 99503 (907) 344-3244 Brian@midnightsunenv.com AK CESCL# MSE-23-0036 EXP: 10/19/2026	Assess conditions at the construction site that could impact storm water quality. Assess the effectiveness of any erosion and sediment control measures selected to control the quality of storm water discharge, and familiar with Part 6 as a means to ensure compliance with the permit.

3.0 PROJECT INFORMATION (5.3.3)

3.1 Project Information

Project Name: Whittier Head of the Bay				
Location Address:	Street: Tank Farm Rd		Borough or similar government subdivision: Chugach Census Area	
	City: Whittier		State: Alaska	Zip: 99693
	Latitude (decimal degree, 5 places): Start: 60.77772 End: 60.78366		Longitude (decimal degree, 5 places): Start: -148.72471 End: -148.71822	
	Determined By: <input type="checkbox"/> GPS <input type="checkbox"/> Web Map: <input type="checkbox"/> USGS Topo Map, Scale: <input checked="" type="checkbox"/> Other: Google Earth			

3.2 Project Site Specific Conditions (5.3.3)

Mean annual precipitation based on nearest weather stations (inches): The Western Regional Climate Center (WRCC) reports the following average annual precipitation level for the Whittier, Alaska (509829) Period of Record: 1942 to 2011 has 196.11 inches average total annual precipitation. WRCC: wrcc@dri.edu

WHITTIER, ALASKA (509829)													
Period of Record Monthly Climate Summary													
Period of Record : 03/01/1942 to 06/30/2011													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	31.2	32.6	35.4	43.2	51.5	59.7	62.4	60.9	53.4	42.8	35.3	32.7	45.1
Average Min. Temperature (F)	22.9	24.2	25.8	32.6	39.5	46.6	50.8	49.7	44.0	34.5	27.0	24.5	35.2
Average Total Precipitation (in.)	18.32	15.52	13.72	15.42	14.77	9.76	10.92	14.68	20.68	19.92	18.95	23.45	196.11
Average Total SnowFall (in.)	49.2	47.8	46.3	21.6	1.4	0.0	0.0	0.0	0.1	6.5	27.3	56.8	257.0
Average Snow Depth (in.)	32	42	47	36	8	0	0	0	0	0	5	18	16
Percent of possible observations for period of record.													
Max. Temp.: 69.5% Min. Temp.: 69.2% Precipitation: 69.5% Snowfall: 64.4% Snow Depth: 61.6%													
Check Station Metadata or Metadata graphics for more detail about data completeness.													
Western Regional Climate Center, wrcc@dri.edu													

<http://www.wrcc.dri.edu>

Soil Type(s) and Slopes (describe soil type(s) and current slopes; note any changes due to grading or fill activities): Whittier lies on a fan-shaped delta formed of glacial sediment composed of angular cobbles and boulders intermixed with coarse-grained, poorly sorted material. Finer grained sediments are found closer to the shoreline. Bedrock, specifically slate and greywacke, of the Chugach Formation surrounds the site. The project area has an uphill slope gradient of 0.0298 tiled towards the project area and a slope gradient of 0.0165 from the project area in the direction of the Passage Canal.

Landscape Topography: The topography of the project area is comprised of an alluvial plain with a gradual downgrading slope towards the receiving Passage Canal.

Drainage Patterns (describe current drainage patterns and note any changes due to grading or fill activities): Drainage is expected to follow the natural topography; All drainage is expected to flow directly east of the project site into the Passage Canal.

Public Water System Drinking Water Protection (CGP Part 5.3.5.15): There are no public water system drinking water protection areas located within the project area (Appendix A).

Approximate Growing Season: The approximate median growing season for the Cook Inlet ecoregion is June 16 to September 26 (USACE 2007 Wetlands Alaska Regional Supplement).

The WRCC reports the following freeze/thaw probabilities for the project area:

Spring 'Freeze' Probabilities (Jan 1 - Jul 31)											
WHITTIER s, k (509829)											
Temp F	Earliest	90%	80%	70%	60%	50%	40%	30%	20%	10%	Latest
36.5	04/21	04/29	05/05	05/13	05/16	05/19	05/24	05/27	06/01	06/08	07/27
32.5	03/28	04/06	04/13	04/16	04/21	04/24	04/28	05/04	05/12	05/21	06/03
28.5	02/22	03/14	03/26	04/02	04/07	04/11	04/15	04/19	04/25	05/01	05/24
24.5	02/21	03/06	03/18	03/24	03/29	04/05	04/10	04/13	04/20	04/30	05/07
20.5	02/08	02/21	03/05	03/16	03/23	03/27	04/03	04/10	04/16	04/22	05/05
Graphic Output											

<http://www.wrcc.dri.edu>

Fall 'Freeze' Probabilities (Jul. 31 - Dec. 31)											
WHITTIER s, k (509829)											
Temp F	Earliest	10%	20%	30%	40%	50%	60%	70%	80%	90%	Latest
36.5	08/25	09/14	09/18	09/22	09/26	09/29	10/02	10/05	10/07	10/13	10/18
32.5	09/22	09/26	09/30	10/05	10/09	10/11	10/14	10/16	10/19	10/28	11/02
28.5	09/30	10/08	10/14	10/17	10/20	10/25	10/28	11/01	11/06	11/13	11/18
24.5	09/30	10/13	10/19	10/24	11/01	11/06	11/11	11/13	11/18	11/27	12/16
20.5	10/07	10/13	10/27	11/04	11/09	11/14	11/17	11/23	12/01	12/15	12/18
Graphic Output											

<http://www.wrcc.dri.edu>

Type of Existing Vegetation: Vegetation in the area consists of salmonberry, raspberry, western hemlock, and Sitka spruce and Mountain hemlock.

Historic site contamination evident from existing site features and known past usage of the site: Using a map creator provided by the Alaska Department of Environmental Conservation (ADEC) – Contaminated Sites Program, the following map depicts two contaminated sites with a status of cleanup complete within half of a mile of the project footprint. There is one active contaminated site 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 at the facility. 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

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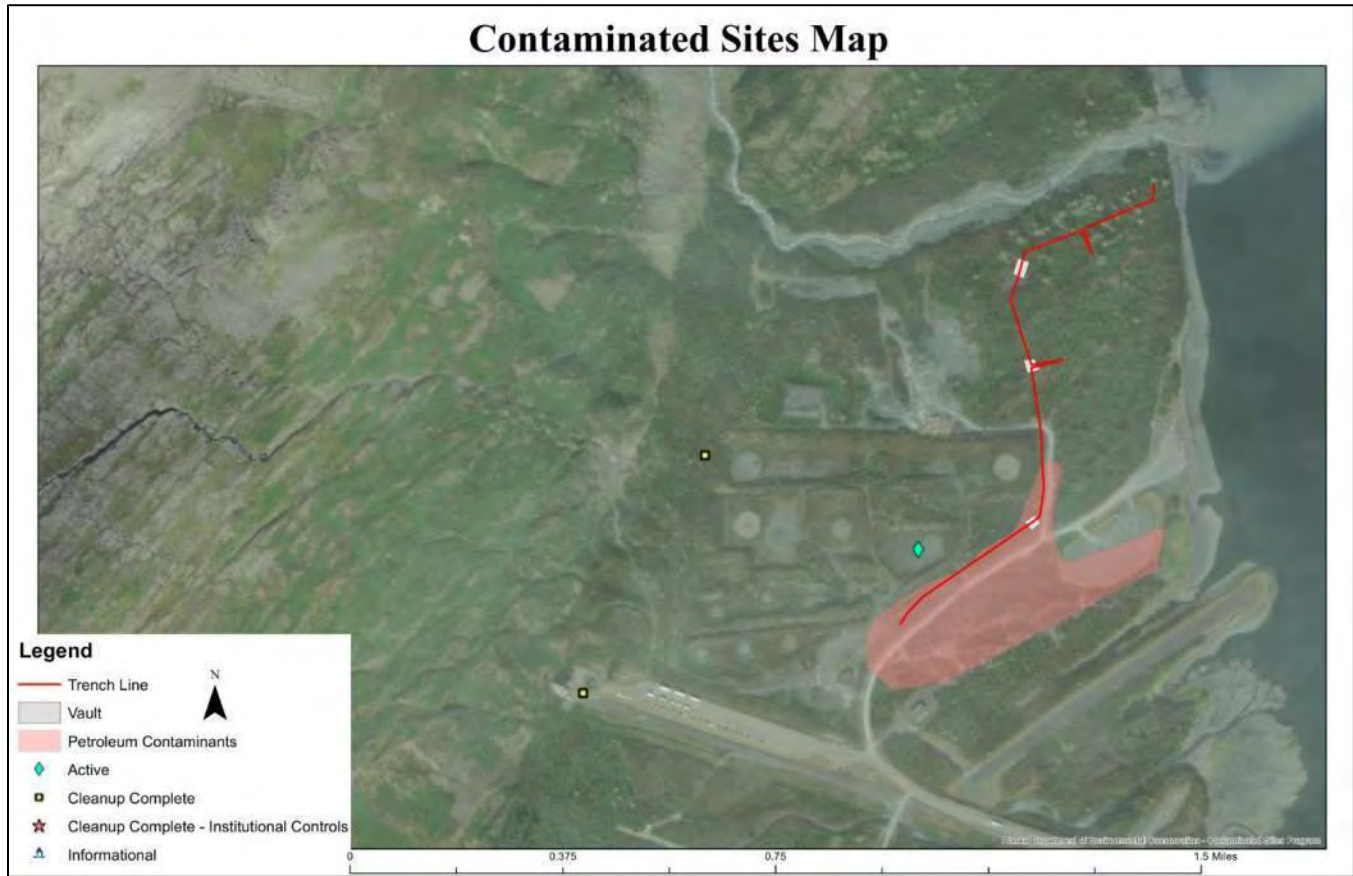
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releases, it is reasonable to assume that similar valve failures have occurred during the earlier history of the tank farm. The tank farm consists of 85 acres and contained 19 above ground storage tanks (ASTs) and 6 underground storage tanks (USTs). 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. 1996 November 1, the Whittier facility ceased operating. Removal action of fuel contaminated soils 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 at depths of 17-20 feet, 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 Appendix A.

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

Additional information about this site is available on the DEC Division of Spill Prevention and Response website:
http://dec.alaska.gov/spar/csp/db_search.htm.



http://dec.alaska.gov/arcgis/rest/services/SPAR/Contaminated_Sites/MapServer

4.0 NATURE OF CONSTRUCTION ACTIVITY (5.3.4)

4.1 Scope of Work

The project consists of 20,300 sq ft of trenching, installing 3 new vaults, 6 new poles, and the addition of new connections and conductors in Whittier, AK within the former World War II Army post.

4.2 Project Function (5.3.4.1)

The function of this project is to provide new electrical upgrades through the former World War II Army post to the new Ship Terminal in Whittier, AK.

4.3 Support Activities (As Applicable)

Support activities for this project are:

Support Activity	Location	Dedicated	
		Yes	No
Concrete Batch Plant		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Asphalt Batch Plant		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Equipment Staging Yards		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Material Storage Areas	Along the project area	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Excavated Material Disposal Areas	Along the project area	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Borrow Areas		<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.4 Sequence and Timing of Soil-disturbing Activities (5.3.4.2)

Construction activities for this project are scheduled to commence during the summer of 2024. The major phase of construction will proceed as follows:

- Survey and staking
- Install Best Management Practices (BMPs)
- Mobilization
- Trenching and backfilling
- Site revegetation/restoration as needed
- Stabilization

4.5 Size of property and total area expected to be disturbed (5.3.4.3)

The following are estimates of the construction site:

Total Project Area:.....	1.5	acres
Construction-site area to be disturbed:	1.0	acres
Percentage impervious area BEFORE construction:.....	11	%
Runoff coefficient BEFORE construction:	0.25	
Percentage impervious area AFTER construction:	11	%
Runoff coefficient AFTER construction:.....	0.25	

4.6 Identification of All Potential Pollutant Sources (5.3.4.5)

Potential sources of sediment to storm water runoff:

Construction activities performed during the project that may be potential sources of sediment to storm water runoff are as follows:

- Runoff from unpaved and disturbed surfaces
- Runoff from temporarily staged material piles
- Rainwater wash-off from equipment tracks and buckets

Potential pollutants and sources, other than sediment, to storm water runoff:

Trade Name Material	Storm Water Pollutants	Location
---------------------	------------------------	----------

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Vehicle and equipment fluids (e.g., oil, grease, fuel, solvents, coolants)	Petroleum hydrocarbons, volatile compounds, etc.	Project show-up and equipment staging area within the project zone.
General site litter and waste	Various	Project show-up and other work areas within the project zone.
Survey marking paint	Various solvents unless water based.	Along project corridor.
BMP materials	Various	Along project corridor.

5.0 SITE MAPS (5.3.5)

Include a general location map in Appendix A of this SWPPP. (5.3.4.4)

A general location map is included in Appendix A of the SWPPP.

Include site maps in Appendix A of this SWPPP. (5.3.5)

Site maps are included in Appendix A of this SWPPP.

6.0 DISCHARGES

6.1 Locations of Other Industrial Storm Water Discharges (5.3.8)

There are no asphalt plants, concrete plants, material sites, or off-site disposal sites dedicated to this project. All materials will be procured from licensed commercial businesses. All off-site disposal sites, if required, will be licensed commercial facilities or private property with their own SWPPP plans.

6.2 Allowable Non-Storm Water Discharges (1.4.3; 4.3.7; 5.3.9)

The following are non-storm water discharges authorized by the 2021 Alaska Construction General Permit (ACGP):

- Water used to control dust in an effort to minimize tracking and dust generation;
- Potable water including uncontaminated water line flushing;
- Water used for seeing activities or landscape irrigation; and
- Construction dewatering waters that are treated by an appropriate control measure in compliance with part 4.4.2 of the CGP including filtration designed to remove sediment.

7.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO TOTAL MAXIMUM DAILY LOADS (3.2, 5.6)

7.1 Identify Receiving Waters (5.3.3.3)

Description of receiving waters: The drainage basin throughout the project area will flow into the Whittier Passage Canal. There is one unnamed drainage located immediately north of the project area. Shakespeare Creek is an anadromous stream (AWC Code: 224-10-14400) located 0.25 south of the project area with no water ways connected to the project footprint.

Description of storm sewer and/or drainage systems: There are no storm sewer systems located near the project. Storm water follows the natural topography and along the ditch lines of the road prism.

Other: N/A

7.2 Identify TMDLs (5.6.1)

Is an EPA-established or approved TMDL published for the receiving water(s) listed in Section 7.1? ☐ Yes ☒ No.

TMDL: N/A

Summary of consultation with state or federal TMDL authorities (5.6.2): N/A

Measures taken to ensure compliance with TMDL (5.6.3): N/A

8.0 DOCUMENTATION OF PERMIT ELIGIBILITY RELATED TO ENDANGERED SPECIES (3.3, 5.7)

8.1 Information on Endangered or Threatened Species or Critical Habitat (5.7.1)

Are endangered or threatened species and critical habitats on or near the project area? ☐ Yes ☒ No.

Describe how this determination was made: [USFWS Information for Planning and Conservation \(IPaC\) Regulatory Review Document and Resource List \(Appendix D\)](#).

Will species or habitat be adversely affected by storm water discharge? ☐ Yes ☒ No.

According to the USFWS IPaC Regulatory Review Document and Resources List (Appendix D), no critical species or habitat will be affected by storm water discharges from the project. Bald and Golden Eagles may be present in the area from January through September. Black Oystercatcher, Chestnut-backed Chickadee, Kittlitz's Murrelet, Rufous Hummingbird, and Tufted Puffins may be present and breeding in the area from May through August.

Include any agency correspondence in the SWPPP (5.7.4). N/A

Provide summary of necessary measures (5.7.5): [Avoid vegetation clearing during the following times/conditions according to the U.S. Fish and Wildlife Service land clearing timing guidance for Alaska website:
https://www.fws.gov/alaska-bird-nesting-season:](#)

- May 1 through July 15 for shrub or open (i.e., shrub cover or marsh, pond, tundra, gravel, or other treeless/shrub less ground habitat). With the following exceptions: Canada geese and swan habitat: Avoid vegetation clearing beginning April 15 Black scoter habitat:

9.0 APPLICABLE FEDERAL, STATE, TRIBAL, OR LOCAL REQUIREMENTS (4.15)

CEA and their contractor will carry out all activities in compliance with federal, state, local, and private property environmental regulations and permit requirements. This SWPPP follows permits and regulations:

- 2021 Construction General Permit, Alaska Department of Environmental Conservation (Appendix F).

Control Measures

The BMPs listed in this section were selected based on the project drawings for construction activity and the natural environment of the project. Each BMP listed in the SWPPP may or may not be used as field conditions demand. BMP details are presented in Appendix B.

BMPs found to be damaged or inadequate will be repaired or replaced per the CGP 8.2 or as soon as practicable and before the next rainfall event. Specific maintenance parameters are outlined in the following sections and are provided in the BMP details in Appendix B. Temporary BMPs shall not be removed until the area of disturbance they control has received final stabilization or temporary stabilization capable of preventing erosion and introduction of fines into storm water runoff.

10.0 CONTROL MEASURES/BEST MANAGEMENT PRACTICES (4.0; 5.3.6)

10.1 Minimize Amount of Soil Exposed During Construction Activity (4.2.2)

The area that will be disturbed by the project will be limited to only that necessary to accomplish the work. The project work limits are shown on the project drawings (Appendix A). All other area will be left undisturbed and existing vegetation will remain in place. Temporary stabilization measures will be initiated as soon as practicable, but at least within 14 days, on all portions of the site where construction activities have temporarily or permanently ceased. All temporary erosion control measures will remain in place until the soil is stabilized, or work resumes on the site.

<i>BMP Description: Scheduling SS-1</i>
<i>Source: Caltrans Storm Water Quality Handbooks, Construction Site Best Management Practices Manual. May 2017</i>
<i>Installation Schedule:</i> Project scheduling will occur to minimize land disturbance for all project areas.
<i>Maintenance and Inspection:</i> No maintenance required. Project schedule changes which effect sediment control measures will be recorded in the SWPPP.
<i>Responsible Staff:</i> Project manager or Site Superintendent as specified in Section 2.0

10.1.1 Delineation of Site

The permittee will generally delineate the location of all areas where soil disturbing construction activities will occur and specific areas that will be left undisturbed such as trees, boundaries of sensitive areas, or buffers established under Part 4.2.1 of the 2021 CGP permit. Marking clearing limits is used to prevent equipment and construction related activities from impacting areas outside the project boundaries. Project limits/clearing limits will be marked with flagging/surveyor's stakes or fencing. Permit boundaries will be marked with flagging/surveyor stakes.

BMP Description: Site Delineation BMP 54
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Prior to the start of soil disturbing activities in work area.
Maintenance and Inspection: Inspect at the frequency described in Section 11.1 of this SWPPP and maintain as indicated by the inspector.
Responsible Staff: Project General Foreman is responsible for maintenance of this BMP.

10.2 Maintain Natural Buffer Areas (4.2.3)

Are stream crossings or waters of the U.S. located within or immediately adjacent to the property? ☐ Yes ☒ No.

Natural vegetation must be preserved in all areas where no construction is planned, or where project activities will occur later. Perimeter controls such as vegetation buffers and fiber rolls will be used to protect wetlands, creeks, and other waterways.

BMP Description: Preservation of Existing Vegetation AK-1
Source: DOT&PF Alaska SWPPP Guide. February 2011
Installation Schedule: Undisturbed area or strip of natural vegetation that will provide a living filter to reduce soil erosion and runoff velocities.
Maintenance and Inspection: Keep heavy equipment off of these slopes to preserve vegetation. Replace or repair fencing or flagging as necessary. Inspect as per requirements of the ACGP. Check for damage by equipment and vehicles. Ensure water flowing through the area is not forming ponds, riling, or gullies.
Responsible Staff: Project Manager, or SWPPP Lead/Inspector as specified in Section 2.0

BMP Description: Vegetation Buffer BMP 38
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Undisturbed area or strip of natural vegetation that will provide a living filter to reduce soil erosion and runoff velocities.
Maintenance and Inspection: Keep heavy equipment off of these slopes to preserve vegetation. Replace or repair fencing or flagging as necessary. Check for damage by equipment and vehicles, and for sediment build up. Ensure water flowing through the area is not forming ponds, rills, or gullies. Inspect as per requirements of the ACGP.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Fiber Rolls BMP 10a & 10b
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Fiber rolls may be placed along trenching activities to delineate the work area and control sediment. Fiber Rolls may be used as a check dam. Fiber rolls are installed prior to soil disturbance.
Maintenance and Inspection: Fiber rolls should be placed downslope of ground-disturbing activities where a vegetative buffer does not exist. Equipment cannot drive over the installed fiber rolls; if damaged, the sections must be replaced. Remove sediment accumulated upslope of the roll when it reaches one-half the distance between the top of the fiber roll and the ground surface. Inspect as per requirements of the ACGP. Specific locations are identified in Appendix A, BMP Maps.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Silt Fence BMP 20
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Silt fence can be used as a perimeter protection below the toe of exposed erodible slopes.
Maintenance and Inspection: Repair undercut silt fences. Repair or replace split, torn, slumping, or weathered fabric. Inspect silt fence when rain is forecast. Maintain silt fences to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches one- third (1/3) of the barrier height. Removed sediment shall be incorporated. Inspect as per requirements of the CGP.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.3 Control Storm Water Discharges and Flow Rates (4.2.5)

To reduce storm water flow rates, a vegetation buffer will be maintained around disturbed areas to help dissipate the velocity of runoff and facilitate infiltration of storm water prior to leaving the project right of way (ROW).

BMP Description: Vegetation Buffer BMP 38
Source: DOT&PF Alaska SWPPP Guide. February 2016
Installation Schedule: Undisturbed area or strip of natural vegetation that will provide a living filter to reduce soil erosion and runoff velocities.
Maintenance and Inspection: Keep heavy equipment off of these slopes to preserve vegetation. Replace or repair fencing or flagging as necessary. Check for damage by equipment and vehicles, and for sediment build up. Ensure water flowing through the area is not forming ponds, rills, or gullies. Inspect as per requirements of the CGP.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Fiber Rolls BMP 10a & 10b
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Fiber rolls can be placed along trenching activities to delineate the work area and control sediment. Fiber Rolls may be used as a check dam to control flow rates. Fiber rolls are installed prior to soil disturbance.
Maintenance and Inspection: Fiber rolls or compost sock would be installed prior to construction activities. Fiber rolls will be placed downslope of ground-disturbing activities where a vegetative buffer does not exist. Equipment cannot drive over the installed fiber rolls; if damaged, the sections must be replaced. Remove sediment accumulated upslope of the roll when it reaches one-half the distance between the top of the fiber roll and the ground surface. Inspect as per requirements of the CGP. Specific locations are identified in Appendix A, BMP Maps.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Silt Fence BMP 20
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Silt fence can be used as a perimeter protection below the toe of exposed erodible slopes, prior to spring thaw where determined necessary.
Maintenance and Inspection: Repair undercut silt fences. Repair or replace split, torn, slumping, or weathered fabric. Inspect silt fence when rain is forecast. Maintain silt fences to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches one- third (1/3) of the barrier height. Removed sediment shall be incorporated. Inspect as per requirements of the CGP.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Geotextiles, Plastic Covers and Erosion Control Blankets/Mats EC-11
Source: Best Management Practices Manual. Idaho, January 2014
Installation Schedule: Prepare the site properly to ensure complete contact of the blanket or matting with the soil. Grade and shape the area of installation. Installation shall be in accordance with the manufacturer's standard.
Maintenance and Inspection: Inspections shall be conducted as required by the CGP permit or contract specifications. Areas treated with the temporary geotextiles, mats, blankets, and other covers shall be maintained to provide adequate erosion control. Any failures shall be repaired immediately. If washout or breakage occurs, reinstall the material after repairing the damage to the slope or channel.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Earth Dikes and Drainage Swales (ED/DS) EC-10
Source: Urban Storm Drainage Criteria Manual Volume 3, Best Management Practices. November 2010
Installation Schedule: A dike located at the top of a slope to divert upland runoff away from the disturbed area and convey it in a temporary or permanent channel. A diversion dike located at the base or mid-slope of a disturbed area to intercept runoff and reduce the effective slope length.
Maintenance and Inspection: Inspect earth dikes for stability, compaction, and signs of erosion and repair. Inspect side slopes for erosion and damage to erosion control fabric. Stabilize slopes and repair fabric as necessary. If there is reoccurring extensive damage, consider installing rock check dams or lining the channel with riprap.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.3.1 Protect Steep Slopes (4.2.6)

Will steep slopes be present at the site during construction? ☐ Yes ☒ No.

If necessary, compost sock or straw wattles will be used to decrease storm water flow rates and discharge in areas where the vegetative buffer is insufficient.

BMP Description: Vegetation Buffer BMP 38
Source: DOT&PF Alaska SWPPP Guide. February 2016
Installation Schedule: Undisturbed area or strip of natural vegetation that will provide a living filter to reduce soil erosion and runoff velocities.
Maintenance and Inspection: Keep heavy equipment off of these slopes to preserve vegetation. Replace or repair fencing or flagging as necessary. Check for damage by equipment and vehicles, and for sediment build up. Ensure water flowing through the area is not forming ponds, rills, or gullies. Inspect as per requirements of the CGP.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Fiber Rolls BMP 10a & 10b
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Fiber rolls can be placed along trenching activities to delineate the work area and control sediment. Fiber Rolls may be used as a check dam to control flow rates. Fiber rolls are installed prior to soil disturbance.
Maintenance and Inspection: Fiber rolls or compost sock would be installed prior to construction activities. Fiber rolls will be placed downslope of ground-disturbing activities where a vegetative buffer does not exist. Equipment cannot

drive over the installed fiber rolls; if damaged, the sections must be replaced. Remove sediment accumulated upslope of the roll when it reaches one-half the distance between the top of the fiber roll and the ground surface. Inspect as per requirements of the CGP. Specific locations are identified in Appendix A, BMP Maps.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.4 Storm Water Inlet Protection Measures (4.3.1)

No storm drain inlets exist near the project site. If necessary, culvert inlet protection will be used around culverts.

BMP Description: Culvert Inlet Protection BMP 8

Source: DOT&PF Alaska SWPPP Guide. October 2016

Installation Schedule:

Culvert Inlet Protection should be sited and constructed in a manner that will facilitate cleanout and disposal of trapped sediment. Culvert Inlet Protection should be constructed in a manner that will allow flow to pass and minimize ponding after the run-off has ceased.

Maintenance and Inspection:

Use sandbags, fiber roll, or compost sock. Assure that barrier makes full contact with soil, all around the inlet in a single continuous circle. Inspect for sediment accumulation, displacement, and structural damage. Repair or replace any structural damaged materials as soon as practicable.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.5 Water Body Protection Measures (4.3.2)

A vegetative buffer and appropriate BMPs will be maintained around water bodies. The project will minimize storm water discharge from the project site. No streams or water body will be altered or redirected.

BMP Description: Vegetation Buffer BMP 38

Source: DOT&PF Alaska SWPPP Guide. February 2016

Installation Schedule:

Undisturbed area or strip of natural vegetation that will provide a living filter to reduce soil erosion and runoff velocities.

Maintenance and Inspection:

Keep heavy equipment off of these slopes to preserve vegetation. Replace or repair fencing or flagging as necessary. Check for damage by equipment and vehicles, and for sediment build up. Ensure water flowing through the area is not forming ponds, rills, or gullies. Inspect as per requirements of the CGP.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Silt Fence BMP 20

Source: DOT&PF Alaska SWPPP Guide. October 2016**Installation Schedule:**

Silt fence can be used as a perimeter protection below the toe of exposed erodible slopes, prior to spring thaw where determined as necessary.

Maintenance and Inspection:

Repair undercut silt fences. Repair or replace split, torn, slumping, or weathered fabric. Inspect silt fence when rain is forecast. Maintain silt fences to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches one-third (1/3) of the barrier height. Removed sediment shall be incorporated. Inspect as per requirements of the CGP.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Fiber Rolls BMP 10a & 10b**Source: DOT&PF Alaska SWPPP Guide. October 2016****Installation Schedule:**

Fiber rolls can be placed along trenching activities to delineate the work area and control sediment. Fiber Rolls may be used as a check dam. Fiber rolls are installed prior to soil disturbance.

Maintenance and Inspection:

Fiber rolls or compost sock will be installed prior to construction activities. Fiber rolls will be placed downslope of ground-disturbing activities where a vegetative buffer does not exist. Equipment cannot drive over the installed fiber rolls; if damaged, the sections must be replaced. Remove sediment accumulated upslope of the roll when it reaches one-half the distance between the top of the fiber roll and the ground surface. Inspect as per requirements of the ACGP. Specific locations are identified in Appendix A, BMP Maps.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.6 Down-Slope Sediment Controls (4.3.3)

Whenever slopes are disturbed on this project, compost socks or straw wattles should be placed down-slope as needed to prevent any sediment from leaving the project area.

BMP Description: Fiber Rolls BMP 10a & 10b**Source: DOT&PF Alaska SWPPP Guide. October 2016****Installation Schedule:**

Fiber rolls will be placed along trenching activities to delineate the work area and control sediment. Fiber Rolls may be used as a check dam. Fiber rolls are installed prior to soil disturbance.

Maintenance and Inspection:

Fiber rolls or compost sock will be installed prior to construction activities. Fiber rolls will be placed downslope of ground-disturbing activities where a vegetative buffer does not exist. Equipment cannot drive over the installed fiber rolls; if damaged, the sections must be replaced. Remove sediment accumulated upslope of the roll when it reaches one-half the distance between the top of the fiber roll

and the ground surface. Inspect as per requirements of the ACGP. Specific locations are identified in Appendix A, BMP Maps.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Silt Fence BMP 20

Source: DOT&PF Alaska SWPPP Guide. October 2016

Installation Schedule:

Silt fence can be used as a perimeter protection below the toe of exposed erodible slopes, prior to spring thaw where determined necessary.

Maintenance and Inspection:

Repair undercut silt fences. Repair or replace split, torn, slumping, or weathered fabric. Inspect silt fence when rain is forecast. Maintain silt fences to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches one- third (1/3) of the barrier height. Removed sediment shall be incorporated. Inspect as per requirements of the ACGP.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.7 Stabilized Construction Vehicle Access and Exit Points (4.3.4)

Project access is from an existing road. No stabilized construction vehicle access or exit is required. If the condition of the road becomes muddy, or if vehicles and equipment track sediment off the project site, a stabilized construction entrance or exit in the form of rumble mat or strips will be utilized.

BMP Description: Stabilized construction Exit AK-23 & 24

Source: DOT&PF Alaska SWPPP Guide. October 2016

Installation Schedule:

A vehicle tracking entrance/exit provides a stabilized gravel area or pad underlined with a geotextile and located where traffic enters or exits the construction site.

Maintenance and Inspection:

Maintain each entrance in a condition that will prevent mud or sediment on the public rights-of-way. Replace gravel material when surface voids are visible. Inspect as per requirements of the ACGP. Specific locations are identified in Appendix A, BMP Maps.

Responsible Staff:

Project General Foreman is responsible for maintenance of this BMP.

10.8 Dust Generation and Track-Out from Vehicles (4.3.5 and 4.3.6)

Dust is not anticipated for this project. Should dust generation and track out from vehicles become a threat to storm water quality, sweeping will be utilized to remove loose sediments from paved surfaces. If necessary, wind erosion control BMP will be used to prevent or alleviate erosion by the wind.

BMP Description: Street Sweeping BMP 55
Source: DOT&PF Alaska SWPPP Guide. October 2016
Installation Schedule: Sweep and vacuum as needed to minimize dust and track out.
Maintenance and Inspection: Inspect ingress /egress access points daily and during routine SWPPP inspections.
Responsible Staff: The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Wind Erosion Control WE-1
BMP Manual/Publication: Caltrans, Storm Water Quality Handbooks, Construction Site BMP Manual. May 2017
Installation Schedule: Apply water or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind.
Maintenance and Inspection: Check areas where wind erosion controls have been implemented daily for erosion and visible dust.
Responsible Staff: Project General Foreman is responsible for maintenance of this BMP.

10.9 Soil Management (4.3.7)

Will soil stockpiles be at the site during construction? ☐ Yes ☒ No.

Soil stockpiles are not anticipated, however, small piles from trench excavation may be present for short durations. Stabilization beyond good housekeeping measures (minimizing the number of piles, and placement of piles in areas away from sensitive habitats) should be minimal. If necessary, plastic covering will be used to cover stockpiles if sediment from soil piles is expected to migrate.

BMP Description: Geotextiles, Plastic Covers and Erosion Control Blankets/Mats EC-11
Source: Idaho DOT Best Management Practices Manual. Idaho, January 2014
Installation Schedule: Prepare the site properly to ensure complete contact of the blanket or matting with the soil. Grade and shape the area of installation. Installation shall be in accordance with the manufacturer's standard.
Maintenance and Inspection: Inspections shall be conducted as required by the CGP permit or contract specifications. Areas treated with temporary geotextiles, mats, blankets, and other covers shall be maintained to provide adequate erosion control. Any failures shall be repaired immediately. If washout or breakage occurs, reinstall the material after repairing the damage to the slope or channel.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

10.10 Authorized Non-Storm Water Discharges (4.3.8)

Describe any measures taken to minimize any non-storm water authorized by this permit.

10.11 Sediment Basins (4.3.9)

Will a sediment basin be required during construction? ☐ Yes, ☒ No.

10.12 Dewatering (4.4)

According to historical contaminated sites information, groundwater is approximately 25 to 15 feet below ground service. There is no anticipated dewatering required to install the vaults, trench line, or poles.

Will dewatering be conducted during construction? ☐ Yes, ☒ No.

Will excavation dewatering be conducted within 1,500 feet of a DEC-mapped contaminated site found on the following website? ☐ Yes, ☒ No. <http://www.arcgis.com/home/item.html?id=315240bfbaf84aa0b8272ad1cef3cad3>

10.13 Soil Stabilization (4.5, 5.3.6.3)

Disturbance of vegetative areas will be minimized to the maximum extent practicable. The entire project will be performed within the existing disturbed ROW area or utility easement corridors.

BMP Description: Soil Binders SS-5

Source: Caltrans, Storm Water Quality Handbooks, Construction Site BMP Manual. May 2017

Installation Schedule:

After selecting an appropriate soil binder, the untreated soil surface must be prepared before applying the soil binder. The untreated soil surface must contain sufficient moisture to assist the agent in achieving uniform distribution.

Maintenance and Inspection:

High traffic areas shall be inspected daily, and lower traffic areas shall be inspected weekly. Reapplying the selected soil binder may be needed for proper maintenance.

Responsible Staff:

Project Manager, or SWPPP Lead/Inspector as specified in Section 2.0

BMP Description: Mulching AK-9

Source: DOT&PF Alaska SWPPP Guide. February 2011

☐ Permanent ☒ Temporary

Installation Schedule:

Mulching can be applied to all seeded areas. Hydro mulching can be installed with the seed at specified rates per project specs in Appendix B. Bonded Fiber Matrix (BFM) will be used in all hydro seeding operations to ensure that the product is allowed to "cure" or dry to prevent mulch from washing away.

Maintenance and Inspection:

Replace mulch that has been loosened or dislodged. In addition, reseed areas if necessary. Water mulched areas periodically to ensure that moisture content will be maintained and seed germination and grass growth will continue. Inspect as per requirements of the ACGP to check for rill erosion, dislocation, or failure.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Permanent Seeding BMP 52 & 53

Source: DOT&PF Alaska SWPPP Guide. October 2016

Installation Schedule:

Permanent seeding should be conducted in conjunction with various forms of mulching, matting, and annual grass (cereal grain) as a nurse crop.

Seeding should be done at the proper time of year. Proper application of fertilizers as prescribed will contribute to the success of the seeding. Once seeded, the site should not be disturbed. Irrigation may have to be used in low precipitation area (arid/semi-arid) for establishment.

Maintenance and Inspection:

Inspect all seeded areas on a regular basis and after each major storm event to check for areas where corrective measures may have to be made.

Indicate which areas need to be reseeded or where other remedial actions are necessary to assure establishment of permanent seeding.

Continue monitoring of the site/area until permanent vegetation is established.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

BMP Description: Temporary Seeding BMP 57

Source: DOT&PF Alaska SWPPP Guide. October 2016

Installation Schedule:

Grade as needed where it's feasible to permit the use of equipment for seedbed preparation.

Prepare the seedbed by using surface roughening if soil has been compacted by machinery or heavy foot traffic. If using hand or mechanical methods, apply fertilizer in order to optimize growing conditions, followed by seed, mulch, and water.

Maintenance and Inspection:

Inspect newly seeded areas on a regular basis and after each storm event to check for areas where protective measures (mulch) have failed or where plant growth is not proceeding at the desired rate. Water seeded areas daily until initial ground cover is established if rainfall does not provide moisture for seed germination. Reseed areas where growth is absent or inadequate. Provide additional fertilizer if needed.

Responsible Staff:

The SWPPP Lead/Inspector. The Project General Foreman is responsible for maintenance of this BMP.

Seeding recommendations should be followed by Alaska Plant Materials Center – Revegetation Manual.

10.14 Treatment Chemicals (4.6; 5.3.6.4)

Will treatment chemicals be used to control erosion and/or sediment during construction? ☐ Yes, ☒ No.

10.15 Treatment Chemicals (4.6.1)

N/A

10.15.1 Treatment Chemical Use Procedures (4.6.2)

N/A

10.15.2 Application of Treatment Chemicals (4.6.3)

N/A

10.16 Active Treatment System Information or cationic treatment chemicals (4.6.7)

Will ATS or cationic treatment chemicals be used as a control measure at the site? ☐ Yes, ☒ No.

N/A

10.17 Good Housekeeping Measures (4.8)

10.17.1 Washing of Equipment and Vehicles (4.8.1)

Will equipment and vehicle washing and/or wheel wash-down be conducted at the site? ☐ Yes, ☒ No.

10.17.2 Fueling and Maintenance Areas (4.8.2)

Will equipment and vehicle fueling, or maintenance be conducted at the site? ☐ Yes, ☒ No.

If fueling does occur on site, duck ponds or similar containments will be utilized to contain any drips, and an on-site spill kit with spill response and cleanup supplies will be available.

BMP Description: Vehicle and Equipment Cleaning AK-23
Source: DOT&PF Alaska SWPPP Guide. February 2011
Installation Schedule: Vehicle and equipment maintenance activities will be located at least 50 feet from any downstream drainages or water bodies. Inspect vehicles and equipment daily for leaks. Repair leaks as soon as practicable. Store and/or dispose of all chemicals, lubricants, and fuels according to manufacturer's recommendations. Perform all maintenance away from water bodies, environmentally sensitive areas,

discharge points, and potential erosion areas. Keep a spill kit and drip pans/duck ponds accessible to vehicles being maintained.

Maintenance and Inspection:

Equipment operators will visually inspect for leaks daily during active construction. Dispose of chemicals and clean up materials as soon as practicable.

Responsible Staff:

Site Superintendent, or Project Manager as specified in Section 2.0

10.17.3 Staging and Material Storage Areas (4.8.3)

Staging and/or material storage areas will be determined by the contractor. Any designated areas to be used for staging and material storage areas should be located to the extent practicable, away from storm water conveyance channels, storm water inlets, and waters of the U.S.; and minimize the exposure to precipitation and storm water and vandalism for all chemicals, treatment chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.

10.17.4 Washout of Applicators/Containers Used for Paint, Concrete, and Other Materials (4.8.4)

Will washout areas for trucks, applicators, or containers of concrete, paint, or other materials be used at the site? ☐ Yes, ☒ No.

N/A

10.17.5 Fertilizer or Pesticide Use (4.8.5)

Will fertilizers or pesticides be used at the site? ☒ Yes ☐ No.

If hand seeding, no fertilizer is needed. However, in the case of hydroseeding or other forms of revegetation, applications of fertilizers are necessary.

Material Name: 10N-10P-10K-8s (slow release) fertilizer.

Installation Schedule: Apply 250 lbs per acre or 6 lbs per 1000 sq ft.

Once the seed has been applied no additional traffic should be allowed on site.

Responsible Staff: Superintendent, or SWPPP Manager as specified in Section 2.0.

Seeding guidelines will be followed by the Alaska Plant Materials Center – Revegetation Manual.

10.18 Spill Notification (4.9)

Releases of hazardous substances or petroleum hydrocarbons in excess of the EPA's or ADEC's reportable quantities are detailed in Appendix H.

10.19 Construction and Waste Materials (4.8.6, 5.3.7)

The following requirements will be followed for the storage, handling, and disposal of construction debris and waste materials (with designated areas to be used for staging and material storage).

- Such activities will be located, to the extent practicable, away from storm water conveyance channels, storm drain inlets, and Waters of the United States.
- Construction personnel shall minimize the exposure to precipitation, storm water, and vandalism of all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.
- Collected sediment, paper, plastic, fabric, construction and demolition debris, and other domestic wastes shall be disposed of according to federal, state, and local requirements. Garbage bins will be covered to prevent blowing debris.
- Containment shall be provided for sanitation facilities (portable toilets) to prevent discharge(s) of pollutants to the storm water drainage system or receiving waters. Sanitation facilities shall be cleaned regularly and inspected for leaks and spills.

BMP Description: Solid Waste Management WM-6
Source: Idaho DOT Best Management Practices Manual. Idaho, January 2014
Installation Schedule: Continuously during construction activities.
Maintenance and Inspection: All collection containers will be covered and emptied when full. Inspect as per requirements of the CGP.
Responsible Staff: Site Superintendent, or Project Manager as specified in Section 2.0

BMP Description: Sanitary/Septic Waste Management WM-10
BMP Manual/Publication: Idaho DOT Best Management Practices Manual. Idaho, January 2014
Installation Schedule: As needed. Portable toilets will be placed, when possible, away from impervious surfaces and will be kept as far away as possible from the storm drain system and waterways. Portable toilets will be tied down or otherwise secured to prevent tipping.
Maintenance and Inspection: Portable toilets will be inspected daily and will be serviced by the supplier as necessary.
Responsible Staff: Site Superintendent, or Project Manager as specified in Section 2.0

11.0 INSPECTIONS (5.4; 6.0)

11.1 Inspection Schedules (5.4.1.2; 6.1; 6.2)

Inspection frequency: Inspections will be conducted weekly during construction for this project, and within two business days of a storm event where a discharge occurs. MSE anticipates five inspections during the construction period, and one monthly inspection following construction completion to achieve final stabilization and one additional storm event inspection.

Justification for reduction in inspection frequency, if applicable:

(1) If the entire site is stabilized in accordance with Section 4.5 of the 2021 CGP, inspections may be reduced to at least once every month and within two business days of the end of a storm event at an actively staffed site that results in a discharge from the site.

(2) If portions of the project site have achieved final stabilization in accordance with Section 4.5 of the 2021 CGP but construction activity remains on other portions of the site, inspections may be suspended for those portions that have achieved final stabilization. However, inspections must be conducted on those sections within two business days of the end of a storm event that results in a discharge from the portion of the site previously considered finally stabilized.

(3) If the entire site has achieved final stabilization (as defined in Appendix C of the 2021 CGP) and a NOT has been submitted, no further inspection requirements apply to the site.

Estimated date of winter shutdown: N/A

11.2 Inspection Form or Checklist (5.4.1.3; 6.7)

Inspection reports are included in Appendix K. A "Complete by Date" will be noted on the inspection form adjacent to any BMP that requires maintenance or modification.

11.3 Corrective Action Procedures (5.4.1.4; 8.0)

Corrective actions should be implemented when one or more of the following conditions occur:

- If an incident of non-compliance with the SWPPP or CGP is identified;
- If an Inspection or the Engineer identifies the SWPPP or any part of the SWPPP is ineffective in preventing erosion, sedimentation or the discharge of pollutants;
- If a required BMP was not installed according to the SWPPP schedule or phasing, or was installed incorrectly, or was not installed according to the CGP Part 4.0;
- If a BMP is not operating as intended, has not been maintained in an effective operational condition, or is unable to effectively perform the intended function;
- If a prohibited discharge of pollutants, as specified in CGP Part 4.6, is occurring or will occur; or
- If there is accumulation of sediment or other pollutants, that is in or near any storm water conveyance channels, or that may enter a discharge point or storm sewer system. If there is accumulation of sediment or other pollutants that is being tracked outside the project zone.

Implement corrective actions so that they comply with the following time requirements:

For conditions that are easily resolved, i.e., removal of tracked sediment, maintenance of control measure, or spill clean-up); initiate corrective action within 24 hours and complete as soon as possible.

For all other conditions, meet both the following requirements:

- Complete corrective action in time to protect water quality; and
- Complete corrective action no later than the Complete-by-Date that was documented in an Inspection Report.

If a corrective action is not implemented within the time requirements of this section, document the situation in the SWPPP, notify the Engineer, and implement corrective action as soon as possible. If a corrective action could affect a subcontractor, notify the subcontractor within three days of taking corrective action.

Corrective Action Log

Corrective actions will be tracked using the Corrective Action Log (Appendix J). Corrective actions will be implemented as soon as practicable. Simple actions will be completed within 24 hours.

11.4 Inspection recordkeeping (5.4.2)

Records will be maintained for a minimum period of at least three (3) years after the permit is terminated.

12.0 MONITORING PLAN (If Applicable) (5.5; 7.0)

12.1 Determination of Need for Monitoring Plan

Is there an EPA-established or approved TMDL for **Passage Canal**? ☐ Yes, ☒ No.

Is there an EPA-established or approved TMDL for **Shakespeare Creek**? ☐ Yes, ☒ No.

Is the receiving water listed as impaired for turbidity and/or sediment? ☐ Yes, ☒ No.

What is the acreage of the disturbance in the proposed construction project?

Is the disturbed acreage equal to or greater than 20 acres? ☐ Yes, ☒ No. 1.0 acres

12.2 Monitoring Plan Development

Monitoring schedules (5.5.1.2; 7.3.2): N/A

Monitoring form or checklist (5.5.1.3; 7.3.9): N/A

Corrective action procedures (5.5.1.4; 8.0): N/A

12.3 Monitoring Considerations

- Locate upstream/upgradient sampling point(s) to determine background turbidity in the receiving water body. The location should be reasonably close to discharge but not so close as to experience increased turbidity from discharge. Clearly mark in field and on map in SWPPP.
- Sample the discharge where it enters the receiving water body or where it leaves the construction site. Clearly mark in field and on map in SWPPP.
- The discharge entering the water body impaired for turbidity or sediment must not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less and may not have more than a 10-percent increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.
- Correct control measures within seven (7) calendar days, update your SWPPP to reflect improvements, submit a Corrective Action Report consistent with the CGP, AND continue daily sampling until discharge meets allowable turbidity.
- If a specific waste-load allocation has been established for turbidity or sediment that would apply to the discharge of storm water from the construction site, the permittee must implement necessary steps to meet that allocation.
- If there is only a general waste-load allocation applicable to construction storm water discharges, the permittee must consult the ADEC to confirm consistency with approved TMDL.

13.0 POST-AUTHORIZATION RECORDS (5.8)

Copy of Permit Requirements (5.8.1)

The SWPPP must contain the following documents:

- copy of CGP (5.8.1.1);
- copy or signed and certified NOI form submitted to ADEC (5.8.1.2);
- upon receipt, a copy of letter from ADEC authorizing permit coverage, providing tracking number (5.8.1.3)

These documents must be included in Appendix F.

13.1 Additional Documentation Requirements (5.8.2)

- Dates when grading activities occur (5.8.2.1; insert in Appendix G).
- Dates when construction activities temporarily or permanently cease on a portion of the site (5.8.2.1.3; insert in Appendix G).
- Dates when stabilization measures are initiated (5.8.2.1.4; insert in Appendix G).

- Date of beginning and ending period for winter shutdown (5.8.2.2; insert in Appendix G).
- Copies of inspection reports (5.4.2; 5.8.2.3; insert in Appendix K).
- Copies of monitoring reports, if applicable (5.8.2.4; insert in Appendix H).
- Documentation in support of chemical-treatment processes (4.6; 5.8.2.6; insert in Appendix H).
- Documentation of maintenance and repairs of control measures (5.8.2.8; 8.1; 8.2; insert in Appendix J).
- Documentation of any rainfall monitoring records (6.7.1.3)

13.1.1 Records of Employee Training (4.14; 5.8.2.7)

Describe Training Conducted:

General storm water and BMP awareness training for staff and subcontractors:

Training staff and subcontractors is an effective BMP. The General Foreman will be responsible for ensuring that employees are aware of control measures that are being used during construction. Training records including the date, name of attendees, subjects covered, and length of training are located in Appendix I. Items covered during storm water training should include a description of what storm water is, what to look for on the construction project site, what to do if an issue is identified, and who to contact.

Good Housekeeping

- Employee responsibility and accountability, basic cleanup procedures, proper storage, and disposal procedures.

Detailed training will be conducted for staff and subcontractors with specific storm water responsibilities (e.g. installing, inspecting and maintaining BMPs).

Detailed training for staff and subcontractors with specific storm water responsibilities:

This training will include review of the SWPPP and the topics listed below:

- SWPPP contents, with emphasis on BMP locations, maintenance, inspections, record keeping, logs and contacts;
- Good housekeeping measures and employee responsibility and accountability, basic cleanup procedures, proper storage and disposal procedures;
- Spill prevention and response, fuel transfer procedures; and
- Material handling and storage, and hazardous waste management.

Individual(s) Responsible for Training:

Darvin Thorton, Construction Manager
Chugach Electric Association, Inc.
1740 S Chugach St
Anchorage, Alaska 99518
(907) 762-4609

darvinthorton@chugachelectric.com

14.0 MAINTAINING AN UPDATED SWPPP (5.9)

The permittee must modify the SWPPP, including site map(s), in response to any of the following:

- whenever changes are made to construction plans, control measures, good housekeeping measures, monitoring plan (if applicable), or other activities at the site that are no longer accurately reflected in SWPPP (5.9.1.1);
- if inspections of site investigations by staff or by local, state, tribal, or federal officials determine SWPPP modifications are necessary for permit compliance (5.9.1.2); and
- to reflect any revisions to applicable federal, state, tribal, or local laws that affect control measures implemented at the construction site (5.9.1.3).

14.1 Log of SWPPP Modifications (5.9.2)

A permittee must keep a log showing dates, name of person authorizing the change, and a brief summary of changes for all significant SWPPP modifications (e.g., adding new control measures, changes in project design, or significant storm events that cause replacement of control measures). A form to document SWPPP amendments has been placed at the beginning of this template.

14.2 Deadlines for SWPPP Modifications (5.9.3)

Revisions to the SWPPP must be completed within seven days of the inspection that identified the need for a SWPPP modification or within seven days of substantial modifications to the construction plans or changes in site conditions.

15.0 ADDITIONAL SWPPP REQUIREMENTS (5.10)

15.1 Retention of SWPPP (5.10.1)

A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from ADEC must be retained at the construction site.

15.2 Main Entrance Signage (5.10.2)

A sign or other notice must be posted conspicuously near the main entrance of the site. The sign or notice must include the permit authorization number assigned to the NOI, Operator Contact Name, and phone number for obtaining additional construction site information, and location of the SWPP or name and telephone number of the contact person for scheduling SWPPP viewing times. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to DEC in the NOI), the current location of the SWPPP or name and telephone number of a contact person for scheduling viewing times.

15.3 Availability of SWPPP (5.10.3)

The permittee must keep a current copy of the SWPPP at the site. The SWPPP must be made available to subcontractors, government, and tribal agencies, and MS4 operators, upon request.

15.4 Signature and Certification (5.10.4)

The SWPPP must be signed and certified in accordance with the requirements of the CGP Appendix A, Part 1.12. The certification form on page ii of this template meets the requirements of this paragraph.

15.5 Submittal of a Modification to NOI (2.7)

Note: A permittee must file an NOI modification form to DEC (see Permit Part 2.3) to update or correct the following information on the original NOI within 30 calendar days of the change:

- Owner/Operator address and contact information;
- Site information;
- Estimated start or end dates;
- Number of acres to be disturbed; or
- SWPPP location and contact information.

APPENDICES

APPENDIX A – SITE MAPS AND DRAWINGS

APPENDIX B – BMP DETAILS

APPENDIX C – PROJECT SCHEDULE

APPENDIX D – SUPPORTING DOCUMENTATION:

- TMDL
- ENDANGERED SPECIES
- OTHER PERMITS

APPENDIX E – DELEGATION OF AUTHORITY, SUBCONTRACTOR CERTIFICATIONS

APPENDIX F – PERMIT CONDITIONS:

- COPY OF SIGNED NOTICE OF INTENT
- COPY OF LETTER FROM ADEC AUTHORIZING COVERAGE
- ADEC NOI TRACKING NUMBER
- COPY OF ALASKA CONSTRUCTION GENERAL PERMIT

APPENDIX G – GRADING AND STABILIZATION RECORDS

APPENDIX H – SPILL PLAN AND REPORTING REQUIREMENTS

APPENDIX I – TRAINING RECORDS

APPENDIX J – CORRECTIVE ACTION LOG

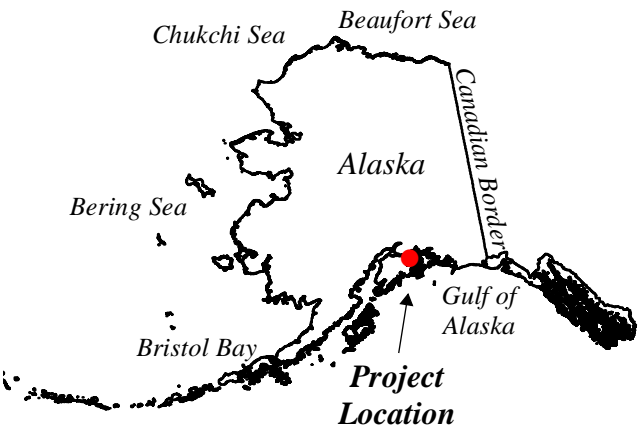
APPENDIX K – INSPECTION RECORDS

APPENDIX A

SITE MAPS

Whittier Head of Bay Eletrical Project Whittier, Alaska

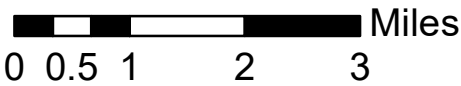
Topographic Map



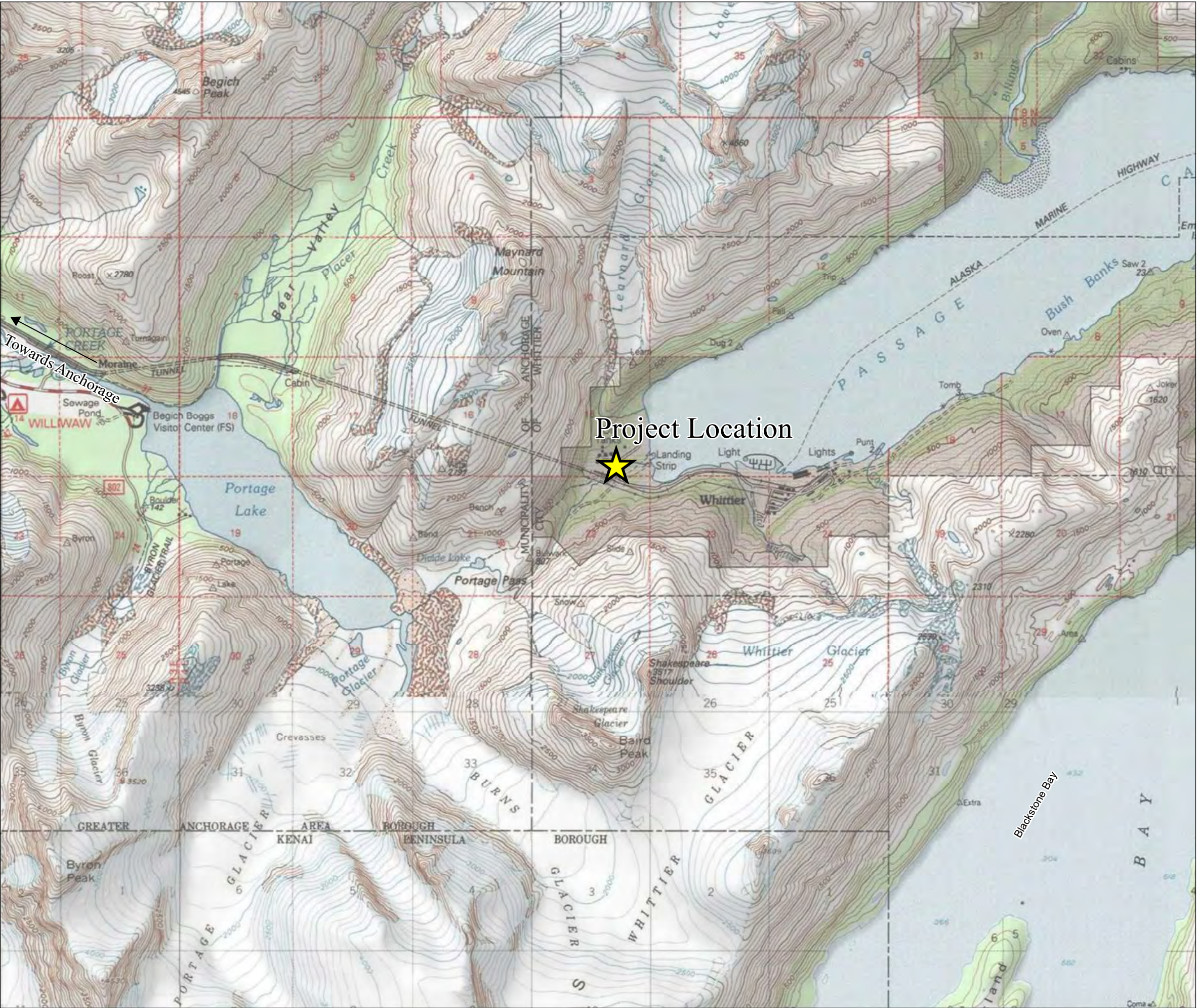
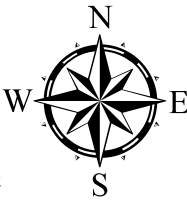
DATE : June 2024

PROJECT NO.: E2214130

GIS ANALYST: Kelly Kennedy

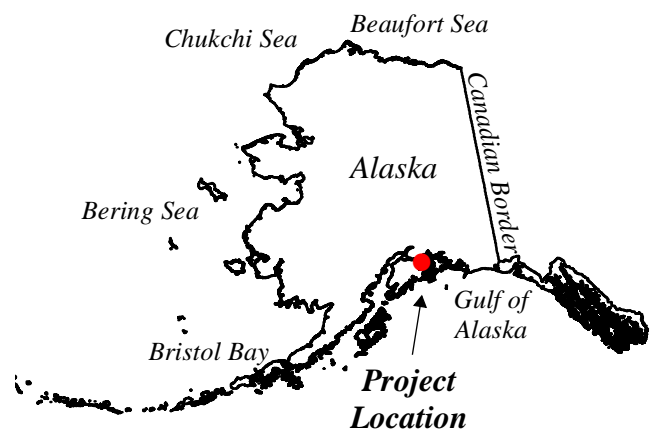


560 E 34th Ave Suite 102
Anchorage, Alaska 99503
(907) 344-3244
www.midnightsunenvironmental.com



Whittier Head of Bay Eletrical Project Whittier, Alaska

Figure 1.
BMP Map



DATE : June 2024

PROJECT NO.: E2214130

GIS ANALYST: Kelly Kennedy

Legend

Trench Line Pole

Vault

Best Management Practices

Vegetative Buffer

Fiber Roll

Flow Direction

Contaminated Sites

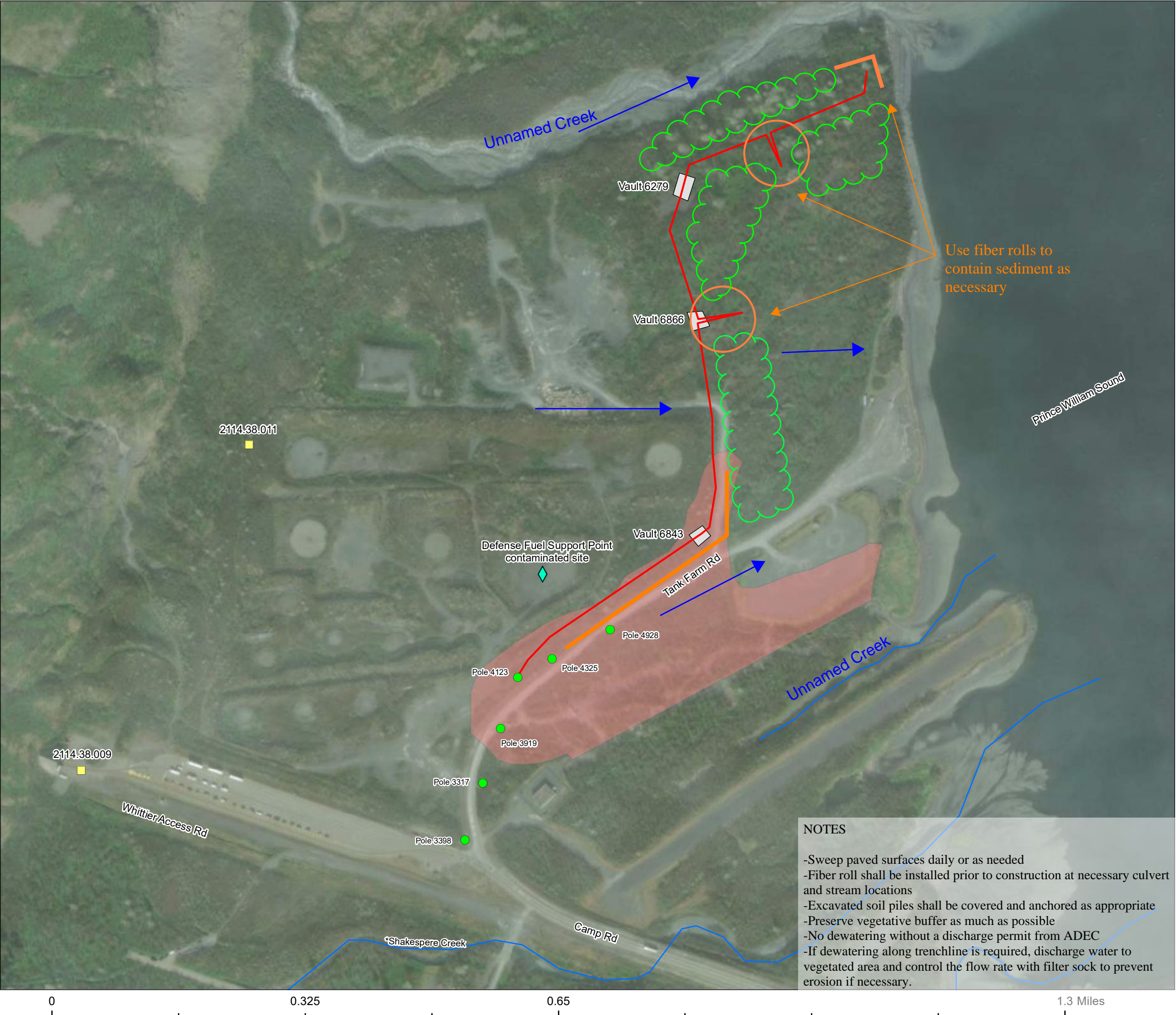
Cleanup Complete

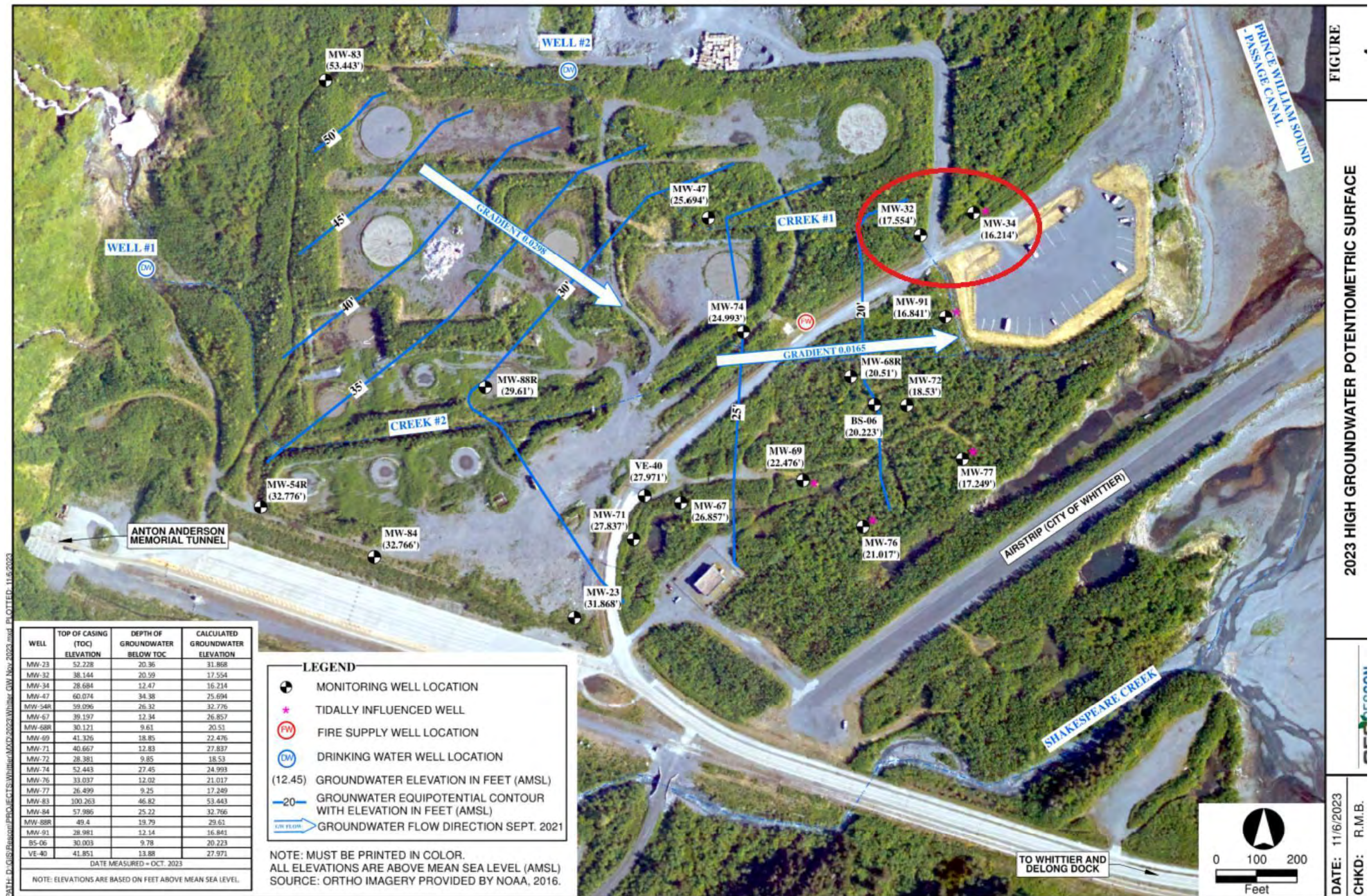
Active

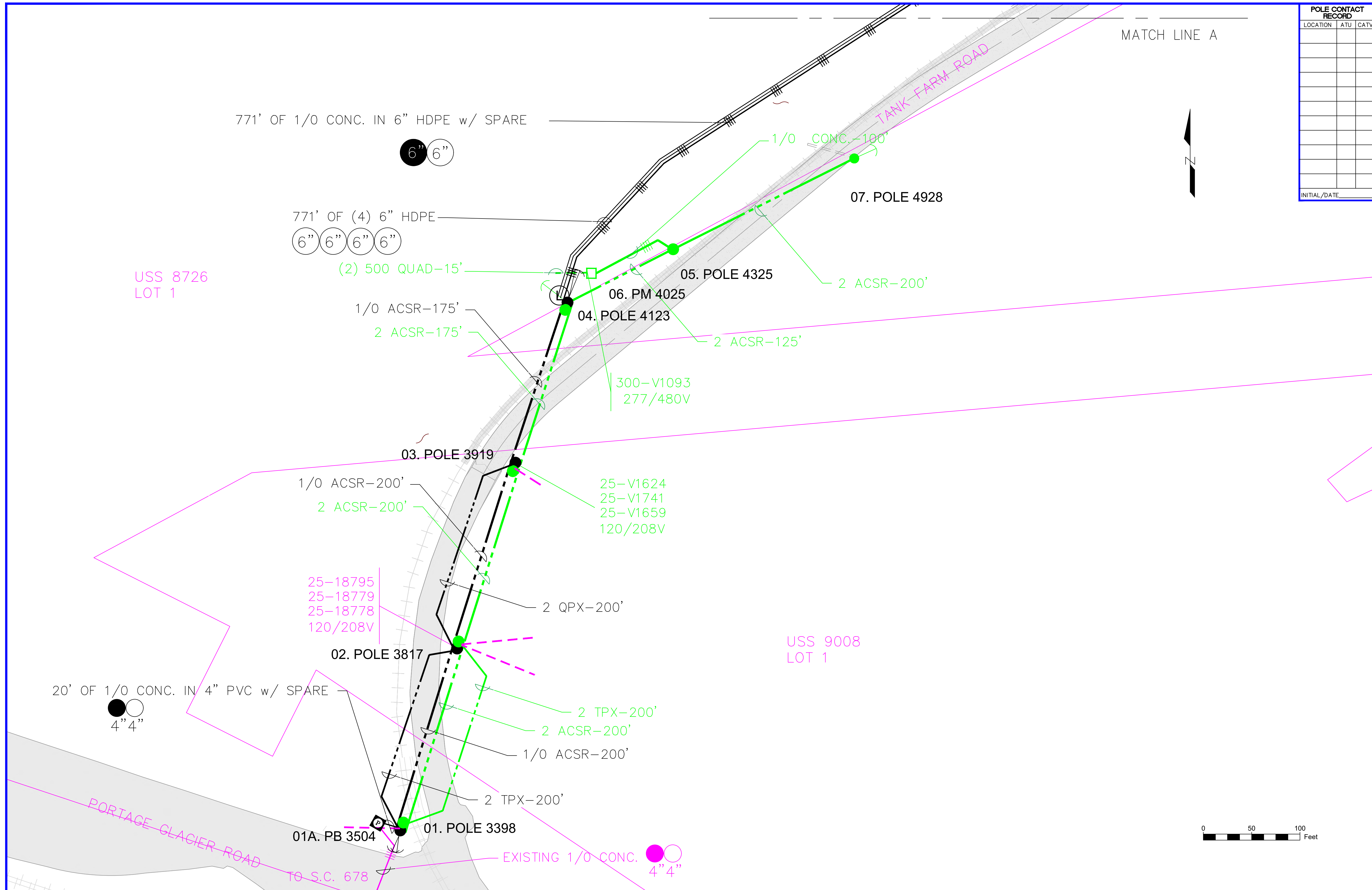
Petroleum Plume



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







POLE CONTACT RECORD		
LOCATION	ATU	CATV
INITIAL/DATE		

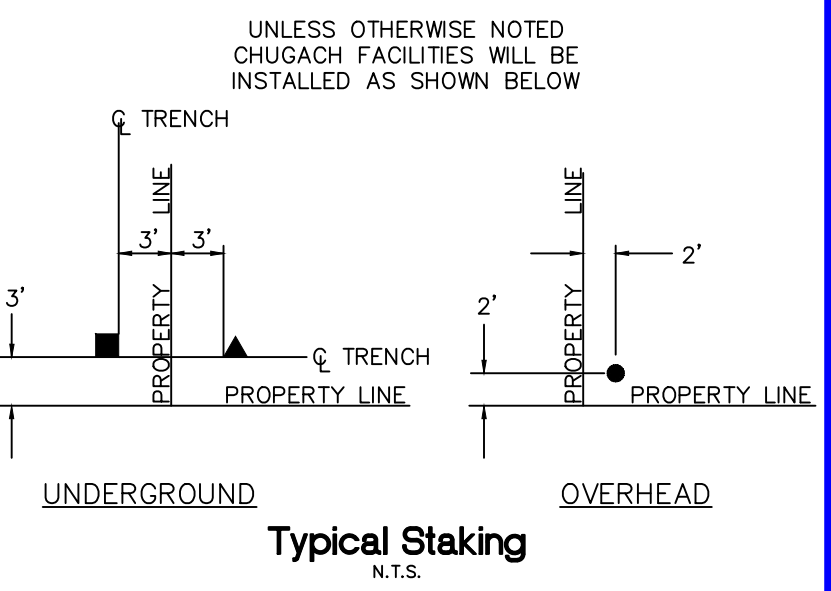


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Cond. Size/Type	Cond. Size/Type	Cond. Size/Type	Cond. Size/Type
Quantity in Feet	Quantity in Feet	Quantity in Feet	Quantity in Feet

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

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



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

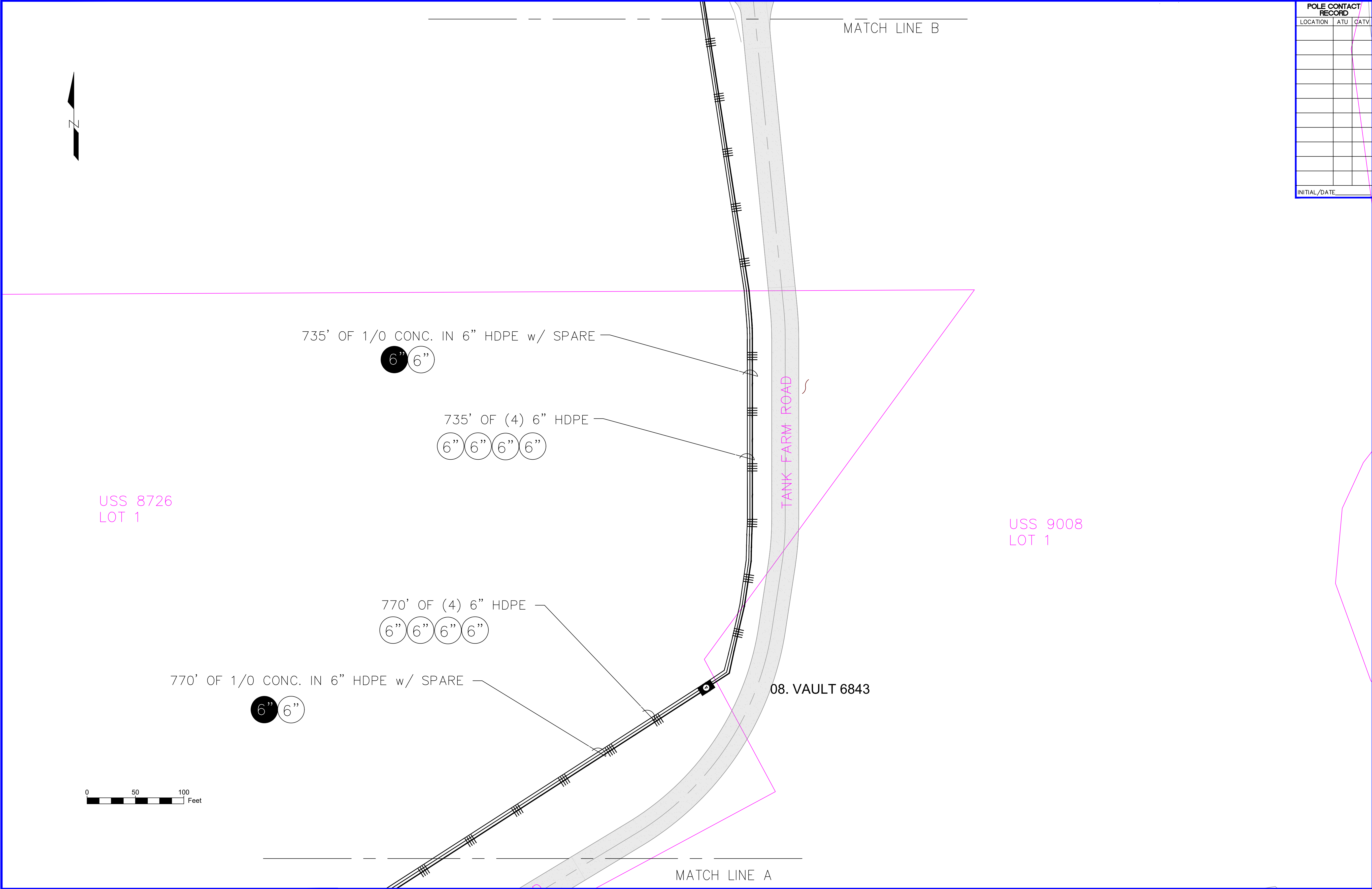
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
ELECTRICAL
E2214130

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

SHEET 1 OF 10



POLE CONTACT RECORD		
LOCATION	ATU	CATV
INITIAL/DATE		

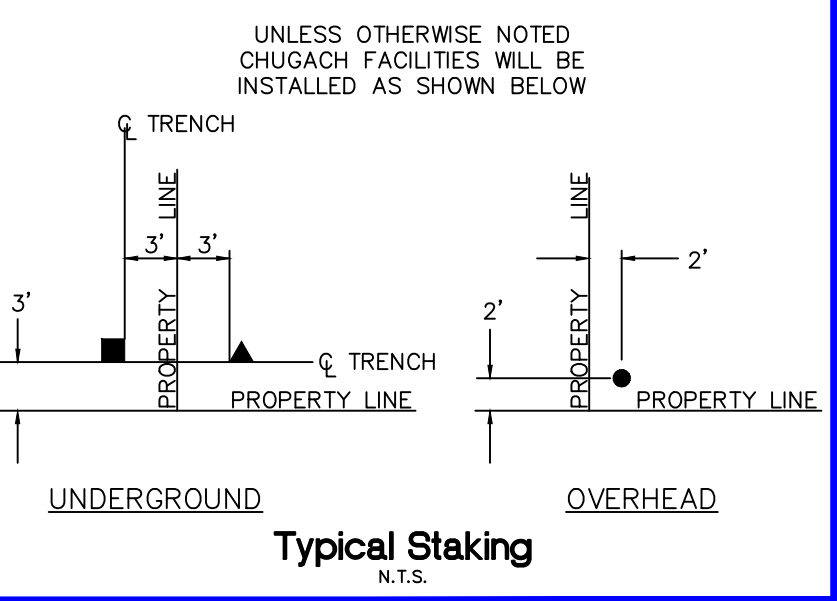


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Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____
Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____

CALL BEFORE YOU DIG!	
LOCATE CALL CENTER OF ALASKA (LCCA)	
ANCHORAGE AREA.....	278-3121
STATEWIDE.....	800-478-3121
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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

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



PROJECT: <u>HEAD OF THE BAY WHITTIER</u>				
DESIGNER/PROJECT ENGINEER: <u>E. COOK</u> W.O. #: <u>E2214130</u>				
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 Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

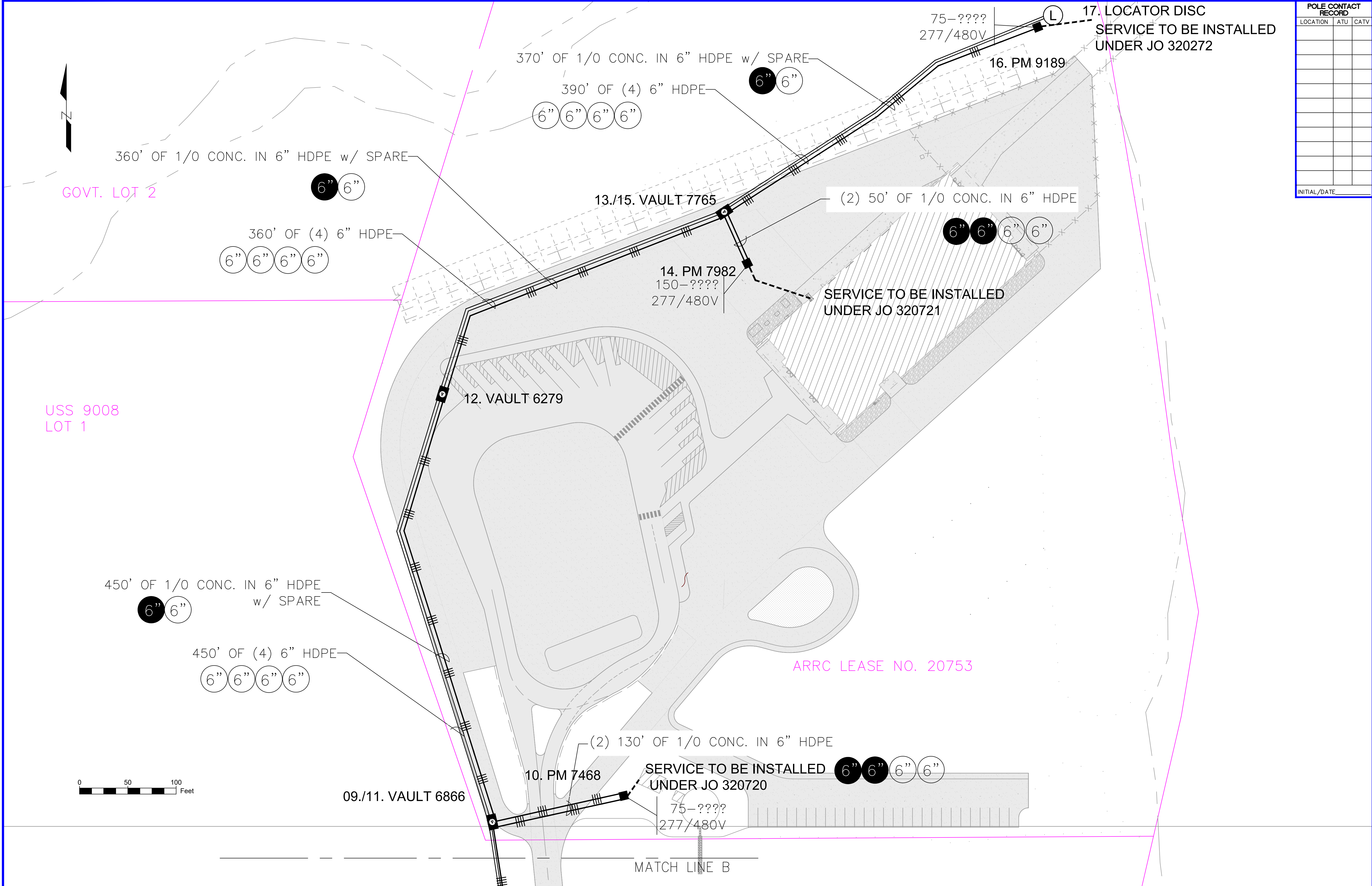
DRAWING NAME:

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		



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Quantity in Feet	Quantity in Feet	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
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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

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: <u>HEAD OF THE BAY WHITTIER</u>				
DESIGNER/PROJECT ENGINEER: <u>E. COOK</u>				
W.O. #: <u>E2214130</u>				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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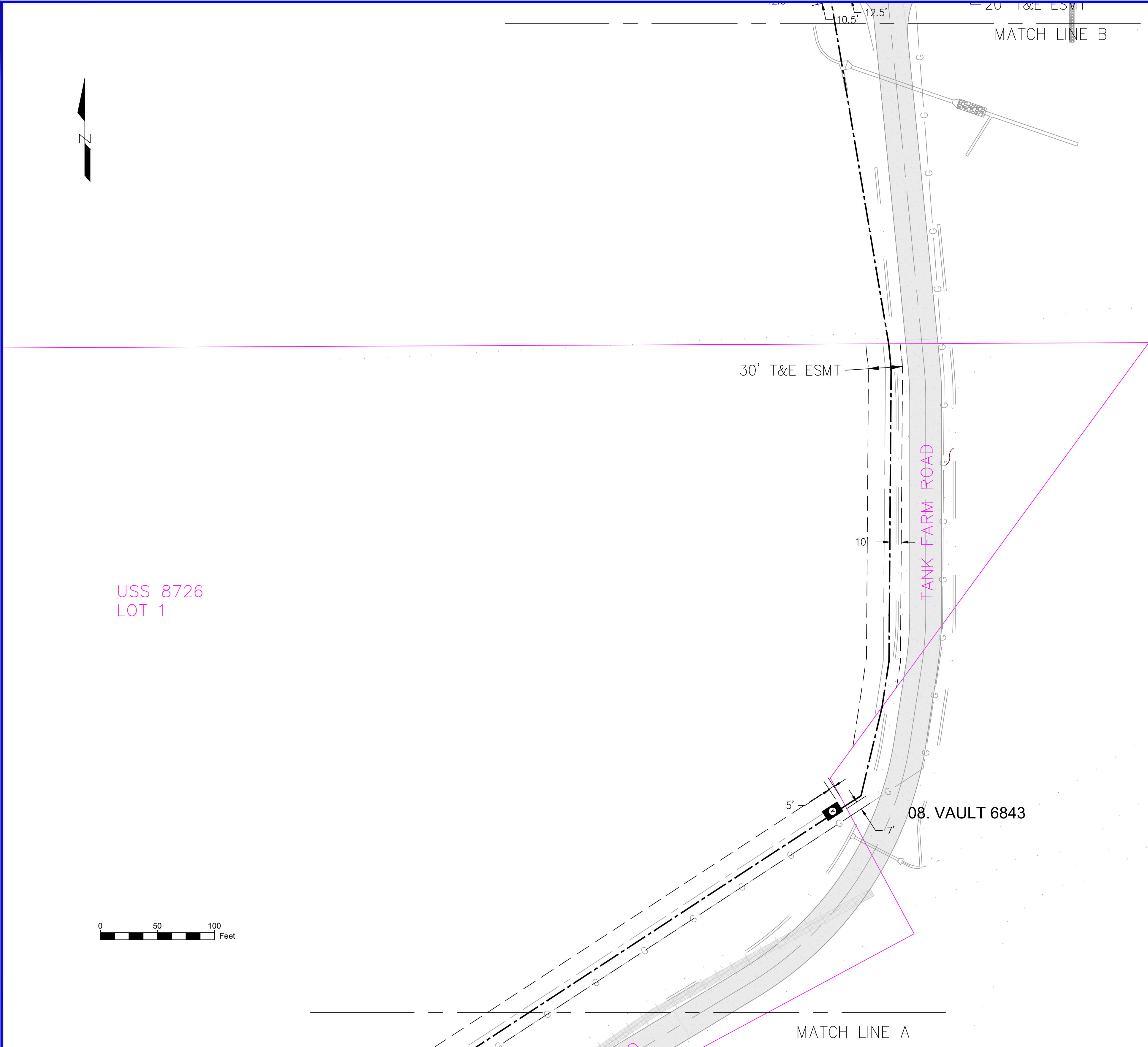
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
ELECTRICAL
E2214130

C.W.P. REF. NO.:

SHEET 3 OF 10



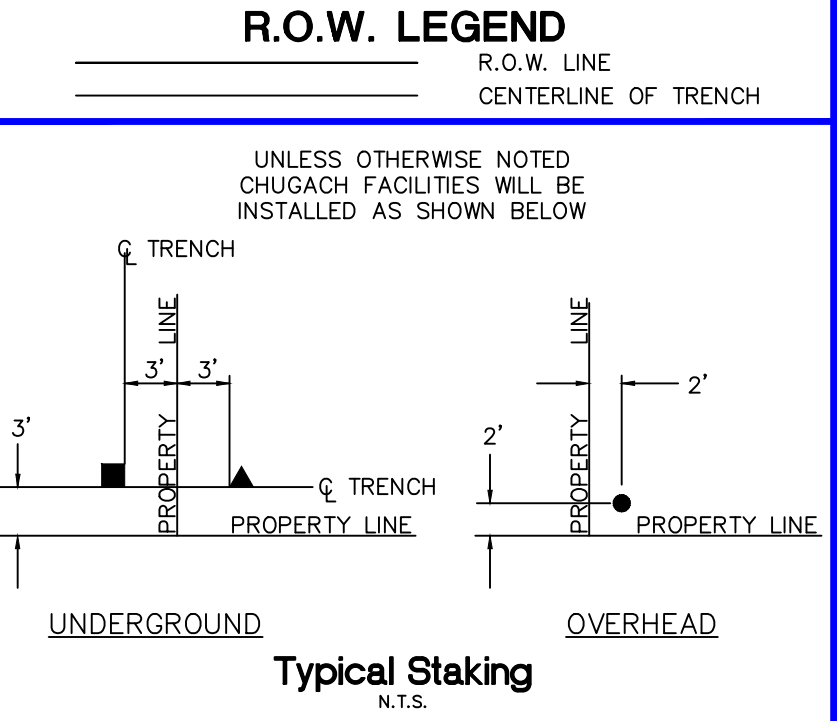
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LOCATION	ATU	CATV
INITIAL/DATE		



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Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____

CALL BEFORE YOU DIG!	
LOCATE CALL CENTER OF ALASKA (LCCA)	
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STATEWIDE.....	800-478-3121
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ALASKA RAILROAD UTILITIES.....	265-2457
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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



PROJECT: <u>HEAD OF THE BAY WHITTIER</u>				
DESIGNER/PROJECT ENGINEER: <u>E. COOK</u> W.O. #: <u>E2214130</u>				
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 Electric Association, Inc.
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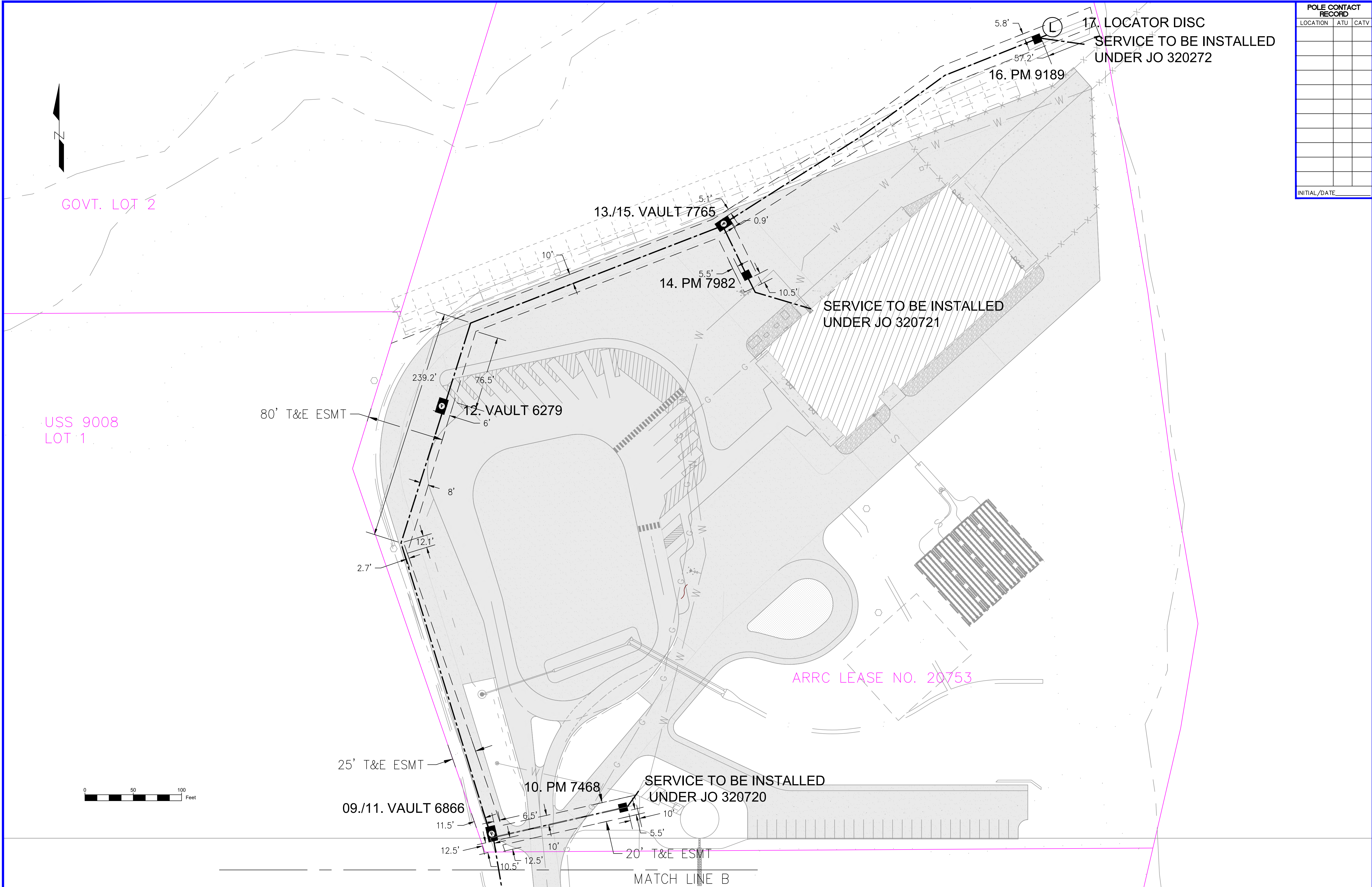
DRAWING NAME:

**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 5 OF 10



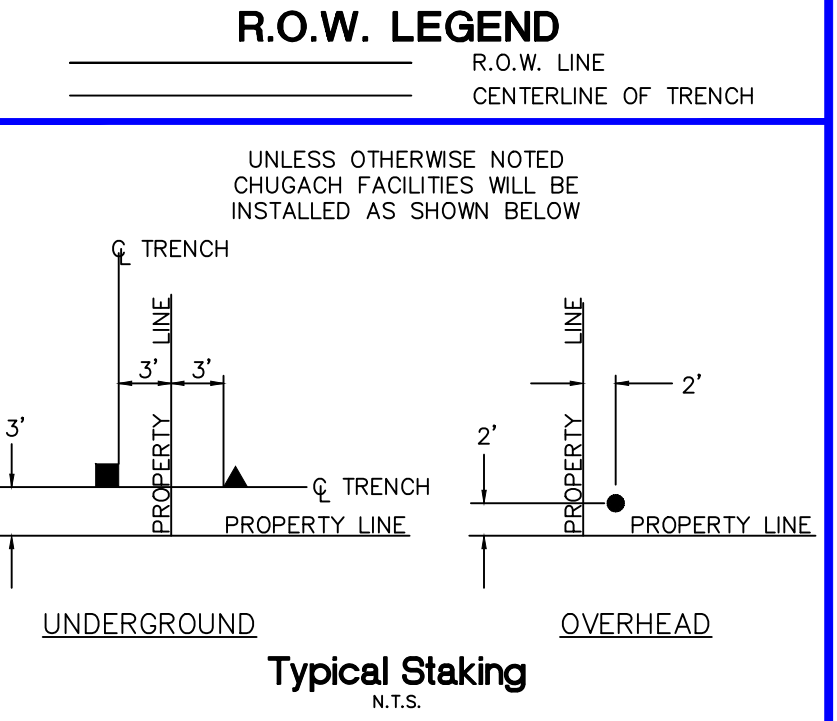
POLE CONTACT RECORD		
LOCATION	ATU	CATV
INITIAL/DATE		



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



PROJECT: <u>HEAD OF THE BAY WHITTIER</u>				
DESIGNER/PROJECT ENGINEER: <u>E. COOK</u>				
W.O. #: <u>E2214130</u>				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUE FOR CONSTRUCTION	EC 8/21/24	<i>Jm</i> 8/27/24	

ENG. STAMP

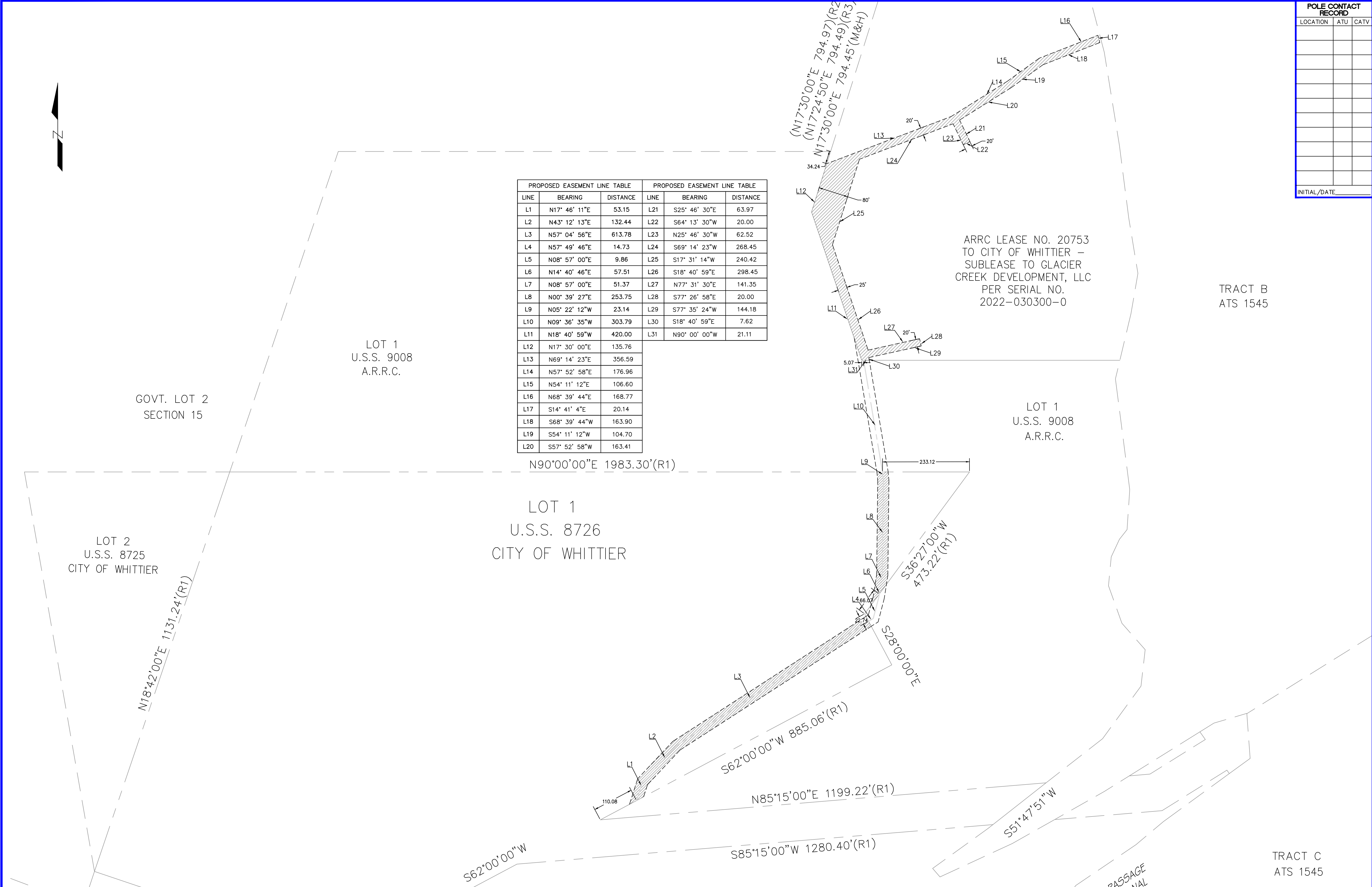
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
RIGHT-OF-WAY
E2214130

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

SHEET 6 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

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

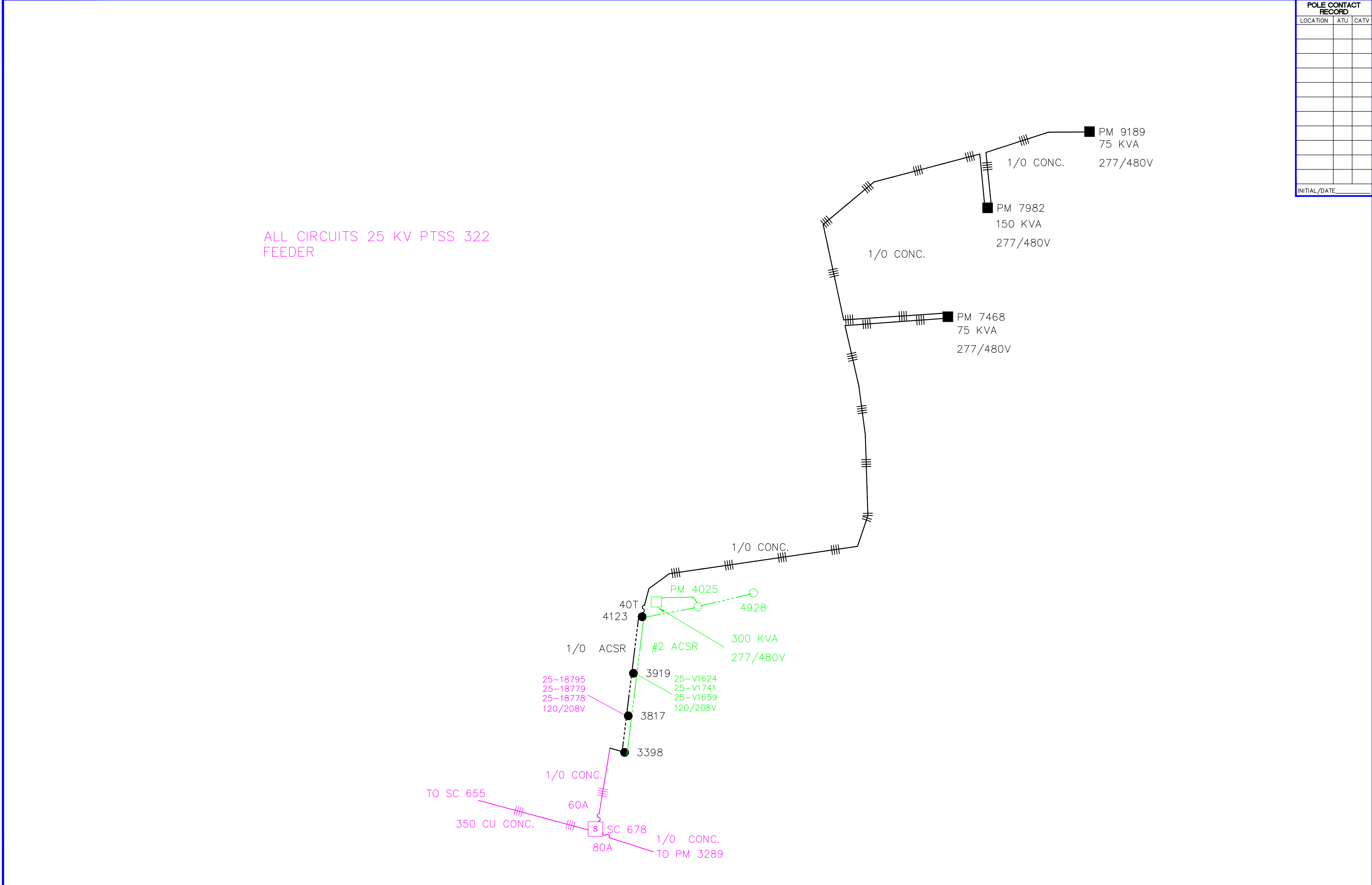
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:

HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
SURVEY
E2214130

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

SHEET 7 OF 10



POLE CONTACT RECORD		
LOCATION	ATU	CATV
INITIAL/DATE		



CONDUCTOR DATA			
Manuf. _____	Manuf. _____	Manuf. _____	Manuf. _____
Manuf. Date _____	Manuf. Date _____	Manuf. Date _____	Manuf. Date _____
Volt Rating _____	Volt Rating _____	Volt Rating _____	Volt Rating _____
Insul. Type _____	Insul. Type _____	Insul. Type _____	Insul. Type _____
Insul. Size _____	Insul. Size _____	Insul. Size _____	Insul. Size _____
Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____
Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____	Quantity in Feet _____
Manuf. _____	Manuf. _____	Manuf. _____	Manuf. _____
Manuf. Date _____	Manuf. Date _____	Manuf. Date _____	Manuf. Date _____
Volt Rating _____	Volt Rating _____	Volt Rating _____	Volt Rating _____
Insul. Type _____	Insul. Type _____	Insul. Type _____	Insul. Type _____
Insul. Size _____	Insul. Size _____	Insul. Size _____	Insul. Size _____
Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____	Cond. Size/Type _____
Quantity in Feet _____	Quantity in Feet _____	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	▲ PADMOUNT TRANSFORMER
▲ PEDESTAL	▲ PEDESTAL
● POWER POLE	● POWER POLE
●* STREET LIGHT	●* STREET LIGHT
■ WARNING POST	■ WARNING POST
1# U.G. PRI. CONDUCTOR	1# U.G. PRI. CONDUCTOR
3# U.G. PRI. CONDUCTOR	3# U.G. PRI. CONDUCTOR
U.G. SECONDARY CONDUCT.	U.G. SECONDARY CONDUCT.
U.G. STREET LIGHT CONDUCT.	U.G. STREET LIGHT CONDUCT.
1# O.H. CONDUCTOR	1# O.H. CONDUCTOR
3# O.H. CONDUCTOR	3# O.H. CONDUCTOR
J JUNCTION BOX	J JUNCTION BOX
◆ SPLICE POINT	◆ SPLICE POINT
SPARE CONDUIT	SPARE CONDUIT
CONDUIT W/ CONDUCTOR	CONDUIT W/ CONDUCTOR
S SWITCH CABINET	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	
UNDERGROUND	OVERHEAD
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 Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

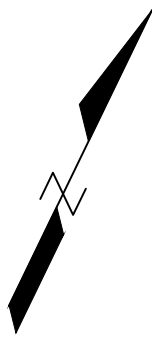
DRAWING NAME:

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

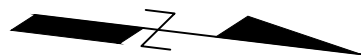
W.O. NO.:
C.W.P. REF. NO.:

E2214130

SHEET 8 OF 10

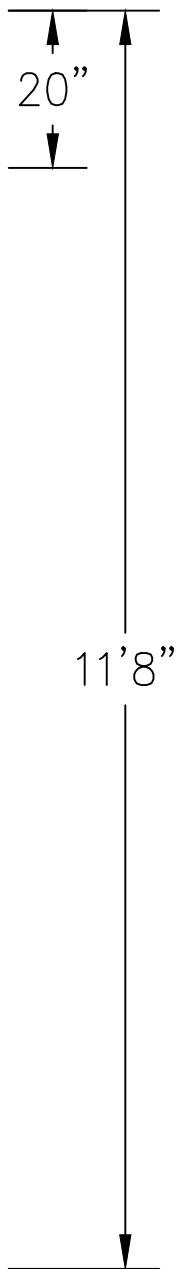


(1) 6" HDPE WITH (3) 1/0 CONC
CABLES (24.9kV) AND (5) 6" HDPE
SPARE TO VAULT 6866
PTSS 322

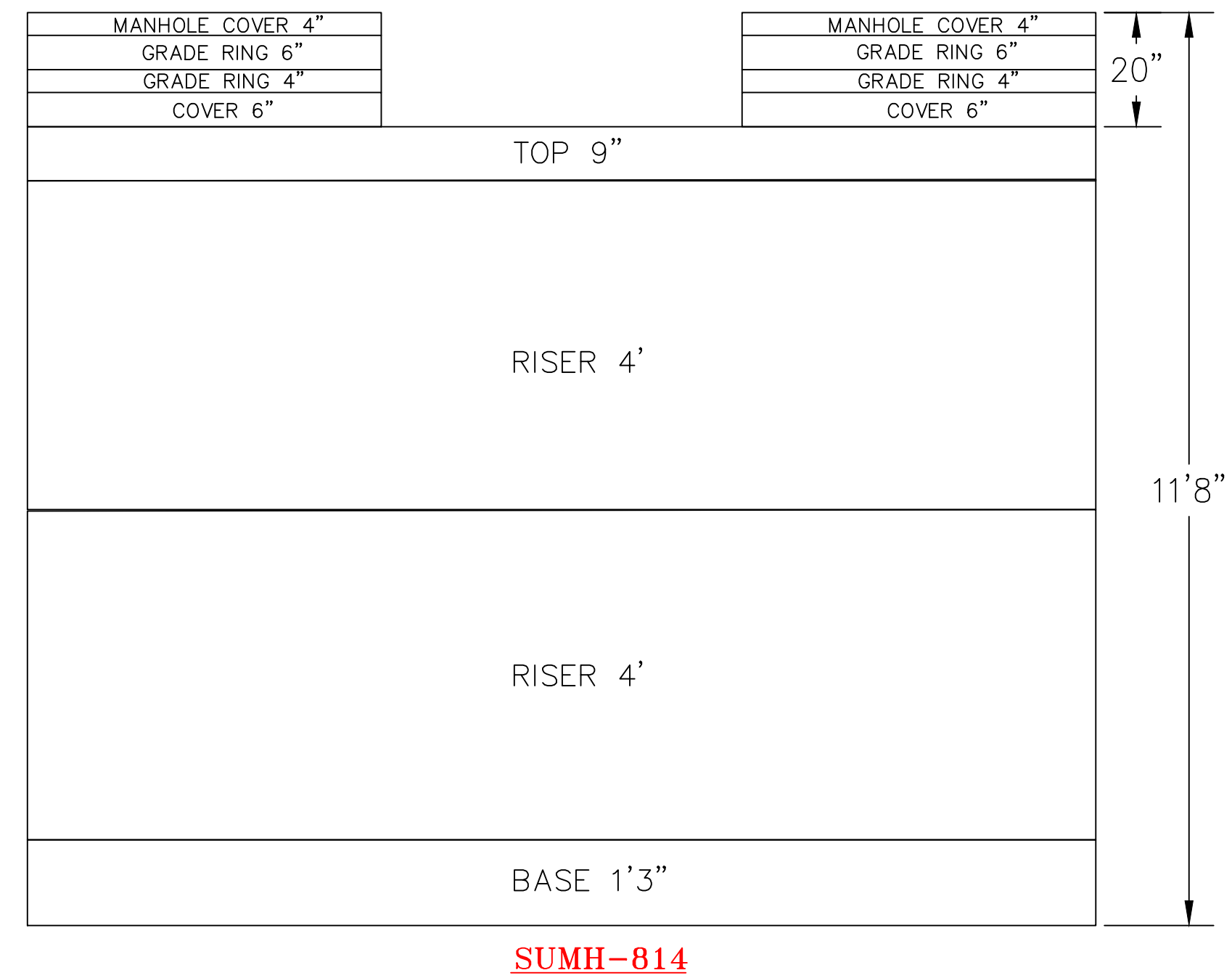
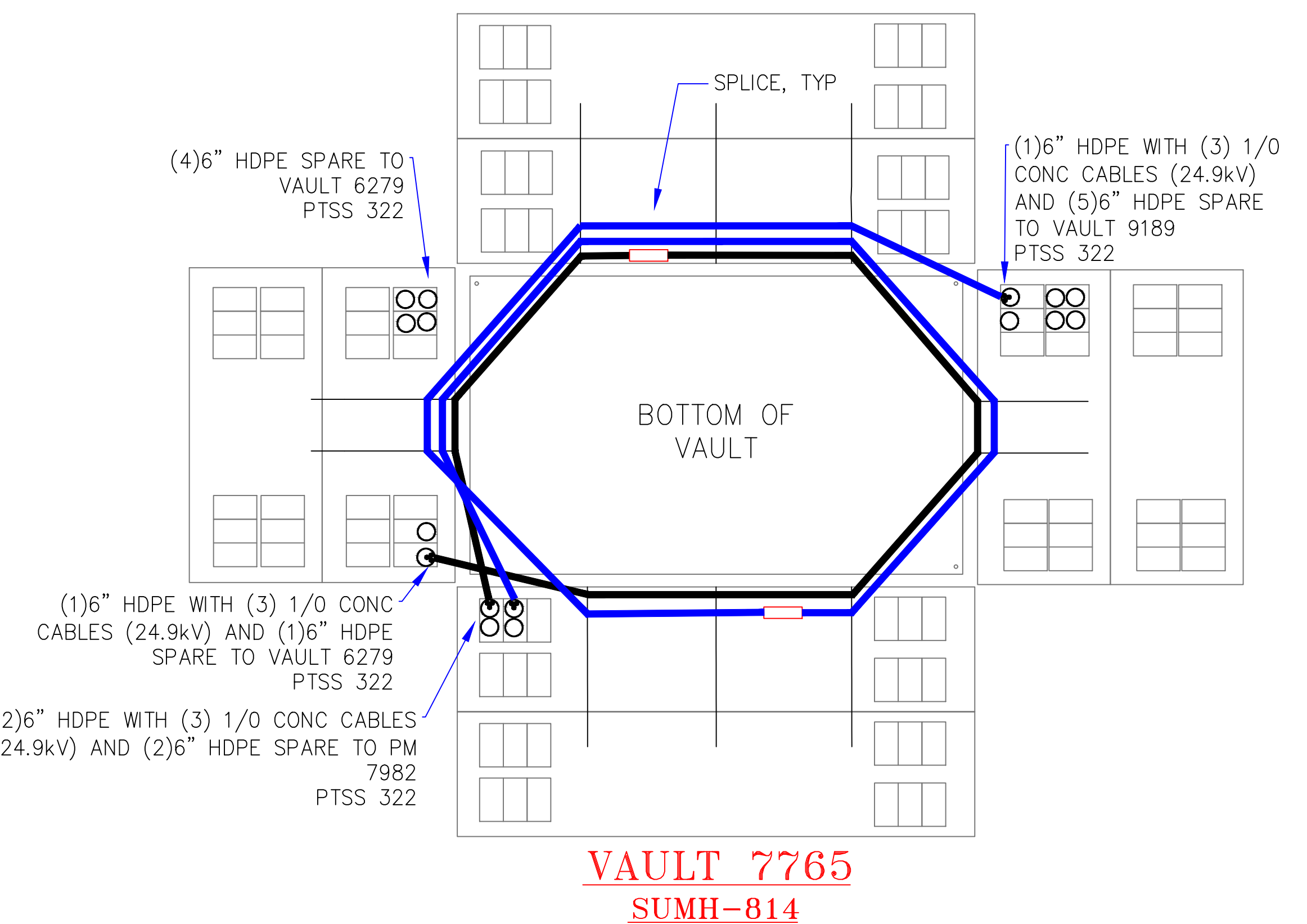


(1)6" HDPE WITH (3) 1/0
CONC CABLES (24.9kV)
AND (5)6" HDPE SPARE
TO VAULT 6279
PTSS 322

VAULT 6866
SUMH-814

[illegible][illegible]

SHEET 9 OF 10



CALL BEFORE YOU DIG!

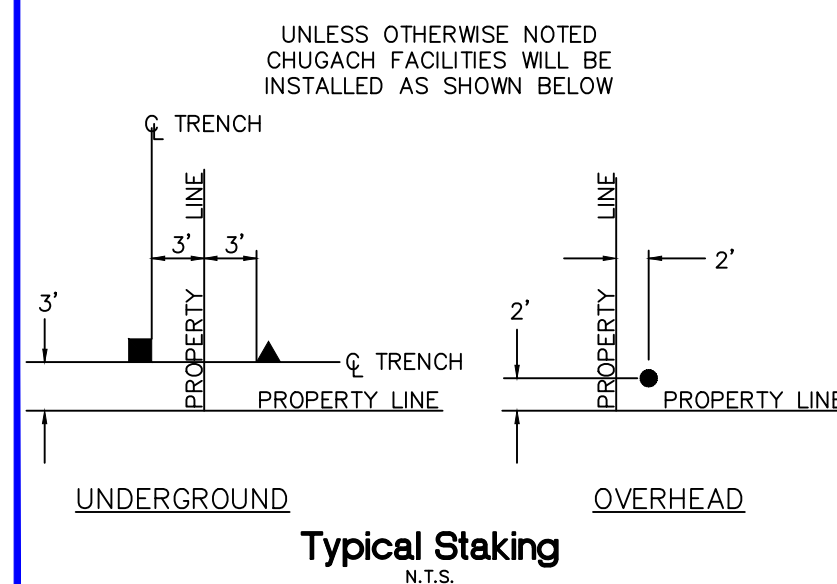
LOCATE CALL CENTER OF ALASKA (LCCA)

ANCHORAGE AREA.....	278-3121
STATEWIDE.....	800-478-3121
AT&T ALSCOM 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	
	10 U.G. P.R.I. CONDUCTOR	
	36 U.G. P.R.I. CONDUCTOR	
	U.G. SECONDARY CONDUCTOR	
	U.G. STREET LIGHT CONDUCTOR	
	10 O.H. CONDUCTOR	
	36 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

[illegible]

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

DRAWING NAME:

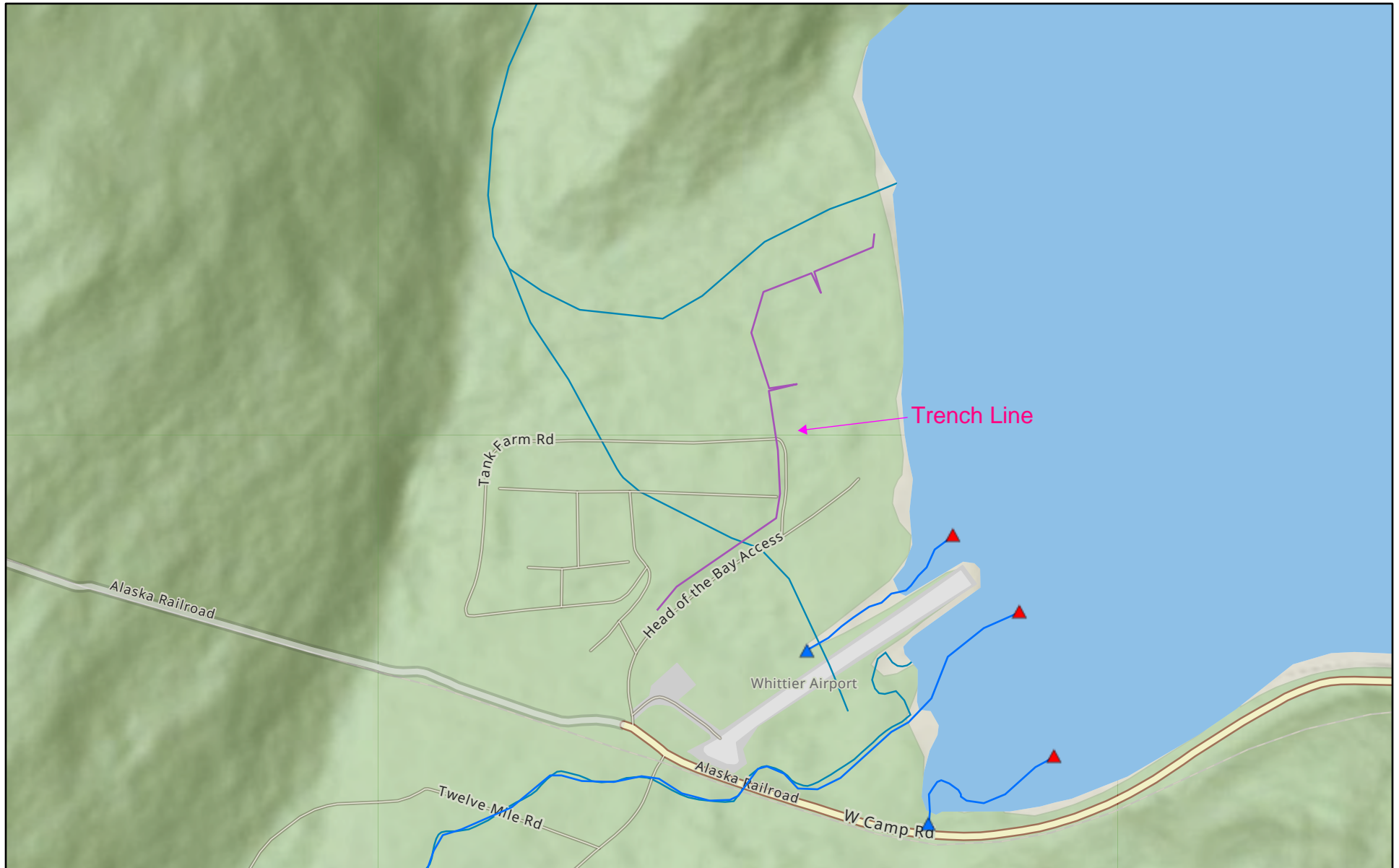
HEAD OF THE BAY
WHITTIER
GRID: W002 MAP: 0804-15
FEEDER: PTSS 322
VAULT DIAGRAM

E2214130

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

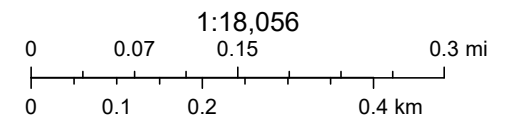
SHEET 10 OF 10

AWC Map



6/6/2024, 2:42:02 PM

— Trench line - Export_Output ▲ UPPER
AWC 2023 - Anadromous points — AWC 2023 - AWC stream
▲ LOWER



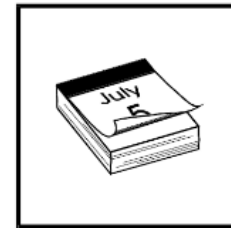
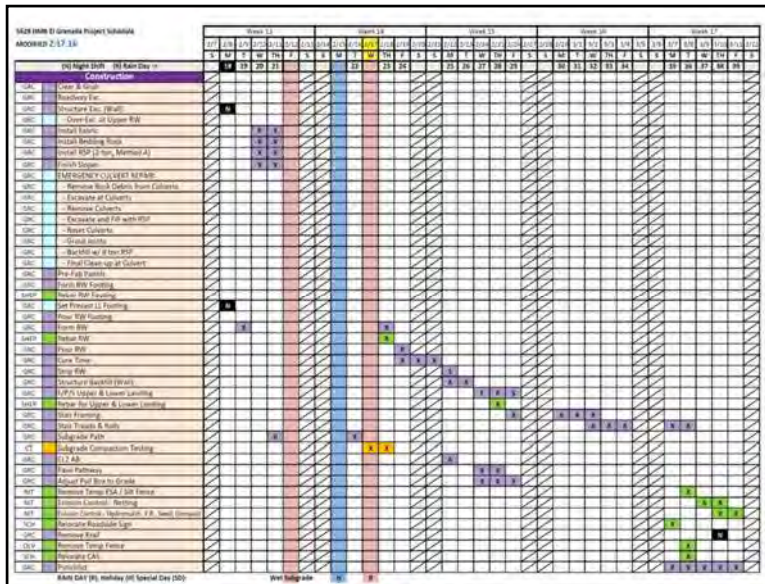
Kenai Peninsula Borough, Municipality of Anchorage, State of Alaska, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census

ADF&G

Sources: Esri, USGS | Kenai Peninsula Borough, Municipality of Anchorage, State of Alaska, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | Esri, USGS, FEMA | Source: USGS,

APPENDIX B

BMP DETAILS



Standard Symbol

BMP Objectives	
Soil Stabilization	<input checked="" type="checkbox"/>
Sediment Control	<input checked="" type="checkbox"/>
Tracking Control	<input checked="" type="checkbox"/>
Wind Erosion Control	<input checked="" type="checkbox"/>
Non-Stormwater Management	<input type="checkbox"/>
Materials and Waste Management	<input type="checkbox"/>

Definition and Purpose

This BMP involves developing, for every project, a schedule that includes sequencing of construction activities with the implementation of construction site BMPs such as temporary soil stabilization and temporary sediment control measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Appropriate Applications

Construction sequencing should be scheduled to minimize land disturbance during the wetter months for all projects. In addition, any construction windows required by regulatory permits, and any winter suspension work should be described in the schedule. Appropriate BMPs must be implemented year-round.

Limitations

Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Standards and Specifications

General Requirements

- Developing a schedule and planning the project operations to minimize erosion and the potential to discharge pollutants to stormwater are the very first steps in an effective stormwater program. The construction schedule must be incorporated into the SWPPP or WPCP. Refer to Section 8 and 13 of the Standard Specifications.

- The schedule should clearly show when work activities that could pollute stormwater with sediment or other contaminants would occur (e.g., grading, move-in, move-out, stockpiling, pile driving), and when soil stabilization, sediment control, and other BMPs associated with each phase of construction would be implemented.
- The schedule should include details on the implementation and deployment of:
 - Temporary and permanent soil stabilization BMPs
 - Temporary sediment control BMPs
 - Tracking control BMPs
 - Wind erosion control BMPs
 - Non-stormwater BMPs and
 - Waste management and materials pollution control BMPs
- The schedule should also include dates for significant long-term operations or activities that may have planned non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, bridge cleaning, etc.
- The construction schedule should reflect requirements for in-water work and other construction activity with potential to disturb water and biological resources contained in regulatory agency permits and approvals (RWQCB 401 WQC, USACE 404 permit, DFG 1602 permit, etc.).

Recommendations

- Schedule work to minimize soil disturbing activities during predicted rain events. Consider rescheduling activities for dry periods to minimize maintenance requirements.
- Develop the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, pouring foundations, installing utilities, etc., to minimize the active construction area.
- Schedule major grading operations during dryer months when practical.
- Stabilize inactive areas within 15 days from the cessation of soil-disturbing activities or one day prior to the onset of precipitation, whichever occurs first. Must consider manufacturers recommendation for the selected soil stabilization BMP to ensure they meet the minimum dry time required. See Appendix B of this Manual for additional guidance.
- Monitor the weather forecast for storm events, which are storms that produce or are forecasted to produce at least 0.1 inch of precipitation within a 24-hour period. When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization, sediment controls, and, if applicable, sediment treatment controls on all disturbed areas prior to the onset of rain.

- Ensure ample supply of BMP materials are on site in order to quickly mobilize and implement required BMPs, particularly ahead of rain events when materials may be in short supply or back order.
 - Be prepared year-round to deploy soil stabilization and sediment control practices. Erosion may be caused during dry seasons by unseasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year-round, and retain and maintain sediment trapping devices in operational condition.
 - Sequence trenching activities so that most open portions are closed before new trenching begins. Trenched material should be stored on the upstream side of the trenches.
 - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
 - Consider the early planting and establishment of permanent vegetation in the schedule to maximize plant establishment success and minimize irrigation and continuous maintenance needs.
 - Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.
- Maintenance and Inspection
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
 - Keep the schedule up to date and ensure it is consistent with the contractor's three-week look ahead, or other routine schedule submitted to the RE under the contract.
 - Amend the schedule when changes are warranted or when directed by the RE.
- SWPPP or WPCP
- A Water Pollution Control Schedule (WPCS) must include construction operations and BMP implementation for the entire duration of the project. The WPCS is to be included as an attachment and discussed in section 500.7 of the SWPPP or Section 30.5 of the WPCP.

BMP 54.00. Site Delineation

DESIGN CONSIDERATIONS

Objectives

Site delineation measures are intended to mark (1) all areas where land disturbing activities will occur, including clearing and grading, and (2) specific areas that will be left undisturbed, such as trees, boundaries of sensitive areas, or environmental buffer zones, prior to work beginning. Buffer zones may include those at stream crossings and around the edges of any wetlands or waters of the U.S. that are located within or immediately adjacent to the property where the construction activity will take place.

This measure is intended to comply with the requirements of Alaska Construction General Permit.

Description

Site delineation measures may be physical barriers, such as temporary fencing, or visual indications, such as staking and flagging, used to delineate specific areas. They are intended to remain until construction activity is completed. The most common measures include temporary fencing, survey flagging tape, stakes, paint on asphalt or concrete, and signs.

Other Names

Flagging, temporary fencing, high-visibility fencing, staking, signs, paint markings.

Applicability

Site delineation applies to all construction projects involving land disturbing activities.

Selection Considerations

Choose marking materials that have high visibility and contrast with the natural surroundings. Select materials based on ability to last for the duration of construction. This is especially important for construction that will span multiple seasons, or last several years.

Sensitive areas and their buffers may require more substantial protection, such as work zone safety fences. Silt fence, in combination with survey flagging, can be an acceptable method of marking sensitive areas and buffers. However, silt fencing

should only be used for this purpose if it is also needed for, and properly installed and maintained as, a sediment control measure.

If fencing other than orange fencing is used, provide signage with wording describing the purpose of the fence.

If signs are to be used, specify the type and spacing of signs and the wording on the sign, such as 'No Entry,' 'Keep Out,' 'No Grade Change', 'No Work, Storage Of Materials or Equipment Permitted Beyond This Point,' or other appropriate directive. Specify minimum lettering size for signs.

For long linear projects that are constructed in phases, consider the following:

- Provide delineation to protect adjacent out-of-phase areas that are not part of the current phase of construction.
- Specify installation of site delineation to coincide with phases of construction so that the length of time the site delineation must be inspected and maintained is sufficient but no longer (too far in advance) than necessary.

Common Failures or Misuses

- Failure to install prior to land disturbing activities.
- Inappropriately using materials intended for other purposes. For example, silt fencing material should not be used unless it is properly installed as a sediment control measure (BMP-20).
- Installing markers too close to areas of construction activity; failure to provide adequate maneuvering room for construction activities.
- Damage to markings and flagging cut down during clearing activities.
- Using products that are easily vandalized by humans or disturbed by animals.

SPECIFICATIONS

Standard Specification

655 – Site Delineation

BMP AK-1

Preservation of Existing Vegetation

Purpose and Description

- The purpose of preserving existing vegetation is to limit site disturbance and to minimize soil erosion by identifying and protecting pre-existing vegetation on the construction site.¹

Applicability

- Natural vegetation must be preserved in all areas where no construction is planned or will occur at a later date.
- Clear only land that is needed for building activities or vehicle traffic.²
- This BMP is not to supersede existing guidelines, restrictions or law, preserve vegetation as required by local governments (such as stream buffers).
- The preservation of existing vegetation is an applicable practice in all regions and climates in Alaska.

Design and Installation

- Before any clearing begins, vegetation selected for preservation must be clearly marked with established barriers.³ These barriers must be about 1 meter in height, must be highly visible and be anchored by wood or metal fence posts at spacing and depth that will adequately support the fence for the entirety of the project.¹

- A site map must be prepared clearly outlining all areas of vegetation that is to be preserved.²
- Vehicle traffic, equipment storage and parking shall be kept away from these areas to prevent soil and root compaction.¹
- Ground disturbance must be kept from these areas at least as far out as the leaf drip line.³
- Maintain pre-existing irrigation systems that may supply water to vegetation selected for preservation.¹
- To increase chances of survival it is best to limit grade changes in these areas and areas within the drip line.³

Maintenance and Inspection

- Repair or replace damaged vegetation immediately.²
- Inspect preservation areas regularly, if barrier has been removed or visibility reduced repair or replace barrier so that visibility is restored.³
- If roots are exposed or damaged, prune ends just above damage with pruning shears or loppers and recover with native soil.³

References

¹Caltrans Storm Water Quality Handbooks, March 2003, Construction Site Best Management Practices Manual, SS-2 Preservation of Existing Vegetation, http://www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf

(Continued on next page)

²USEPA (United States Environmental Protection Agency), October 2000, National Menu of Best Management Practices, Preserving Natural Vegetation,
<http://cfpub.epa.gov/npdes/stormwater/measureofbmps/index.cfm?action=browse&Rbutton=detail&bmp=34&minmeasure=4>

³Washington State Department of Ecology, February 2005, Storm Water Management Manual for Western Washington, Construction Storm Water Pollution Prevention, BMP C101: Preserving Natural Vegetation,
<http://www.ecy.wa.gov/pubs/0510030.pdf>

BMP 38.00. Vegetation Buffer

DESIGN CONSIDERATIONS

Objectives

A Vegetation Buffer is intended to reduce the quantity of suspended soil sediments in construction-related stormwater runoff by using living strips of vegetation suitable to reducing run-off velocities. The application for this type of control can include, but is not limited to the following:

- Type I – Perimeter Control - Provides a Vegetation Buffer as a perimeter control between the on-site construction related activities and the project boundaries.
- Type II – Natural Buffer - Provides a Vegetation Buffer between the construction related activities and sensitive areas such as waters of the U.S. and riparian areas (as required by the Alaska Construction General Permit [CGP]).

Description

Vegetation Buffers can be strips of existing vegetation or can be areas that are graded and planted with grass or other types of vegetation. They are intended to be used adjacent to where construction activities will occur and are primarily designed to treat sheet flow. Vegetation Buffers should not be used in areas with concentrated flows. Larger areas must be used to accommodate the larger run-off volume. These strips function by reducing the velocity of run-off to allow the suspended sediments and other pollutants to settle and partially infiltrate into the underlying soils.

Other Names

Vegetated Sediment Filtration Areas, Buffer Strips, Vegetated Strips

Applicability

Vegetation Buffer strips can be used at numerous locations over a project but are best suited if installed at locations where the soil is well drained and where the water table and bedrock are well below the surface. Vegetation Buffers may also be effectively used on the top and bottom of slopes. They can be used either temporarily or as permanent installations.

Selection Considerations

During the design phase of a project any area specified to be a natural Vegetation Buffer area should be identified. The type of vegetation, soil conditions, and the estimated volume of stormwater run-off should be considered when selecting a natural Vegetation Buffer.

Vegetation Buffer areas that are installed (or planted) should be located directly adjacent to where construction activities will occur. These areas should be graded and planted to establish a healthy vigorous stand of vegetation prior to any construction occurring. Other erosion and sediment control measures should be installed to help protect and stabilize the Vegetation Buffer while the planted vegetation becomes established.

When retaining existing vegetation as a Vegetative Buffer, minimize the disturbed areas by locating temporary roadways to avoid stands of vegetation and following the existing contours to reduce cutting and filling. To avoid disturbing the root-zone of existing trees, the edge of the tree canopy or drip-line should be noted when locating these temporary roadways.

Vegetated Buffers must be on land controlled by the project. If in wetlands, they must be recognized in the wetland permit.

Design

The designer should consider the type of Vegetation Buffer (Type I or II) and the slope of the proposed Vegetation Buffer area, the soil type and infiltration rate, the water table level, the type of proposed or existing vegetation, the estimated stormwater flow in the area, and the protection of sensitive areas. There may be site specific constraints that dictate alternate widths for a Vegetation Buffer or require the use of a different perimeter control measure.

Vegetation Buffer areas should be fully established with vegetation prior to construction occurring. A fully established Vegetation Buffer should be composed of species that are capable of growing a sod forming mass that covers 90 percent of the selected area. New Vegetation Buffers with planted vegetation should be composed of more than just one species and be hardy to the area. The

combination of species should be capable of creating a perennial stand of vegetation and be able to withstand frequent inundation from run-off. See BMP-53 Permanent Seeding.

All Vegetation Buffer areas with either naturally-occurring or planted stands of vegetation should be delineated prior to and throughout construction to prevent damage to the vegetation and its roots. All Vegetation Buffer areas should be inspected for impacts from soil deposited by construction related activities, damage from channelized run-off, excess accumulation of sediment, and disturbance or damage from construction activities. It may be necessary to employ other erosion and sediment control measures upstream to support existing Vegetation Buffer areas. Do not include the acreage of Vegetation Buffers in the acreage of disturbed areas for the purpose of the Notice of Intent (NOI) acreage.

The two types of buffers for Vegetation Buffer landscaping include the following:

Type I Perimeter Control Vegetation Buffers are used to help filter sediments from run-off before it leaves the job site. These can be composed of existing or newly planted vegetation. The length of these buffers should be determined by the steepness of the slope.

Type II Natural Buffer Vegetation Buffers are used when required by the Alaska CGP to protect sensitive areas (such as waters of the U.S. or riparian areas). The minimum width shall be 25 feet unless found to be infeasible. However, in some cases the governing local ordinance may specify an alternate minimum width. In such cases, it is the responsibility of the designer and the contractor to review and adhere to the specific requirements for a Vegetation Buffer in the local ordinance. Local ordinances governing nonpoint source pollution in Alaska can be found here:

<http://www.commerce.state.ak.us/dca/nonpoint/ordinances.cfm?type=Hy>

Relationship to Other Erosion and Sediment Control Measures

Vegetation Buffers areas with existing vegetation may not require other erosion and sediment control measures; however, installing or planting new Vegetation Buffer areas will require other erosion

and sediment control measures during the establishment period of the specified vegetation.

Common Failures or Misuses

Common failures are generally due to faulty application and maintenance. These failures include:

- Damage to the roots or stalks of the vegetation from construction activities.
- Overwhelming the buffer with excessive quantities of stormwater run-off, sediments, channelized run-off, and pollutants.
- Inadequate subsurface soil, vegetation, and size of Vegetation Buffer strip
- Non-observance of delineated Vegetation Buffer areas.
- Designer does not visit site and fails to take site specific conditions into account.

SPECIFICATIONS

Standard Specifications

- 688 – Vegetation Buffer
- 201 – Clearing and Grubbing
- 203 – Excavation and Embankment
- 620 – Topsoil
- 651 – Hydraulic Erosion Control Product
- 652 – Soil Amendments
- 655 – Site Delineation
- 712-2.01 – Water
- 724 – Seed
- 725 – Fertilizer
- 726 – Topsoil
- 751 – Hydraulic Erosion Control Products
- 752 – Tackifier
- 753 – Soil Amendments

Drawing

- BMP-38.00 Vegetation Buffer

VEGETATION BUFFER NOTES:
MATERIAL
SITE DELINEATION MATERIAL: SEE SPECIFICATION SECTION 655 SITE DELINEATION.

- INSPECTION
1. INSPECT NATURAL EXISTING VEGETATION BUFFER AREAS TO ENSURE THAT THE SITE DELINEATION TO MARK THE NON-DISTURBANCE AREAS IS IN PLACE.
 2. CHECK FOR DAMAGE BY EQUIPMENT AND VEHICLES.
 3. INSPECT NEW VEGETATION BUFFER AREAS FOR THE PROGRESS OF GERMINATION AND PLANT GROWTH.
 4. ENSURE STORMWATER FLOWING THROUGH THE AREA IS NOT FORMING PONDS, RILLS, OR GULLIES.
 5. INSPECT FOR SEDIMENT DEPOSITION THROUGHOUT THE BUFFER.

- MAINTENANCE
1. REPLACE OR REPAIR SITE DELINEATION (SUCH AS FENCING, STAKING, OR FLAGGING) AS NECESSARY TO DELINEATE THE VEGETATION BUFFER AREAS.
 2. REPAIR ANY DAMAGE BY EQUIPMENT OR VEHICLES.
 3. PROVIDE ADDITIONAL SEED, FERTILIZER, AND WATER TO REPAIR SEEDED AREAS DAMAGED BY EROSION OR PONDING OF WATER.
 4. IF SEDIMENT IS DEPOSITING IN THE BUFFER, INSTALL IMPROVED EROSION CONTROL MEASURES UPSLOPE OF THE BUFFER.

- REMOVAL
1. PROVIDE THE NECESSARY PERMANENT STABILIZATION TO AREAS WITH TEMPORARY VEGETATION BUFFER AS REQUIRED BY PLANS.
 2. REMOVE SITE DELINEATION MATERIAL AFTER FINAL STABILIZATION OF WORK AREAS. WORK TO REMOVE THE SITE DELINEATION MATERIAL SHALL NOT DAMAGE THE EXISTING VEGETATION OR ANY STABILIZATION MEASURE.

VEGETATION BUFFER TABLE	
AVERAGE SLOPE	BUFFER WIDTH (MIN.)
0%–2%	25 FEET
3%–5%	29–37 FEET
5%–10%	37–57 FEET
10%–20%	57–100 FEET
20% MAXIMUM	100 FEET

- VEGETATION BUFFER TABLE NOTES:
1. THE MINIMUM WIDTH FOR ANY VEGETATION BUFFER IS 25 FEET. FOR EVERY 1% INCREASE OF THE SLOPE ADD 4 FEET TO THE VEGETATION BUFFER WIDTH.
 2. INSTALL VEGETATION BUFFERS ENTIRELY WITHIN THE RIGHT-OF-WAY.
 3. FOR VEGETATION BUFFERS THAT ARE USED AS PERIMETER CONTROL (TYPE 1):
 - a. THE MINIMUM WIDTH FOR ANY VEGETATION BUFFER IS 25 FEET WHEN BUFFER WIDTHS LISTED IN THE TABLE ABOVE ARE NOT FEASIBLE.
 - b. USE ADDITIONAL BMPS WHEN THE MINIMUM BUFFER WIDTH CANNOT BE ACHIEVED.
 4. THE WIDTH OF VEGETATION BUFFERS THAT ARE NATURAL BUFFER AREAS AS REQUIRED BY THE CGP (TYPE II) MUST ALSO COMPLY WITH THE WIDTH REQUIRED BY LOCAL ORDINANCES, IF GREATER THAN 25 FEET.

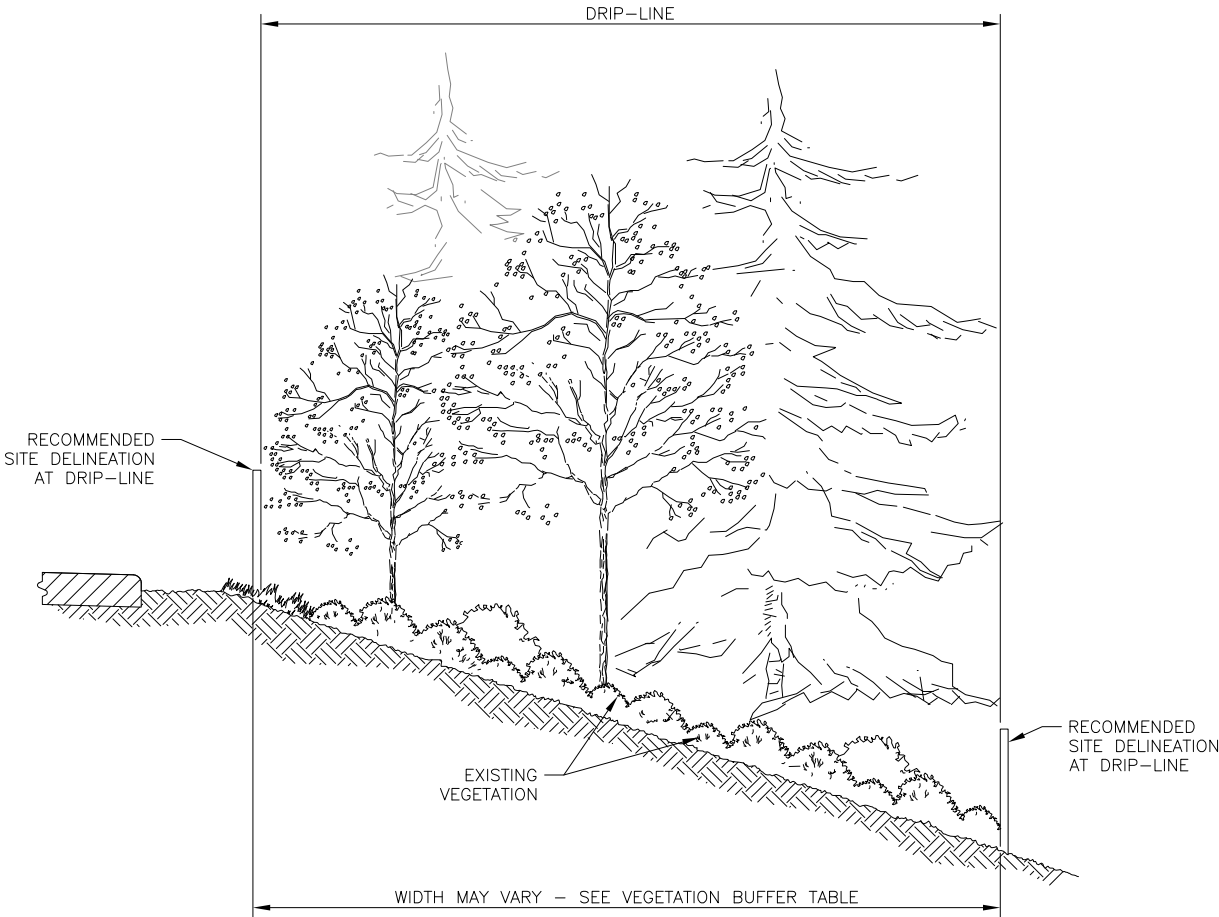
REVISIONS		
Date	Description	By

State of Alaska DOT&PF

VEGETATION
BUFFER

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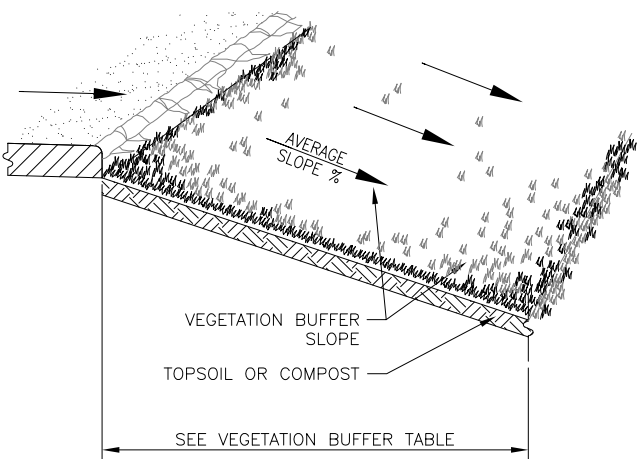


SECTION

EXISTING VEGETATION BUFFER

NOT TO SCALE

- EXISTING VEGETATION BUFFER AREA NOTES:
- INSTALLATION
1. DELINEATE UNDISTURBED NATURAL AREAS OF VEGETATION IDENTIFIED IN THE PLANS WITH METHODS CONSISTENT WITH THE SITE DELINEATION SPECIFICATION PRIOR TO COMMENCEMENT OF CLEARING AND GRUBBING OPERATIONS OR OTHER SOIL DISTURBING ACTIVITIES.
 2. ENSURE ALL OTHER SEDIMENT CONTROL MEASURES USED IN CONJUNCTION WITH THE VEGETATION BUFFER AREAS ARE IN PLACE AND FUNCTIONING PROPERLY.
 3. DO NOT ALLOW CONSTRUCTION MATERIALS, EQUIPMENT, OR PARKING ON THE VEGETATION BUFFER AREAS OR WHERE THE ROOT-ZONE OF THE VEGETATION MAY BE DAMAGED.



PERSPECTIVE

NEW VEGETATION BUFFER

NOT TO SCALE

- NEW VEGETATION BUFFER AREA NOTES:
- THIS BMP IS NOT APPROPRIATE FOR PROJECTS LASTING LESS THAN 30 DAYS. THIS BMP IS NOT APPROPRIATE FOR ALL CLIMATE ZONES IN ALASKA.
- MATERIAL
TOPSOIL OR COMPOST

SEED, FERTILIZER, MULCH

- INSTALLATION
1. ENSURE ALL SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWPPP (SUCH AS SILT FENCE AND DIVERSIONS) ARE IN PLACE TO PROTECT WATERS OF THE U.S. UNTIL THE VEGETATION BUFFER AREA IS ESTABLISHED.
 2. ESTABLISH VEGETATION USING SPECIFIED SEED, FERTILIZER, AND MULCH. IF SEED MIX IS NOT SPECIFIED, USE PERMANENT SEED MIX FOR PERMANENT, POST-CONSTRUCTION BUFFERS AND FAST GROWING ANNUAL RYE FOR TEMPORARAY BUFFERS.
 3. MAINTAIN VEGETATION AND PROVIDE IRRIGATION AS NECESSARY TO ENSURE VIGOROUS GROWTH AND TO PREVENT DIEBACK.
 4. DELINEATE VEGETATION BUFFER AREAS WITH METHODS CONSISTENT WITH THE SITE DELINEATION SPECIFICATION AT THE EDGE OF THE NEW VEGETATION BUFFER.
 5. AVOID DAMAGE TO THE VEGETATION BUFFER OR ROOT-ZONE BY NOT ALLOWING CONSTRUCTION MATERIALS, EQUIPMENT OR PARKING ON THEM.

BMP 10.00.a. Fiber Rolls for Erosion Control

DESIGN CONSIDERATIONS

Objectives

The purpose of Fiber Rolls for Erosion Control is to shorten the slope and help to slow, filter, and spread overland flows. They capture sediment, organic matter, and seeds that might otherwise be washed downslope.

Description

Fiber Rolls are long rolls of material such as wood excelsior, rice or wheat straw, flax, coconut fibers, or compost, which is rolled or bound in a tight tubular roll and wrapped in plastic or biodegradable netting. They are typically about 8 inches in diameter and under 30 feet long.

They may come pre-fabricated or they can be fabricated on-site.

Other Names

Wattles, Straw Wattles, Straw Rolls, Coir Logs, Excelsior Log, Straw Log, Filter Logs, Fiber Logs.

Applicability

Fiber Rolls can be applied to steep or long slopes and slopes that are susceptible to freeze/thaw activity, sheet and rill erosion, or dry ravel. They can be placed along the toe, top, face, and at grade-breaks on disturbed or erodible slopes. They can be used as a temporary berm to direct flow around exposed soils or to a sediment trap and as a check dam in unlined ditches. They can be used at other locations at the project site for sediment control.

Selection Considerations

- Use in areas of low shear stress.
- Avoid use on slopes that could build up ice; for instance, where seepage occurs.
- They are effective for one to two seasons.
- Fiber Rolls can be staked to the ground using willow cuttings to increase the revegetation effort. Since the fiber roll will retain moisture, it will provide a good site for the willow cuttings to root. The Alaska Department of Fish and Game (ADF&G) has prepared guidance for willow cuttings and dormant cuttings in the

Streambank Revegetation and Protection: A Guide for Alaska at:

<http://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.staking>

and

<http://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.cuttings>

- The quantity of sediment that a roll can capture prior to maintenance is limited to one-half the exposed height of the roll.
- Rolls will be difficult to move once they are saturated. Determine whether Fiber Rolls must be removed at the end of the project based on the use of the area. If removal is required, specify in the plan set and require removal of netting upon final stabilization.

Relationship to Other Erosion and Sediment Control Measures

Fiber Rolls are best used in combination with seeding, mulch, hydraulic erosion control products (HECPs), and/or rolled erosion control products (RECPs). They can be used to stabilize slopes until the permanent vegetation becomes established.

Common Failures or Misuses

- Unless they are placed in a trench, run-off can flow underneath Fiber Rolls and cause failure.
- Unless they are properly staked, Fiber Rolls can be transported by high flows.
- Water can flow between Fiber Rolls if they are not overlapped.
- Fiber Rolls must be placed perpendicular to flow (parallel to the slope contour).
- Fiber Rolls will not work if the slope is slumping, creeping, or sliding.

SPECIFICATIONS

Standard Specification

- 669 – Fiber Rolls for Erosion and Sediment Control

Drawings

- BMP-10.00 Fiber Rolls for Erosion and Sediment Control
- BMPs -31.00, 32.00 and 33.00 Temporary Check Dam

BMP 10.00.b. Fiber Rolls for Sediment Control

DESIGN CONSIDERATIONS

Objectives

The purpose of Fiber Rolls for Sediment Control is to trap sediment and prevent it from being transported out of the project area, to another area, or to waters of the U.S.

Description

Fiber Rolls are long rolls of material such as wood excelsior, rice or wheat straw, flax, coconut fibers, or compost, which is rolled or bound in a tight tubular roll and wrapped in plastic or biodegradable netting. They are typically about 8 inches in diameter and under 30 feet long.

They may come pre-fabricated or they can be fabricated on-site.

Other Names

Wattles, Straw Wattles, Straw Rolls, Coir Logs, Excelsior Log, Straw Log, Filter Logs, Fiber Logs.

Applicability

Fiber Rolls can be placed at the perimeter of a project, below the toe of exposed and erodible slopes, and around temporary stockpiles. They may also be used for inlet protection. They can be used at other locations at the project site for erosion control.

Selection Considerations

- Use in areas of low shear stress.
- Avoid use on slopes that could build up ice; for instance, where seepage occurs.
- They are effective for one to two seasons.
- Fiber Rolls can be staked to the ground using willow cuttings to increase revegetation efforts. Since the Fiber Roll will retain moisture, it will provide a good site for the willow cuttings to root. The Alaska Department of Fish and Game has prepared guidance for willow cuttings and dormant cuttings in the *Streambank Revegetation and Protection: A Guide for Alaska* at:
<http://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.staking>

and

<http://www.adfg.alaska.gov/index.cfm?adfg=streambankprotection.cuttings>

- The quantity of sediment that a roll can capture prior to maintenance is limited to one-half the exposed height of the roll.
- Rolls will be difficult to move once they are saturated. Determine whether Fiber Rolls must be removed at the end of the project based on the use of the area. If removal is required, specify in the plan set and require removal of netting upon final stabilization.

Relationship to Other Erosion and Sediment Control Measures

Fiber Rolls are best used in combination with seeding, mulch, hydraulic erosion control products (HECPs), and/or rolled erosion control products (RECPs).

- Fiber Rolls can be used in place of silt fence. The advantage of fiber rolls over silt fence is that installation is much easier, they do not have to be removed, and hydroseeding can be done after their installation.
- Compost socks can be used in place of Fiber Rolls and do not require trenching. Compost socks are also heavy enough that they can be placed on paved surfaces.
- A prefabricated barrier system can be used in place of fiber rolls and requires a smaller trench. A prefabricated barrier system can also be adhered to paved surfaces.

Common Failures or Misuses

- Unless they are placed in a trench and have tamped backfill in the trench on the uphill side, runoff can flow underneath Fiber Rolls and cause failure.
- Unless they are properly staked, Fiber Rolls can be transported by high flows.
- Water can flow between Fiber Rolls if they are not overlapped.

- Fiber Rolls must be placed perpendicular to flow (parallel to the slope contour).
- Fiber Rolls will not work if the slope is slumping, creeping, or sliding.

SPECIFICATIONS

Standard Specification

- 669 – Fiber Rolls for Erosion and Sediment Control

Drawings

- BMP-10.00 Fiber Rolls for Erosion and Sediment Control
- BMP-08.00 Culvert Inlet Protection
- BMPs -25.00, 26.00, 27.00, 28.00 and 29.00 Storm Drain Inlet Sediment Protection

FIBER ROLL GENERAL NOTES:

MATERIALS
FIBER ROLLS: THE NETTING MAY BE UV-DEGRADABLE POLYPROPYLENE, BIODEGRADABLE BURLAP, JUTE OR COIR. THE FILLINGS MAY BE STRAW, FLAX, RICE, OR COCONUT-FIBER. MINIMUM DIAMETER OF 6 INCHES.

STAKES: 1-INCH BY 1-INCH WOODEN STAKES 24 INCHES LONG (18 INCHES IF SOILS ARE ROCKY) OR 3/8-INCH REBAR WITH SAFETY CAPS OR 3/4-INCH TO 1 1/2-INCH DIAMETER LIVE WILLOW CUTTINGS. IF USING LIVE WILLOW CUTTINGS, DO NOT INSTALL ROPE.

INSTALLATION

1. PLACE FIBER ROLLS PERPENDICULAR TO FLOW AND PARALLEL TO THE SLOPE CONTOUR.
2. AT THE END OF THE ROLL, TURN THE END UPSLOPE TO PREVENT RUN-OFF FROM GOING AROUND THE ROLL END.

INSPECTION

1. ENSURE THAT THE ROLLS ARE IN CONTACT WITH THE SOIL AND THOROUGHLY ENTRENCHED.
2. LOOK FOR SCOURING UNDERNEATH THE ROLLS.
3. LOOK FOR SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER ROLLS.
4. ENSURE EQUIPMENT HAS NOT DRIVEN OVER THE INSTALLED FIBER ROLLS.

MAINTENANCE

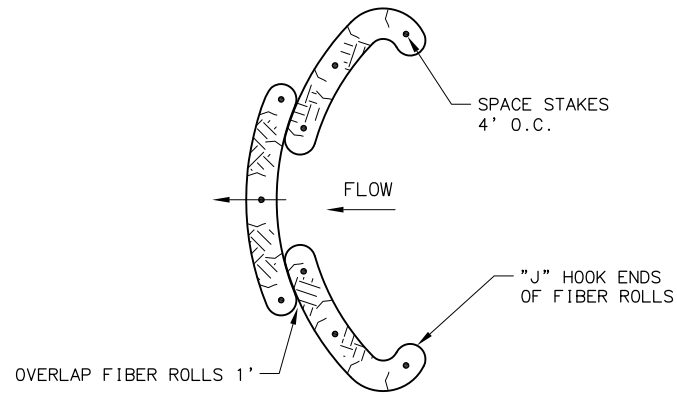
1. REPLACE DAMAGED SECTIONS OF FIBER ROLL.
2. REMOVE ACCUMULATED SEDIMENT UPSLOPE OF THE ROLL BEFORE IT REACHES ONE-HALF THE DISTANCE BETWEEN THE TOP OF THE FIBER ROLL AND THE GROUND SURFACE. WHEN PROTECTING A WATER BODY OR STORM DRAIN INLET, REMOVE ACCUMULATED SEDIMENT UPSLOPE OF THE ROLL WHEN IT REACHES ONE-THIRD OF THE DISTANCE BETWEEN THE TOP OF THE FIBER ROLL AND THE GROUND SURFACE.

REMOVAL

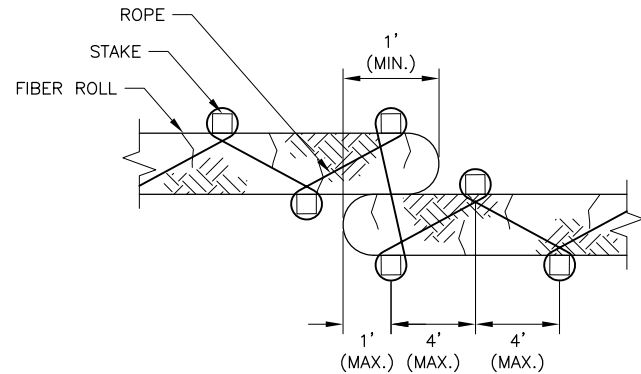
1. REMOVE FIBER ROLLS WHEN THE AREA IS STABILIZED OR WHEN THEY ARE NO LONGER NECESSARY.
2. COLLECT AND DISPOSE OF THE ACCUMULATED SEDIMENT.
3. REMOVE AND DISPOSE OF FIBER ROLLS.
4. FILL THE TRENCHES AND STAKE HOLES TO BLEND WITH THE ADJACENT GROUND AND REVEGETATE AS NECESSARY.

RETENTION

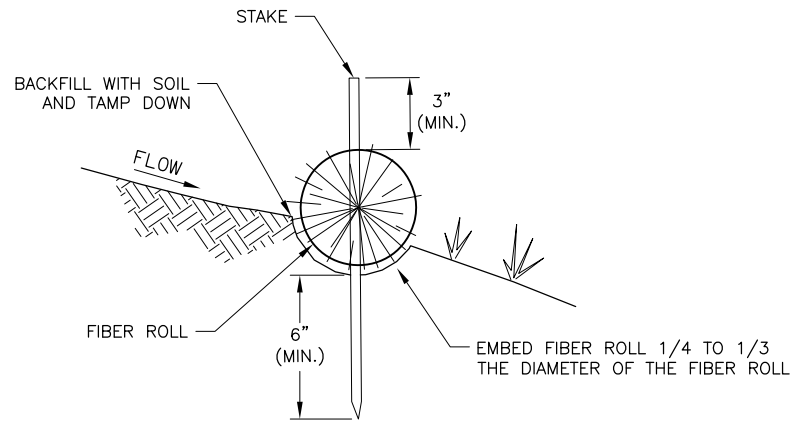
1. LEAVE FIBER ROLLS IN PLACE WHEN THE AREA IS STABILIZED OR WHEN THEY ARE NOT NECESSARY.
2. COLLECT AND DISPOSE OF THE ACCUMULATED SEDIMENT.
3. REMOVE AND DISPOSE OF THE NETTING, STAKES, AND ROPE.



PLAN



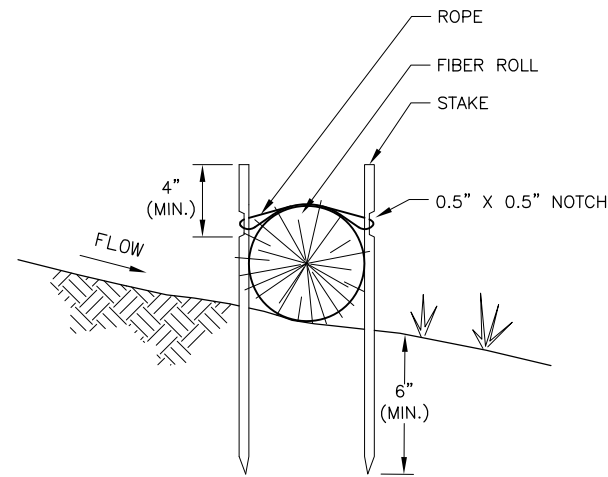
PLAN



SECTION

TRENCHED INSTALLATION

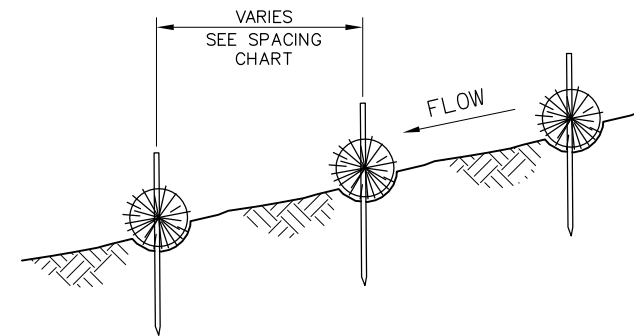
NOT TO SCALE



SECTION

ROPE INSTALLATION

NOT TO SCALE



TYPICAL SPACING CHART	
SLOPE	SPACING (FEET)
1:1	10
2:1	20
3:1	30

SLOPE INSTALLATION

NOT TO SCALE

TRENCHED INSTALLATION NOTES:

1. DIG TRENCHES AND PLACE FIBER ROLLS IN THE TRENCHES.
2. CURVE BACK THE UPSLOPE END OF THE FIBER ROLL IN A "J" HOOK.
3. SPREAD EXCAVATED MATERIAL EVENLY ALONG THE UPHILL SLOPE AND COMPACT USING HAND TAMPING OR OTHER METHODS.
4. STAKE THE ROLL EVERY 4 FEET AND WITHIN 1-FOOT OF THE ENDS. LEAVE 3 INCHES OF THE STAKE ABOVE THE ROLL.
5. DRIVE STAKES THROUGH THE MIDDLE OF THE FIBER ROLL.
6. IF REQUIRED, PILOT HOLES FOR THE STAKES MAY BE CREATED BY DRIVING A STRAIGHT BAR THROUGH THE ROLL.

SLOPE INSTALLATION NOTES:

1. INSTALL ON A SLOPE TO SHORTEN THE SLOPE LENGTH.
2. START INSTALLATION DOWNSLOPE.
3. SPACE ROLLS ACCORDING TO THE SPACING CHART AND DECREASE SPACING ON MORE ERODIBLE SOILS AND INCREASE SPACING ON ROCKY SOILS.

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
FIBER ROLLS FOR EROSION AND SEDIMENT CONTROL		
APPROVED		
Date	12/2015	X/XX/XX

BMP 20.00. Silt Fence

DESIGN CONSIDERATIONS

Objectives

The purpose of Silt Fence is to trap sediment and prevent it from being transported out of the project area to another area, or to a water body.

Description

Silt Fence is geotextile fabric secured to posts and secured in a trench, and/or with sandbags or drain rock.

Other Names

Geotextile for Sediment Control, Sediment Barrier.

Applicability

Silt Fence is used downslope from erosion-susceptible terrain to trap sheet flow run-off before the drainage exits the project site. Adequate space must be provided for pooled water on the uphill side of the fence.

Barrier locations are chosen based on site features and conditions (e.g. soil types, climate, terrain features, sensitive areas, etc.), design plans, existing and anticipated drainage courses, and other available erosion and sediment controls. Typical barrier sites are catchpoints beyond the toe of fill, or on sideslopes above waterways or drainage channels.

Although drainage in contact with the fence is to some degree filtered by the geotextile, the fabric's small pores not only block larger-sized eroded particles but also severely restrict water exfiltration rates and behaves like a dam. For this reason, Silt Fences are not to be used for concentrated flows in continuous flow streams or ditches; or as check dams.

Silt Fence can be installed in standing water to provide time for particles to settle.

Silt Fences are used to encircle stockpiled erodible material to prevent off-site sediment transport.

Since Silt Fence installation can cause significant damage, alternative best management practices (BMPs) should be considered for installation instead of Silt Fence. Use Fiber Rolls, compost socks, brush bundles to filter small amounts of sediment in shallow gullies or ditches. Temporary settlement

basins, gravel berms, or foam barriers can be used as alternatives to Silt Fence.

Do not use Silt Fence on airport runways, taxiways, aprons, or within the Runway Safety Areas.

Selection Considerations

Use of sediment control measures and the level of effort should be commensurate with the potential problem. Silt Fence is not to be used solely as a project delineator (see Site Delineation, BMP-55).

- Use of a Silt Fence sediment control measure is usually more complex, expensive, and maintenance-prone than other sediment control measures.
- Consider impacts of the fence installation, maintenance, and removal on sensitive areas needing protection (e.g. avoid equipment encroachment on wetlands).
- Consider potential undesirable effects of fence placement (e.g. a trench in ground that will not readily "heal" after fence removal; undesirable effects of extent or depth of ponded water, etc.)
- An equipment access route and space for fence installation, maintenance, and removal must be available without encroaching into sensitive areas or off the project limits.
- Wire reinforcement can be used with Silt Fence by backing the geotextile fabric with chain link, polymeric mesh, or welded wire fencing. Below is a list of considerations for adding wire reinforcement to Silt Fence installation:
 - Consider using wire reinforcement and longer posts to resist overturn.
 - Consider using wire reinforcement in areas of high wind.
 - Consider using wire reinforcement for standing water installations.

Types of Silt Fence for Purchase:

- *With Pockets:* Sewn-in pocket Silt Fence is geotextile that has factory-sewn pockets for the posts and does not require post fasteners.
- *Without Pockets:* Silt Fence without pockets is geotextile fabric that requires fasteners to attach

the fabric to the posts or Silt Fence that is available with posts pre-attached.

- **Wire Reinforcement:** When Silt Fence is wire reinforced, the geotextile fabric is backed with chain link or welded wire fencing.

Methods of Installation:

- **Trenchless:** Drive support posts into the ground, attach geotextile on the upslope side of the line of stakes with a portion lying flat on the ground, and place clean rock or sandbags on the geotextile. Using sandbags to anchor the fence bottom is a less desirable method because of the tendency for undermining. Require removal of the rock or sandbags when the fence is removed.
- **Trench Key:** Drive support posts into the ground, excavate a trench on the uphill side along the line of the stakes, attach geotextile, and bury fence bottom. Use soil to backfill trench and compact to secure fence bottom. Compacted soil is preferred to gravel fill.
- **Machine Slice:** This method requires a Silt Fence installation machine or attachment. The machine utilizes a blade that plows or slices the fabric directly into the soil minimizing soil disturbance. Displaced soil must be manually backfilled into the slice before the tractor is used to mechanically compact the soil.

Design

Locate Silt Fence at a distance from the base of the slope or pile such that there is space for temporary storage of potential accumulated material. Consider a space of 4 feet for worker access if feasible. The grade and length of slope as well as soil erodibility must be considered when specifying silt fence. If the slope is steep or long, consider intermediate slope breaks.

Below are design considerations for Silt Fence that is not wire-reinforced:

- **Design Life:** 1 season (6 months) or less.
- **Contributing Sheet Flow Drainage Area:** Not to exceed 0.25 acres/100 ft. of fence.
- **Maximum Height of Ponding Water:** 18 in.

Guidelines for Maximum Slope Length for Silt Fence:

Slope (H:V)	Length of Slope Above Fence, Assumes 30 In High Fence
10:1	150 ft.
6:1	85 ft.
5:1	70 ft.
4:1	55 ft.
3:1	40 ft.
2:1	25 ft.
1:1	15 ft.

Relationship to Other Erosion and Sediment Control Measures

Sediment control measures are secondary to erosion prevention or soil stabilizing measures. Silt Fence may be used as part of a sequential system with other temporary or permanent measures such as vegetation, check dams, settling ponds, etc. Occasional flow velocity increases may be offset using corrective measures such as rock berms or other redirecting energy absorbers.

Common Failures or Misuses

- Inappropriate for intended function (e.g. used for check dam, flow diversion, diversion dam, etc.).
- Installation of Silt Fence in streams or concentrated flow.
- Use as a mid-slope protection on slopes greater than 4:1.
- Use as a perimeter control in high flow areas.
- Field-sewn seams.
- Use of incorrect type of fabric.
- Loose or sagging fabric between posts.
- Fence improperly attached or fastened to posts.
- Posts not driven deep enough into the ground.
- Posts spaced too far apart.
- Posts installed on incorrect side of fence.
- Placement of overlapped joints across pooled drainage areas.
- Fence allows spillover or bypass.
- Soil is not compacted next to fence after backfilling trench, allowing water to flow underneath.

- Trenches are too shallow to anchor the Silt Fence below ground or trenchless construction failure.
- Slope erosion occurs below the fenceline due to drainage that bypasses the barrier end, or water build-up that “blows out” a poorly-secured fence bottom.
- Fence function impairment due to sediment build-up, maintenance neglect, etc.
- Fence topples due to poor installation and/or high levels of impounded backup water or sediment.
- Uneven distribution of pooled drainage along non-level fenceline surface reduces efficiency.
- End of fence is not “J-hooked” upslope allowing water to run around the end.
- Poor support system (e.g. soil too rocky to secure posts, fabric stapled to trees, etc.).
- Installation of Silt Fence in a long continuous run.

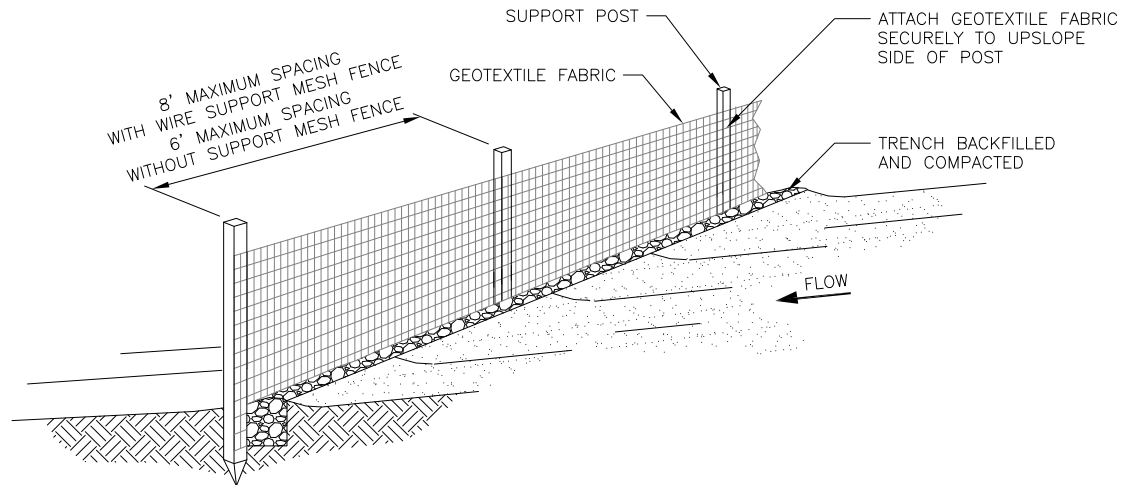
SPECIFICATIONS

Standard Specification

- 633 – Silt Fence
- 729-2.04 - Geosynthetics

Drawing

- BMP-20.00 Silt Fence (Sheets 1 and 2)



GENERAL INSTALLATION
NOT TO SCALE

SILT FENCE GENERAL NOTES:

MATERIALS

SILT FENCE: SEE SPECIFICATION SECTION 633, SILT FENCE.

INSTALLATION

1. INSTALL FENCELINE ALONG A LEVEL CONTOUR AND PERPENDICULAR TO ANTICIPATED SHEET FLOW DRAINAGE PATH(S).
2. ORIENT END SECTIONS UPHILL SLIGHTLY IN A J-HOOK TO PREVENT WATER FROM GOING AROUND THE SILT FENCE.
3. DO NOT EXCEED 100 FEET FOR EACH 1/4-ACRE OF DRAINAGE AREA AND DO NOT EXCEED 500 FEET REGARDLESS OF DRAINAGE AREA.
4. THE DIFFERENCE IN ELEVATION BETWEEN THE HIGHEST AND LOWEST POINT ALONG THE TOP OF THE SEDIMENT FENCE SHALL NOT EXCEED ONE-THIRD THE FENCE HEIGHT.
5. WHERE GROUND SURFACES ARE UNEVEN, INSTALL SHORTER FENCES FOLLOWING CONTOURS (RATHER THAN INSTALLING ONE LONG, CONTOUR-CROSSING FENCE THAT DIRECTS DRAINAGE TO ACCUMULATE IN LOW SPOTS).
6. LOCATE FENCE 3 TO 10 FEET BEYOND TOE OF FILL TO LEAVE ROOM FOR A BROAD, SHALLOW SEDIMENTATION POOL AND FOR EQUIPMENT ACCESS DURING FENCE MAINTENANCE AND REMOVAL.
7. IF FEASIBLE, LEAVE A MINIMUM OF 3.5-FOOT BUFFER BETWEEN FENCING AND SENSITIVE RECEIVING AREAS.
8. PLACE GEOTEXTILE ON THE UPSLOPE SIDE OF POSTS OR, WHEN USING SILT FENCE WITH SEWN-IN POCKETS, PLACE POCKETS ON THE UPSLOPE SIDE OF THE FENCE.
9. EXCAVATE TRENCHES NOT WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION OF THE SILT FENCE. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
10. AT JOINTS, ROLL ENOUGH OF THE ENDS OF SECTIONS TOGETHER AT SUPPORT POST SUCH THAT THE JOINT PREVENTS SILT-LADEN WATER FROM ESCAPING THROUGH THE FENCE.
11. IF USING THE FRONT WHEEL OF A TRACTOR OR ROLLER, COMPACT THE UPSTREAM SIDE FIRST, THEN EACH SIDE TWICE (A TOTAL OF FOUR TRIPS).

12. KEEP FENCE FABRIC TAUT.

13. WHEN USING SUPPORT MESH, ATTACH GEOTEXTILE TO THE SUPPORT MESH WITH FASTENERS SPACED EVERY 24 INCHES AT THE TOP AND MIDSECTION.

MACHINE SLICE INSTALLATION (NOT IN PERMAFROST)

1. USE A SILT FENCE INSTALLATION MACHINE OR ATTACHMENT TO PLOW OR SLICE THE FABRIC DIRECTLY INTO THE SOIL.
2. BACKFILL SOIL LOOSENED BY THE BLADE INTO THE SLICE AND USE THE TRACTOR TO MECHANICALLY COMPACT THE SOIL.
3. TUCK FABRIC DEEPER INTO THE GROUND WHERE NECESSARY.
4. INSTALL SUPPORT POSTS ALONG THE LENGTH OF THE FENCE FOLLOWING SIMILAR PROCEDURES FOR THE TRENCH METHOD.

WINTER INSTALLATION (NOT IN PERMAFROST)

1. DIG A TRENCH.
2. BACKFILL TRENCH WITH THE LOOSENED SOIL AND COMPACT SOIL PRIOR TO POST INSTALLATION.
3. MOISTEN THE BACKFILLED SOIL SO IT WILL FREEZE UP AND GRIP THE SILT FENCE FABRIC IN PLACE.
4. DO NOT LEAVE LARGE FROST CHUNKS AS THE BACKFILL.

INSPECTION

1. INSPECT FENCELINE FOR CONTINUITY, COLLAPSE, UNDERMINED AREAS, AND DAMAGE. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
2. INSPECT FABRIC FOR TEARS, PUNCTURES, FRAYING, WEATHERING, AND COMPROMISED INTEGRITY.
3. CONFIRM THAT THE FENCE POSTS ARE SECURE.
4. ENSURE THE FENCE IS KEYED IN AND THAT THERE IS NO UNDERCUTTING.
5. LOOK FOR EVIDENCE OF SEDIMENT OR EROSION FLOW LEADING OFF THE DOWNHILL EDGE OF THE FENCE. (THIS MAY BE AN INDICATOR OF DRAINAGE BYPASS OR FENCE UNDERMINE.)

6. NOTE DEPTH OF SEDIMENT BUILD UP AT THE FENCE.

7. LOOK FOR SIGNS OF INADEQUATE PROTECTION OF OFF-SITE SENSITIVE AREAS.

8. CHECK FOR SEDIMENT FLOWING THROUGH THE FENCE.

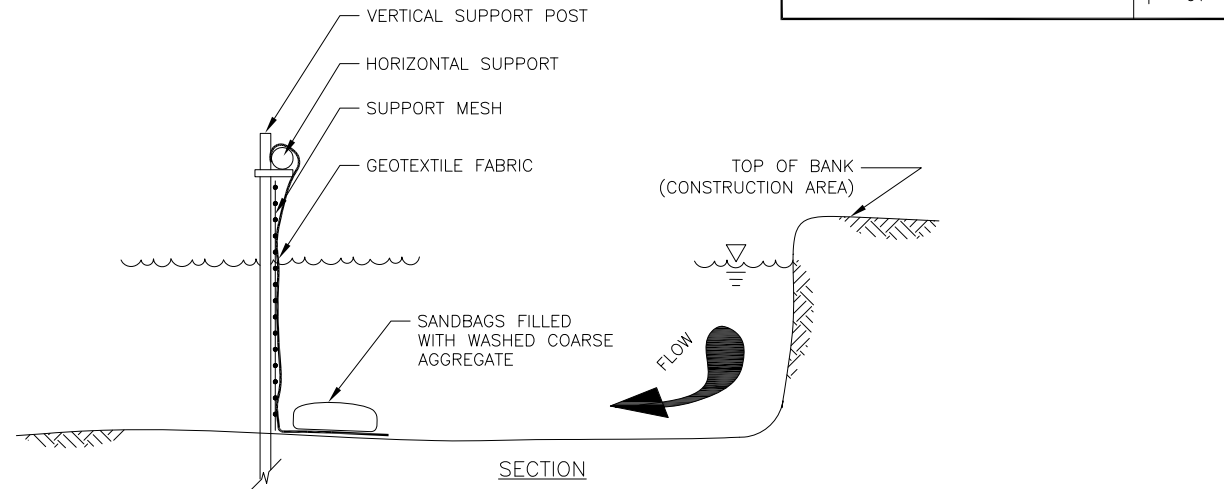
9. CHECK FOR HOLES IN FENCE WHERE WIRE TIES ARE USED TO SECURE GEOTEXTILE FABRIC TO THE SUPPORT POST.

MAINTENANCE

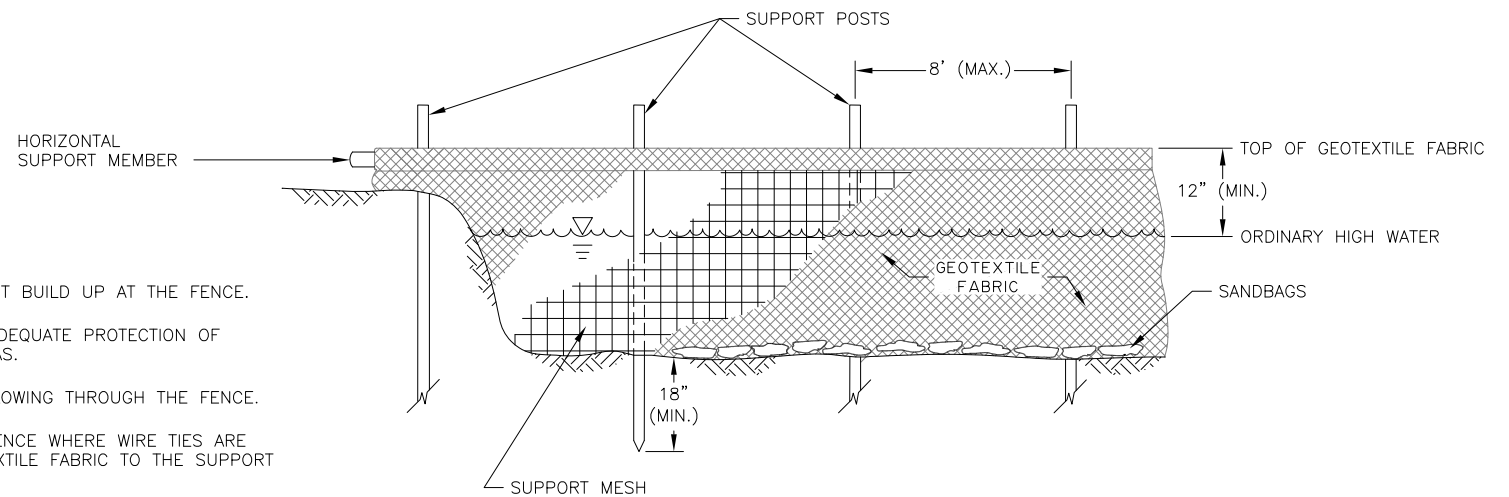
1. INSTALL ALTERNATE OR ADDITIONAL BMPS AS NEEDED TO PREVENT UNDESIRABLE SEDIMENTATION OF SENSITIVE AREAS.
2. REPLACE DAMAGED FABRIC.
3. REMEDY FENCE SAGS AS NEEDED.
4. REMOVE ACCUMULATED SEDIMENT BEFORE IT ACCUMULATES TO ONE-HALF THE CAPACITY, OR ONE-THIRD OF THE AVAILABLE STORAGE IF PROTECTING A WATER BODY OR STORM DRAIN INLET.
5. DISPOSE OF SILT WASTE IN APPROVED MANNER/LOCATION (TYPICALLY IN A NON-EROSION AREA).
6. IF THERE IS EVIDENCE OF EXCESSIVE SEDIMENTATION AGAINST THE SILT FENCE, PROVIDE INCREASED EROSION CONTROL UPSLOPE.

REMOVAL

1. WHEN DISTURBED AREAS ARE PERMANENTLY STABILIZED OR SEDIMENT PROTECTION IS NO LONGER NEEDED, COLLECT AND PROPERLY DISPOSE OF ACCUMULATED SEDIMENT OR SEED IN PLACE.
2. CUT FABRIC AT GROUND LEVEL AND REMOVE SUPPORTS.
3. DISCARD FILTER FENCE AS APPROVED. AVOID DAMAGE TO SENSITIVE AREAS (E.G. WETLAND OR SURFACE WATER).



SECTION



PROFILE

STANDING WATER INSTALLATION
NOT TO SCALE

STANDING WATER NOTES:

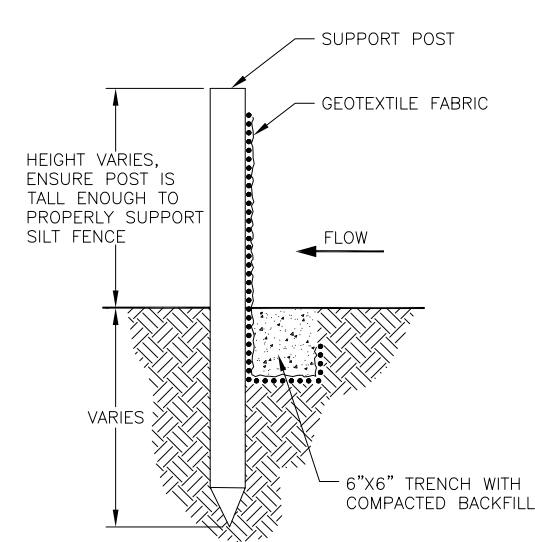
INSTALLATION

1. DRIVE SUPPORT POSTS INTO THE GROUND AND ATTACH A HORIZONTAL SUPPORT MEMBER.
2. ATTACH SUPPORT MESH AND GEOTEXTILE ON THE UPSLOPE SIDE OF THE STAKES, EXTEND GEOTEXTILE ON THE GROUND UPSLOPE OF THE FENCE, AND ANCHOR THE GEOTEXTILE WITH SANDBAGS OR EQUIVALENT TO PREVENT GAPS.
3. SPACE SUPPORT POSTS A MAXIMUM OF 8 FEET APART.
4. KEEP FENCE FABRIC TAUT.

REVISIONS		
Date	Description	By

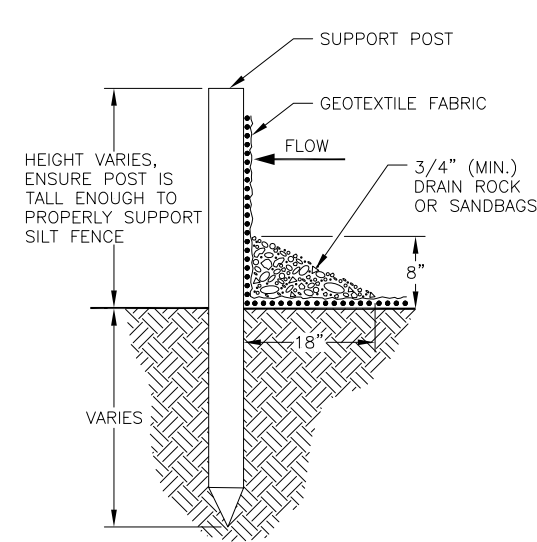
State of Alaska DOT&PF
SILT FENCE
(NOTES, GENERAL
INSTALLATION, & STANDING
WATER INSTALLATION)

APPROVED
Date 12/2015 X/XX/XX



TRENCH DETAIL
NOT TO SCALE

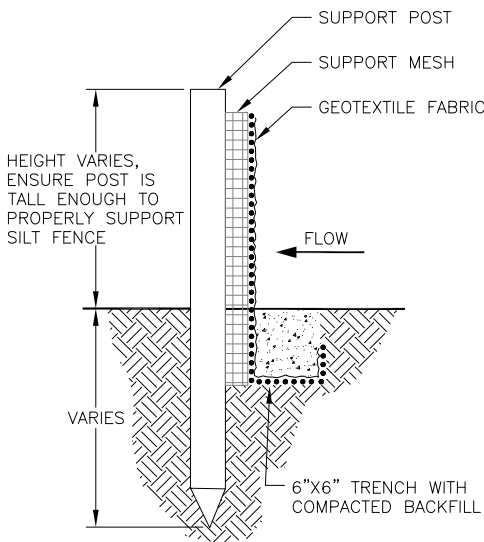
- TRENCH NOTES:
INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
 2. FOLLOW MANUFACTURER’S SPECIFICATIONS FOR POST BURIAL DEPTH.
 3. EXCAVATE A TRENCH ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES.
 4. ATTACH GEOTEXTILE TO STAKES AND BURY GEOTEXTILE BOTTOM.
 5. BACKFILL TRENCH AND COMPACT TO SECURE FENCE BOTTOM.



TRENCHLESS DETAIL
NOT TO SCALE

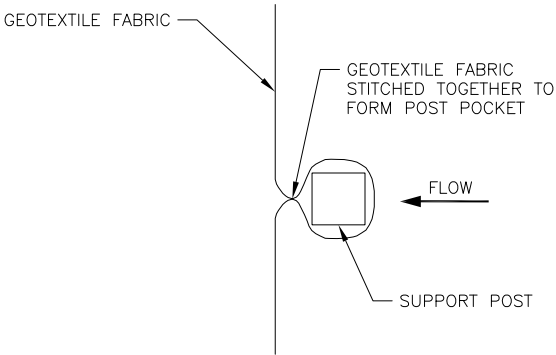
- TRENCHLESS NOTES:
MATERIALS
CLEAN ROCK OR SANDBAGS.
- INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
 2. ATTACH GEOTEXTILE ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES.
 3. EXTEND GEOTEXTILE ON THE GROUND UPHILL OF THE FENCE.
 4. PLACE DRAIN ROCK ON GEOTEXTILE.

- REMOVAL
1. WHEN SILT FENCE IS LOCATED IN WETLANDS OR SENSITIVE AREAS, REMOVE CLEAN ROCK OR SANDBAGS WHEN THE SILT FENCE IS REMOVED.



SUPPORT MESH REINFORCED
FABRIC DETAIL
NOT TO SCALE

- SUPPORT MESH REINFORCED FABRIC NOTES:
INSTALLATION
1. DRIVE SUPPORT POSTS INTO THE GROUND.
 2. EXCAVATE A TRENCH ON THE UPHILL SIDE ALONG THE LINE OF THE STAKES. DO NOT EXCAVATE TRENCHES IN PERMAFROST.
 3. EXTEND SUPPORT MESH A MINIMUM OF 3 INCHES INTO THE TRENCH.
 4. ATTACH GEOTEXTILE TO STAKES AND BURY GEOTEXTILE BOTTOM.
 5. BACKFILL TRENCH AND COMPACT TO SECURE FENCE BOTTOM.



SEWN-IN POCKET DETAIL
NOT TO SCALE

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

SILT FENCE
(DETAILS)

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P
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Date X/XX/XX

Description

Earth dikes and drainage swales are temporary storm conveyance channels constructed either to divert runoff around slopes or to convey runoff to additional sediment control BMPs prior to discharge of runoff from a site. Drainage swales may be lined or unlined, but if an unlined swale is used, it must be well compacted and capable of resisting erosive velocities.

Appropriate Uses

Earth dikes and drainage swales are typically used to control the flow path of runoff at a construction site by diverting runoff around areas prone to erosion, such as steep slopes. Earth dikes and drainage swales may also be constructed as temporary conveyance features. This will direct runoff to additional sediment control treatment BMPs, such as sediment traps or basins.



Photograph ED/DS-1. Example of an earth dike used to divert flows at a construction site. Photo courtesy of CDOT.

Design and Installation

When earth dikes are used to divert water for slope protection, the earth dike typically consists of a horizontal ridge of soil placed perpendicular to the slope and angled slightly to provide drainage along the contour. The dike is used in conjunction with a swale or a small channel upslope of the berm to convey the diverted water. Temporary diversion dikes can be constructed by excavation of a V-shaped trench or ditch and placement of the fill on the downslope side of the cut. There are two types of placement for temporary slope diversion dikes:

- A dike located at the top of a slope to divert upland runoff away from the disturbed area and convey it in a temporary or permanent channel.
- A diversion dike located at the base or mid-slope of a disturbed area to intercept runoff and reduce the effective slope length.

Depending on the project, either an earth dike or drainage swale may be more appropriate. If there is a need for cut on the project, then an excavated drainage swale may be better suited. When the project is primarily fill, then a conveyance constructed using a berm may be the better option.

All dikes or swales receiving runoff from a disturbed area should direct stormwater to a sediment control BMP such as a sediment trap or basin.

Earth Dikes and Drainage Swales	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

EC-10 Earth Dikes and Drainage Swales (ED/DS)

Unlined dikes or swales should only be used for intercepting sheet flow runoff and are not intended for diversion of concentrated flows.

Details with notes are provided for several design variations, including:

ED-1. Unlined Earth Dike formed by Berm

DS-1. Unlined Excavated Swale

DS-2. Unlined Swale Formed by Cut and Fill

DS-3. ECB-lined Swale

DS-4. Synthetic-lined Swale

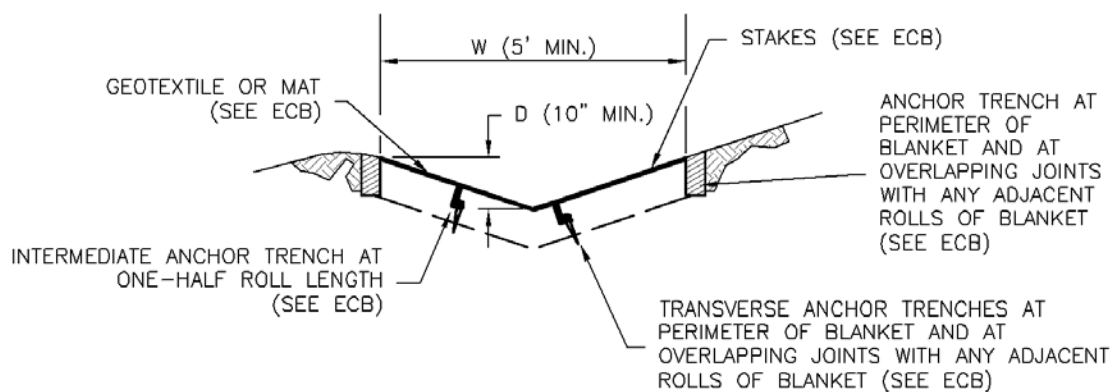
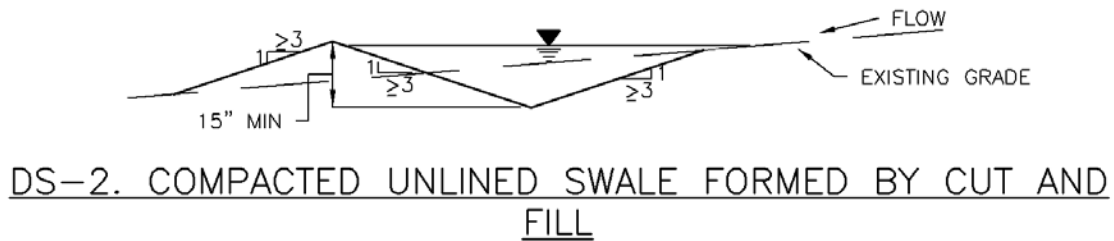
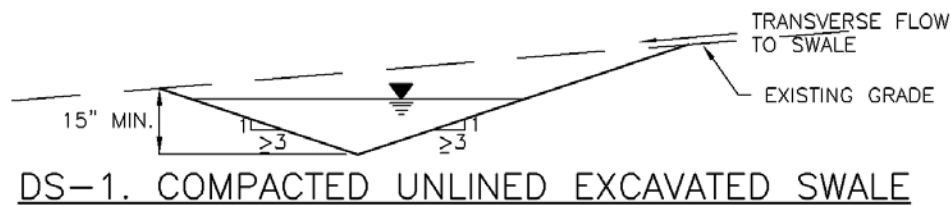
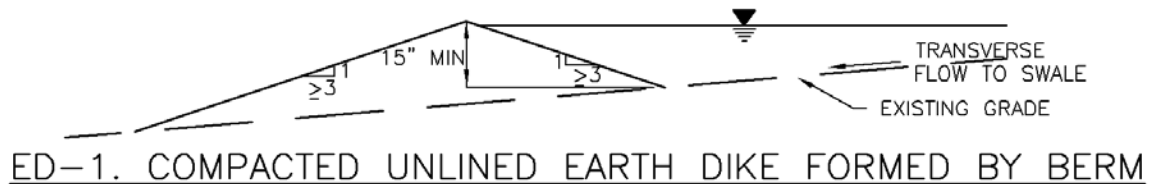
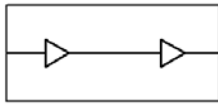
DS-5. Riprap-lined Swale

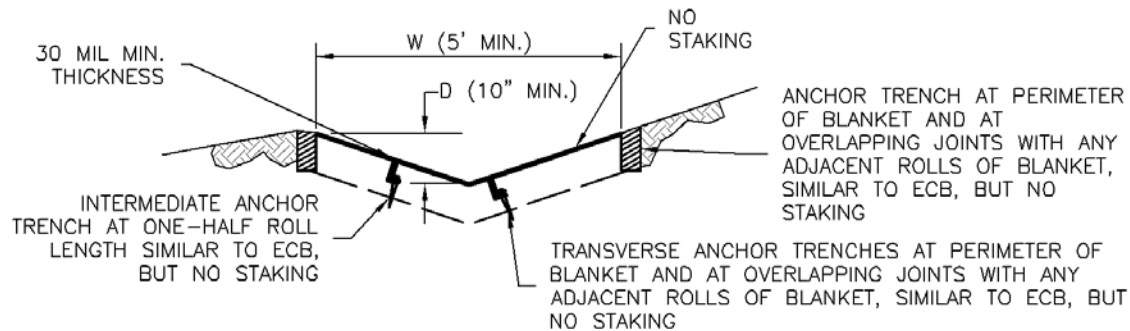
The details also include guidance on permissible velocities for cohesive channels if unlined approaches will be used.

Maintenance and Removal

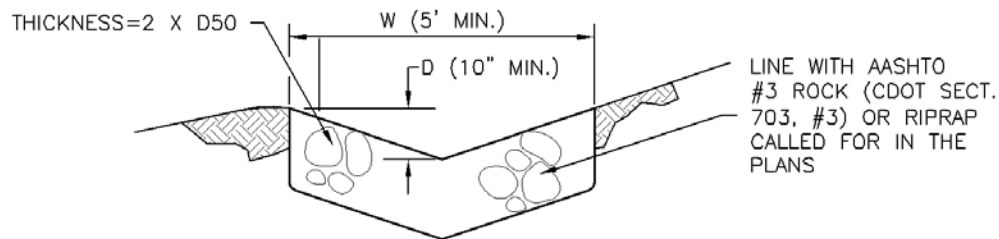
Inspect earth dikes for stability, compaction, and signs of erosion and repair. Inspect side slopes for erosion and damage to erosion control fabric. Stabilize slopes and repair fabric as necessary. If there is reoccurring extensive damage, consider installing rock check dams or lining the channel with riprap.

If drainage swales are not permanent, remove dikes and fill channels when the upstream area is stabilized. Stabilize the fill or disturbed area immediately following removal by revegetation or other permanent stabilization method approved by the local jurisdiction.





DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

1. SEE SITE PLAN FOR:
 - LOCATION OF DIVERSION SWALE
 - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
 - LENGTH OF EACH SWALE.
 - DEPTH, D, AND WIDTH, W DIMENSIONS.
 - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
 - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.
2. SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
3. EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
4. EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.
5. SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
6. FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
7. WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

EARTH DIKE AND DRAINAGE SWALE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SWALES SHALL REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION; IF APPROVED BY LOCAL JURISDICTION, SWALES MAY BE LEFT IN PLACE.
5. WHEN A SWALE IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF COLORADO SPRINGS, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

BMP 08.00. Culvert Inlet Protection

DESIGN CONSIDERATIONS

Objectives

Culvert Inlet Protection is used to trap sediment and reduce the amount of sediment entering a culvert.

Description

Culvert Inlet Protection is a low barrier, similar to a check dam, placed up-gradient of a culvert inlet to temporarily impound water and trap sediment while still allowing flow to enter the culvert. There are several types of temporary barriers applicable for different conditions:

- Geotextile-wrapped foam barriers
- Sand bags or gravel-filled sand bags
- Fiber rolls
- Geotextile-wrapped wire cage barrier

Other Names

Filter Inlet.

Applicability

Culvert Inlet Protection is applicable when there is potential for sediment to be transported to and through the culvert. Placement in the flowline is applicable for culverts conveying runoff or project drainage that must remain operational before permanent stabilization of the disturbed area. Placement above (all the way around) a culvert inlet is applicable when earth disturbing activities are occurring upslope of the inlet, to prevent sediment and runoff from entering the culvert inlet from above. Culvert Inlet Protection is not generally placed in the flowline of culverts conveying stream flow, since the purpose of the best management practice (BMP) is to treat run-off before it reaches receiving waterbodies such as streams. If placement in the flowline of streams is required, applicable permits must be obtained.

Selection Considerations

- Culvert Inlet Protection should be sited and constructed in a manner that will facilitate cleanout and disposal of trapped sediment.

- Culvert Inlet Protection should be constructed in a manner that will allow flow to pass and minimize ponding after the run-off has ceased.
- Blocking the inlet can cause flooding affecting streets and the construction area. Where flooding would cause a hazard, consider where overflow will go in extreme events and provide emergency overflows with additional treatment.
- Slope Gradient: The slope of the ditch discharging to the culvert inlet should not exceed 5 percent or flow velocity exceeding 2.5 to 3 cubic feet per second. The steeper the slope or the higher the velocity and shear stress, the larger the particle diameter that can be transported. The flatter the slope and the slower the flow, the longer the travel distance and time behind the barrier, allowing for sediment to settle. If Culvert Inlet Protection is required on steeper grades, consider using a series of barriers or a widened channel to provide velocity reduction or barriers of greater depth to lengthen the settling distance.
- Inlet protection should extend all the way around the inlet when upgradient slopes are not stabilized.
- Consider the effects if the barrier were to fail when water is ponded. Provide additional downstream protection if warranted.

Design

Drainage Area: The area of the construction drainage area to the culvert inlet should not exceed 1-acre. The total drainage area to the inlet may be larger than 1-acre, provided that the additional area is vegetated and/or permanently stabilized and that the spillway and ponding area is sized to adequately treat, impound, and convey the runoff from the tributary area.

Depth: Provide a temporary minimum ponding depth of 6 to 8 inches. The design must specify fiber rolls of adequate diameter, foam barriers, or sandbags of adequate thickness to provide the minimum ponding depth, and spillways with minimum elevations and width must be provided to limit the maximum ponding depth.

Relationship to Other Erosion and Sediment Control Measures

Erosion control measures in the contributing areas must be in place to minimize the amount of sediment that must be treated at inlets. Culvert Inlet Protection is installed as a secondary measure to remove residual sediment that was not removed by other measures such as check dams, grassed swales, and sediment traps.

Common Failures or Misuses

- Sediment accumulation resulting in reduced settling capacity.
- Improper installation, resulting in sediment bypassing filter and entering the culvert.
- Tearing, undermining, or collapsing of the barrier, resulting in sediment entering the culvert.

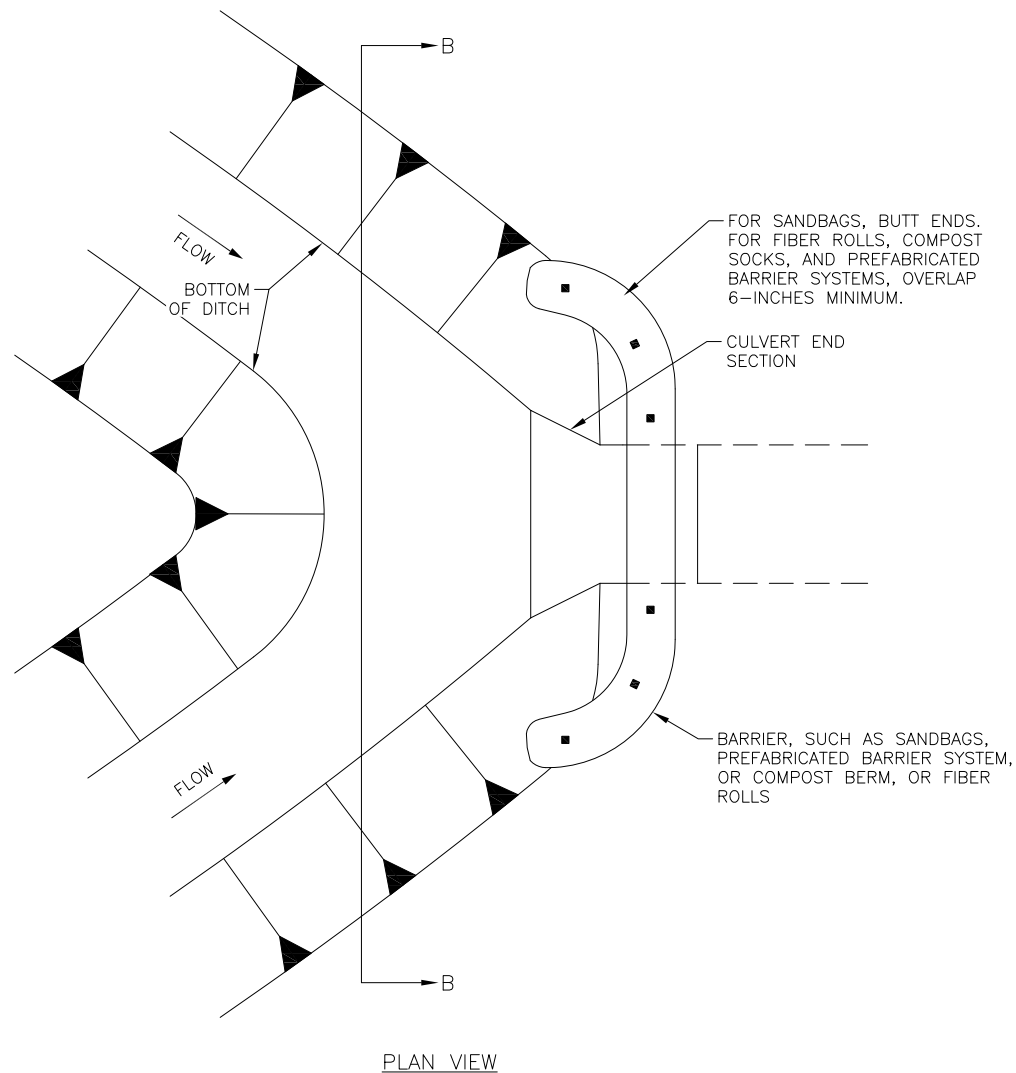
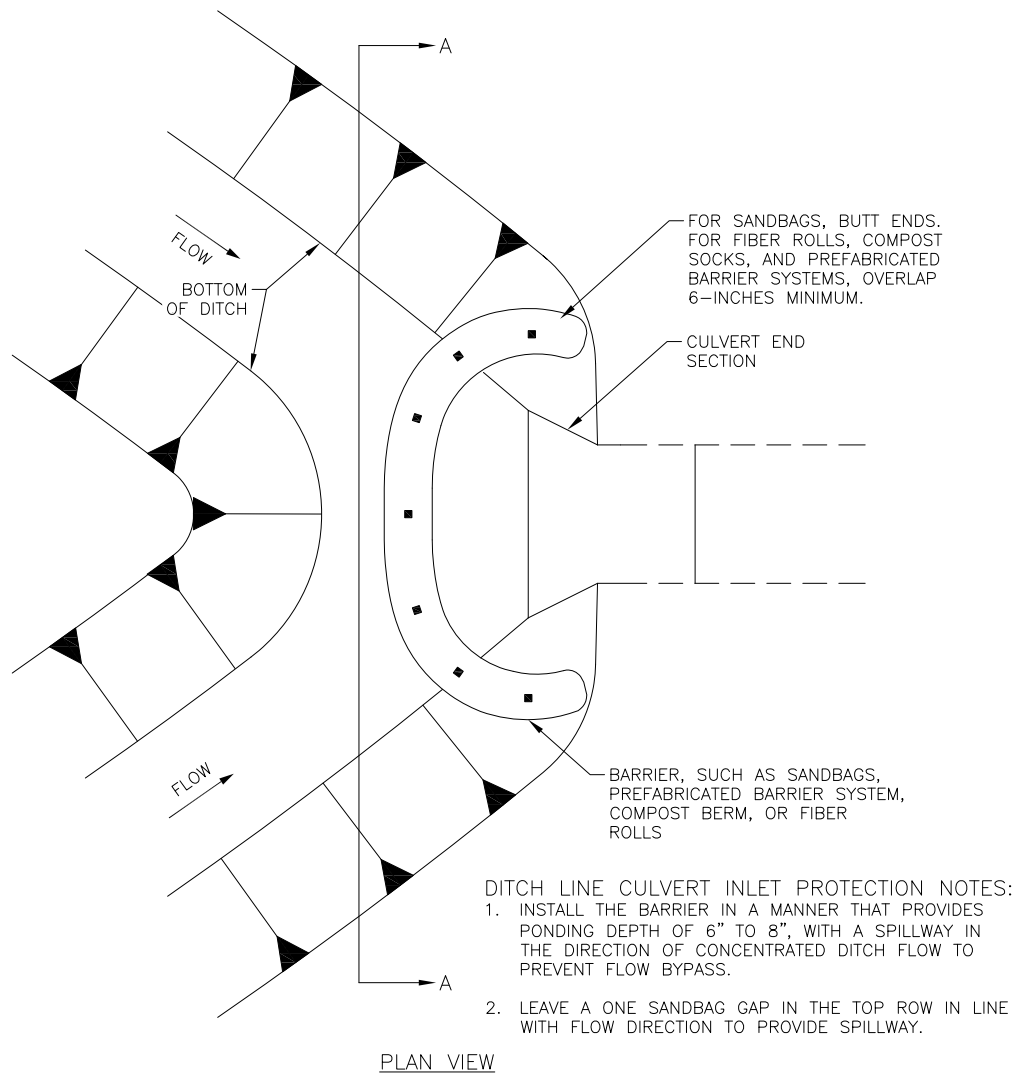
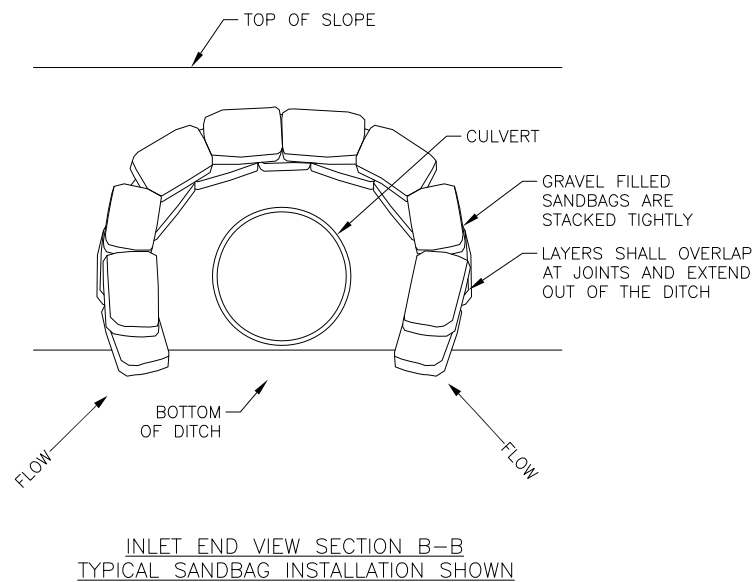
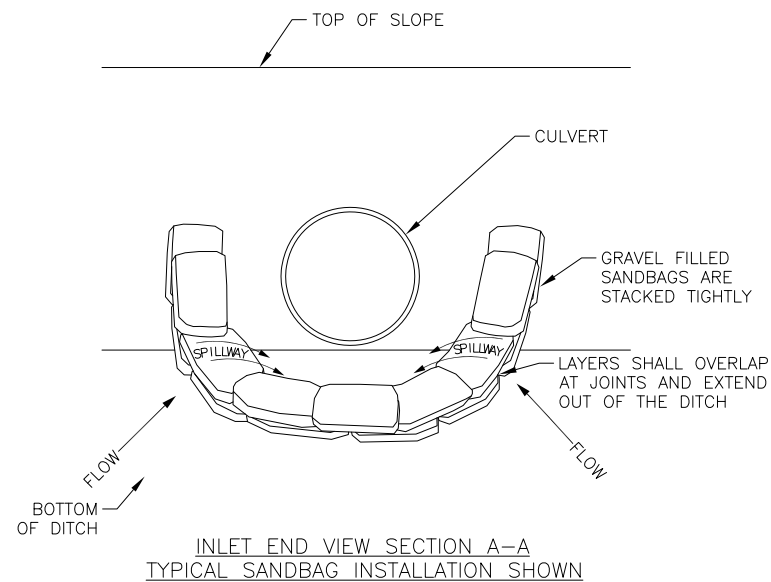
SPECIFICATIONS

Standard Specification

- 667 – Culvert Inlet Protection

Drawing

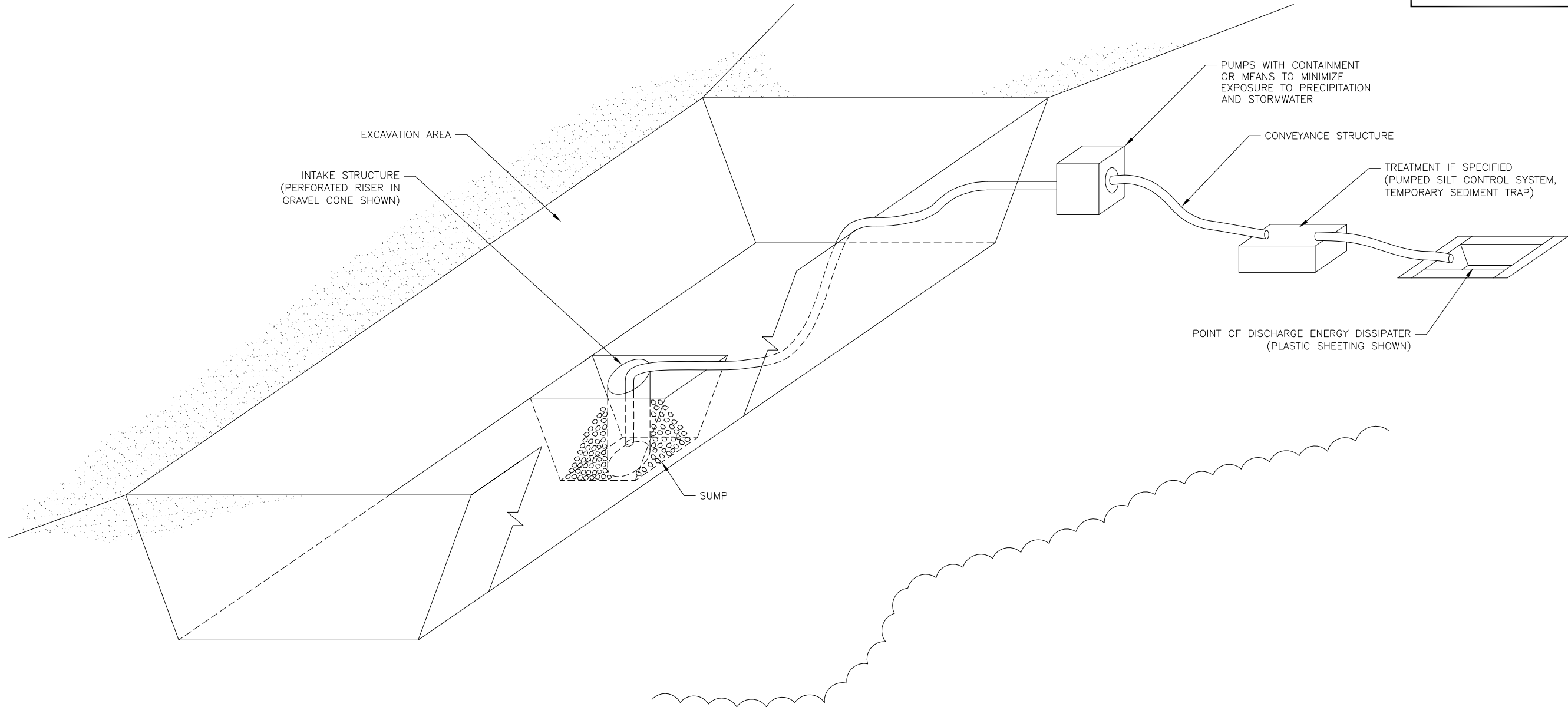
- BMP – 08.00 Culvert Inlet Protection



- CULVERT INLET PROTECTION NOTES:
- MATERIALS
- BARRIER MATERIALS:
1. PREFABRICATED BARRIER SYSTEM, AS SHOWN ON DRAWING BMP-13.00.
 2. SANDBAG BARRIER, CONSISTING OF TIGHTLY WOVEN BURLAP OR WOVEN GEOTEXTILE BAG MATERIAL SUFFICIENTLY DURABLE TO REMAIN INTACT FOR THE TIME INTENDED. BAGS 2/3 FULL OF GRAVEL OR SAND WITH A GRADATION SUCH THAT NO FINE SEDIMENT PASSES THROUGH THE BAG. IF THE SANDBAGS ARE NEEDED FOR MORE THAN ONE SUMMER SEASON, PROVIDE BAG MATERIAL THAT HAS ULTRAVIOLET STABILITY OF AT LEAST 70% IN CONFORMANCE WITH ASTM D4355 REQUIREMENTS. SECURELY CLOSE THE SANBAGS.
 3. FIBER ROLL, AS SHOWN ON DRAWING BMP-10.00, 8 INCHES MINIMUM DIAMETER.
 4. COMPOST SOCK, AS SHOWN ON DRAWING BMP-05.00.
- INSTALLATION
1. INSTALL WHERE INDICATED IN THE PLANS OR WHERE APPROVED BY THE ENGINEER.
 2. ASSURE THAT BARRIER MAKES FULL CONTACT WITH SOIL ALL AROUND THE INLET.
 3. IF PROTECTING BOTH DITCHLINE AND TOP OF PIPE, THE PROTECTION BARRIER CAN BE A SINGLE CONTINUOUS CIRCLE.
 4. IN ADDITION:
 - a. PREFABRICATED BARRIER SYSTEM - ANCHOR WITH WIRE STAPLES ON SOIL, OR ADHESIVE ON PAVEMENT. OVERLAP 6 INCHES.
 - b. SANDBAG BARRIER - LAYER AND OVERLAP AT JOINTS.
 - c. FIBER ROLL - TRENCH A MINIMUM OF 2 INCHES. SEE STAKING REQUIREMENTS ON DRAWING BMP-10.00.
 - d. COMPOST SOCK - SEE STAKING REQUIREMENTS ON DRAWING BMP-05.00. STAKING REQUIRED WHEN PLACED WITHIN FLOWLINE/DITCH.

- INSPECTION
1. CONFIRM THAT BARRIERS ARE IN FULL CONTACT WITH THE SOIL AND THAT BYPASS ROUTES ARE NOT PRESENT.
 2. INSPECT FOR SEDIMENT ACCUMULATION, DISPLACEMENT, AND STRUCTURAL DAMAGE.
- MAINTENANCE
1. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE-THIRD OF THE DESIGN DEPTH OF SPILLWAY.
 2. RESTORE STRUCTURE TO ITS ORIGINAL DIMENSIONS AND FULL CONTACT WITH SOIL AROUND THE INLET AS SOON AS PRACTICABLE.
 3. REPAIR ANY STRUCTURAL DAMAGE, INCLUDING REPLACING DAMAGED SANDBAGS, AS SOON AS PRACTICABLE.

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
CULVERT INLET PROTECTION		
APPROVED		
Date	12/2015	X/XX/XX



EXCAVATION DEWATERING
NOT TO SCALE

EXCAVATION DEWATERING NOTES:

MATERIALS
PUMP: SIZED FOR DESIGN FLOW IN CONTRACT, INTAKE LINE, FITTINGS, AND NOZZLES.

INTAKE STRUCTURES: RISERS, SCREENS, GRAVEL CONES, GRAVEL FILTER BERMS, GEOTEXTILE, OR EQUIVALENT,

CONVEYANCE SYSTEM: FLEXIBLE HOSE, WITH PROPER FITTINGS OR EQUIVALENT.

ENERGY DISSIPATER: PLASTIC SHEETING, RIPRAP, SANDBAGS, T-BAR SPREADER, OR EQUIVALENT.

TREATMENT: UPLAND VEGETATIVE AREA, PUMPED SILT CONTROL SYSTEM, OR TEMPORARY SEDIMENT TRAP.

INSTALLATION

1. INSTALL THE CONVEYANCE STRUCTURE. FOR PIPED CONVEYANCE, ENSURE THAT IT IS ADEQUATELY SECURED AGAINST MOVEMENT DURING PUMPING.
2. PLACE THE PUMP IN AN AREA DESIGNED FOR ITS USE AND OPERATION.
3. INSTALL SPILL PREVENTION BMPS PRIOR TO OPERATION.
4. INSTALL THE ENERGY DISSIPATER.
5. CONNECT THE CONVEYANCE STRUCTURE TO THE DOWNSTREAM DISCHARGE POINT.

INSPECTION

1. WHEN PUMPING, MONITOR PUMPS AND INTAKE AND DISCHARGE POINTS.
2. INSPECT THE CONVEYANCE STRUCTURE FOR LEAKS, EROSION, OR OTHER DEFECTS.
3. INSPECT THE TREATMENT CONTROLS FOR BYPASS, CLOGGING, AND SIGNS OF INADEQUATE TREATMENT.
4. INSPECT DISCHARGE POINT FOR EROSION OR FAILURE OF THE ENERGY DISSIPATION MATERIAL.
5. INSPECT THE EQUIPMENT AREA FOR PROPERLY STORED FUEL AND OTHER POTENTIALLY HAZARDOUS SUBSTANCES.

MAINTENANCE

1. REINFORCE, REPAIR, OR RESTORE ANY PORTION OF THE TREATMENT CONTROLS, CONVEYANCE SYSTEM, OR ENERGY DISSIPATER.

REMOVAL

1. REMOVE THE INTAKE HOSE.
2. REMOVE THE ENERGY DISSIPATER AND TREATMENT CONTROLS, IF THEY ARE NOT PART OF THE PERMANENT SITE FEATURES.
3. REMOVE THE CONVEYANCE SYSTEM.
4. AS REQUIRED, BACKFILL OR REGRADE THE CONVEYANCE SYSTEM ALIGNMENT AND TREATMENT AREA AND RESTORE TO ORIGINAL CONTOURS.
5. REGRADE AND SEED OR PERMANENTLY STABILIZE ALL DISTURBED AREAS.

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

EXCAVATION
DEWATERING

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Date 12/2015 X/XX/XX

BMP 25.00 – 29.00. Storm Drain Inlet Sediment Protection – Curb and Area Inlets

These instructions cover BMP 25.00, 26.00, 27.00, 28.00 and 29.00.

DESIGN CONSIDERATIONS

Objectives

Storm Drain Inlet Sediment Protection is used prior to permanent stabilization of the disturbed area to prevent sediment from entering downgradient storm drainage systems.

Description

Storm Drain Inlet Sediment Protection is a device or mechanism, either internal or external, for preventing sediment from entering a storm drain; generally by trapping sediment within or immediately adjacent to a storm drain inlet. Types of temporary protection devices applicable for different conditions are listed in the table. Pre-fabricated devices are available for internal and external applications.

Other Names

Storm Drain Inlet Protection, Filter Bag Insert, “Witch’s Hat,” Silt Sack

Applicability

Storm Drain Inlet Sediment Protection – Curb and Area Inlets are applicable when storm drain inlets must remain operational before permanent stabilization of the disturbed area and when there is potential for sediment to be transported into the storm drain system.

Selection Considerations

Internal devices generally consist of nonwoven, semi-porous material that traps larger sediment, but allows silt and clay-size particles to pass. They are most appropriate in situations where roadway flooding is a concern or where construction traffic will damage an external device.

External devices trap sediment by creating a ponding area surrounding or adjacent to the inlet, reducing velocities and allowing sediment to settle. This process allows external devices to be more efficient at trapping greater volumes of smaller sized sediment.

Curb inlets are distinguished from area inlets by their roadway edge location and proximity to traffic. Both are grated inlets, but whereas curb inlets are in-line with concrete curbing or curb and gutter features, area inlets are located in open areas and are generally surrounded by unpaved surfaces. These are also known as field inlets when they are permanent features, or they may be inlets in unpaved areas that will have paving around them as construction progresses.

Storm Drain Inlet Sediment Protection types applicable to curb inlets and area inlets are summarized in the following table:

Storm Drain Inlet Sediment Protection Types and Applicability Table

Storm Drain Inlet Sediment Protection Type	Applicability	
	Curb Inlet	Area Drain Inlet
External Sediment Protection		
Prefabricated Barrier System	Yes *	Yes
Gravel or Sand Bag Berm	Yes *	Yes
Fiber Roll	No	Yes
Filter Fabric (Silt Fence)	No	Yes
Inlet Grate Covers		
Filter Mat	No	Yes
Curb Face Mesh Filter	Yes	No
Internal Sediment Protection		
Filter Bag Insert	Yes	Yes
Sediment Control Inlet Hat	Yes	Yes
* If neither the sediment protection structure nor ponding will intrude into travel way		

- Fiber rolls and prefabricated barrier systems are not appropriate for locations where they cannot be properly anchored to the surface.
- Filter fabric (silt fence) as a sediment protection device is applicable to area inlets and for flows

less than 0.5 cubic feet per second (cfs) on flat grades (5 percent or less).

- Inlet grate filter mats are only applicable where heavy concentrated flows are not expected and are not applicable where ponding around the structure might cause excessive damage to adjacent structures and unprotected areas.
- Curb face inlet mesh filters for curb inlets prevent sediment from entering the inlet but they also require that runoff is bypassed. This sediment protection device should not be used at a sag inlet (an inlet at the lowest point on a vertical curve or in a depression); and, if used, conveyance to another point of discharge must be provided.

Any of these sediment protection devices may cause flooding affecting streets and the construction area. Where flooding would cause a hazard, consider where overflow will go in extreme events and provide emergency overflows with additional treatment.

Design

Drainage Area: Not to exceed 1 acre.

Slope Gradient: Not to exceed 5 percent.

Site and construct Storm Drain Inlet Sediment Protection in a manner that will facilitate cleanout and disposal of trapped sediment.

Design and construct the Storm Drain Inlet Sediment Protection in a manner that will allow flow to pass and to minimize ponding after the runoff has ceased.

Relationship to Other Erosion and Sediment Control Measures

Erosion and sediment control measures in the contributing areas must be in place to minimize the amount of sediment that must be treated at inlets. Storm Drain Inlet Sediment Protection is installed as a secondary measure to remove residual sediment that was not removed by other measures such as check dams, grassed swales, and sediment traps.

Common Failures or Misuses

- Sediment accumulation, by which filtering capacity is reduced, resulting in ponding of water.

- Improper installation, resulting in sediment bypassing filter and entering the inlet.
- Tearing, undermining, or collapsing of filter fabric, resulting in sediment entering the inlet.

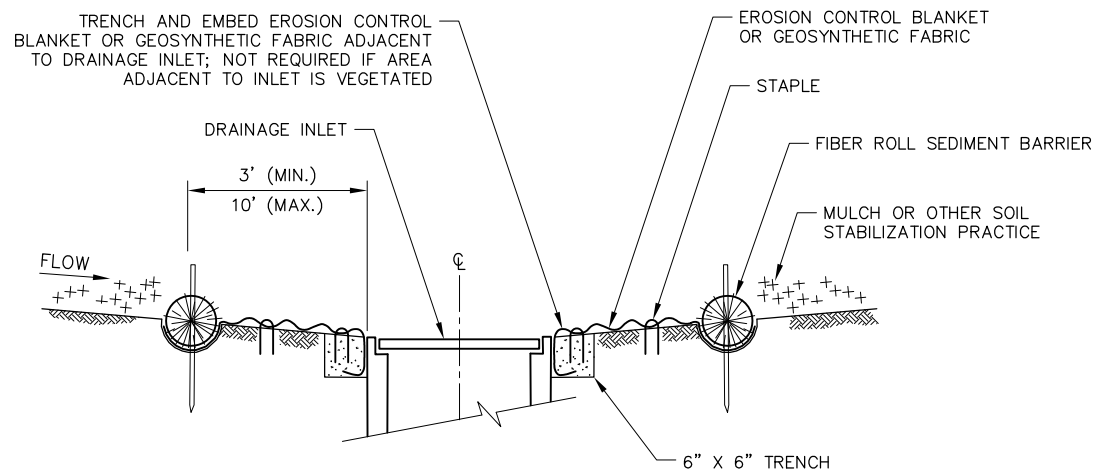
SPECIFICATIONS

Standard Specifications

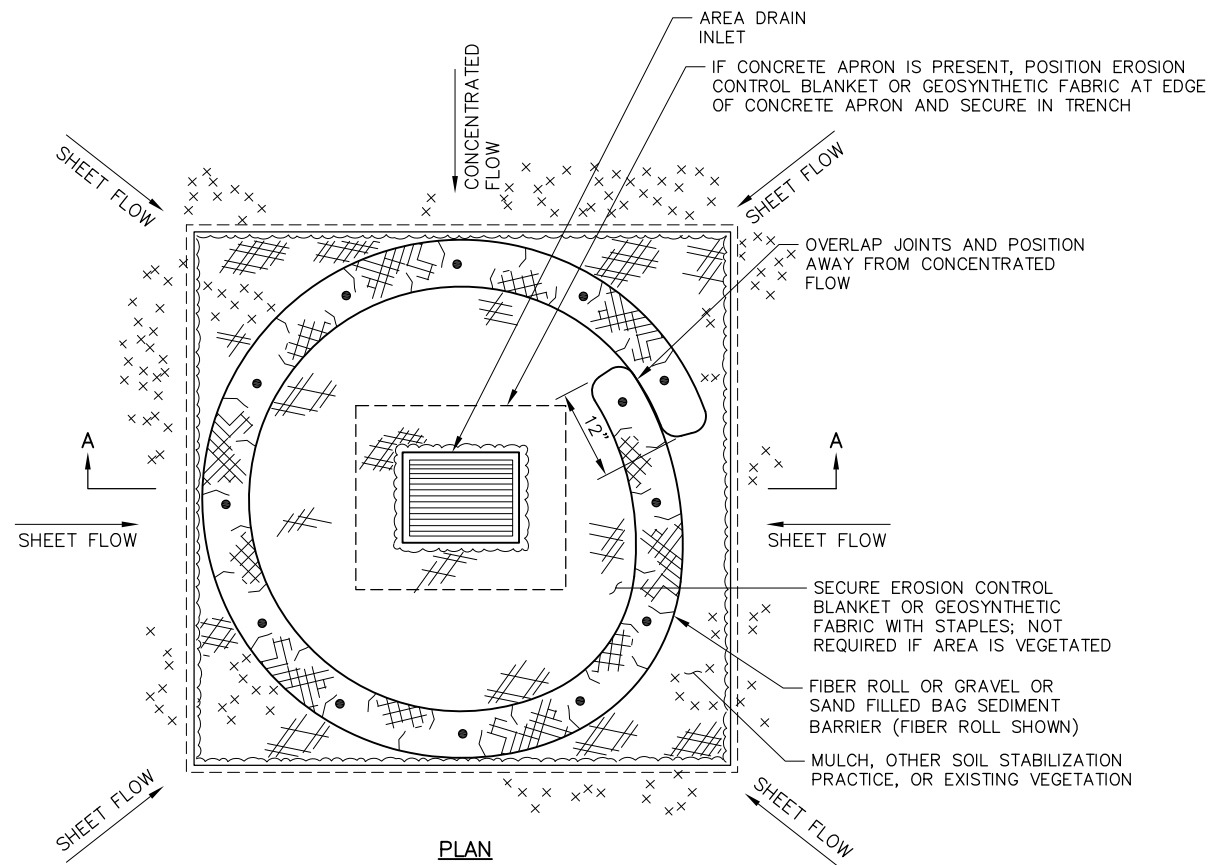
- 683 – Storm Drain Inlet Sediment Protection
- 633 – Silt Fence
- 729-2.04 Geosynthetics

Drawings

- BMP-25.00 Storm Drain Inlet Sediment Protection (Sheets 1 of 5)
- BMP-26.00 Storm Drain Inlet Sediment Protection
- BMP-27.00 Storm Drain Inlet Sediment Protection
- BMP-28.00 Storm Drain Inlet Sediment Protection
- BMP-29.00 Storm Drain Inlet Sediment Protection
- BMP-13.00 Prefabricated Barrier System
- BMP-10.00 Fiber Rolls for Erosion and Sediment Control



SECTION A-A



PLAN

**FIBER ROLL OR GRAVEL OR SAND BAG BERM
FOR AREA INLETS**

NOT TO SCALE

**FIBER ROLL OR GRAVEL OR SAND BAG BERM NOTES:
MATERIALS**

FIBER ROLL AND STAKES: SEE DRAWING BMP-10.00 FIBER ROLL FOR EROSION AND SEDIMENT CONTROL.

GRAVEL- OR SAND-FILLED BAG: TIGHTLY WOVEN BURLAP OR WOVEN GEOTEXTILE BAG MATERIAL THAT IS SUFFICIENTLY DURABLE TO REMAIN INTACT FOR THE TIME INTENDED. FILL BAGS $\frac{3}{4}$ FULL OF GRAVEL OR SAND WITH A GRADATION SUCH THAT NO FINE SEDIMENT PASSES THROUGH THE BAG. IF THE SANDBAGS ARE NEEDED FOR MORE THAN ONE SUMMER SEASON, PROVIDE BAG MATERIAL THAT HAS ULTRAVIOLET STABILITY OF AT LEAST 70% IN CONFORMANCE WITH ASTM D4355 REQUIREMENTS. SECURELY CLOSE THE SAND BAGS.

PREFABRICATED UNITS: MAY BE USED IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING UPON APPROVAL BY THE ENGINEER.

INSTALLATION

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

2. FIBER ROLL - SEE DRAWING BMP-10.00 [FIBER ROLL]

INSPECTION, MAINTENANCE, AND REMOVAL

1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES, THIS SHEET.

**STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES:
INSTALLATION**

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

INSPECTION

1. CHECK FOR SEDIMENT DEPTH. CLEANING IS REQUIRED WHEN SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE DESIGN DEPTH (OR LESS WHEN SPECIFIED BY THE MANUFACTURER OF PREFABRICATED BARRIERS).

2. CHECK FOR UNDERMINING OR BYPASSING, SUCH AS EVIDENCE THAT SEDIMENT IS ENTERING THE INLET OR THAT RUN-OFF IS BYPASSING THE BARRIER AND ENTERING THE INLET UNTREATED.

MAINTENANCE

1. IF PREFABRICATED BARRIERS ARE USED, MAINTAIN THEM AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

2. CORRECT UNDERMINING OR BYPASSING FAILURES.

3. REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES ONE-THIRD OF THE AVAILABLE STORAGE OF THE SEDIMENT PROTECTION DEVICE OR LESS WHEN SPECIFIED BY THE MANUFACTURER.

4. REMOVE AND DISPOSE OF ANY ROCK OR DEBRIS THAT HAS ACCUMULATED BEHIND THE SEDIMENT BARRIER TO PREVENT FURTHER CLOGGING.

5. REPLACE FRAYED OR TORN FABRIC OR MATERIALS AND REPAIR ANY STRUCTURAL DAMAGE AS SOON AS PRACTICABLE.

REMOVAL

1. LEAVE INLET SEDIMENT PROTECTION DEVICES IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA IS PERMANENTLY STABILIZED.

2. REMOVE AND DISPOSE OF TRAPPED OR REMAINING SEDIMENT.

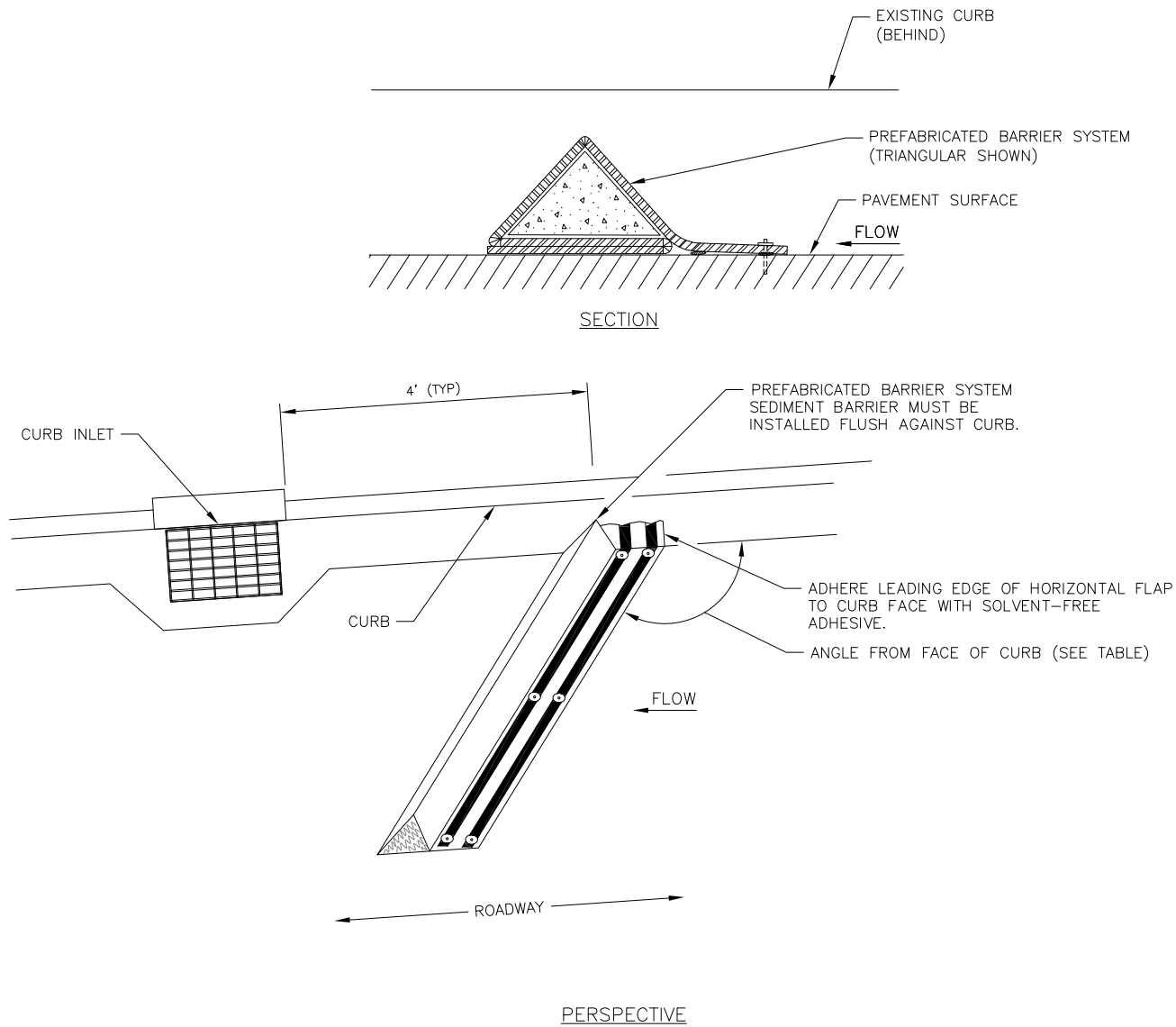
3. STABILIZE DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF BARRIERS OR SEDIMENT.

REVISIONS		
Date	Description	By

State of Alaska DOT&PF
**STORM DRAIN INLET
SEDIMENT PROTECTION
(NOTES & AREA INLET FIBER ROLL
OR GRAVEL/SAND BAG BERM**

Date **12/2015**
X/XX/XX

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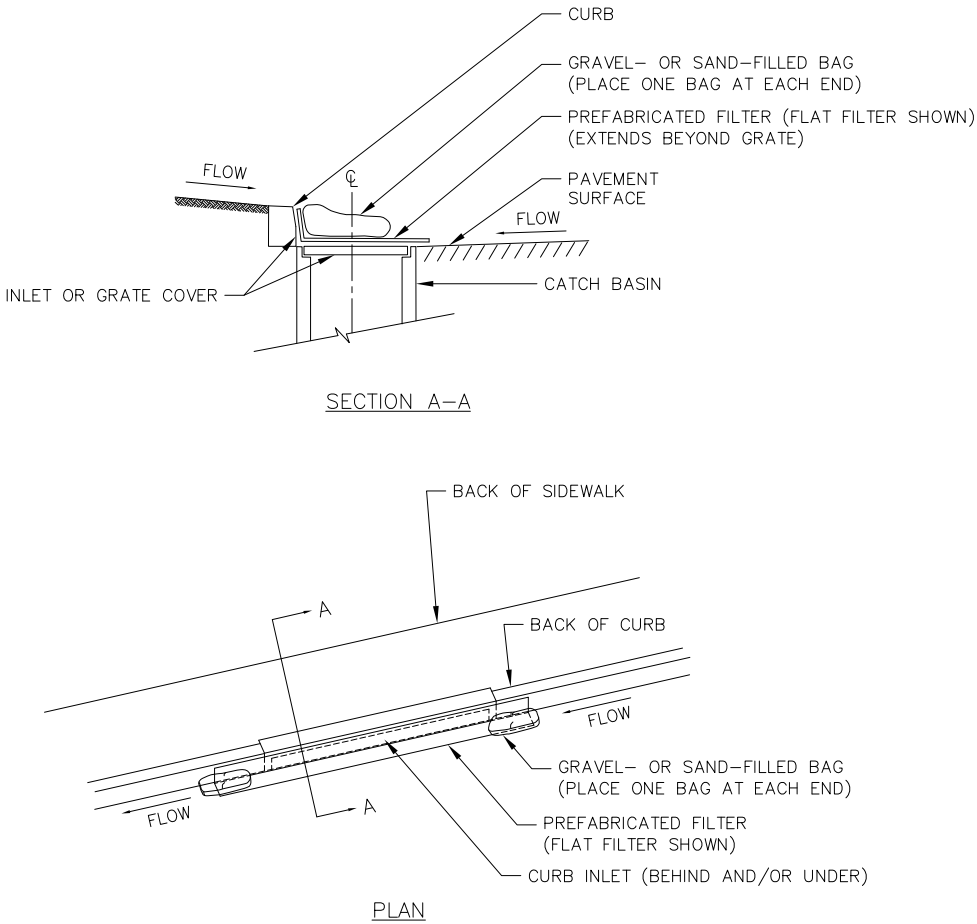


PREFABRICATED BARRIER SYSTEM
FOR CURB INLETS
NOT TO SCALE

- CURB INLET PREFABRICATED BARRIER NOTES:
MATERIALS
1. PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.
- INSTALLATION
1. PREFABRICATED BARRIERS: INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
2. PREFABRICATED BARRIER SYSTEM – SEE DRAWING BMP-13.00 PREFABRICATED BARRIER SYSTEM

PREFABRICATED BARRIER SYSTEM SEDIMENT BARRIER DIMENSIONS TABLE		
SLOPE OF ROADWAY (PERCENT)	0 TO 2.9	3 TO 5+
ANGLE FROM FACE OF CURB	70°	45°
SUGGESTED BARRIER LENGTH	4'	
SUGGESTED DISTANCE FROM INLET	4'	

- INSPECTION, MAINTENANCE, AND REMOVAL
1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES ON BMP-25.00 [STORM DRAIN INLET SEDIMENT PROTECTION (NOTES & AREA INLET FIBER ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR INSPECTION, MAINTENANCE, AND REMOVAL.

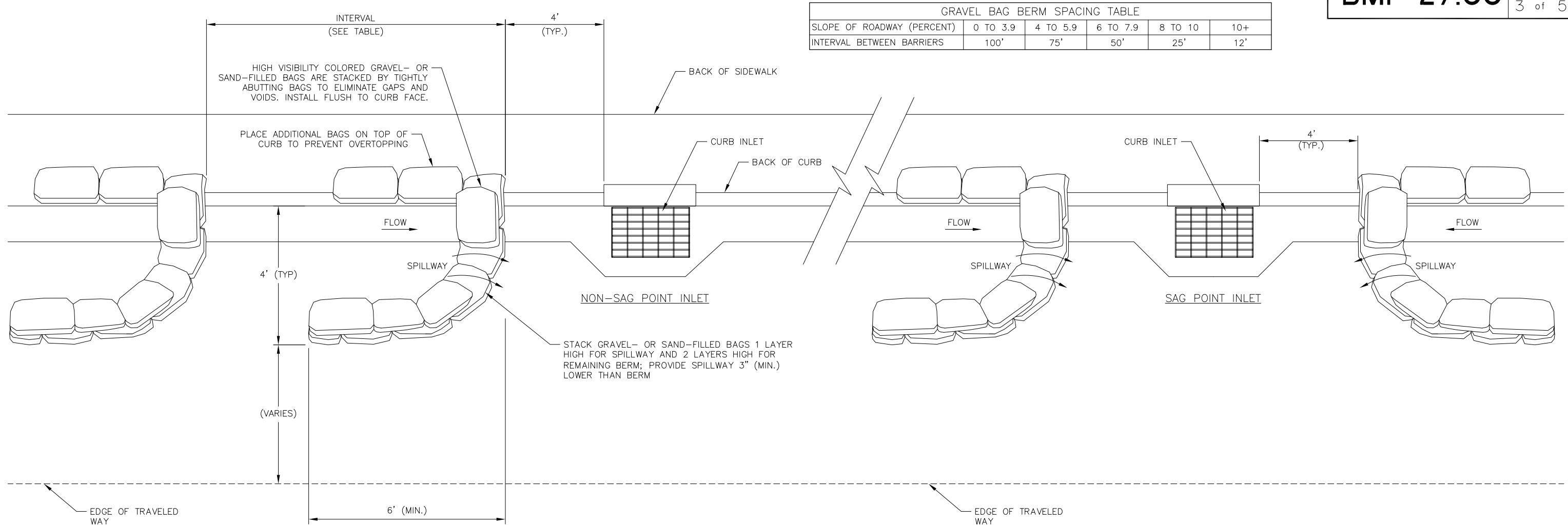


CURB FACE INLET FILTER SYSTEM
FOR CURB INLETS
NOT TO SCALE

- CURB FACE INLET FILTER SYSTEM NOTES:
MATERIALS
PREFABRICATED FILTER: LINEAR, FLAT OR TUBE SHAPED CURB INLET FILTER
- GRAVEL- OR SAND-FILLED BAG: TIGHTLY WOVEN BURLAP OR WOVEN GEOTEXTILE BAG MATERIAL THAT IS SUFFICIENTLY DURABLE TO REMAIN INTACT FOR THE TIME INTENDED. FILL BAGS 3/4 FULL OF GRAVEL OR SAND WITH A GRADATION SUCH THAT NO FINE SEDIMENT PASSES THROUGH THE BAG. IF THE SANDBAGS ARE NEEDED FOR MORE THAN ONE SUMMER SEASON, PROVIDE BAG MATERIAL THAT HAS ULTRAVIOLET STABILITY OF AT LEAST 70% IN CONFORMANCE WITH ASTM D4355 REQUIREMENTS. SECURELY CLOSE THE SAND BAGS.
- PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

- INSTALLATION
1. INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
- INSPECTION, MAINTENANCE, AND REMOVAL
1. SEE NOTES ON BMP-23.00 STORM DRAIN INLET SEDIMENT POTENTIAL BARRIERS, SHEET 1 – NOTES FOR INSPECTION, MAINTENANCE, AND REMOVAL.

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
STORM DRAIN INLET SEDIMENT PROTECTION (CURB INLET PREFABRICATED BARRIER SYSTEM & CURB FACE INLET FILTER)		
APPROVED		
Date	12/2015	X/XX/XX



PERSPECTIVE

GRAVEL OR SANDBAG BERMS FOR CURB INLETS
NOT TO SCALE

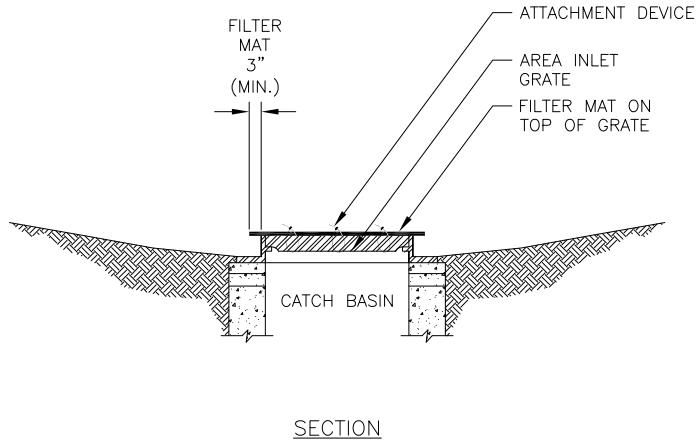
CURB INLET GRAVEL OR SANDBAG BERM NOTES:
MATERIALS
PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER,
USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

GRAVEL— OR SAND—FILLED BAG: TIGHTLY WOVEN BURLAP
OR WOVEN GEOTEXTILE BAG MATERIAL THAT IS SUFFICIENTLY
DURABLE TO REMAIN INTACT FOR THE TIME INTENDED. FILL
BAGS $\frac{3}{4}$ FULL OF GRAVEL OR SAND WITH A GRADATION
SUCH THAT NO FINE SEDIMENT PASSES THROUGH THE BAG.
IF THE SANDBAGS ARE NEEDED FOR MORE THAN ONE
SUMMER SEASON, PROVIDE BAG MATERIAL THAT HAS
ULTRAVIOLET STABILITY OF AT LEAST 70% IN CONFORMANCE
WITH ASTM D4355 REQUIREMENTS. SECURELY CLOSE THE
SAND BAGS.

- INSTALLATION
1. DELINEATE SAND BAGS WITH TRAFFIC CONTROL DEVICES
WHERE NECESSARY
 2. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS
SPECIFIED BY THE VENDOR OR MANUFACTURER.

- INSPECTION, MAINTENANCE, AND REMOVAL
1. SEE STORM DRAIN INLET SEDIMENT PROTECTION
GENERAL NOTES ON BMP-25.00 [STORM DRAIN INLET
SEDIMENT PROTECTION (NOTES & AREA INLET FIBER
ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR
INSPECTION, MAINTENANCE, AND REMOVAL.

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
STORM DRAIN INLET		
SEDIMENT PROTECTION		
(CURB INLET GRAVEL		
OR SANDBAG BERMS)		
A P P R O V E D		
Date	12/2015	X/XX/XX



FILTER MAT FOR AREA INLETS
NOT TO SCALE

AREA INLET FILTER MAT NOTES:

MATERIALS

MAT: FABRICATED FROM COIR OR EQUIVALENT MATERIAL FOR INLET PROTECTION

ATTACHMENT DEVICES: WIRE OR PLASTIC TIES

PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

INSTALLATION

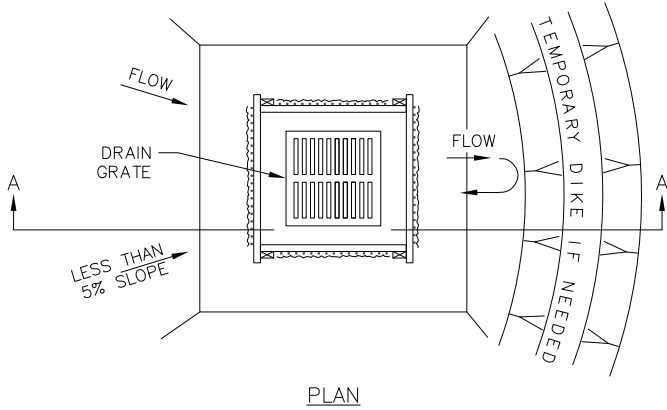
1. POSITION THE MAT OVER THE INLET GRATE AND ENSURE THAT IT EXTENDS BEYOND THE EDGE OF THE GRATE BY 3-INCHES MINIMUM ON ALL SIDES.
2. INSTALL AND ATTACH THE MAT TO THE GRATE AS SPECIFIED BY THE MANUFACTURER.
3. IF OTHER PREFABRICATED UNITS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

MAINTENANCE

1. SWEEP TOP AND SIDES OF THE MAT TO REMOVE SEDIMENT AND DEBRIS.
2. REMOVE AND REPLACE MAT IF IT BECOMES CLOGGED.

INSPECTION, MAINTENANCE, AND REMOVAL

1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES ON BMP-25.00 [STORM DRAIN INLET SEDIMENT PROTECTION (NOTES & AREA INLET FIBER ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR INSPECTION, MAINTENANCE, AND REMOVAL.



PLAN

FILTER FABRIC FOR AREA INLETS
NOT TO SCALE

AREA INLET FILTER FABRIC NOTES:

MATERIALS

PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

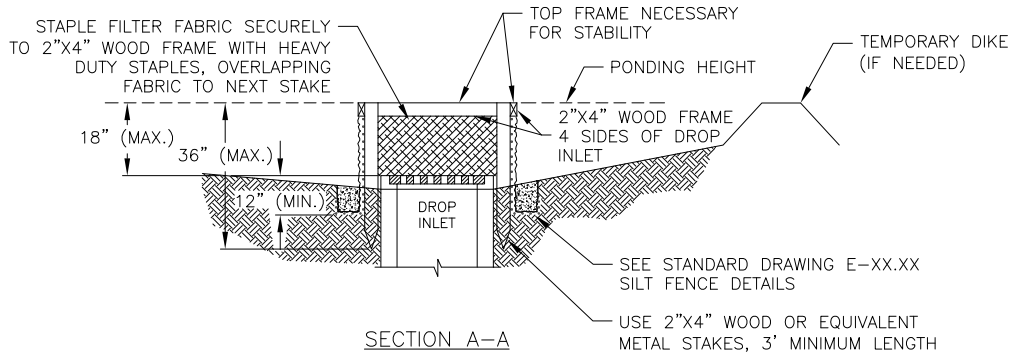
FILTER FABRIC: (SILT FENCE) SHALL COMPLY WITH SECTION 729-2.04 SILT FENCE.

INSTALLATION

1. IF PREFABRICATED BARRIERS ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.
2. PLACE A STAKE AT EACH CORNER OF THE INLET OR IN A CIRCULAR PATTERN AROUND THE INLET NO MORE THAN 3 FEET APART. DRIVE STAKES INTO THE GROUND A MINIMUM OF 12 INCHES.
3. ENSURE STABILITY BY BRACING AT THE TOP.
4. INSTALL FILTER FABRIC (SILT FENCE) AS SHOWN ON DRAWING BMP-20.00 SILT FENCE.

INSPECTION, MAINTENANCE, AND REMOVAL

1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES ON BMP-25.00 [STORM DRAIN INLET SEDIMENT PROTECTION (NOTES & AREA INLET FIBER ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR INSPECTION, MAINTENANCE, AND REMOVAL.



SECTION A-A

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
STORM DRAIN INLET		
SEDIMENT PROTECTION		
(AREA INLET FILTER MAT		
& FILTER FABRIC)		
APPROVED		
Date	12/2015	X/XX/XX

AREA DRAINS OR CURB INLET NOTES:
MATERIALS
PREFABRICATED UNITS: UPON APPROVAL BY THE ENGINEER, USE IN PLACE OF THE DESIGN SHOWN ON THIS DRAWING.

SEDIMENT CONTROL INLET HATS: SHALL BE A POLYETHYLENE HAT-LIKE STRUCTURE COVERING THE INLET WITH SMALL WEEP HOLES ON THE SIDE PROVIDING A FILTERING FUNCTION FOR THE STORMWATER RUNOFF, AND A LARGE OPENING ABOVE THE WEEP HOLES FOR EMERGENCY OVERFLOW.

FILTER BAG INSERTS: SHALL CONSIST OF A REPLACEABLE FILTER BAG REINFORCED WITH AN OUTER POLYESTER MESH FABRIC.

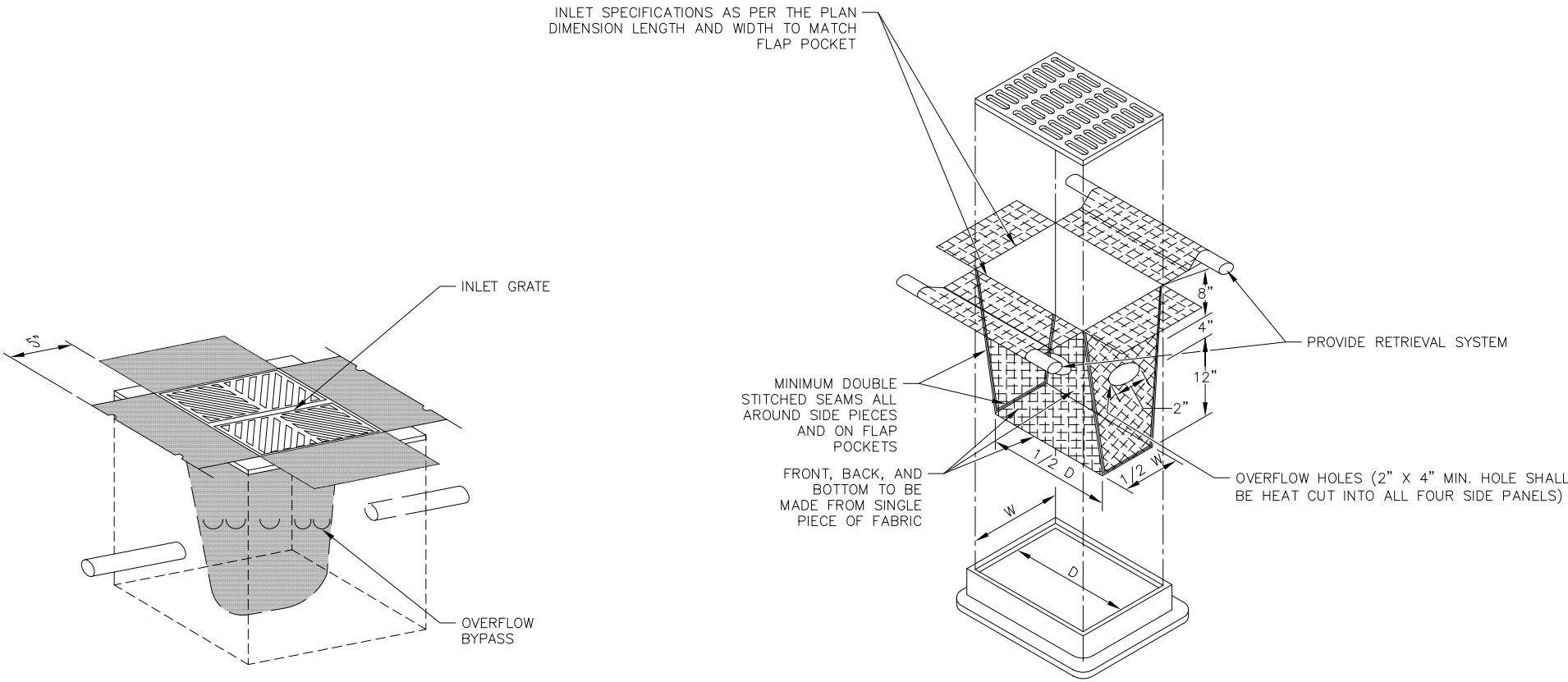
1. THE FILTER BAG SHALL BE SUSPENDED FROM A GALVANIZED STEEL RING, REBAR OR STEEL RODS, OR FRAME THAT FITS WITHIN A GRATE UTILIZING A STAINLESS STEEL BAND AND LOCKING CLAMP.
2. CONSTRUCT THE FILTER BAG THAT IS SUSPENDED FROM A FRAME OF A POLYPROPYLENE FILTER GEOTEXTILE FABRIC, THAT MEETS THE FOLLOWING MINIMUM REQUIREMENTS:

	ASTM METHOD	VALUE	UNITS
UNIT WEIGHT	--	4	OUNCE/SQ YD
FLOW RATE	--	145	GALLONS/MINUTE/SQ FT
PERMITTIVITY	D4491	0.5	PER SECOND
GRAB TENSILE STRENGTH	D4632	200	POUNDS
PUNCTURE STRENGTH	D6241	80	POUNDS
TEAR STRENGTH	D4533	50	POUNDS
DEBRIS CAPACITY	--	2	CUBIC FT

3. DOUBLE STITCH ALL EDGES AND SEAMS.
4. THE FILTER BAG INSERT SHALL HAVE OVAL, EDGE-HEAT-SEALED OVERFLOW HOLES, MINIMUM 2 INCHES X 4 INCHES, CUT INTO ALL FOUR PANEL SIDES.
5. PROVIDE BUILT-IN OVERFLOW BYPASS.
6. THE INLET STRUCTURE'S GRATE OVERFLOW CAPACITY IS AT A MINIMUM EQUAL TO THE DESIGN FLOW CAPACITY.
7. PROVIDE A RETRIEVAL SYSTEM, SUCH AS FLAPS, HANDLES, OR CORDS, TO ALLOW REMOVAL OF THE BELOW-INLET GRATE BARRIER WITHOUT SPILLING THE COLLECTED MATERIAL.

INSTALLATION
1. IF PREFABRICATED SEDIMENT PROTECTION DEVICES ARE USED, INSTALL AS SPECIFIED BY THE VENDOR OR MANUFACTURER.

INSPECTION, MAINTENANCE, AND REMOVAL
1. SEE STORM DRAIN INLET SEDIMENT PROTECTION GENERAL NOTES ON BMP-25.00 [STORM DRAIN INLET SEDIMENT PROTECTION (NOTES & AREA INLET FIBER ROLL OR GRAVEL/SAND BAG BERM)] NOTES FOR INSPECTION, MAINTENENACE, AND REMOVAL.



PERSPECTIVE

SEDIMENT CONTROL INLET HAT
FOR AREA DRAINS OR CURB INLETS

NOT TO SCALE

PERSPECTIVE

FILTER BAG INSERT
FOR AREA DRAINS OR CURB INLETS

NOT TO SCALE

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
STORM DRAIN INLET SEDIMENT PROTECTION (AREA OR CURB INLET FILTER INSERT)		
APPROVED		
Date	12/2015	X/XX/XX

BMP 23.00 & 24.00. Stabilized Construction Exit

DESIGN CONSIDERATIONS

Objectives

Stabilized Construction Exits are used to clean mud and sediment from vehicle tires, minimizing the amounts transported off-site from construction projects.

Description

A Stabilized Construction Exit provides a stabilized rock area or pad underlined with a geotextile and located where traffic exits the construction site.

Other Names

Vehicle Tracking Exit/ Entrance, Construction Exit, Construction Entrance

Applicability

Stabilized Construction Exits are necessary for projects where sediment or mud can be tracked off-site. Stabilized Construction Exits are also applicable for projects adjacent to waters of the U.S., where poor soils have been encountered, or where dust is a problem during dry weather conditions.

Selection Considerations

Stabilized Construction Exits should be installed at project access points prior to commencing major grading operations.

- Limit exits to the project.
- Avoid exits that have steep grades or are located where sight distance may be a problem.
- Slope exit towards the project where possible to retain sediment on-site.
- Provide drainage to carry water to sediment trap or other suitable outlet.
- Design exit for heaviest/longest vehicles and equipment to be used on-site.
- Exit shall be a minimum length to provide for three complete revolutions of the largest vehicle tires and 12 feet wide.
- Use fencing as necessary to direct traffic to the exit.
- Construct exit on a firm compacted subgrade when practicable.

- Avoid crossing sidewalks or back-of-walk drains.
- Avoid constructing exits at curves in public roads.
- Separation geotextile may be placed under the Stabilized Construction Exit to prevent fine sediment from pumping up into the exit structure.
- If project conditions determine the need for Stabilized Construction Exits at specific locations, provide the location on the plans.

Relationship to Other Erosion and Sediment Control Measures

Stabilized Construction Exits may be used in combination with street sweeping and tire washing to minimize the amount of sediment transported off-site.

Common Failures or Misuses

- Failure to periodically “top dress” (provide additional rock) when sediment accumulates on the surface.
- Failure to repair and/or clean out any structures used to trap sediment.
- Failure to provide adequate depth and length of rock.
- Not having a Stabilized Construction Exit and using street sweeping as a substitute.
- Use of asphalt concrete grindings, crushed concrete, cement, or calcium chloride resulting in an increase in pH levels in stormwater.

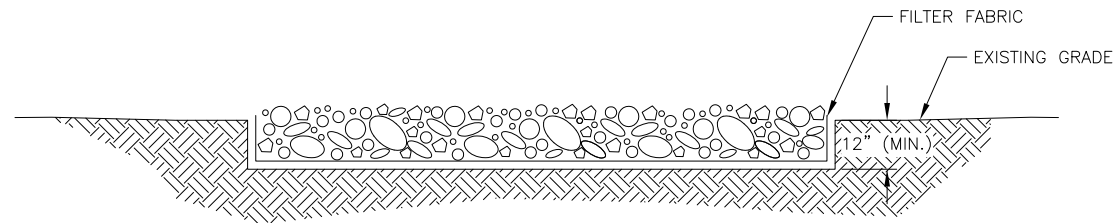
SPECIFICATIONS

Standard Specification

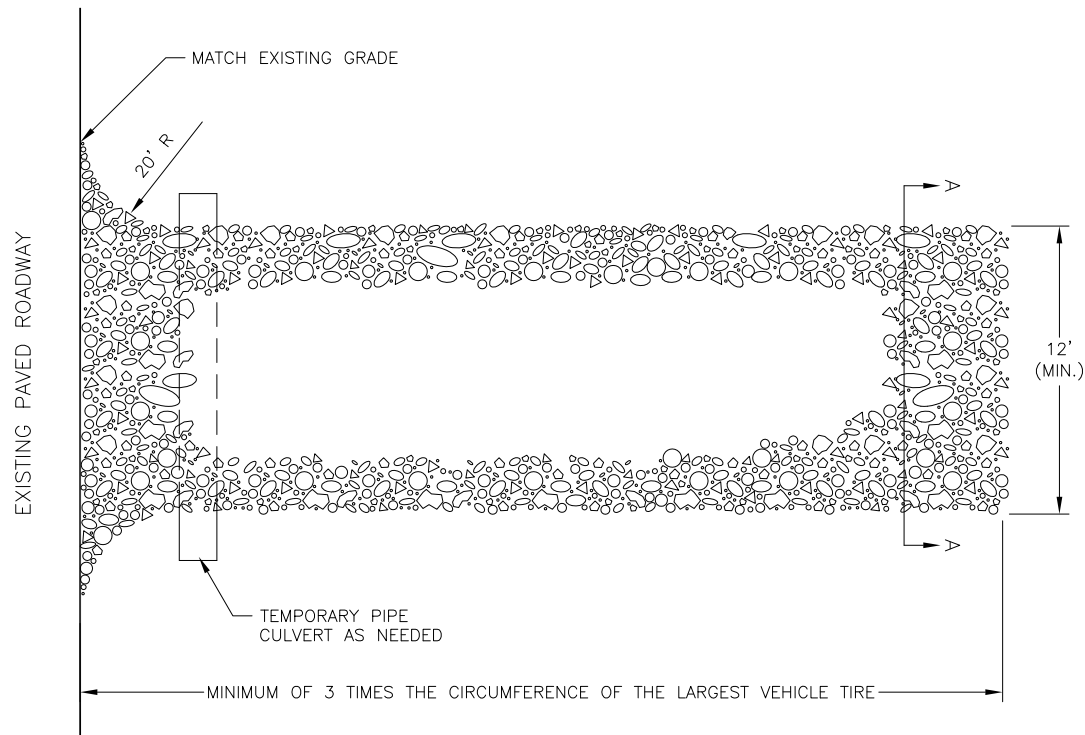
- 682 – Stabilized Construction Exit

Drawing:

- BMP-23.00 Stabilized Construction Exit (Sheets 1 of 2)
- BMP-24.00 Stabilized Construction Exit (Metal Plate, Sheet 2 of 2)



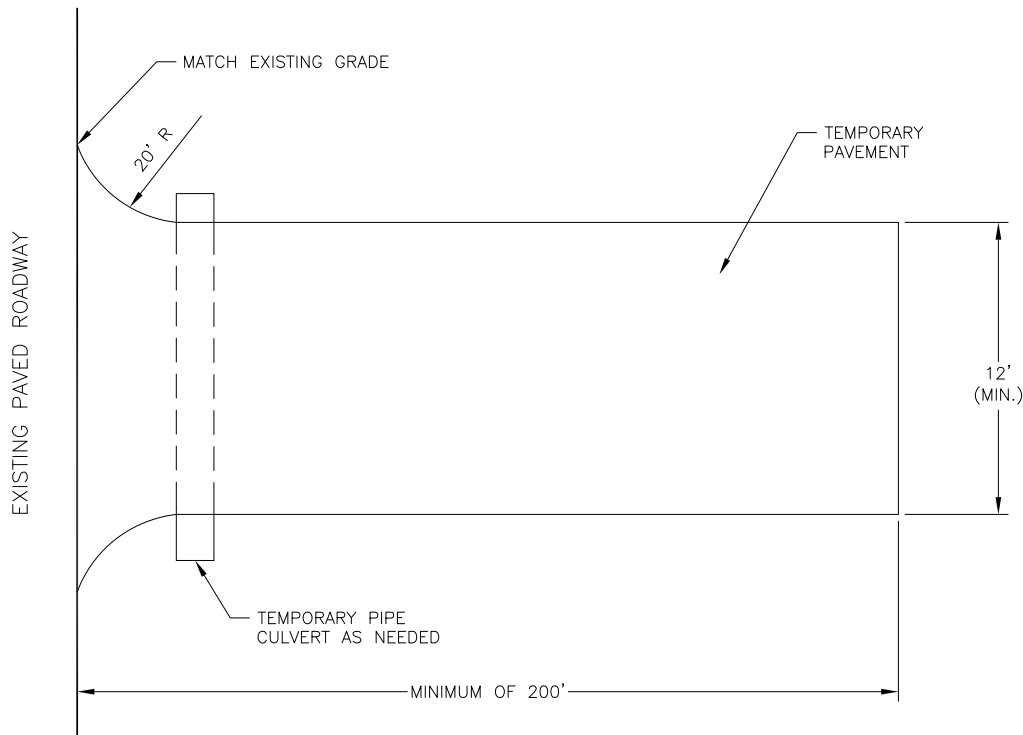
SECTION A-A



PLAN

ROCK CONSTRUCTION EXIT
NOT TO SCALE

- ROCK CONSTRUCTION EXIT NOTES:
- MATERIALS
- ROCK: 2- TO 3-INCH COARSE AGGREGATE OR 3- TO 6-INCH QUARRY SPALL OR ANGULAR ROCK, WHICHEVER IS APPROPRIATE TO THE PROJECT FLEET.
- INSTALLATION
- PLACE THE FILTER FABRIC AND ROCK TO THE SPECIFIC GRADE SHOWN ON THE PLANS.
- MAINTENANCE
- REMOVE ACCUMULATED SEDIMENT OR MUD.
 - REPLACE ROCK MATERIAL WHEN SURFACE VOIDS ARE FILLED WITH SEDIMENT. REPLACE FABRIC AS NEEDED.
 - TOP DRESS WITH 2 TO 3 INCHES OF COARSE AGGREGATE OR 3- TO 6-INCH COARSE ROCK WHEN THE PAD BECOMES LADEN WITH SEDIMENT.
- INSPECTION
- INSPECT FOR ROCK THAT HAS BEEN DISPLACED FROM THE PAD.



PLAN

TEMPORARY PAVEMENT CONSTRUCTION EXIT
NOT TO SCALE

- TEMPORARY PAVEMENT CONSTRUCTION EXIT NOTES:
- INSPECTION
- INSPECT TEMPORARY PAVEMENT FOR DAMAGE.
- MAINTENANCE
- SWEEP DESIGNATED PAVED EXIT TO PREVENT SEDIMENT TRACK-OUT.
 - REPAIR DAMAGED TEMPORARY PAVEMENT.

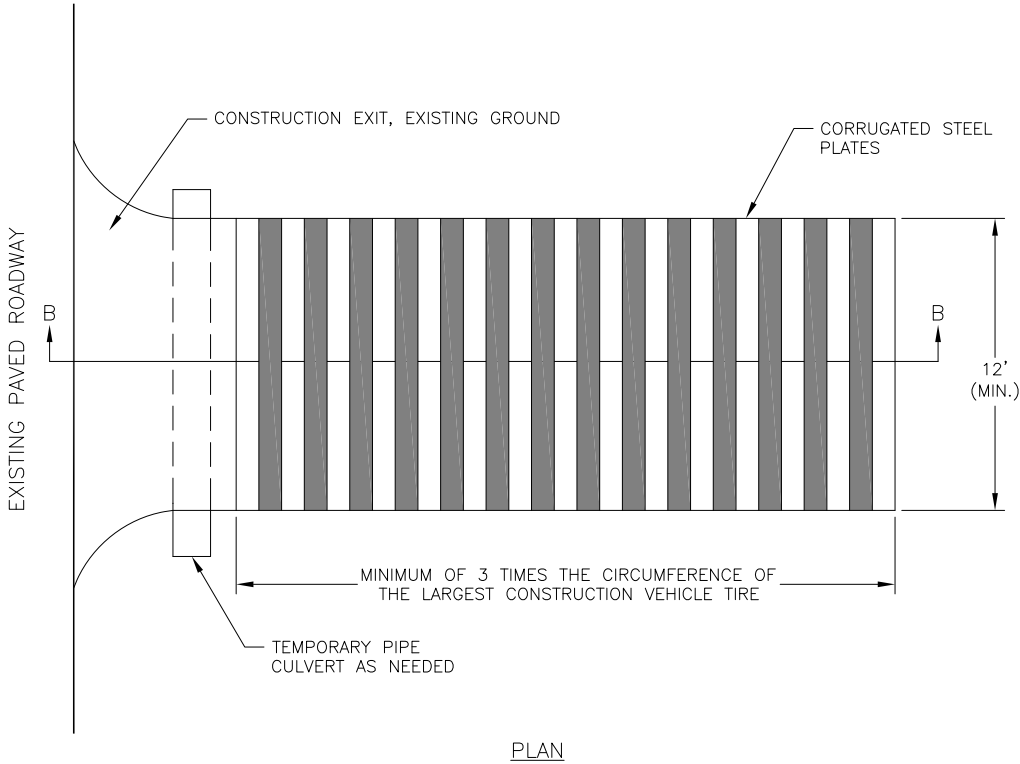
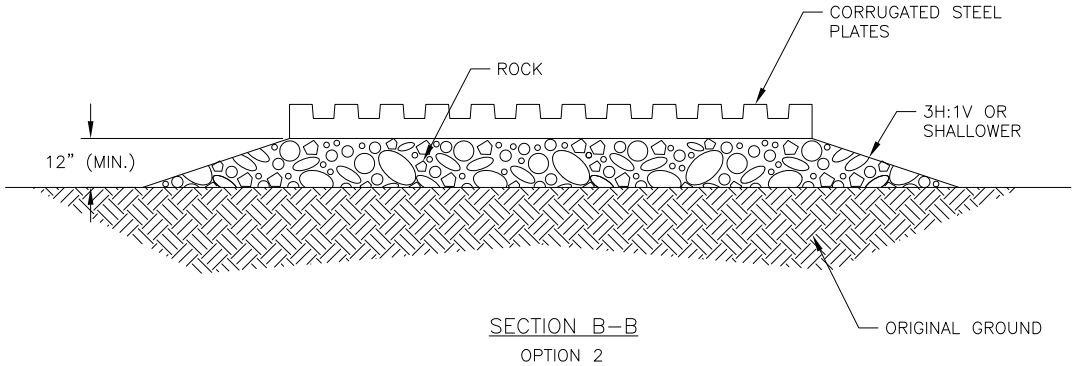
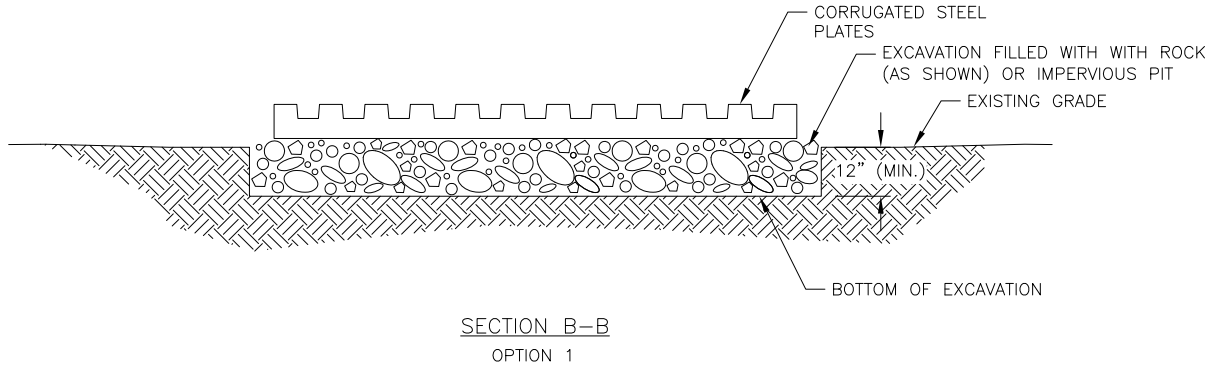
- STABILIZED CONSTRUCTION EXIT GENERAL NOTES:
- INSTALLATION
- INSTALL STABILIZED CONSTRUCTION EXIT PRIOR TO EARTH WORK.
 - CLEAR THE EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER MATERIAL.
 - PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP, VEGETATIVE SEDIMENT FILTER OR OTHER PROTECTED OUTLET.
 - EXCAVATE AND GRADE THE AREA FOR ROCK PLACEMENT.
 - INSTALL SIGNS, FENCING OR BARRICADES TO CHANNEL OUTGOING TRAFFIC TO THE STABILIZED CONSTRUCTION EXIT.

- INSPECTION
- INSPECT STABILIZED CONSTRUCTION EXIT FOR SEDIMENT ACCUMULATION AND MATERIAL DISPLACEMENT.
 - INSPECT ROADWAY FOR SEDIMENT TRACK-OUT.
 - INSPECT DITCHES TO ENSURE NO SEDIMENT ACCUMULATION.

- MAINTENANCE
- MAINTAIN EACH EXIT IN A CONDITION THAT WILL PREVENT TRACKING OF MUD OR SEDIMENT ONTO PUBLIC RIGHT-OF-WAY.
 - REPAIR AND/OR CLEAN OUT ANY STRUCTURES USED TO TRAP SEDIMENT.
 - REMOVE ALL MUD AND SEDIMENT DEPOSITED ON PAVED ROADWAYS.
 - ADD MORE SIGNS, FENCING OR BARRICADES WHEN VEHICLES ARE EXITING THE PROJECT WITHOUT USING THE STABILIZED CONSTRUCTION EXIT. INSTALL ADDITIONAL STABILIZED CONSTRUCTION EXITS IF NEEDED, YET USE SIGNS AND BARRICADES TO MINIMIZE THE NUMBER OF STABILIZED CONSTRUCTION EXITS.
 - PREVENT TRACK-OUT BY USING ADDITIONAL BMPs, SUCH AS A TIRE WASH.

- REMOVAL
- REMOVE THE STABILIZED CONSTRUCTION EXIT AND ANY SEDIMENT TRAPPING STRUCTURES AFTER THEY ARE NO LONGER NEEDED, OR WITH FINAL SITE STABILIZATION.
 - REGRADE AND PERMANENTLY STABILIZE THE REMAINING DISTURBED AREAS ACCORDING TO THE PLANS.

REVISIONS		
Date	Description	By
State of Alaska DOT&PF		
STABILIZED		
CONSTRUCTION EXIT		
(NOTES, ROCK &		
TEMPORARY PAVEMENT)		
APPROVED		
Date	12/2015	X/XX/XX



METAL PLATE CONSTRUCTION EXIT
NOT TO SCALE

METAL PLATE CONSTRUCTION EXIT NOTES:

MATERIALS
CORRUGATED STEEL PLATES: SHAKER/RUMBLE PLATES, CORRUGATED STEEL PLATES, OR EQUIVALENT DESIGNED FOR ANTICIPATED TRAFFIC LOADS.

ROCK: 2- TO 3-INCH COARSE AGGREGATE.

INSTALLATION

- IF CORRUGATED STEEL PLATES ARE OPEN TO THE SURFACE BELOW, INSTALL GRAVEL OR IMPERVIOUS PIT.
- PLACE CORRUGATED STEEL PLATES.

INSPECTION

- INSPECT CORRUGATED STEEL PLATES FOR DAMAGE.

MAINTENANCE

- REPLACE DAMAGED CORRUGATED STEEL PLATES AS NECESSARY.
- LIFT PLATE AND REMOVE ACCUMULATED SEDIMENT.
- WHEN SURFACE VOIDS FILL WITH SEDIMENT, REPLACE ROCK MATERIAL.

ADDITIONAL NOTES:

SEE STABILIZED CONSTRUCTION EXIT GENERAL NOTES ON BMP 23.00 STABILIZED CONSTRUCTION EXIT (NOTES, ROCK & TEMPORARY PAVEMENT).

REVISIONS		
Date	Description	By

State of Alaska DOT&PF

STABILIZED
CONSTRUCTION EXIT
(METAL PLATE)

APPROVED

Date12/2015X/XX/XX

BMP 55.00. Street Sweeping and Vacuuming for Sediment Control

DESIGN CONSIDERATIONS

Objectives

Street Sweeping and Vacuuming for Sediment Control is used to remove sediment from paved surfaces to prevent it from entering storm drain systems or waters of the U.S.

Description

Sediment is removed from roads and paved surfaces by power sweepers or manual methods and disposed of in a controlled sediment disposal area.

Applicability

Sweeping is implemented anywhere sediment is tracked from the project area onto public or private paved roads and other paved surfaces. Street Sweeping and Vacuuming for Sediment Control should be conducted when sediment accumulation is visible on paved surfaces. Typically, this will be concentrated at the exit to the construction site

Selection Considerations

- Sweepers that pick up sediment and control dust emissions should be specified. Of the four types of mechanical power sweepers available, three (vacuum, regenerative air, and high efficiency sweepers) are acceptable. Prohibit the use of methods that use only mechanical kick brooms. Conventional mechanical broom sweepers have been found to have a negative effect on the amount of stormwater runoff pollution. Mechanical sweepers may only be used if followed by a vacuum-assisted sweeper.
- Manual broom sweeping with pickup is acceptable. On smaller construction sites and in areas not accessible by power sweepers, sweeping can be conducted manually using a broom and shovel.
- The use of leaf blowers and other similar equipment for sweeping is unacceptable.
- Reasonable measures must be employed to prevent dust from becoming airborne during any operation where material that may create dust is handled, transported, or stored.

- If the sediment or soil is wet or muddy, paved surfaces will need to be scraped manually or mechanically.

Relationship to Other Erosion and Sediment Control Measures

Erosion and sediment control measures in the contributing areas must be in place to minimize the amount of sediment that must be swept. Stabilized Construction Exit (BMP-23 and BMP-24) or Tire Wash (BMP-36 and BMP-37) should be included in the contract. Street Sweeping and Vacuuming for Sediment Control is a secondary measure to remove residual sediment that was not removed by other measures. Well-maintained stabilized construction exits, vehicle tracking controls, and tire wash facilities can help reduce the necessary frequency of Street Sweeping and Vacuuming for Sediment Control.

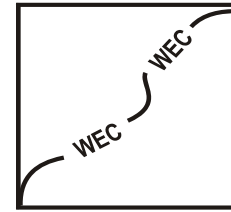
Common Failures or Misuses

- Insufficient erosion controls in the contributing disturbed area.

SPECIFICATIONS

Standard Specifications

- 656 Street Sweeping and Vacuuming for Sediment Control



Standard Symbol

BMP Objectives	
Soil Stabilization	<input checked="" type="checkbox"/>
Sediment Control	<input checked="" type="checkbox"/>
Tracking Control	<input type="checkbox"/>
Wind Erosion Control	<input checked="" type="checkbox"/>
Non-Stormwater Management	<input type="checkbox"/>
Materials and Waste Management	<input type="checkbox"/>

Definition and Purpose	<ul style="list-style-type: none"> Wind erosion control consists of applying water or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind. Dust control must be applied in accordance with Caltrans standard practices. Covering of small stockpiles or areas is an alternative to applying water or other dust palliatives; see SS-7 for “Temporary Cover and Rolled Erosion Control Products” Must comply with local agencies such as Air Quality Management District’s requiring dust control plans or dust control permits as well as any Air Clean Act requirements.
Appropriate Applications	This practice is generally implemented on all exposed soils subject to wind erosion.
Limitations	<ul style="list-style-type: none"> Effectiveness depends on soil, temperature, humidity and wind velocity. Chemically treated subgrades could cause soil to become water repellant, preventing infiltration or the long-term re-vegetation of the site.
Standards and Specifications	Standard Specification Section 10-5 contains general requirements for “Dust Control.”
	<ul style="list-style-type: none"> Effective dust control is accomplished by applying dust palliatives, temporary Soil Stabilization BMPs, Tracking Controls and managing stockpiles. “Dust Palliatives” are covered under Section 18 of the Standard Specifications. Acceptable dust palliatives include water, dust control binders, and dust suppressants. Dust control binders must comply with specifications for tackifier. Dust suppressants include petroleum-based organic product, nonpetroleum-based organic product, hygroscopic product, and synthetic polymer emulsion.

- If a dust suppressant or tackifier is used, submit a Dust Treatment Plan. Submit a certificate of compliance for dust suppressants, tackifiers, and fibers.
 - Identify and stabilize key access points with the use of Tracking Control BMPs.
 - Minimize the impact of dust by anticipating the direction of prevailing winds.
 - Temporary soil stabilization BMPs, such as SS-3 “Hydraulic Mulch”, SS-4 “Hydroseed, SS-5 “Soil Binders, also provide wind erosion control benefits.
 - Ensure proper implementation of BMPs WM-3, “Stockpile Management,” and SC-7, “Street Sweeping,” as these BMPs provide wind erosion control benefits.
 - Ensure that water is applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles to ensure even distribution.
 - All distribution equipment should be equipped with a positive means of shutoff.
 - Chemical dust suppression products could have environmental water quality impacts. Depending on the product and the time of application, water quality sampling for non-visible pollutants should be assessed when a storm even is forecasted.
 - For chemical or petroleum based organics stabilization, there are many products available. These products should not create any adverse effects on stormwater, plant life, groundwater and should meet all applicable regulatory requirements including inspection, documentation, monitoring and reporting requirements.
 - Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
 - If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the RWQCB requirements. Non-potable water must not be conveyed in tanks or drain pipes that will be used to convey potable water and there must be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances must be marked “NON-POTABLE WATER - DO NOT DRINK.”
 - Appendix B of this Manual includes additional information on selecting temporary soil stabilization products that could be used for Wind Erosion Control.
- Maintenance and Inspection**
- Check areas where wind erosion controls have been implemented daily for erosion and visible dust.
 - Most water-based dust control measures require frequent application. Obtain vendor or independent information on longevity of chemical dust suppression.

- SWPPP or WPCP ■ Wind Erosion Control must be discussed in Section 500.3.5 of the SWPPP or Section 30.2.4 of the WPCP.

BMP AK-9

Mulching

Objectives and Applications

Mulching is the application of a uniform protective layer of straw, wood fiber, wood chips, or other acceptable material on or incorporated into the soil surface of a seeded area to allow for the immediate protection of the seed bed.

The purpose of mulching is to protect the soil surface from the forces of raindrop impact and overland flow, foster the growth of vegetation, increase infiltration, reduce evaporation, insulate the soil, and suppress weed growth. Mulching also helps hold fertilizer, seed, and topsoil in place in the presence of wind, rain, and runoff, and reduces the need for watering. Mulching may be utilized in areas that have been seeded either for temporary or permanent cover.

Mulches include straw, hay, wood fiber, paper fiber, wood/ paper fiber blends, peat moss, wood chips, bark chips, shredded bark, manure, compost and corn stalks. This type of mulch is usually spread by hand or by machine (mulch blower) after seed, water, and fertilizer have been applied. Soil binders or tackifiers, composed of a variety of synthetic and organic materials, including emulsions or dispersions of vinyl compounds, rubber, asphalt, or plastics mixed with water are often added to commercial mulch products. Tackifiers aid in the stabilization process, and are not used as a mulch alone, except in cases where temporary dust and erosion control is required. Hydroseeding, sometimes referred to as hydromulching, consists of mixing a tackifier, specified organic mulch, seed, water, and fertilizer together in a hydrosurry and spraying a layer of the mixture onto a surface or slope with hydraulic application equipment. The choice of materials for mulching should be based on soil conditions, season, type of vegetation, and the size of the area.

Common Failures - Generally due to faulty installation or maintenance.

- Mulches are not properly watered after application, resulting in drying out and possible blowing or washing away of materials.
- Depth of mulching material is either insufficient or excessive, resulting in low seed germination rates.
- Hydroseeding slurry not applied uniformly,

resulting in spotty germination and inadequate ground cover.

Other Considerations

- Mulch should be applied immediately after seeding to improve seed germination.
- Hydroseeding can be performed in one step, and is effective provided that materials are properly mixed and equipment is in good working order.
- Depth of the applied mulch should be not less than 1 in. and not more than 2 in.
- Chemical soil stabilizers or soil binders, when used alone, are less effective than other types of mulches. These products are primarily useful for tacking organic mulches.
- A tackifier should be used in conjunction with seeding, fertilizing, and mulching or hydroseeding on any slopes steeper than 3:1.
- Check labels on chemical mulches and binders for environmental concerns. Take precautions to avoid damage to fish, wildlife, and water resources.
- Some materials such as wood chips may absorb nutrients necessary for plant growth.

Relationship to Other ESC Measures

Mulching may be performed in conjunction with seeding, fertilizing, surface roughening, and grading practices. Concentrated flows of runoff should be directed away from mulched areas.

Alternate Sediment Control Measures

Erosion Control Blankets; Sodding

Other Names

Hydromulching; Chemical Stabilization

Design

Design life: 1 season (6 months) or less

Site applicability: Areas which have been disturbed and require temporary or permanent cover

Materials and application rates: *as per Section 619 and Section 727 of Alaska Standard Specifications for Highway Construction, and Special Provisions for project*

Materials

Most Commonly Specified Mulches – Wood Fiber, Paper Fiber, Wood/Paper Fiber Combination Blends, Peat Moss

Other Mulches – Straw, Hay, Wood Chips, Bark Chips, Shredded Bark, Corn Stalks, Compost, Manure

Tackifiers – Vinyl Compounds, Rubber, Asphalt, or Plastics mixed with water

Installation

Complete the required grading as shown on the plans and ensure that erosion control measures intended to minimize runoff over the area to be mulched are in place. Apply mulch at the rates specified in the special provisions either by hand or by machinery immediately after the seed and fertilizer have been applied (two step method), or as part of the hydrosurry incorporating seed, fertilizer, mulch, and water (one step method). Apply specified tackifier if not already incorporated into the mulch matrix or hydrosurry. Provide additional watering as specified to ensure optimal seed germination conditions.

Inspection

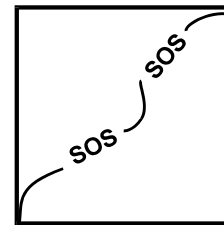
Inspect all mulches weekly, and after each rainstorm to check for rill erosion, dislocation, or failure.

Maintenance

Replace mulch that has been loosened or dislodged. In addition, reseed areas if necessary. Water mulched areas periodically to ensure that moisture content will be maintained and seed germination and grass growth will continue.

Removal

Mulching is usually left in place to naturally decompose and become part of the soil structure.



Standard Symbol

BMP Objectives	
Soil Stabilization	<input checked="" type="checkbox"/>
Sediment Control	<input type="checkbox"/>
Tracking Control	<input checked="" type="checkbox"/>
Wind Erosion Control	<input checked="" type="checkbox"/>
Non-Stormwater Management	<input type="checkbox"/>
Materials and Waste Management	<input type="checkbox"/>

Definition and Purpose	Soil binders consist of applying and maintaining a soil stabilizer to exposed soil surfaces. Soil binders are materials applied to the soil surface to temporarily prevent water-induced erosion of exposed soils on construction sites. Soil binders also provide temporary dust, wind, and soil stabilization (erosion control) benefits. This is one of five temporary soil stabilization alternatives to consider.
Appropriate Applications	Soil binders are typically applied to disturbed areas requiring short-term temporary protection. Because soil binders can often be incorporated into the work, they may be a good choice for areas where grading activities will soon resume. Application on stockpiles to prevent water and wind erosion.
Limitations	<ul style="list-style-type: none"> ■ Soil binders are temporary in nature and may need reapplication. ■ Soil binders require a minimum curing time until fully effective, as prescribed by the manufacturer. Soil binders may need reapplication after a storm event. ■ Soil binders will generally experience spot failures during heavy rainfall events. If runoff penetrates the soil at the top of a slope treated with a soil binder, it is likely that the runoff will undercut the stabilized soil layer and discharge at a point further down slope. ■ Soil binders do not hold up to pedestrian or vehicular traffic across treated areas. ■ Soil binders may not penetrate soil surfaces made up primarily of silt and clay, particularly when compacted. ■ Some soil binders may not perform well with low relative humidity. Under rainy conditions, some agents may become slippery or leach out of the soil. ■ May not cure if low temperatures occur within 24 hours of application.

Standards and Specifications

General Considerations

- Site-specific soil types will dictate appropriate soil binders to be used.
- A soil binder must be environmentally benign (non-toxic to plant and animal life), easy to apply, easy to maintain, economical, and shall not stain paved or painted surfaces, refer to Standard Specifications Section 13,18 and 21.
- Some soil binders are compatible with existing vegetation.
- Performance of soil binders depends on temperature, humidity, and traffic across treated areas.
- Avoid over-spray onto the traveled way, sidewalks, lined drainage channels, and existing vegetation.
- Storm water quality runoff sampling is required for many soil binders. Per table 5-1, footnote 7, of the 2013 Construction Site Monitoring Program Guidance Manual the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is not required Super Tak, M-binder, Fish Stik, Pro40dc, Fisch-Bond, Soil Master WR and EarthGuard.

Soil Binders Applications

After selecting an appropriate soil binder, the untreated soil surface must be prepared before applying the soil binder. The untreated soil surface must contain sufficient moisture to assist the agent in achieving uniform distribution. In general, the following steps shall be followed:

- Follow manufacturer's recommendations for application rates, pre-wetting of application area, and cleaning of equipment after use.
- Prior to application, roughen embankment and fill areas by rolling with a crimping or punching type roller or by track walking. Track walking shall only be used where rolling is impractical.
- Consider the drying time for the selected soil binder and apply with sufficient time before anticipated rainfall. Soil binders shall not be applied during or immediately before rainfall.
- Avoid over-spray onto the traveled way, sidewalks, lined drainage channels, sound walls, and existing vegetation.
- Soil binders shall not be applied to frozen soil, areas with standing water, under freezing or rainy conditions, or when the air temperature is below 4°C (40°F) during the curing period.
- More than one treatment is often necessary, although the second treatment may be diluted or have a lower application rate.
- Generally, soil binders require a minimum curing time of 24 hours before they are fully effective. Refer to manufacturer's instructions for specific cure times.

■ For liquid agents:

- Crown or slope ground to avoid ponding.
- Uniformly pre-wet ground at 0.03 to 0.3 gal/yd² or according to manufacturer's recommendations.
- Apply solution under pressure. Overlap solution 6 to 12 in.
- Allow treated area to cure for the time recommended by the manufacturer; typically, at least 24 hours.
- In low humidities, reactivate chemicals by re-wetting with water at 0.1 to 0.2 gal/yd².

Selecting a Soil Binder

Properties of common soil binders used for erosion control are provided in Table 1 and Appendix B. Use Table 1 to select an appropriate soil binder.

Table 1
Properties of Soil Binders for Erosion Control

Chemicals	Plant Material Based (Short Lived)	Plant Material Based (Long Lived)	Polymeric Emulsion Blends	Cementitious-Based Binders
Relative Cost	Low	Low	Low	Low
Resistance to Leaching	High	High	Low to Moderate	Moderate
Resistance to Abrasion	Moderate	Low	Moderate to High	Moderate to High
Longevity	Short to Medium	Medium	Medium to Long	Medium
Minimum Curing Time before Rain	9 to 18 hours	19 to 24 hours	0 to 24 hours	4 to 8 hours
Compatibility with Existing Vegetation	Good	Poor	Poor	Poor
Mode of Degradation	Biodegradable	Biodegradable	Photodegradable/ Chemically Degradable	Photodegradable/ Chemically Degradable
Labor Intensive	No	No	No	No
Specialized Application Equipment	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher
Liquid/Powder	Powder	Liquid	Liquid/Powder	Powder
Surface Crusting	Yes, but dissolves on rewetting	Yes	Yes, but dissolves on rewetting	Yes
Clean-Up	Water	Water	Water	Water
Erosion Control Application Rate	Varies ⁽¹⁾	Varies ⁽¹⁾	Varies ⁽¹⁾	4,500 to 13,500 kg/ha

(1) Dependant on product, soil type, and slope inclination

Factors to consider when selecting a soil binder include the following:

- Suitability to situation - Consider where the soil binder will be applied; determine if it needs a high resistance to leaching or abrasion, and whether it needs to be compatible with any existing vegetation. Determine the length of time soil stabilization will be needed, and if the soil binder will be placed in an area where it will degrade rapidly. In general, slope steepness is not a discriminating factor for the listed soil binders.
- Soil types and surface materials - Fines and moisture content are key properties of surface materials. Consider a soil binder's ability to penetrate, likelihood of leaching, and ability to form a surface crust on the surface materials.
- Frequency of application - The frequency of application can be affected by subgrade conditions, surface type, climate, and maintenance schedule. Frequent applications could lead to high costs. Application frequency may be minimized if the soil binder has good penetration, low evaporation, and good longevity. Consider also that frequent application will require frequent equipment clean-up.

After considering the above factors, the soil binders in Table 1 will be generally appropriate as follows:

Plant-Material Based (Short Lived)

-Guar: Guar gum based tackifier must be derived from the ground endosperm of the guar plant, *Cyanmopsis tetragonolobus*. It must be treated with dispersing agents for easy mixing.. It shall be diluted at the rate of 1 to 5 lb per 100 gallons of water, depending on application machine capacity. Recommended minimum application rates are as follows:

Application Rates for Guar Soil Stabilizer

Slope (V:H):	Flat	1:4	1:3	1:2	1:1
Kg/Ha:	45	50	56	67	78
lb/ac	40	45	50	60	70

-Psyllium: Psyllium is composed of the finely ground muciloid coating of plantago seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. It dries to form a firm but rewettable membrane that binds soil particles together but permits germination and growth of seed. Psyllium requires 12 to 18 hours drying time. Psyllium shall be applied at a rate of 80 to 200 lb/ac, with enough water in solution to allow for a uniform slurry flow.

-Starch: Starch is non-ionic, water soluble granular cornstarch. The material is mixed with water and applied at the rate of 150 lb/ac. Approximate drying time is 9 to 12 hours.

Plant-Material Based (Long Lived)

-Pitch and Rosin Emulsion: Generally, a non-ionic pitch and rosin emulsion has a minimum solids content of 48%. The rosin shall be a minimum of 26% of the total solids content. The soil stabilizer shall be non-corrosive, water-dilutable emulsion that upon application cures to a water insoluble binding and cementing agent. For soil erosion control applications, the emulsion is diluted and shall be applied as follows:

For clayey soil: 5 parts water to 1 part emulsion

For sandy soil: 10 parts water to 1 part emulsion

Application can be by water truck or hydraulic seeder with the emulsion/product mixture applied at the rate specified by the manufacturer. Approximate drying time is 19 to 24 hours.

Polymeric Emulsion Blends

-Acrylic Copolymers and Polymers: Polymeric soil stabilizers shall consist of a liquid or solid polymer or copolymer with an acrylic base that contains a minimum of 55% solids. The polymeric compound shall be handled and mixed in a manner that will not cause foaming or shall contain an anti-foaming agent. The polymeric emulsion shall not exceed its shelf life or expiration date; manufacturers shall provide the expiration date. Polymeric soil stabilizer shall be readily miscible in water, non-injurious to seed or animal life, non-flammable, shall provide surface soil stabilization for various soil types without totally inhibiting water infiltration, and shall not re-emulsify when cured. The applied compound shall air cure within a maximum of 36 to 48 hours. Liquid copolymer shall be diluted at a rate of 10 parts water to 1 part polymer and applied to soil at a rate of 1,175 gal/ac.

-Liquid Polymers of Methacrylates and Acrylates: This material consists of a tackifier/sealer that is a liquid polymer of methacrylates and acrylates. It is an aqueous 100% acrylic emulsion blend of 40% solids by volume that is free from styrene, acetate, vinyl, ethoxylated surfactants or silicates. For soil stabilization applications, it is diluted with water in accordance with manufacturer's recommendations, and applied with a hydraulic seeder at the rate of 20 gal/ac. Drying time is 12 to 18 hours after application.

-Copolymers of Sodium Acrylates and Acrylamides: These materials are non-toxic, dry powders that are copolymers of sodium acrylate and acrylamide. They are mixed with water and applied to the soil surface for erosion control at rates that are determined by slope gradient:

Slope Gradient (V:H)	kg/ha (lb/ac)
Flat to 1:5	3-5
1:5 to 1:3	5-10
1:2 to 1:1	10-20

-Poly-Acrylamide and Copolymer of Acrylamide: Linear copolymer polyacrylamide is packaged as a dry-flowable solid. When used as a stand-alone stabilizer, it is diluted at a rate of 1 lb/100 gal of water and applied at the rate of 5 lb/ac.

-Hydro-Colloid Polymers: Hydro-Colloid Polymers are various combinations of dry-flowable poly-acrylamides, copolymers and hydro-colloid polymers that are mixed with water and applied to the soil surface at rates of 53 to 62 lb/ac. Drying times are 0 to 4 hours.

Cementitious-Based Binders

-Gypsum: This is a formulated gypsum-based product that readily mixes with water and mulch to form a thin protective crust on the soil surface. It is composed of high purity gypsum that is ground, calcined and processed into calcium sulfate hemihydrate with a minimum purity of 86%. It is mixed in a hydraulic seeder and applied at rates 4,000 to 12,000 lb/ac. Drying time is 4 to 8 hours.

- Additional guidance on the selection of soil stabilization BMPs can be found in Appendix B of this Manual.

Maintenance and Inspection

- Reapplying the selected soil binder may be needed for proper maintenance. High traffic areas shall be inspected daily, and lower traffic areas shall be inspected weekly.
- A certificate of compliance under Standard Specifications Section 21-2.01C(4) must be submitted to the RE prior to application.
- It is recommended that a small test area/mock-up occurs prior to large area application to verify sufficient cover for the approved mix.
- After any rainfall event, the Contractor is responsible for maintaining all slopes to prevent erosion.
- Maintain an unbroken, temporary stabilized area while DSAs are inactive. Repair any damaged stabilized area and re-apply soil binder to exposed areas.
- Cleaning of equipment must be done in a designated area that can collect the water to prevent triggering of non-visible and non-stormwater requirements.

SWPPP or WPCP

- Soil Binders must be discussed in Section 500.3.2 of the SWPPP or Section 30.2 of the WPCP.

BMP 57.00. Temporary Seeding

DESIGN CONSIDERATIONS

Objectives

Temporary Seeding is intended to temporarily stabilize the soil of a disturbed area to prevent the erosion and the discharge of soil and/or sediments.

Temporary Seeding is used in areas where permanent cover is not necessary or appropriate. By protecting bare soil from raindrop impact and binding the soil with roots, a well-established vegetative cover is one of the most effective methods of reducing erosion.

Other Names

Temporary Stabilization.

Applicability

Temporary Seeding is applicable to exposed areas subject to erosion that are not actively being worked. Temporary Seeding can be used where permanent covering is not necessary or where future ground disturbing activities will occur.

By itself, Temporary Seeding is not soil stabilization because the seeds are not effective until they sprout and create a stabilizing root mat. Temporary Seeding should be accompanied by surface preparation, surface roughening, fertilizer, mulch, and maintenance to encourage seed establishment. Temporary Seeding can remain and be left to winter over only if ground-disturbing activities are scheduled to resume the following spring. Prior to application of permanent stabilization measures, Temporary Seeding should be removed from, or plowed/tilled into, the existing soil

Selection Considerations

- Consider application rate, regional climate, environment, and duration of required vegetation coverage prior to application. Temporary Seeding is intended to be used for a maximum of one growing season.
- Temporary Seeding should be applied soon after ground-disturbing activities cease in the area and in compliance with highway Section 641 (airport Section P-157). The use of fertilizers is advised to promote rapid and healthy seed growth. Fertilizer should be applied at the application

rate specified by the manufacturer or per the recommendations from a soil analysis

Design

Seed Selection: Annual Ryegrass (*Lolium multiflorum*) should be used for short periods lasting no more than one growing season.

Seed Application Rate: Typical rate of 20 lbs/acre (per Plant Material Center recommendation), although the rate may be varied based on site-specific conditions.

Fertilizer Application Rate: Typical rate of 200 lbs/acre of 20-20-10 (percent nitrogen-phosphorus-potassium) fertilizer (per Plant Material Center recommendation).

Other Soil Amendments: In certain cases, in addition to fertilizer, specifying compost or topsoil may enhance vegetative growth. However, note that in some cases a layer of topsoil on gravel surfaces can increase erosion potential.

Soil Stabilization Methods: Hydraulic erosion control products (HECPs), including bonded fiber matrix, mulch, and tackifiers; and rolled erosion control products (RECPs) for slopes should be considered on a site-specific basis in conjunction with Temporary Seeding to decrease soil erosion potential

Relationship to Other Erosion and Sediment Control Measures

Seeding should be performed in conjunction with surface roughening, soil stabilization methods, and grading practices. Concentrated flows or runoff should be directed away from the seeded areas using diversions.

Common Failures or Misuses

Common failures are generally due to faulty installation and maintenance. These failures include:

- Ground or growth medium is insufficient to support seed.
- Seed is not applied at an adequate application rate.

- Mulch or HECP used is inadequate to hold seed on slopes.
- Seed is not applied uniformly and/or adequate ground coverage is not achieved.
- Seed is not properly or adequately irrigated.
- Seeded areas are disturbed by foot traffic and/or equipment after installation.
- Seeding is applied too close to freeze-up

SPECIFICATIONS

Standard Specifications

- 658 – Temporary Seeding
- 620 – Topsoil
- 657 – Tackifier
- 650 – Compost Blanket
- 653 – Permanent Seeding
- 652 – Soil Amendments
- 753 – Soil Amendments
- 725 – Fertilizer
- 651– Hydraulic Erosion Control Products
- 751—Hydraulic Erosion Control Products
- 654– Rolled Erosion Control Products for Slopes
- 754-- Rolled Erosion Control Products

BMP AK-23

Vehicle and Equipment Maintenance

Purpose and Description

- Vehicle and equipment cleaning areas, procedures and practices are designed to minimize or prevent discharge of pollutants and hazardous wastes into water courses and/or storm drain systems.¹

Applicability

- Procedures and practices are used everywhere that onsite maintenance and washing takes place.
- When practical, maintenance must be done offsite.

Design and Installation

- When vehicle and equipment maintenance cannot be done offsite or within a structure equipped with proper containment and disposal facilities¹ it must be done at an onsite maintenance area with the following characteristics:
 - Located at least 50ft from any downstream drainages or waterbodies.
 - Protected from storm water run-on and run-off by diversion dikes or berms which are configured to contain spills and pollutants.
 - Have drip pans, absorbent pads and spill kits on site.
 - Absorbent pads, contaminated soil, or any other waste product produced by vehicle or equipment maintenance operations must be disposed of properly.

- Fuels and lubricants must not be dumped on the ground.¹
- Tires must not be buried.¹
- Batteries must be disposed up properly or recycled.¹
- No liquids (oil, fuel, anti-freeze, etc...) will be poured or otherwise go into a storm drain system. They must be disposed of per manufacturer's instructions.²
- Secondary containment is required when storing oil, fuel and chemicals in drums onsite.¹

Maintenance and Inspection

- Any vessel used to store waste fluids must be inspected regularly and maintained in a leak-proof condition.¹
- Inspect construction vehicles and equipment daily and immediately fix any leaks or remove problem vehicle(s) and/or equipment from the site.²
- Maintenance area and secondary containment must be inspected regularly.

References

¹Caltrans Storm Water Quality Handbooks, March 2003, Construction Site Best Management Practices Manual, NS-10 Vehicle and Equipment Maintenance, http://www.dot.ca.gov/hq/construc/stormwater/CSBMPPM_303_Final.pdf

²USEPA (United States Environmental Protection Agency), October 2000, National Menu of Best Management Practices, Vehicle Maintenance and Washing Areas at Construction Sites, <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=34&minmeasure=>

4

WM-6 SOLID WASTE MANAGEMENT



BMP Objectives

- ☐ Perimeter Control
- ☐ Slope Protection
- ☐ Borrow and Stockpiles
- ☐ Drainage Areas
- ☐ Sediment Trapping
- ☒ Stream Protection
- ☐ Temporary Stabilizing
- ☐ Permanent Stabilizing

Definition and Purpose

Solid waste management procedures and practices are designed to minimize or eliminate the discharge of pollutants to the drainage system or to watercourses as a result of the creation, stockpiling, or removal of construction site and domestic wastes.

Appropriate Applications

Solid waste management procedures and practices are implemented on all construction projects that generate solid wastes.

Solid wastes include but are not limited to:

- Construction wastes including brick, mortar, timber, steel and metal scraps, sawdust, pipe and electrical cuttings, non-hazardous equipment parts, and Styrofoam and other materials used to transport and package construction materials.
- Highway planting wastes, including vegetative material, plant containers, and packaging materials.
- Litter, including food containers, beverage cans, coffee cups, paper bags, plastic wrappers, and smoking materials, including litter generated by the public.

Limitations

It may be difficult to schedule waste disposal at projects located in remote areas.

General Considerations

The Contractor's Water Pollution Control Manager (WPCM) shall oversee, schedule, and enforce proper solid waste procedures and practices.

Education

- Instruct employees and subcontractors on identification of solid and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings (or incorporate into regular safety meetings) to discuss and reinforce disposal procedures.

- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Promote good housekeeping practices on all sites.
- Wherever possible, minimize production of solid waste materials.

Collection, Storage, and Disposal

- Dumpsters of sufficient size and number shall be provided to contain the solid waste generated by the project and properly serviced.
- Littering is prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines shall be a priority.
- Trash receptacles shall be provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Construction debris and litter from work areas within the construction limits of the project site shall be collected and placed in dumpsters at least weekly regardless of whether the litter was generated by the Contractor, the public, or others. Collected litter and debris shall not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Full dumpsters shall be removed from the project site and the contents shall be disposed of properly. Clean up immediately if containers overflow.
- Litter stored in collection areas and containers shall be handled and disposed of by trash-hauling contractors.
- Construction debris and non-hazardous waste shall be removed from the site regularly or as directed by the Engineer.
- Construction material visible to the public shall be stored or stacked in an orderly manner to the satisfaction of the Engineer.
- Stormwater run-on shall be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas shall be located at least 50 feet from drainage facilities and watercourses and shall not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in dumpsters shall be securely covered with tarps or plastic sheeting. .
- Dumpster washout on the project site is not allowed.
- Trash-hauling contractors shall be notified that only dumpsters are acceptable for use on-site.

- Additional containers and more frequent pickups will likely be needed during the demolition phase of construction.
- Construction waste shall be stored in a designated area approved by the Engineer.
- Potentially hazardous waste shall be segregated from non-hazardous construction site waste.
- The site shall be kept clean of litter debris through good housekeeping practices.
- Toxic liquid wastes (e.g., used oils, solvents, and paints) and chemicals (e.g., acids, pesticides, additives, and curing compounds) shall not be disposed of in dumpsters designated for construction debris.
- WM-7 (Hazardous Waste Management) contains information on disposal of hazardous waste. Hazardous waste shall be removed to an appropriate disposal and/or recycling facility by a licensed contractor.
- Useful vegetation debris, packaging, and/or surplus building materials shall be salvaged or recycled when practical. For example, trees and shrubs from land clearing can be converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Maintenance and Inspection

- Inspections shall be conducted as required by the NPDES permit or contract specifications.
- The WPCM shall monitor on-site solid waste storage and disposal procedures.
- The site shall be policed for litter and debris.

WM-10 SANITARY/ SEPTIC WASTE MANAGEMENT



BMP Objectives

- ☐ Perimeter Control
- ☐ Slope Protection
- ☐ Borrow and Stockpiles
- ☒ Drainage Areas
- ☐ Sediment Trapping
- ☒ Stream Protection
- ☐ Temporary Stabilizing
- ☐ Permanent Stabilizing

Definition and Purpose

Procedures and practices to minimize or eliminate the discharge of construction site sanitary/septic waste materials to the storm drain system or to watercourses by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Appropriate Applications

Sanitary/septic waste management practices are implemented on all construction sites that use temporary or portable sanitary/septic waste systems.

Limitations

- Must provide regular access for service contractor.
- Must provide sufficient number of units to accommodate all personnel on site.

Education

- Educate employees, subcontractors, and suppliers on sanitary/septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary/septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary/septic waste.
- Hold regular meetings, or incorporate into regular safety meetings the requirement to utilize sanitary facilities.
- Establish a continuing education program.

Storage and Disposal Procedures

- Temporary sanitary facilities shall be located as far away as practicable from drainage facilities given site/traffic conditions and watercourses, but still conveniently located for personnel.
- Temporary sanitary facilities shall be positioned to be secure to prevent overturning.
- Wastewater shall not be discharged or buried within the highway right-of-way.
- If an on-site disposal system, such as a septic system, is used, local health agency requirements shall be complied with.
- Temporary sanitary facilities that discharge to the sanitary sewer system shall be properly connected to avoid illicit discharges.
- Sanitary/septic facilities shall be maintained in good working order and serviced by a licensed provider.
-

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications.
- Arrange for regular waste collection.

APPENDIX C

PROJECT SCHEDULE

APPENDIX D

SUPPORTING DOCUMENTS

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chugach County, Alaska



Local office

Anchorage Fish & Wildlife Field Office

☎ (907) 271-2888

📅 (907) 271-2786

4700 Blm Road
Anchorage, AK 99507

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Short-tailed Albatross <i>Phoebastria</i> (=Diomedea) albatrus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/433	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>

- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

Please refer to [Alaskas Bird Nesting Season](#) for recommendations to minimize impacts to migratory birds, including eagles.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Mar 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

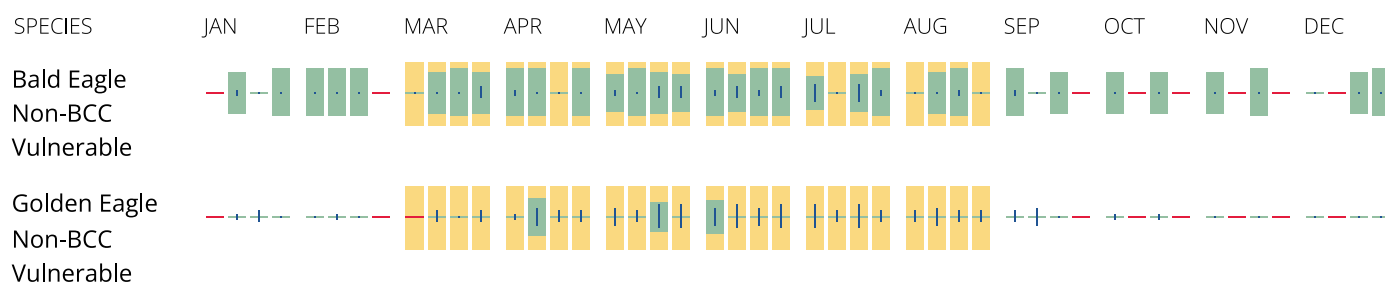
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

There are migratory birds in your project area. Please refer to [Alaska's Bird Nesting Season](#) for recommendations to minimize impacts to migratory birds, including eagles.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus*

Breeds Mar 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Black Oystercatcher *Haematopus bachmani*

Breeds Apr 15 to Oct 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9591>

Chestnut-backed Chickadee *Poecile rufescens rufescens*

Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Golden Eagle *Aquila chrysaetos*

Breeds Mar 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Kittlitz's Murrelet *Brachyramphus brevirostris*

Breeds May 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/1633>

Rufous Hummingbird *Selasphorus rufus*

Breeds Apr 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Tufted Puffin *Fratercula cirrhata*

Breeds May 5 to Oct 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/430>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

Northern Sea Otter *Enhydra lutris kenyoni*
<https://ecos.fws.gov/ecp/species/2884>

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

RIVERINE

[R3UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX E
DELEGATION OF AUTHORITY AND
SUBCONTRACTOR
CERTIFICATIONS

Appendix E – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION STORMWATER POLLUTION PREVENTION PLAN

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above-designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: Day-to-day operational control of on-site activities _____

Signature: _____

Title: _____

Date: _____

APPENDIX F

PERMIT CONDITIONS

**Alaska Pollutant Discharge Elimination System General Permit for Discharges from Large and Small
Construction Activities (Construction General Permit)**

Permit Number: AKR100000

<https://dec.alaska.gov/water/wastewater/stormwater/construction> (Conservation, 2021)

APPENDIX G
GRADING AND STABILIZATION
LOG

Grading and Stabilization Activity Log

Project Name: _____

Date Grading Activity	Location and Description of Grading Activity	Date and Status of Activity at Time of Each Inspection	Date and Description of When Stabilization Measures are Initiated	Date Final Stabilization has been Reached
Initiated:			Temporary:	
Ceased:			Permanent:	
Initiated:			Temporary:	
Ceased:			Permanent:	
Initiated:			Temporary:	
Ceased:			Permanent:	
Initiated:			Temporary:	
Ceased:			Permanent:	
Initiated:			Temporary:	
Ceased:			Permanent:	

APPENDIX H

Spill Plan and Reporting Requirements



ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

OIL & HAZARDOUS SUBSTANCES SPILL NOTIFICATION FORM

ADEC USE ONLY

ADEC SPILL#:		ADEC FILE#:		ADEC LC:	
PERSON REPORTING:		PHONE NUMBER:		REPORTED HOW? (ADEC USE ONLY) <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> PERS <input type="checkbox"/> E-mail	
DATE/TIME OF SPILL:		DATE/TIME DISCOVERED:		DATE/TIME REPORTED TO ADEC:	
INCIDENT LOCATION/ADDRESS:		DATUM: <input type="checkbox"/> NAD27 <input type="checkbox"/> NAD83 <input type="checkbox"/> WGS84 <input type="checkbox"/> Other _____		PRODUCT SPILLED:	
		LAT: _____			
		LONG: _____			
QUANTITY SPILLED: <input type="checkbox"/> gallons <input type="checkbox"/> pounds	QUANTITY CONTAINED: <input type="checkbox"/> gallons <input type="checkbox"/> pounds		QUANTITY RECOVERED: <input type="checkbox"/> gallons <input type="checkbox"/> pounds		QUANTITY DISPOSED: <input type="checkbox"/> gallons <input type="checkbox"/> pounds
POTENTIAL RESPONSIBLE PARTY:		OTHER PRP, IF ANY:		VESSEL NAME:	
Name/Business:					
Mailing Address:				VESSEL NUMBER:	
Contact Name:				> 400 GROSS TON VESSEL:	
Contact Number:				<input type="checkbox"/> Yes <input type="checkbox"/> No	
SOURCE OF SPILL:				CAUSE CLASSIFICATION:	
CAUSE OF SPILL: <input type="checkbox"/> Under Investigation				<input type="checkbox"/> Accident <input type="checkbox"/> Human Factors <input type="checkbox"/> Structural/Mechanical <input type="checkbox"/> Other	
CLEANUP ACTIONS:					
DISPOSAL METHODS AND LOCATION:					
AFFECTED AREA SIZE:		SURFACE TYPE: (gravel, asphalt, name of river etc.)		RESOURCES AFFECTED/THREATENED: (Water sources, wildlife, wells, etc.)	
COMMENTS:					

ADEC USE ONLY

SPILL NAME:		NAME OF DEC STAFF RESPONDING:		C-PLAN MGR NOTIFIED? <input type="checkbox"/> Yes <input type="checkbox"/> No	
DEC RESPONSE: <input type="checkbox"/> Phone follow-up <input type="checkbox"/> Field visit <input type="checkbox"/> Took Report		CASELOAD CODE: <input type="checkbox"/> First and Final <input type="checkbox"/> Open/No LC <input type="checkbox"/> LC Assigned		CLEANUP CLOSURE ACTION: <input type="checkbox"/> NFA <input type="checkbox"/> Monitoring <input type="checkbox"/> Transferred to CS or STP	
COMMENTS:		Status of Case: <input type="checkbox"/> Open <input type="checkbox"/> Closed		DATE CASE CLOSED:	
REPORT PREPARED BY:					
DATE:					

IT'S THE LAW!

AS 46.03.755, 18 AAC 75.300, 75.325 and 18 AAC 78.200

REPORT OIL AND HAZARDOUS SUBSTANCE SPILLS

During Normal Business Hours

call the nearest response team office:

Central Alaska:
Anchorage

(907) 269-3063
Fax: (907) 269-7648

Northern Alaska:
Fairbanks

(907) 451-2121
Fax: (907) 451-2362

Southeast Alaska:
Juneau

(907) 465-5340
Fax: (907) 465-5245

Alaska Pipeline:
Fairbanks

(907) 451-2121
Fax: (907) 451-2362

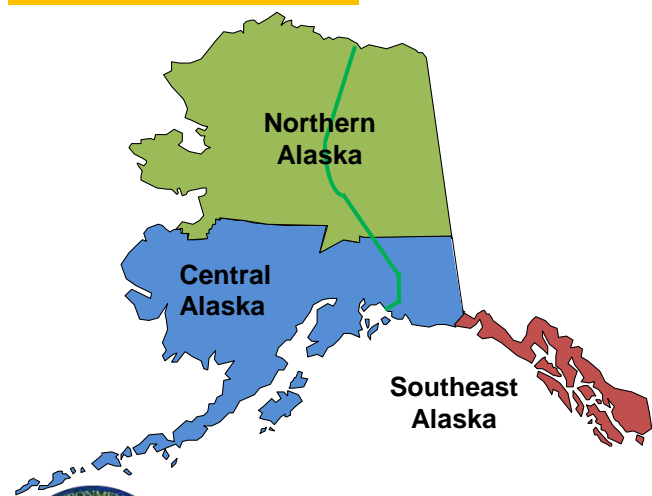
Outside Normal Business Hours

Toll Free

1-800-478-9300

International

1-907-269-0667



Alaska Department of
Environmental Conservation
Division of Spill Prevention and Response
[www.dec.alaska.gov/spar/ppr/spill-
information/reporting](http://www.dec.alaska.gov/spar/ppr/spill-information/reporting)

Hazardous Substance

Any hazardous substance spill, other than oil, must be reported immediately.

Oil – Petroleum Products

To Water

- ◆ Any amount spilled to water must be reported immediately.

To Land

- ◆ Spills in **excess of 55 gallons** must be reported immediately.
- ◆ Spills in **excess of 10 gallons, but 55 gallons or less**, must be reported within 48 hours after the person has knowledge of the spill.
- ◆ Spills of **1 to 10 gallons** must be recorded in a spill reporting log submitted to ADEC each month.

To Impermeable Secondary Containment Areas

- ◆ Any spills in **excess of 55 gallons** must be reported within 48 hours.

Additional Requirements for Underground Storage Tank Spill Reporting

Regulated Underground Storage Tank (UST) systems are defined at 18 AAC 78.005. Releases at heating oil tanks must be reported.

- You must report a *suspected* belowground release from a UST system, in any amount, within 24 hours (18 AAC 78.220(c)).
- You must report if your release detection system indicates two consecutive months of invalid or inconclusive results.
- If you observe unusual operating conditions, sudden loss, erratic dispensing (slow flow/no flow) or discharge to soil or water, **report it to the UST Unit:**

907-269-3055 or 269-7679

APPENDIX I

TRAINING RECORDS

Annie Collie

Has successfully completed training for
Alaska Certified Erosion & Sediment Control Lead



A. Collie

Approved AK-CESCL Instructor

Course Date: 03/13/2024

Expiration Date: 03/14/2027

Location: Virtual | Sponsor ASA



Certificate #
MSE-24-0001

Kelly Kennedy

Has successfully completed training for
Alaska Certified Erosion & Sediment Control Lead



Annie Collie

Approved AK-CESCL Instructor

Course Date: 3/14/2024
Expiration Date: 3/14/2027
Location: Virtual | Sponsor: MSE

Brian Kovol

Has successfully completed training for
Alaska Certified Erosion & Sediment Control Lead



Annie Collie

Approved AK-CESCL Instructor

Course Date: 10/19/2023

Expiration Date: 10/19/2026

Location: *Virtual* | Sponsor: *Midnight Sun Environmental, LLC*



Certificate #
MSE-23-0038

Jovana Karapandzic

Has successfully completed training for
Alaska Certified Erosion & Sediment Control Lead



Annie Collie

Approved AK-CESCL Instructor

Course Date: **10/19/2023**

Expiration Date: **10/19/2026**

Location: *Virtual* | Sponsor: *Midnight Sun Environmental, LLC*

Krista Scott

Has successfully completed training for
Alaska Certified Erosion & Sediment Control Lead



Annie Collie

Approved AK-CESCL Instructor

Course Date: 10/19/2023

Expiration Date: 10/19/2026

Location: Virtual | Sponsor: Midnight Sun Environmental, LLC

APPENDIX J

CORRECTIVE ACTION LOG

Corrective Action Log

Project Name: CEA Whittier Head of the Bay

Page: _____

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible Person

APPENDIX K

INSPECTION REPORT

Storm Water Construction Site Inspection Report

CEA Whittier Head of the Bay

Inspection Date: _____

APDES Tracking No.: _____

1.0 General Information

Inspector Name _____

Company _____

Inspector Name _____

Company _____

Company _____

Describe Present Phase of Construction:

2.0 Weather Information

Has there been a storm event since the last inspection? Yes No

If yes, provide:

Storm Start Date & Time: _____

Storm Duration (hr) _____

Approx Amount of Precipitation (in) _____

Weather at time of this inspection?

☐ Clear ☐ Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snowing ☐ High Winds

Wind

MPH

degrees F

Have any construction-related discharges occurred since the last inspection? (Yes) No

If yes, describe:

3.0 Overall Site Issues

OVERALL SITE ISSUE	Implemented? Y or N	Corrective Action Req'd?	If corrective action is required, describe Action and Location	Comments
Have stabilization measures been initiated on slopes and disturbed areas not actively being worked?				
Are natural resource areas (e.g. streams, wetlands) required by the SWPPP to be delineated in the field, identified with barriers or markings?				
Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?				
Are storm drain inlets or culverts properly protected?				
Is there evidence of sediment being tracked into the street?				
Is trash/litter from work areas collecting and disposed of properly?				
Are washout facilities (e.g. paint, concrete) available, clearly marked, and maintained?				

OVERALL SITE ISSUE	Implemented? Y or N	Corrective Action Req'd?	If corrective action is required, describe Action and Location	Comments
Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks or any other potential pollutants?				
Are materials that are potential storm water contaminants stored inside or under cover?				
Are non-storm water discharges (e.g. wash water, dewatering) properly controlled?				
Has Spill Response kit been used since the last inspection? If yes, has stock been maintained?				
Are the NOI postings legible and do they contain the correct information?				
Are any additional BMPs needed?				
(Other)				

4.0 Discharge Points

ISSUE	Response	Corrective Action Req'd?	If corrective action is required, describe Action and Location	Comments
At the time of inspection, are the discharge points and receiving waters free of pollutant discharges (sediment deposits, sediment plume or oil sheen)?				
Since the last inspection, are the discharge points and receiving waters free of evidence that pollutants had left the project site (i.e. sediment deposits, oily residue)?				

Location of Discharge Points

List the Project Discharge Point Locations	SWPPP Figure #	Inspected? Y or N

5.0 Site-Specific BMPs

<u>Area</u>	<u>SWPPP Figure(s)</u>	<u>Structure No.</u>	<u>BMP No.</u>	<u>Description</u>	<u>Action Required</u>	<u>Comments</u>
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	

5.0 Site-Specific Corrective Actions

<u>Area</u>	<u>SWPPP Figure(s)</u>	<u>Structure No.</u>	<u>BMP No.</u>	<u>Description</u>	<u>Action Required</u>	<u>Comments</u>
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	
					Y / N	

Print name and title: _____

SWPPP Inspector

Signature:

CERTIFICATION STATEMENT

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print name and title: _____

Owner's Representative

Signature: