



To: Zach Gianotti
Environmental Specialist
Alaska Department of Environmental Conservation
Solid Waste Program
P.O. Box 111800, Juneau, AK 99811
Phone: 907.465-5318 | Fax: 907.465-5362

Re: Biosolids Permit Application

Date: 07-12-2024

The Petersburg Wastewater Utility wishes to obtain a permit to treat sewage sludge to produce biosolids.

The approximately 1-acre wastewater treatment facility is positioned centrally within the roughly 16-acre Borough owned parcel. The treatment facility location was excavated to hardpan and backfilled with rock prior to construction of the facility in the 1970's. The land to the South of the facility is approximately 2 feet higher in elevation and the land to the East, North, and West slopes away from the facility. A drainage system was constructed during the development of the facility which diverts and conveys surface water from the surrounding area to natural drainages. Areas of the facility used for operations have concrete floors and curbs. All waters from the operations areas are collected and pumped into the wastewater treatment plants influent line.

The wastewater department composts solids removed from the treatment process using either an Aerated Turn Pile or an Aerated Static Pile. Both processes start with mixing the removed solids with ground wood waste at a ratio of 2-4 parts wood waste per 1 part dewatered sewage solids. For the aerated turned pile, the sewage solids and wood waste mixture is stacked in a contained area with an air distribution system embedded in the floor. The pile is held for at least 15 days at a minimum temperature of 55 degrees Celsius. During the 15 day period the pile is turned every 3 days. For the aerated static pile, air distribution piping is placed in a containment area and about 1 foot of ground wood waste is placed on top. The sewage solids and wood waste mixture is placed on top of the prepared bed and covered with an additional foot of ground wood waste. The aerated static pile is held for at least 14 days with an average temperature above 45 degrees Celsius and at least 3 consecutive days above 55 degrees Celsius.

Public Works Department

PO Box 329, Petersburg, AK 99833 – Phone (907) 772-4430 Fax (907) 772-4102

www.petersburgak.gov

Biosolids, having successfully completed the composting process and meeting the minimum holding time and temperature requirements, are tested for fecal coliform. When fecal coliform concentrations are less than 1000 MPN/gr(dry wt.) the biosolids are taken to the Borough's landfill for disposal.

I certify, under penalty of perjury, that all of the information and exhibits in this cover letter and application are true, accurate, and complete.



Chris Cotta
Public Works Director
Petersburg Borough

Attachment: Petersburg Borough Biosolids Permit Application



Authorization #:

For a new facility or significant change to an existing facility or process, prepare a draft application with a list of questions and schedule a meeting with the ADEC Solid Waste Program.

Phone:

Section 2. Contact Information**Permit Applicant** (Co. or Entity):

Contact Name:

Address:

City:

State:

Zip:

Email:

Phone:

Type of Entity:

Government

Corporation

Other:

State of Incorporation or Registration:

Alaska Business License Number:

IRS Tax ID Number:

Facility Owner (if different than applicant):

Contact Name:

Address:

City:

State:

Zip:

Email:

Phone:

Facility Operator (if different than applicant):

Contact Name:

Address:

City:

State:

Zip:

Email:

Phone:

Agent/Consultant:

Contact Name:

Address:

City:

State:

Zip:

Email:

Phone:

Section 3. Fees

A check or money order for the appropriate fees [listed in 18 AAC 60.700(a) Table E-2] must be submitted with the permit application. If not included, the application will be returned to the applicant.

- | | |
|----|---|
| 1. | Submit payment for the first year's annual fee with the initial application for a facility. No fee is required for permit renewal applications; annual fees will be billed each year. |
| 2. | You will be billed separately for time spent reviewing waiver requests. |

This application is for a:

New Permit

Permit Renewal

Section 4. Cover Letter and Certifications

Submit a cover letter with the following information and signature.

1.	A statement indicating you wish to obtain a permit to treat sewage solids or septage to produce biosolids.
2.	A brief general description of the topography, geology, climate, surface hydrology and groundwater hydrology at the facility.
3.	A brief description of the treatment method that will be applied to the sewage solids and/or septage and the specific goal of the treatment.
4.	A statement of the pathogen reduction method (40 CFR 503.32) and the vector attraction reduction method (40 CFR 503.33) that will be applied to determine that the biosolids meet the applicable requirements of the treatment goal.
5.	A statement of the expected use(s) of the biosolids.
6.	A statement that you are aware of all applicable local ordinances and zoning requirements and a list of any other necessary permits or authorizations.
7.	The applicant must sign the cover letter.
8.	The applicant must submit the following signed statement, which may be added exactly as shown in the box below to the cover letter, or the applicant may sign this sheet and submit it as an attachment to the cover letter.

I certify, under penalty of perjury, that all of the information and exhibits in this cover letter and application are true, accurate, and complete.

Printed Name:

Title:

Signature:



Date:

All applications must be signed as follows per 18 AAC 15.030:

- **Corporations:** A principal executive officer, an officer that is no lower than the level of vice president, or a duly authorized representative who is responsible for the overall management of the project or operation.
- **Municipal, state, federal, or other public entity:** A principal executive officer, ranking elected official, or duly authorized employee.
- **Partnerships:** A general partner.
- **Sole proprietorship:** The proprietor

Section 5. Waste Quantity Information [18 AAC 60.210]

1. List the sources and amounts of untreated sewage solids or septage you expect to receive at the facility each year:

<u>Quantity</u>	<u>Select Units</u>			<u>Source</u>	<u>Sewage Solids</u>	<u>Septage</u>
	Tons (T)	Cubic Yards (C)	Gallons (G)			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	T	C	G			
	Total Tons					
	Total Cubic Yds.					
	Total Gallons					

2. List the amount(s) of biosolids you expect to use, sell, or give away each year for each intended end use (some uses may require an additional permit):

<u>Quantity</u>	<u>Select Units</u>			<u>End Use</u>
	Tons (T)	Cubic Yards (C)	Gallons (G)	
	T	C	G	Fertilizer
	T	C	G	Soil Amendment
	T	C	G	Reclamation
40		C	G	Other: Landfill
	T	C	G	Other:
	T	C	G	Other:
	Total Tons			
	Total Cubic Yds.			
	Total Gallons			

Section 6. Location Information		Please identify the PDF page that addresses each requested item	
1.	Property Ownership and Location Information [18 AAC 60.210]		PDF page
	a. Attach a copy of the deed or another legal document that identifies the landowner(s) of the treatment facility.		
	b. If the applicant is not the landowner, attach a written and notarized statement or a copy of any lease agreement signed by the landowner showing that the landowner consents to the treatment facility.		
2.	Surface Water Information [18 AAC 60.210; 18 AAC 60.225]		
	a. Distance to nearest surface water body:		feet
	b. Provide information on potential for surface water (storm water or ponds, streams, etc.) to run-on to the facility.		
	c. Provide information on the potential for septage, sewage sludge, or biosolids carried by run-off from the treatment facility to impact nearby surface waters.		
3.	Groundwater Information [18 AAC 60.210]		
	a. Attach information documenting the highest measured level of groundwater under the treatment facility.		
4.	Maps Attach maps and/or aerial photographs as needed to show the following. You may submit maps that show more than one of the required items. For example, one map can show property boundaries, wetland and surface water locations, etc. [18 AAC 60.210; 18 AAC 60.233]		
	a. Location of the treatment facility property boundaries.		
	b. Location and flow direction of surface water bodies, streams, containment, or diversion structures.		
	c. Location of public drinking water supplies within 2 miles of the treatment facility property boundaries.		
	d. Location of all residential drinking water wells within one-half mile of the treatment facility.		
	e. Location of the boundary of any wetlands within 500 feet of the property boundary.		
	f. Location of the boundary of any 100-year floodplain in the area.		
	g. Location of any documented earthquake faults or unstable areas within 200 feet of the property boundary.		

Section 7. Facility Design

A complete set of design drawings must be submitted with the following information, with drawings included for the design of the facility, as appropriate. Please ensure that the documentation represents the entire facility.

1.	Facility map(s) which show site conditions, including: [18 AAC 60.210; 18 AAC 60.220; 18 AAC 60.225]	PDF page
	a. All previous, existing and planned treatment areas. The drawings should demonstrate all processing of septage, sewage solids, and biosolids will occur at least 50 feet from the property boundary.	
	b. Fences, gates, berms and other access control devices.	
	c. Access roads to and within the facility.	
	d. Storage and treatment areas for sewage solids, septage, and/or biosolids.	
	e. Storage area(s) for equipment.	
	f. All roads, ditches, berms, etc. associated with the facility.	
2.	Plan view drawings with contour lines <u>and</u> cross section drawings that show: [18 AAC 60.210]	
	a. Treatment and storage facilities.	
	b. All roads, ditches, trenches and berms associated with the facility.	
	c. Any planned liquid or leachate collection piping system, including manholes, sumps, and pump stations.	
	d. Any planned gas venting or gas collection piping system.	
3.	Construction detail drawings <u>and</u> cross sections that show: [18 AAC 60.210; 18 AAC 60.225]	
	a. Any processing areas (e.g. drying beds, digesters, compost piles, lagoons, etc.) used in the treatment of septage or sewage solids.	
	b. Any storage areas for biosolids or untreated sewage solids and septage.	
	c. Any odor control devices.	
	d. Any liner construction details, including liner anchors, liner penetrations, etc.	
	e. Storm water drainage structures, culverts and other surface water control devices.	
4.	Design calculations, data and documentation must include the following with supporting calculations. [18 AAC 60.210; 18 AAC 60.227]	
	a. Printouts of inputs, assumptions and outputs from any computer model used to support the facility design.	
	b. An estimate (including calculations) of the maximum inventory of sewage solids, septage, and biosolids that may be stored onsite at the facility at any given time.	
	c. If located in an unstable area, information and calculations for engineering measures to ensure the integrity of the structural components will be protected.	
	d. A Quality Assurance Plan for any liner installation.	

Section 8. Operations Plan

The operations plan must be a separate document that provides sufficient detail and information that the operator(s) could use it to perform all necessary tasks for day-to-day operation of the facility.

The operations plan is a flexible document that should be reviewed annually and updated as necessary. The following table represents the minimum requirements which must be included. Additional information should be added, as needed, to ensure the facility operates in compliance with the State Solid Waste Regulations. A copy of the operations plan must be kept at the operating facility.

1.	Access control [18 AAC 60.010; 18 AAC 60.210; 18 AAC 60.220]	<u>PDF page</u>
	a. Access to the facility will be controlled, including gates, fences, berms or other means of preventing access; hours of operation; signage; and other control measures.	
	b. Access and onsite roads for treatment facility will be kept passable and safe for vehicles during operating months.	
2.	Waste acceptance and handling policy [18 AAC 60.210; 18 AAC 60.240]	
	a. Waste screening procedures to ensure that only domestic septage or sewage solids are accepted at the facility.	
	b. Any signage placed at the facility entrance.	
3.	Sewage Solids/Septage Processing Plan – Include step-by-step details of the sewage solids or septage processing and handling from delivery of the sewage solids or septage to distribution of the final biosolids product. [18 AAC 60.010; 18 AAC 60.210; 18 AAC 60.500-510]	
	a. Describe how product arrives and is handled for offloading.	
	b. Describe how product is handled (e.g. moved, spread, stored etc.) prior to beginning treatment.	
	c. Include the regulatory text for the Pathogen Reduction Method used to ensure the biosolids have met the requirements. • 40 CFR 503.32(a) Alternative 1-6 for Class A Biosolids • 40 CFR 503.32(b) Alternative 1-3 for Class B Biosolids • Note: For Class A alternatives 5 and 6 and Class B alternatives 2 and 3, include the specific treatment process. • Describe how the treatment and storage processes and testing will meet the requirements of the method. • If using more than one treatment process or Pathogen Reduction method, provide a separate section for each.	
	d. Include the regulatory text for the Vector Attraction Reduction Method used to ensure the biosolids have met the requirements. • 40 CFR 503.33(b) 1-8 for Class A Biosolids • 40 CFR 503.33(b) 1-10, 12 for Class B Biosolids • Describe how the treatment and storage processes and testing will meet the requirements of the method. • If using more than one treatment process or Vector Attraction Reduction method, provide a separate section for each.	
	e. Describe the determining factors or requirements for completion of the treatment.	
	f. Describe how and where the treated biosolids are moved after treatment.	
	g. Describe any additional treatment or curing processes (if applicable), and the determining factors or requirements for the final product	

Section 8. Operations Plan (continued)

4.	Biosolids Storage [18 AAC 60.010; 18 AAC 60.210; 18 AAC 60.500-510]	PDF page
	a. Describe the methods and facilities used to store biosolids and how these maintain the pathogen and vector attraction reduction goals.	
	b. Describe how run-off or leachate from the storage area will be controlled, collected, treated and/or disposed.	
5.	Odor Control Plan [18 AAC 60.010; 18 AAC 60.210; 18 AAC 60.230]	
	a. Describe how odors will be monitored and controlled at the facility. Include drawings and specifications of any odor control devices in Section 7.	
6.	Litter, vector and nuisance control plan [18 AAC 60.010; 18 AAC 60.230; 18 AAC 60.233; AS 46.06.080]	
	a. Describe procedures to ensure wildlife and domestic animals do not endanger the public or facility staff, are not harmed by contact with the waste, and do not become a nuisance.	
	b. Explain how dust, noise, traffic, litter, disease vectors and other effects will be controlled so they do not become a nuisance or hazard outside of the facility boundary.	
7.	Surface & Storm Water Control Plan [18 AAC 60.010; 18 AAC 60.225]	
	a. Describe how run-off from the facility will be controlled and monitored to ensure that all waste remains onsite and does not pollute any surface water.	
	b. Describe how run on water from upgradient sources will be controlled to reduce production of leachate from sewage solids, septage, or biosolids during storage or treatment.	
8.	Corrective action plan – Describe the actions for: [18 AAC 60.010; 18 AAC 60.500-510; 18 AAC 60.815]	
	a. Addressing any batch that does not pass the Pathogen Reduction, Vector Attraction Reduction, or pollutant requirements.	
	b. Cleaning up any improper or unauthorized waste.	
	c. Repairing any damage to the facility or structures.	
	d. Addressing any violations of regulations or permit conditions.	
9.	Operator training [18 AAC 60.235; 18 AAC 60.500-510]	
	a. Identify any training that will be required for an operator at the facility, including on-the-job training.	
	b. Describe how that training will be documented and filed in the operating record.	
10.	Recordkeeping [18 AAC 60.235; 18 AAC 60.500-510]	
	a. Describe how each treatment batch will be identified and how records associated with each batch will be organized.	
	b. Include copies of any forms used for tracking waste batches from delivery to the treatment facility until used, sold, or given away.	
	c. Include a copy of the certification statements from 40 CFR 503.17 that will be used for each batch record.	

Section 8. Operations Plan (continued)

11.	Operating record [18 AAC 60.235]	PDF page
	a. The operating record must include all the elements listed in 18 AAC 60.235, as well as any other documentation specific to the facility and operation.	
	b. The plan must state where the operating record will be located.	
12.	Reporting [18 AAC 60.500-510]	
	a. A statement that a semi-annual report will be submitted to ADEC as required by the permit.	
	b. List any other required report submittals, including the annual EPA report if required.	

Section 9. Monitoring Plan

The monitoring plan should be a separate document and must include sufficient detail to allow a qualified person to complete all monitoring in full compliance with the applicable regulations and permit conditions. It must include the following information.

1.	Organization/Introduction	PDF page
	a. Table of contents	
	b. General discussion of the purpose and goals of monitoring the biosolids.	
	c. Name the sampler (or consulting firm) and attach or discuss appropriate qualifications.	
	d. List the laboratories that will be used and attach their certifications for performing the appropriate methods.	
2.	Pathogen Reduction Monitoring [18 AAC 60.210; 18 AAC 60.500-510]	
	a. List the regulatory text for the selected Pathogen Reduction Method. If using more than one method, address each method in a separate section.	
	b. List all tests, the applicable test method(s), and the standard(s) for comparison to meet the requirements for this method.	
	c. List the number of samples that will be taken from each batch at each monitoring event.	
	d. Provide the timing and frequency of monitoring.	
3.	Vector Attraction Reduction Monitoring [18 AAC 60.210; 18 AAC 60.500-510]	
	a. List the regulatory text for the selected Vector Attraction Reduction Method. If using more than one method, address each method in a separate section.	
	b. List all tests, the applicable test method(s), and the standard(s) for comparison to meet the requirements for this method.	
	c. List the number of samples that will be taken from each batch at each monitoring event.	
	d. Provide the timing and frequency of monitoring.	
4.	Pollutant Monitoring (PCBs & Metals) [18 AAC 60.210; 18 AAC 60.500-510]	
	a. List each of the pollutants, the applicable test method, and the standards for comparison	
	b. List the number of samples that will be taken from each batch at each monitoring event.	
	c. Provide the timing and frequency of monitoring.	

Section 9. Monitoring Plan (continued)

5.	Nutrient Monitoring {pH, total Kjeldahl nitrogen (TKN), Nitrate nitrogen (NO ₃ -N), Ammonia nitrogen (NH ₄ -N), phosphorus (P) and potassium (K)} as required to determine loading rates and Nitrogen content. [18 AAC 60.210; 18 AAC 60.500-510]	PDF page
	a. For each of the required analyses, list the test method to be used.	
	b. List the number of samples that will be taken from each batch at a monitoring event.	
	c. Provide the timing and frequency of monitoring.	
6.	Sampling – For each monitoring test above [18 AAC 60.210; 18 AAC 60.500-510]	
	a. Include a description for determining the location and collection depth of each sample.	
	b. Explain how each sample will be numbered and documented.	
	c. Detail the proper sample collection method, including proper PPE, tools, containers, decontamination procedures, field tests, field documentation, etc.	
	d. Explain how each sample will be preserved and packed for shipping.	
	e. Include a typical copy of a chain of custody form that will be filled out and submitted with each container.	
7.	Quality Control [18 AAC 60.210; 18 AAC 60.500-510]	
	a. Provide a list of quality control samples or blanks for each sampling event	
	b. Provide a list of laboratory quality control samples.	
	c. Include a discussion of how samples outside the control parameters will be addressed.	
8.	Data Analysis [18 AAC 60.210; 18 AAC 60.500-510]	
	a. Provide a table of each tested analyte and the comparison standard.	
	b. Explain how results will be evaluated against the standard.	
	c. Discuss how samples that fail criteria will be addressed.	
9.	Visual Monitoring [18 AAC 60.210; 18 AAC 60.800(a)]	
	a. Provide a description of the procedures for visual monitoring of the facility, including each location that will be inspected.	
	b. Include a specific visual monitoring form or checklist that will be used. It must include, at a minimum, the following: • Details for assessing the condition of the off loading facilities ▪ Spills or sewage sludge outside the facility ▪ Evidence of unacceptable waste disposal • Details for assessing the condition of the treatment facility ▪ Waste properly contained ▪ Issues that could impact treatment process • Details for assessing the condition of storage areas ▪ Waste properly contained ▪ Evidence of run-on or run-off impacts • General facility conditions ▪ Access control ▪ Litter	

Section 9. Monitoring Plan (continued)

	c. A designated day for performing visual monitoring (<i>e.g. first day of the month, or other particular date, last Tuesday of the month, etc.</i>).	
8.	Reporting [18 AAC 60.210; 18 AAC 60.500-510]	
	a. Provide an example of the information that will be provided the customer using the biosolids.	
	b. Monitoring records for the applicable reporting period should be included with the semi-annual reports submitted to ADEC.	

Section 10. Closure Plan and Cost Estimate

It is understood that the closure plan submitted with the permit application will be conceptual and may change throughout the active life of the facility. The closure plan **must include** the following information.

1.	Description of the closure process [18 AAC 60.210]	<u>PDF page</u>
	a. A description and timeline for the closure and removal of all remaining waste or product, storage and treatment structures, and decontamination of any remaining structures.	
	b. A site plan drawing showing the area once the facilities have been removed	
	c. Any expected future use of the site	
2.	Financial information [18 AAC 60.210; 18 AAC 60.265]	
	a. The total present-day equivalent cost estimate for an independent contractor (do not assume onsite use of any material or machinery) to close and remove the facility, including removal and disposal of all infrastructure, treatment and disposal or distribution of the maximum inventory of waste that may be onsite, and decontamination of any remaining structures.	
	b. Demonstration of the mechanism of financial responsibility to cover the cost of closing and removing the facility and disposal or distribution of the remaining waste. Proof of financial responsibility may be demonstrated by self-insurance, insurance, or other guarantee approved by ADEC.	

Additional information

Attach any additional information necessary to accurately reflect the location, construction, and operations of the facility.

Recommended EPA Biosolids Reference Links

40 CFR 503	A Plain English Guide to the EPA Part 503 Biosolids Rule
www.epa.gov/biosolids	FAQs on Sewage Sludge/Biosolids Annual Reporting
Control of Pathogens and Vector Attraction in Sewage Sludge	
Process Design Manual Land Application of Sewage Sludge and Domestic Septage	
A Guide for Land Appliers on the Requirements of the Federal Standards for the Use or Disposal of Sewage Sludge, 40 CFR Part 503	
Preparing Sewage Sludge for Land Application or Surface Disposal	

State of Alaska



Patent

No. 10240

Know Ye By These Presents that the Grantor, the STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES, 3601 C Street, Suite 960, Anchorage, Alaska 99503, pursuant to A.S. 38.05.810 and the regulations promulgated thereunder, in consideration of the sum of TEN AND NO/100 DOLLARS lawful money of the United States, and other good and valuable consideration, now paid, the receipt whereof is hereby acknowledged, hereby grants and conveys to the Grantee, the CITY OF PETERSBURG, whose mailing address of record is P.O. Box 329, Petersburg, Alaska 99833, Grantee's successors and assigns, all that real property situated in the Petersburg Recording District, State of Alaska, and described as follows:

TOWNSHIP 58 SOUTH, RANGE 79 EAST, COPPER RIVER MERIDIAN

SECTION 26: LOT 8.

CONTAINING 15.96 ACRES, MORE OR LESS.

ACCORDING TO THE SURVEY PLAT ACCEPTED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT IN WASHINGTON, D.C., ON JANUARY 8, 1953.

LOT 6 OF U.S. SURVEY NO. 2985, CONTAINING 2.16 ACRES, MORE OR LESS, ACCORDING TO THE SURVEY PLAT ACCEPTED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT IN WASHINGTON, D.C., ON JULY 27, 1951.

LOTS 5, 6 AND 7 IN BLOCK 1 OF FREDERICK SOUND ALASKA SUBDIVISION, CONTAINING 1.552 ACRES, MORE OR LESS, ACCORDING TO THE SURVEY PLAT FILED IN THE PETERSBURG RECORDING DISTRICT ON DECEMBER 5, 1963 AS SERIAL NO. 63-296.

CONTAINING AN AGGREGATE OF 19.672 ACRES, MORE OR LESS.

Subject to:

Valid existing easements and reservations.

A right-of-way easement for a communications transmission line, 44-LD-513.

A reverter is conditioned upon unrestricted public use and access. If the Director of the Division of Land and Water Management of the Department of Natural Resources determines that the Grantee or Grantee's successors in interest have failed to observe this condition, the Director may declare a forfeiture of this conveyance and title hereby conveyed shall thereupon revert to the State of Alaska. This restriction is not intended to imply that the Grantee is prevented from imposing restrictions on use of the land necessary to ensure the health and safety of its residents.

The City of Petersburg shall not dispose of any portion of this conveyance as private property until said property is appraised and the State of Alaska is reimbursed the then current assessed fair market value.

Save and Except, those restrictions appearing in the Federal Patent or other conveyance by which the Grantor acquired title;

And Further, the Grantor hereby expressly saves, excepts and reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, all oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils of every name, kind or description, and which may be in or upon said lands above described, or any part thereof, and the right to explore the same for such oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils, and it also hereby expressly saves and reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, the right to enter by itself, its or their agents, attorneys, and servants upon said lands, or any part or parts thereof, at any and all times for the purpose of opening, developing, drilling, and working mines or wells on these or other lands and taking out and removing therefrom all such oils, gases, coal, ores, minerals, fissionable materials, geothermal resources, and fossils, and to that end it further expressly reserves out of the grant hereby made, unto itself, its lessees, successors, and assigns forever, the right by its or their agents, servants and attorneys at any and all times to erect, construct, maintain, and use all such buildings, machinery, roads, pipelines, powerlines, and railroads, sink such shafts, drill such wells, remove such soil, and to remain on said lands or any part thereof for the foregoing purposes and to occupy as much of said lands as may be necessary or convenient for such purposes hereby expressly reserving to itself, its lessees, successors, and assigns, as aforesaid, generally all rights and power in, to, and over said land, whether herein expressed or not, reasonably necessary or convenient to render beneficial and efficient the complete enjoyment of the property and rights hereby expressly reserved.

To Have And To Hold the said land, together with the tenements, hereditaments, and appurtenances thereunto appertaining, unto the said Grantee and Grantee's successors and assigns forever.

In Testimony Whereof the State of Alaska has caused these presents to be executed by the Director of the Division of Land and Water Management, Department of Natural Resources, State of Alaska, pursuant to delegated authority, this 26th day of January, 1989.

By: Carol L. Shobe
 Carol L. Shobe
 For Gary G. Gustafson, Director
 Division of Land and Water Management

State of Alaska

)
) ss.
)

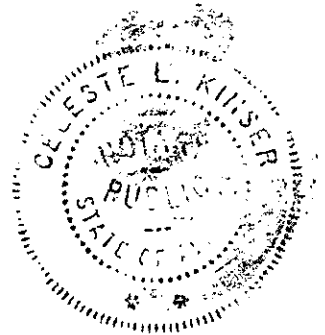
THIRD Judicial District

This Is To Certify that on the 26th day of January, 1989, appeared before me CAROL L. SHOBE, the person who has been lawfully delegated the authority of Gary G. Gustafson, the Director of the Division of Land and Water Management, Department of Natural Resources, State of Alaska, to execute the foregoing document; that Carol L. Shobe executed said document under such legal authority and with knowledge of its contents; and that such act was performed freely and voluntarily upon the premises and for the purposes stated therein.

Witness my hand and official seal the day and year in this certificate first above written.

Celeste L. Kinser
Notary Public in and for the State of Alaska

My Commission Expires: 4-4-89



PATENT No. 10240
ADL No. 100932
Location Index:
T. 58 S., R. 79 E., C.R.M.
Section 26

89-0104

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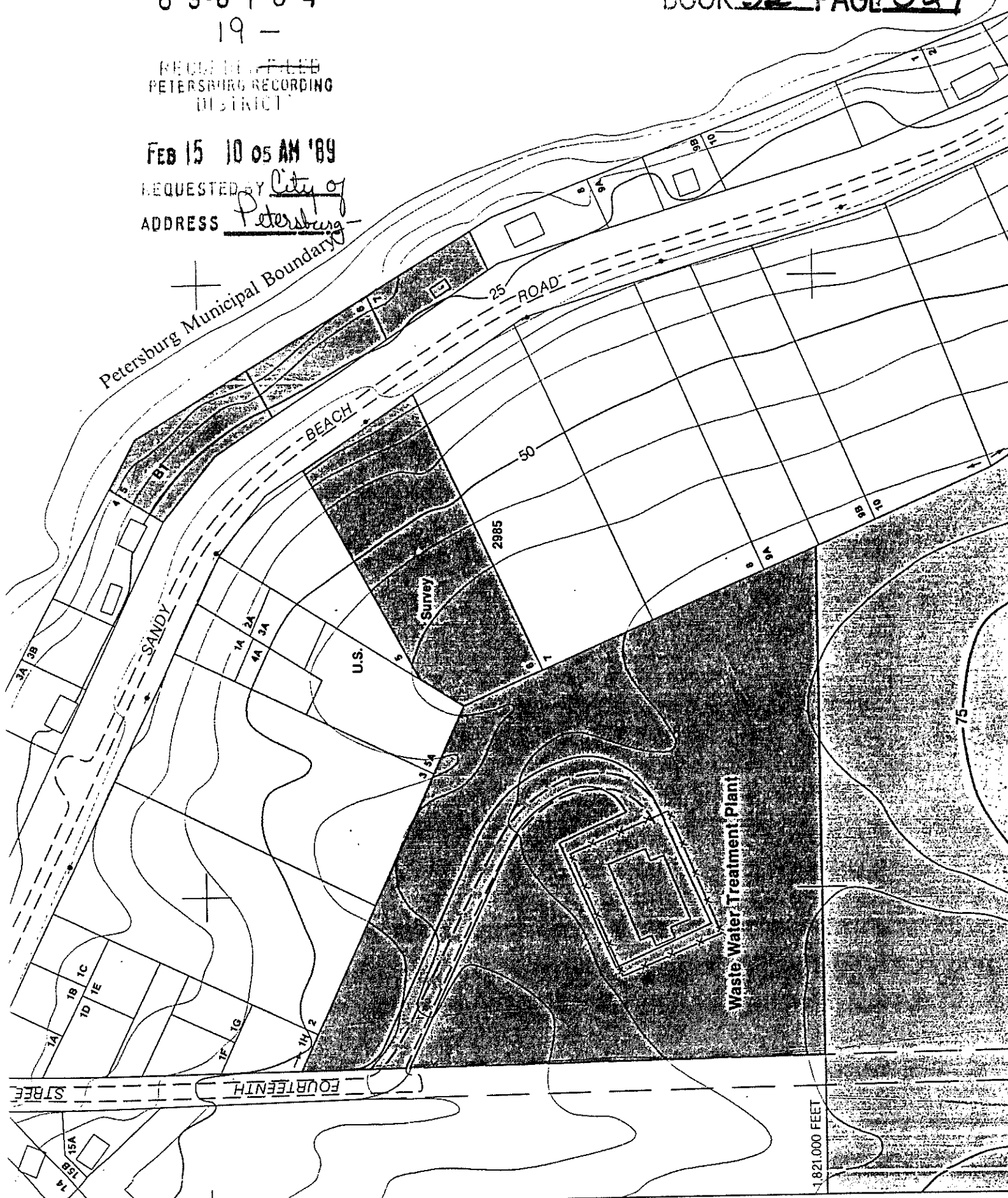
BOOK 32 PAGE 524

RECORD FILED
PETERSBURG RECORDING
DISTRICT

FEB 15 10 05 AM '89

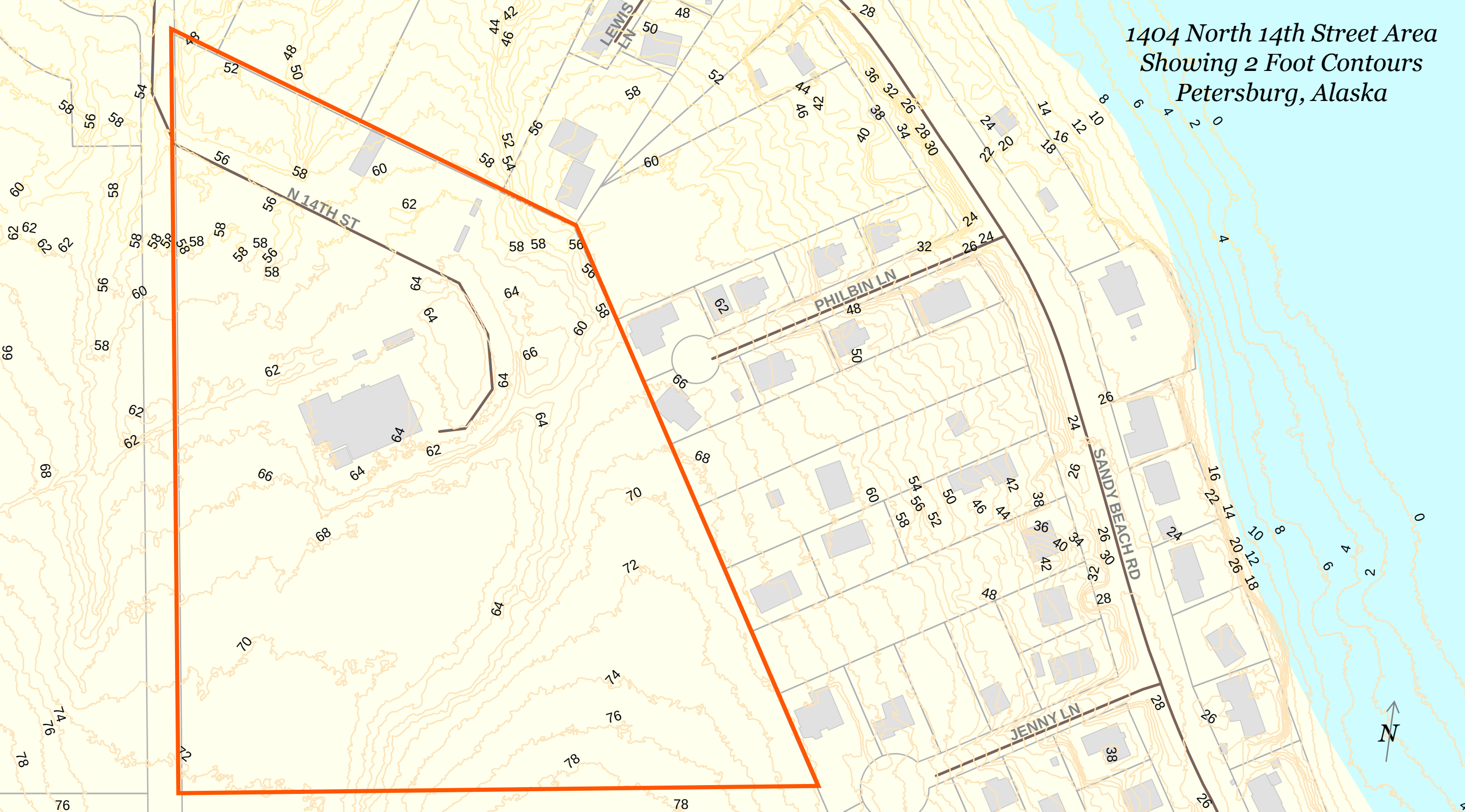
REQUESTED BY City of
ADDRESS Petersburg

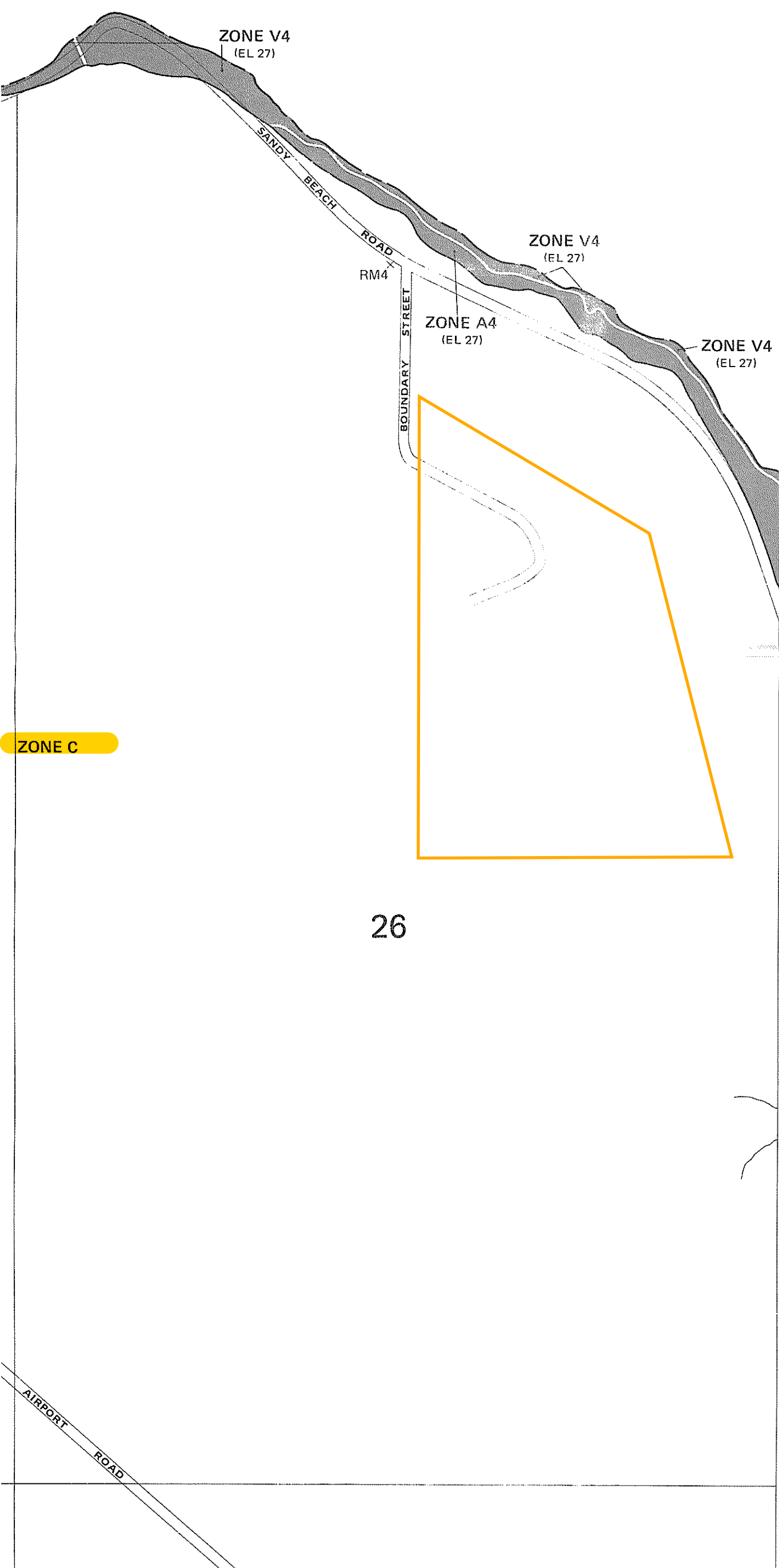
Petersburg Municipal Boundary



POOR FILMING QUALITY

*1404 North 14th Street Area
Showing 2 Foot Contours
Petersburg, Alaska*





KEY TO MAP

500-Year Flood Boundary
100-Year Flood Boundary
Zone Designations*
100-Year Flood Boundary
500-Year Flood Boundary
Base Flood Elevation Line With Elevation In Feet**
Base Flood Elevation in Feet Where Uniform Within Zone**
Elevation Reference Mark
Zone D Boundary
River Mile

513
(EL 987)
RM7X
M1.5

**Referenced to Mean Lower Low Water Datum

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
JUNE 14, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
FEBRUARY 4, 1977

FLOOD INSURANCE RATE MAP EFFECTIVE:
JUNE 1, 1982

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

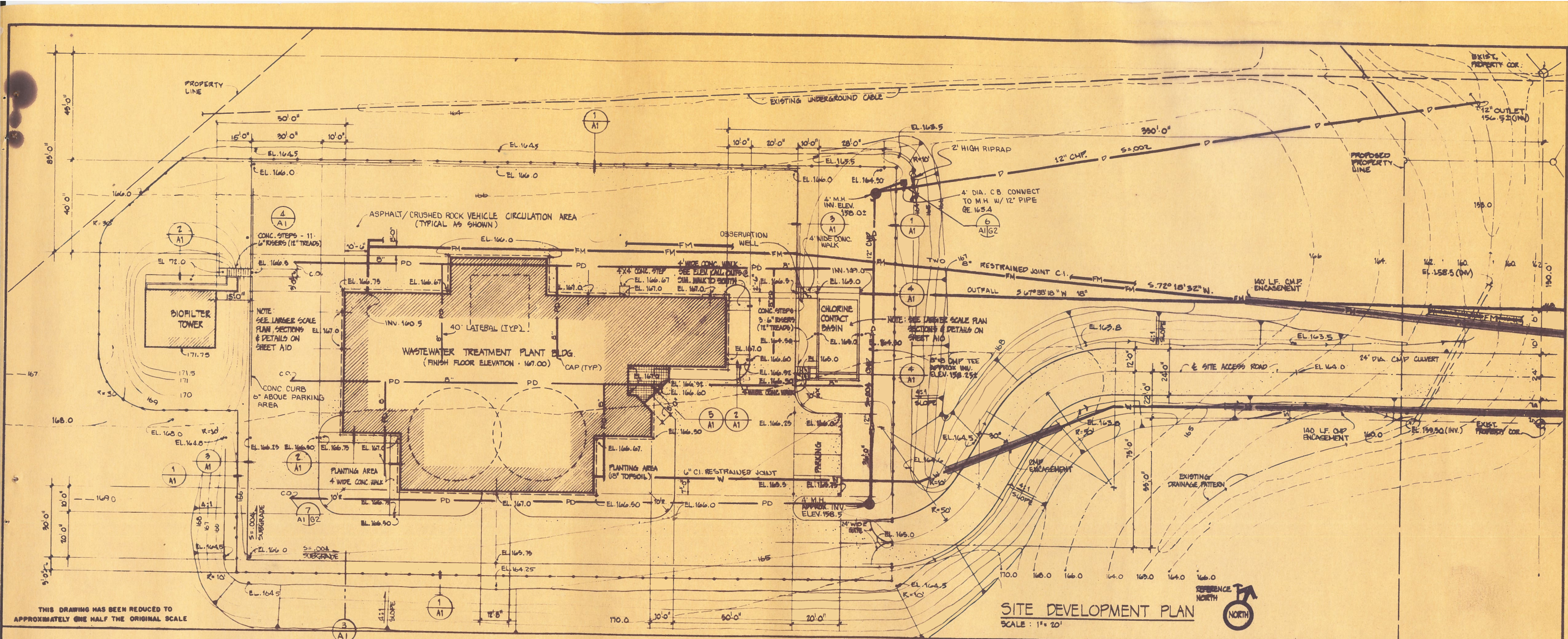
To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.



APPROXIMATE SCALE

400 0 400 FEET





TYP. FENCE DETAIL (1) A1
SCALE 3/4" = 1' 0"

TYP. CONC. SLAB EDGES (2) A1
SCALE 3/4" = 1' 0"

TYP. CONC. STEP DETAIL (4) A1
SCALE 3/4" = 1' 0"

TYP. DITCH DETAIL (3) A1
NO SCALE

MAIN ENT. SLAB EDGE (5) A1
SCALE 3/4" = 1' 0"

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS

Approved by: _____

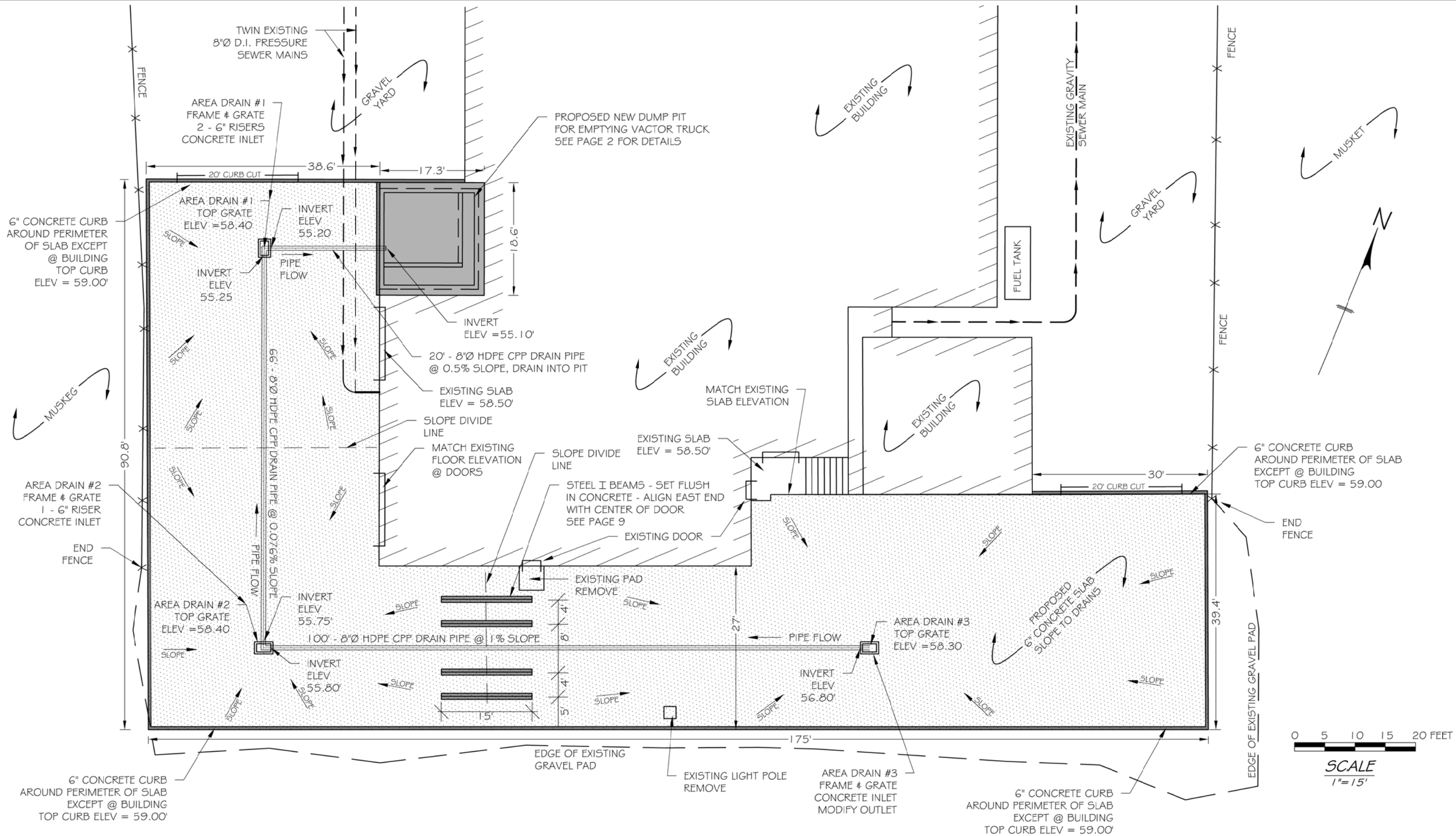
49TH ANNUAL MEETING 1981

Drawn by: R. BURGETT Date: 6-15-79
Designed by: _____
Checked by: _____
Approved by: A.R. 5-75

Scale: AS NOTED
Job no: B-5138-01

CITY OF PETERSBURG
WASTEWATER FACILITIES
TREATMENT PLANT
SITE PLAN • SITE DETAIL • SYMBOLS • GENERAL NOTES

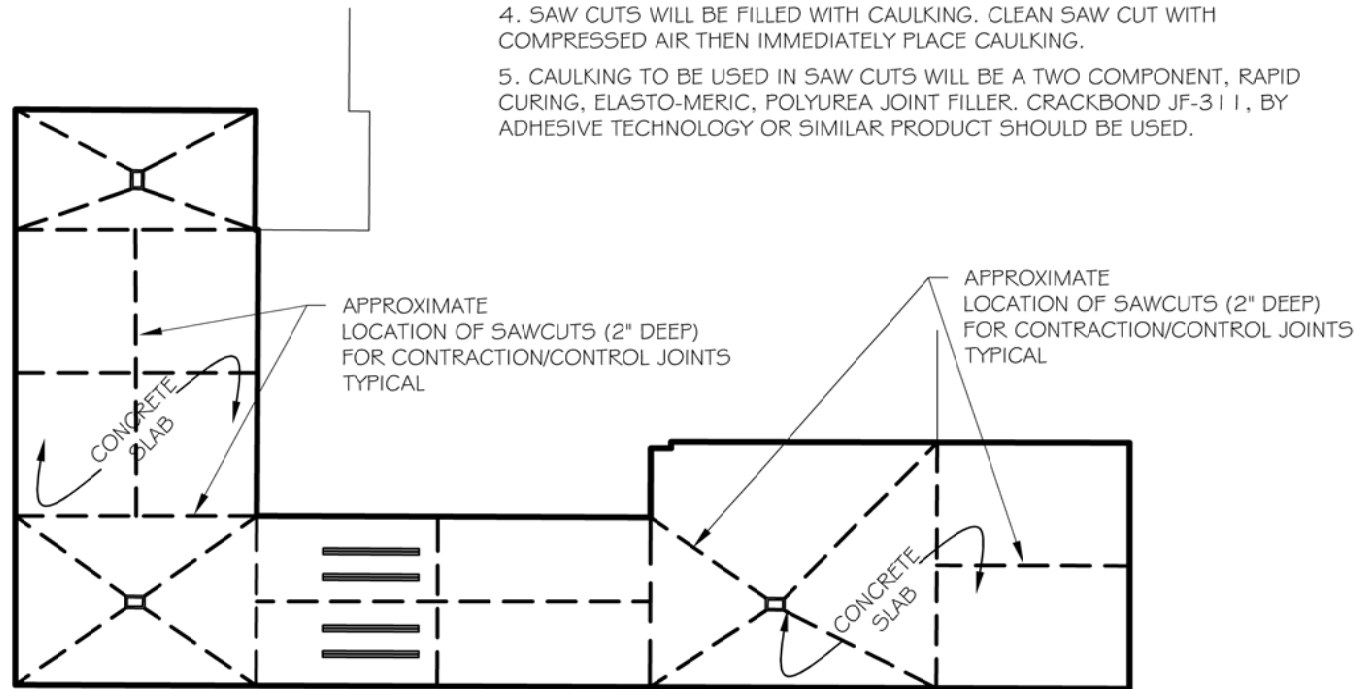
Sheet of **A-1**



PLAN VIEW	PETERSBURG PUBLIC WORKS DEPARTMENT Waste Water Treatment Plant Composting Slab Project ~2016~	PETERSBURG BOROUGH P.O. BOX 329, PETERSBURG, AK. 99833 (907) 772-4532	REVISIONS				DESIGNED BY: HARA & ASSOCIATES, INC P.O. BOX 625, PETERSBURG, ALASKA 99833	
							DATE: JUNE 2016	
							SHEET NUMBER	
							1	
							OF 10	
			REV	DATE	DESCRIPTION			

CONCRETE SAW CUT NOTES:

- 1. SAW CUTS IN THE CONCRETE WILL BE MADE 2" DEEP IN THE APPROXIMATE LOCATION SHOWN BY THE DASHED LINES.
- 2. SAW CUTS WILL BE MADE AS SOON AS POSSIBLE IN THE NEW CONCRETE AND NO LATER THAT 3 DAYS AFTER CONCRETE PLACEMENT.
- 3. A CONSTRUCTION JOINT MAY BE USED IN PLACE OF A SAW CUT.
- 4. SAW CUTS WILL BE FILLED WITH CAULKING. CLEAN SAW CUT WITH COMPRESSED AIR THEN IMMEDIATELY PLACE CAULKING.
- 5. CAULKING TO BE USED IN SAW CUTS WILL BE A TWO COMPONENT, RAPID CURING, ELASTO-MERIC, POLYUREA JOINT FILLER. CRACKBOND JF-311, BY ADHESIVE TECHNOLOGY OR SIMILAR PRODUCT SHOULD BE USED.



CONCRETE SAW CUTS
CONTRACTION/CONTROL JOINTS

SCALE: 1"=30'

GENERAL NOTES

GENERAL REQUIREMENTS
GOVERNING CODE: THE "INTERNATIONAL BUILDING CODE", 2006 EDITION, AS ADOPTED AND MODIFIED BY THE STATE OF ALASKA AND CITY OF PETERSBURG SHALL GOVERN DESIGN AND CONSTRUCTION.

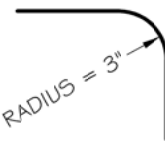
SOIL AND FOUNDATIONS:

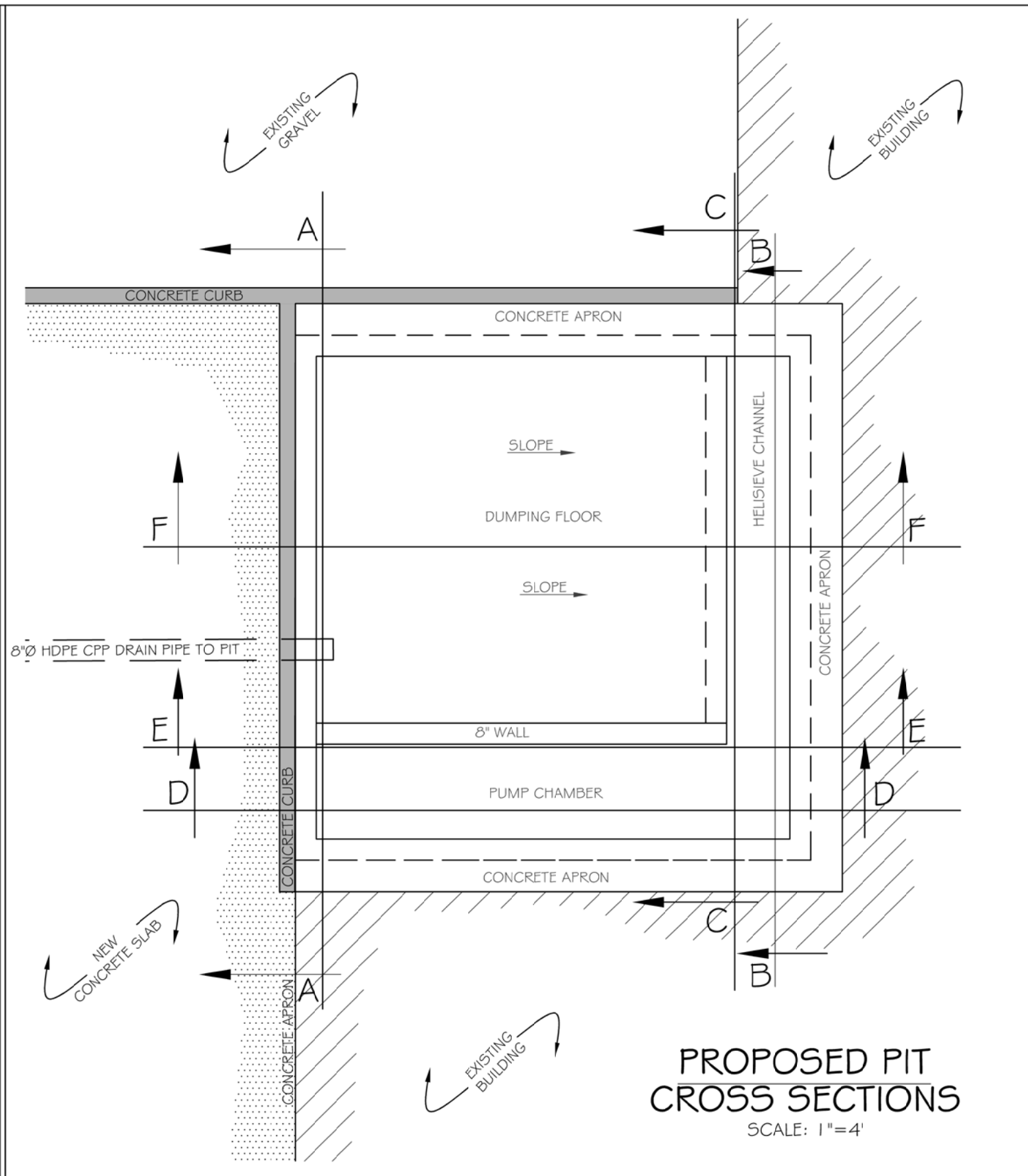
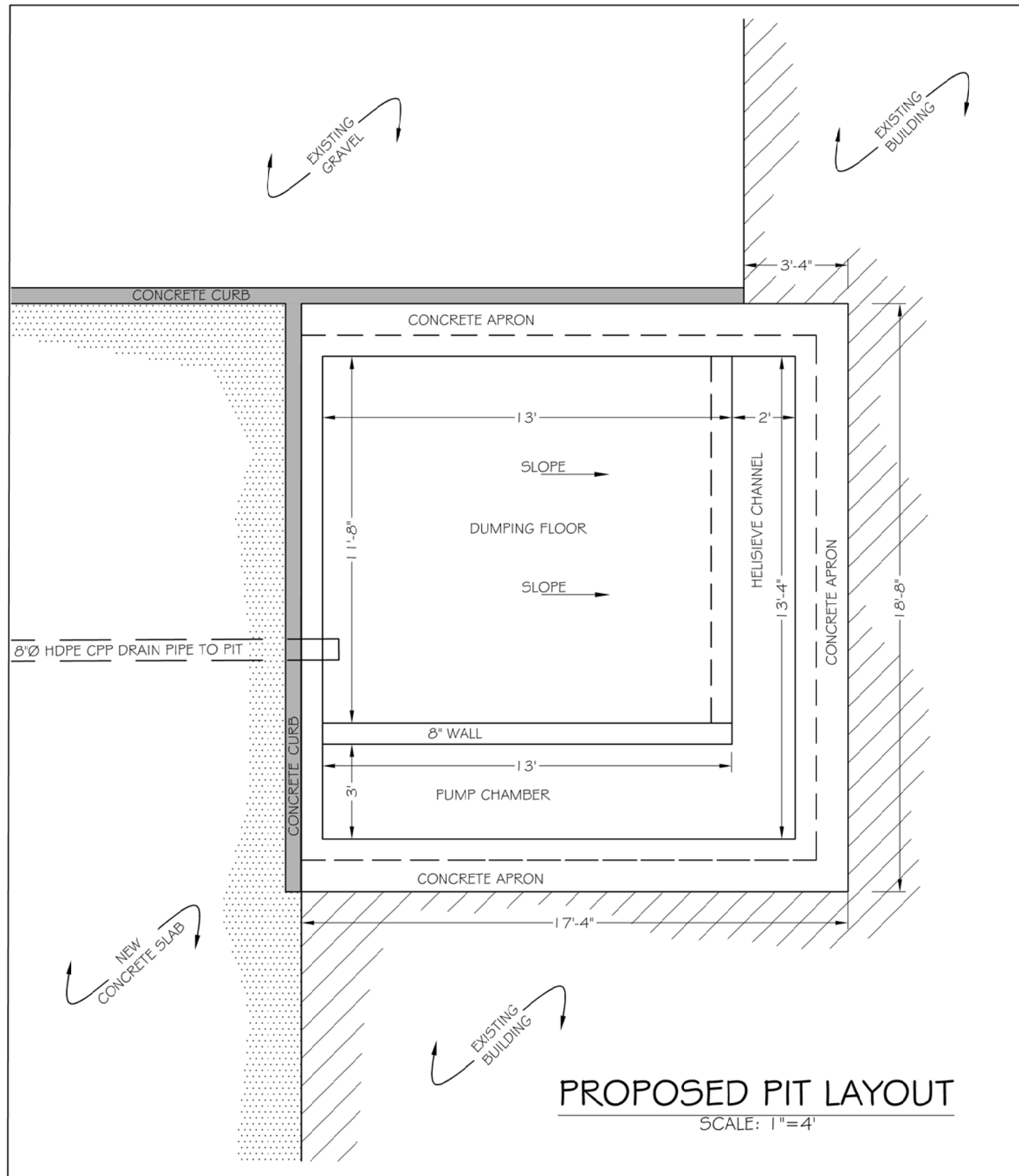
BACKFILL: BACKFILL MATERIAL SHALL CONFORM TO AK D.O.T. STANDARDS FOR D-1 BASE COURSE (3/4" MINUS) FOR CRUSHED GRAVEL OR ROCK. SHOTROCK BACKFILL WILL BE 1 2" MINUS. ALL BACKFILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" AND COMPACTED WITH VIBRATORY EQUIPMENT WITH MIN. 3 PASSES OR UNTIL ALL VISUAL DEFORMATION CEASES.

COMPACTION: THE ENTIRE SITE SHALL BE COMPACTED WITH WITH VIBRATORY EQUIPMENT WITH MIN. 3 PASSES OR UNTIL ALL VISUAL DEFORMATION CEASES. THIS COMPACTION IS REQUIRED WHETHER FILL OR EXCAVATION AS OCCURRED ON THE SITE.

CAST-IN-PLACE CONCRETE
REFERENCE STANDARDS: CONFORM TO ACI 301-99 "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE" & IBC CHAPTER 19
CONCRETE MIXTURES: CONFORM TO ACI 301 SEC. 4 "CONCRETE MIXTURES" AND MEET THE FOLLOWING REQUIREMENTS:
- 5 SACKS OF CEMENT PER CUBIC YARD
- 3500 PSI @ 28 DAYS
- 3/4" MAXIMUM AGGREGATE SIZE
- 6% AIR CONTENT PER ASTM C 260
- .45 MAXIMUM WATER/CEMENT RATIO
- 4" MAXIMUM SLUMP
MATERIALS: CONFORM TO ACI 301 SEC. 4.2.1 "MATERIALS" FOR REQUIREMENTS FOR CEMENTITIOUS MATERIALS, AGGREGATES, MIXING WATER AND ADMIXTURES.
COLD WEATHER CONDITIONS: IF PLACING CONCRETE IN COLD WEATHER CONDITIONS CONFORM TO TO ACI 301 SECTION 5.3.2.1
REINFORCING STEEL: GRADE 60 STEEL PER ASTM A 615
FINISH: LIGHT BROOM FINISH ON SLAB. PROTECT FINISH FROM RAIN FOR A MINIMUM OF 3 DAYS.

MINIMUM BENDING RADIUS
FOR #4 REBAR IS 3"





PIT PLAN
VIEW

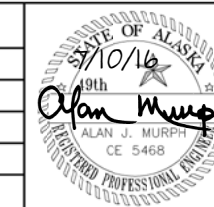
PETERSBURG PUBLIC WORKS DEPARTMENT
Waste Water Treatment Plant
Composting Slab Project
~2016~

PETERSBURG BOROUGH

P.O. BOX 329, PETERSBURG, AK. 99833
(907) 772-4532

REVISIONS

REV	DATE	DESCRIPTION

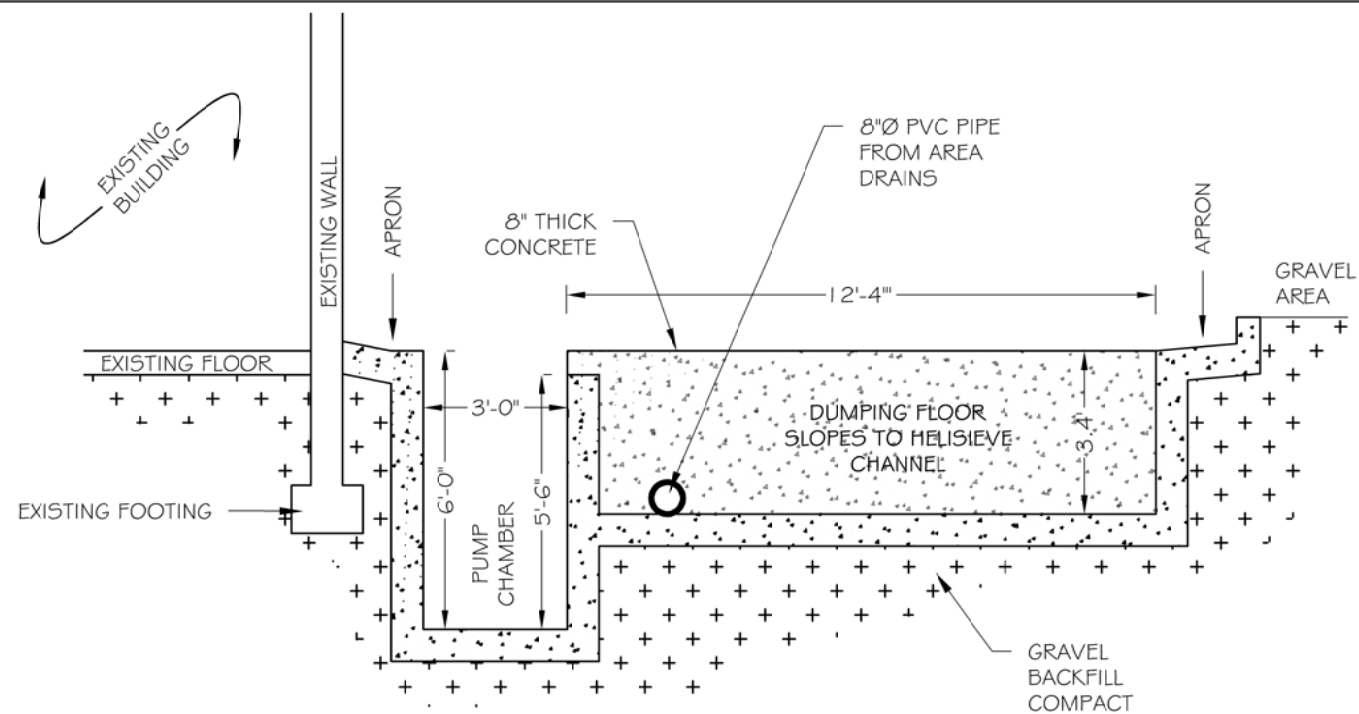


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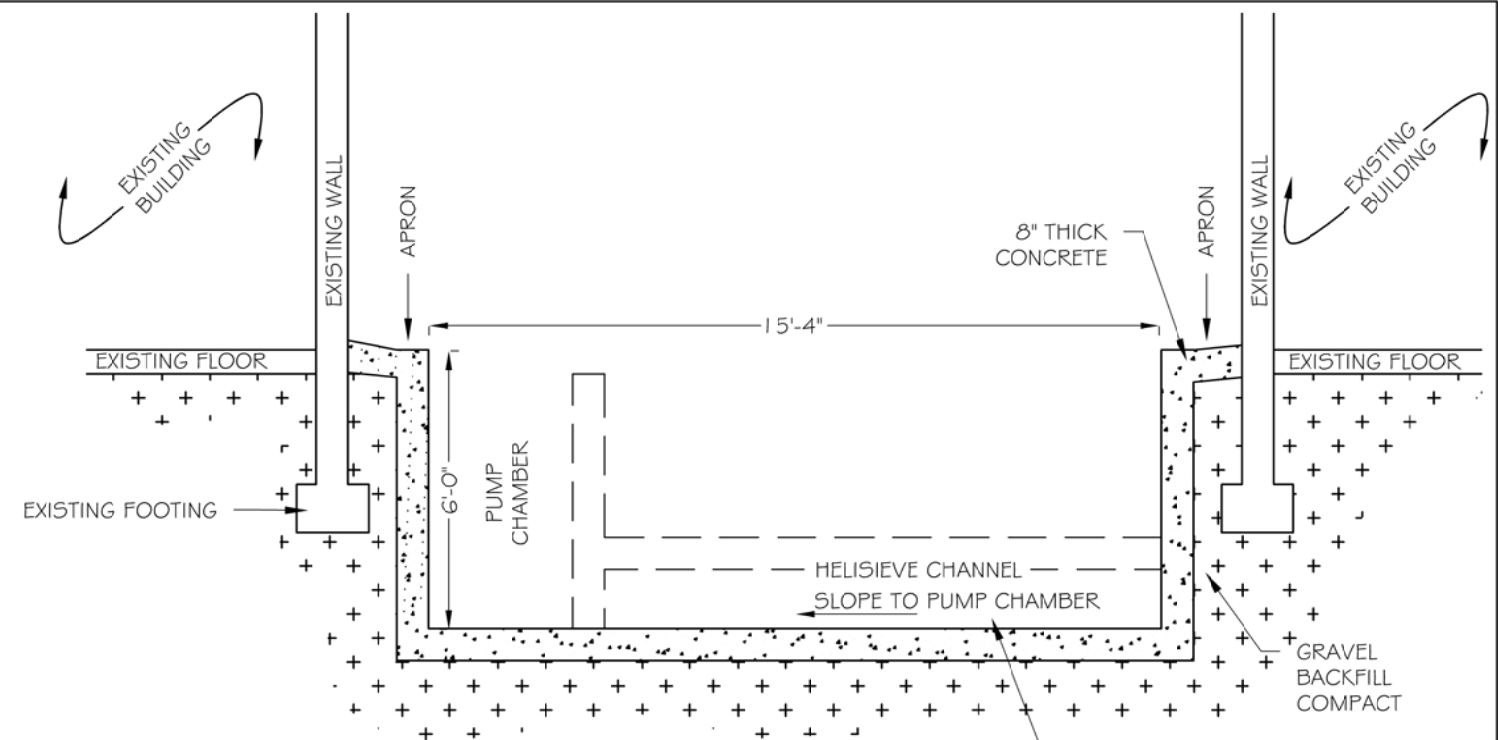
DATE: JUNE 2016

SHEET NUMBER
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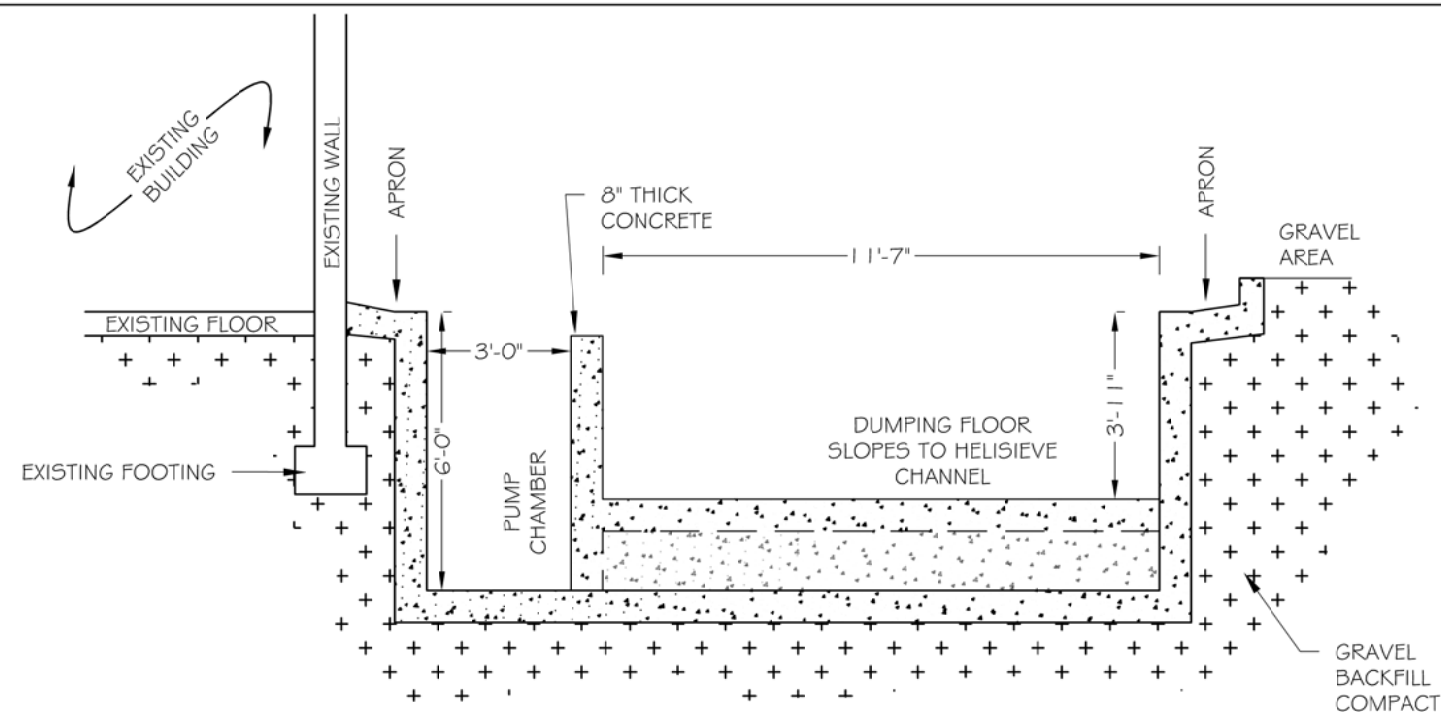


PIT ~ SECTION A-A
SCALE: 1"=4'

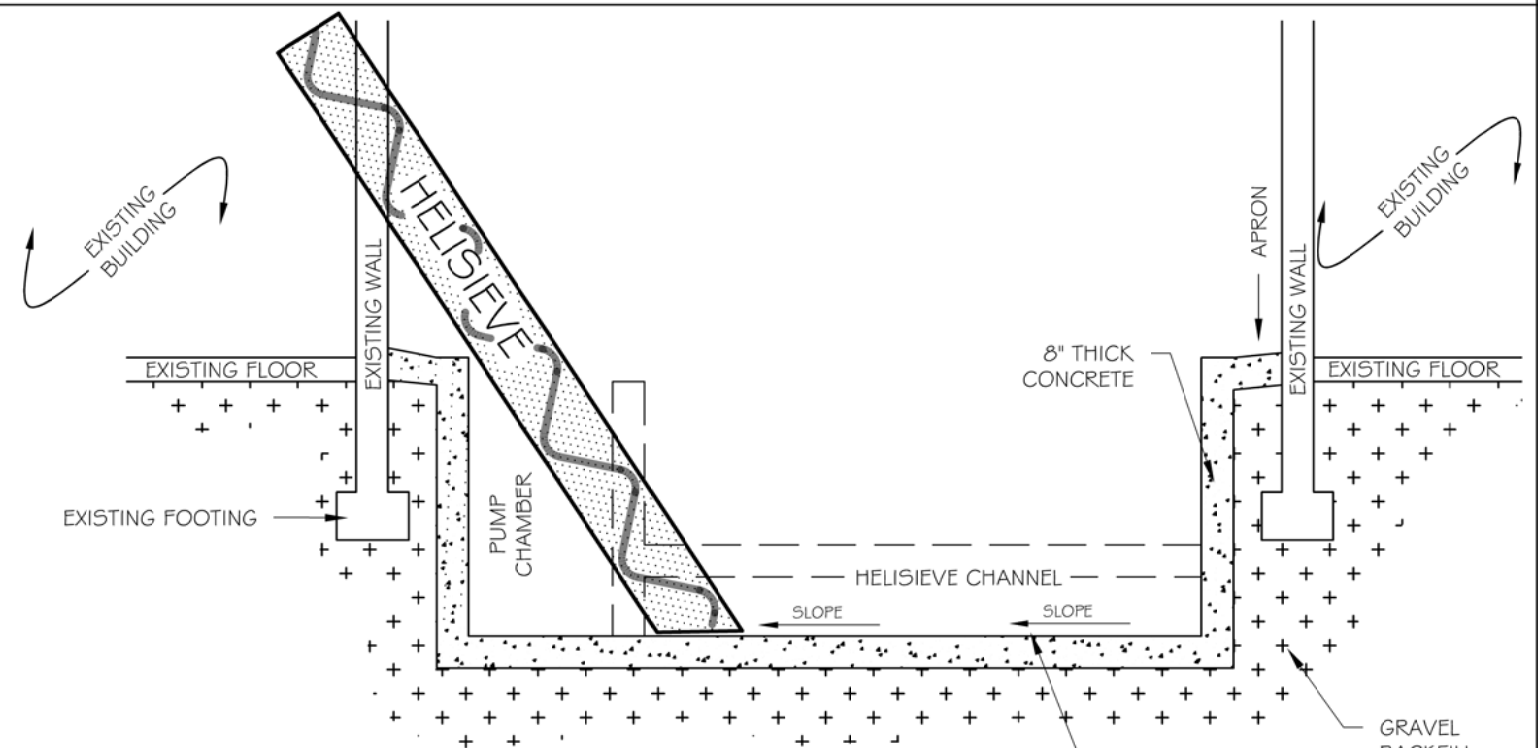


PIT ~ SECTION B-B
SCALE: 1"=4'

FLOOR WILL BE FORMED LEVEL
SLOPE WILL BE MADE WITH GROUT
AFTER PIT CONSTRUCTION



PIT ~ SECTION C-C
SCALE: 1"=4'



PIT ~ SECTION B-B
SHOWING HELISIEVE
SCALE: 1"=4'

FLOOR WILL BE FORMED LEVEL
SLOPE WILL BE MADE WITH GROUT
AFTER PIT CONSTRUCTION

**PIT
X-SECTIONS**

PETERSBURG PUBLIC WORKS DEPARTMENT

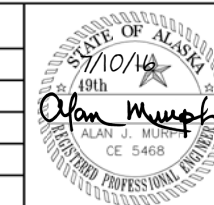
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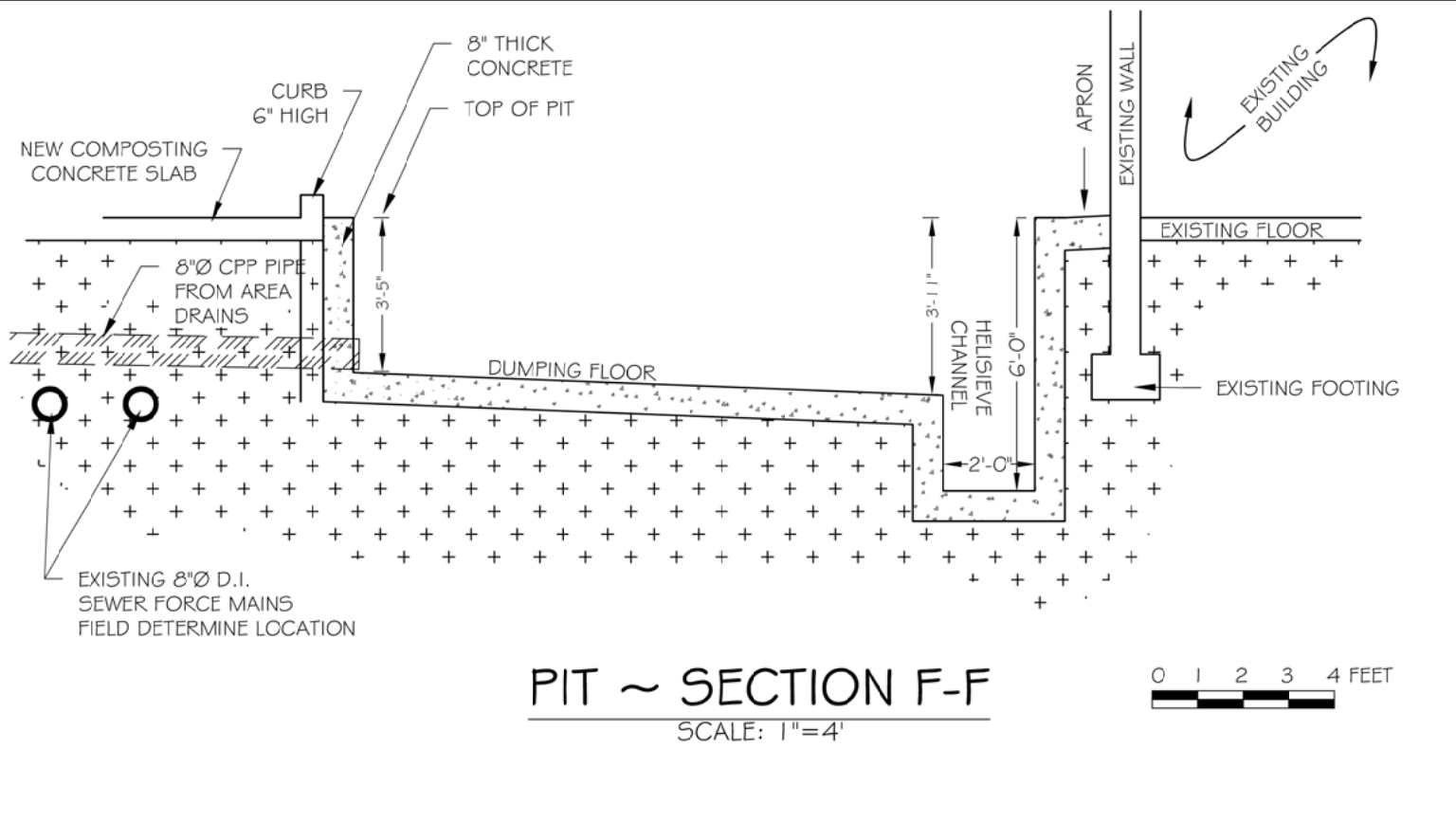
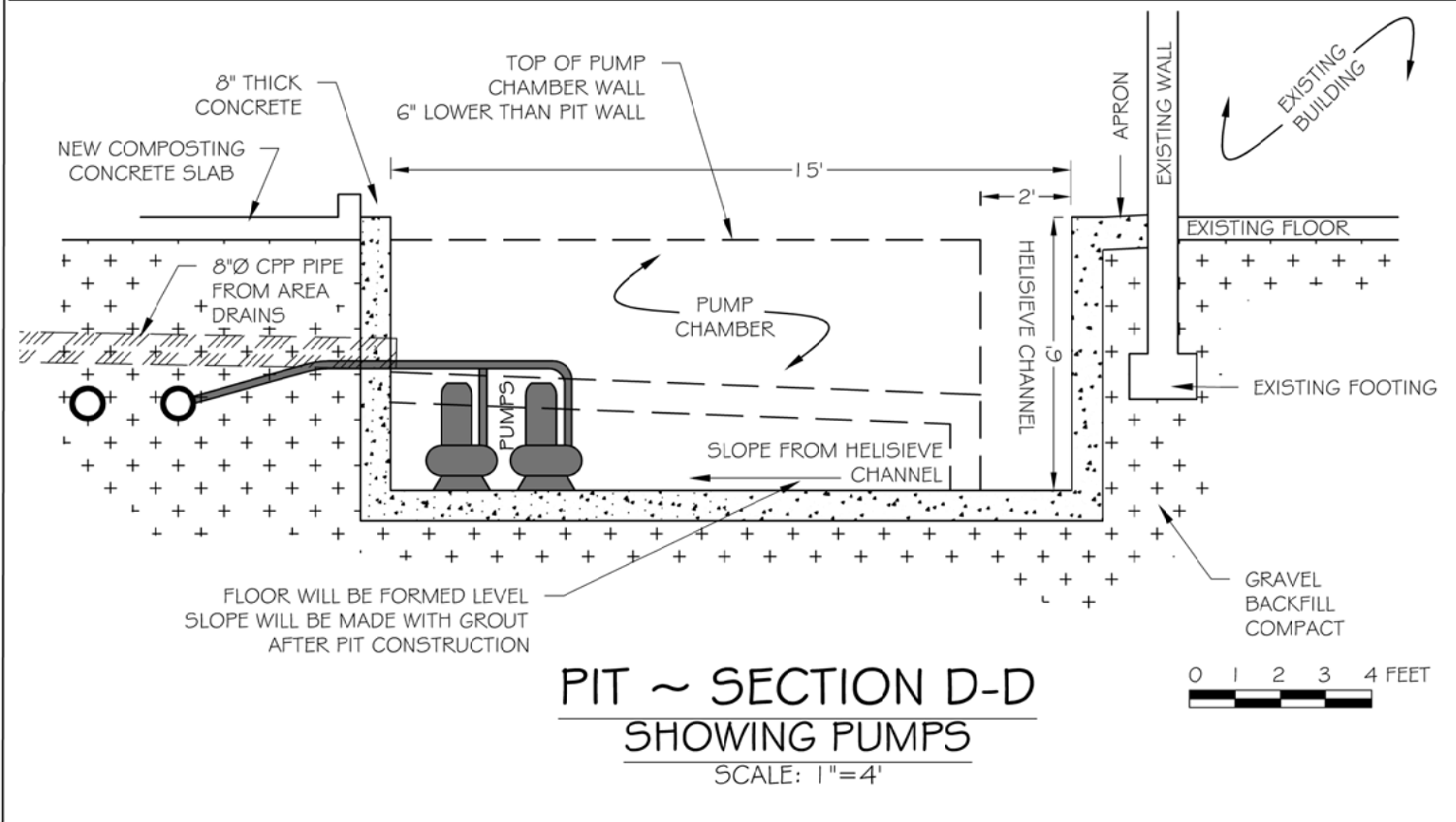
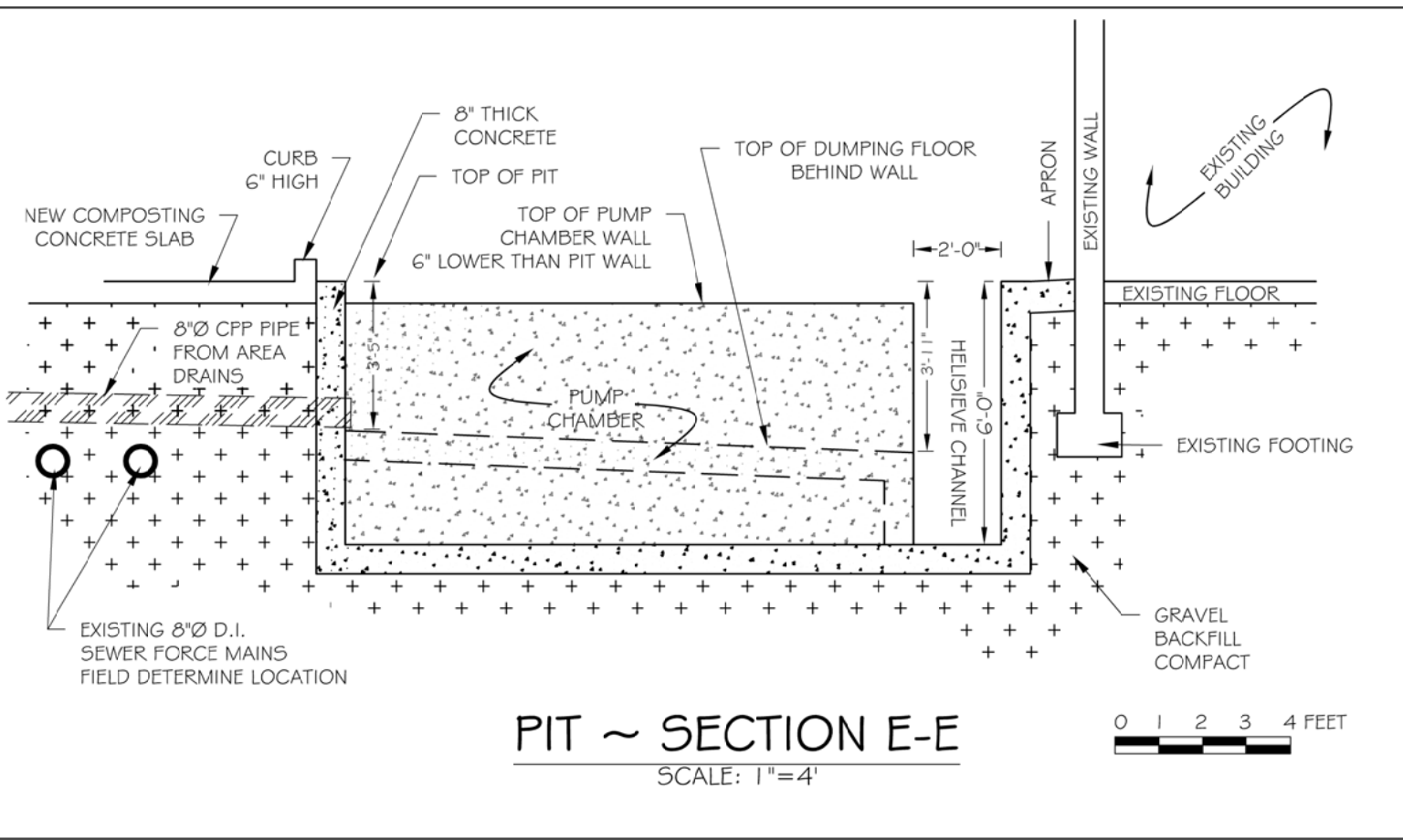
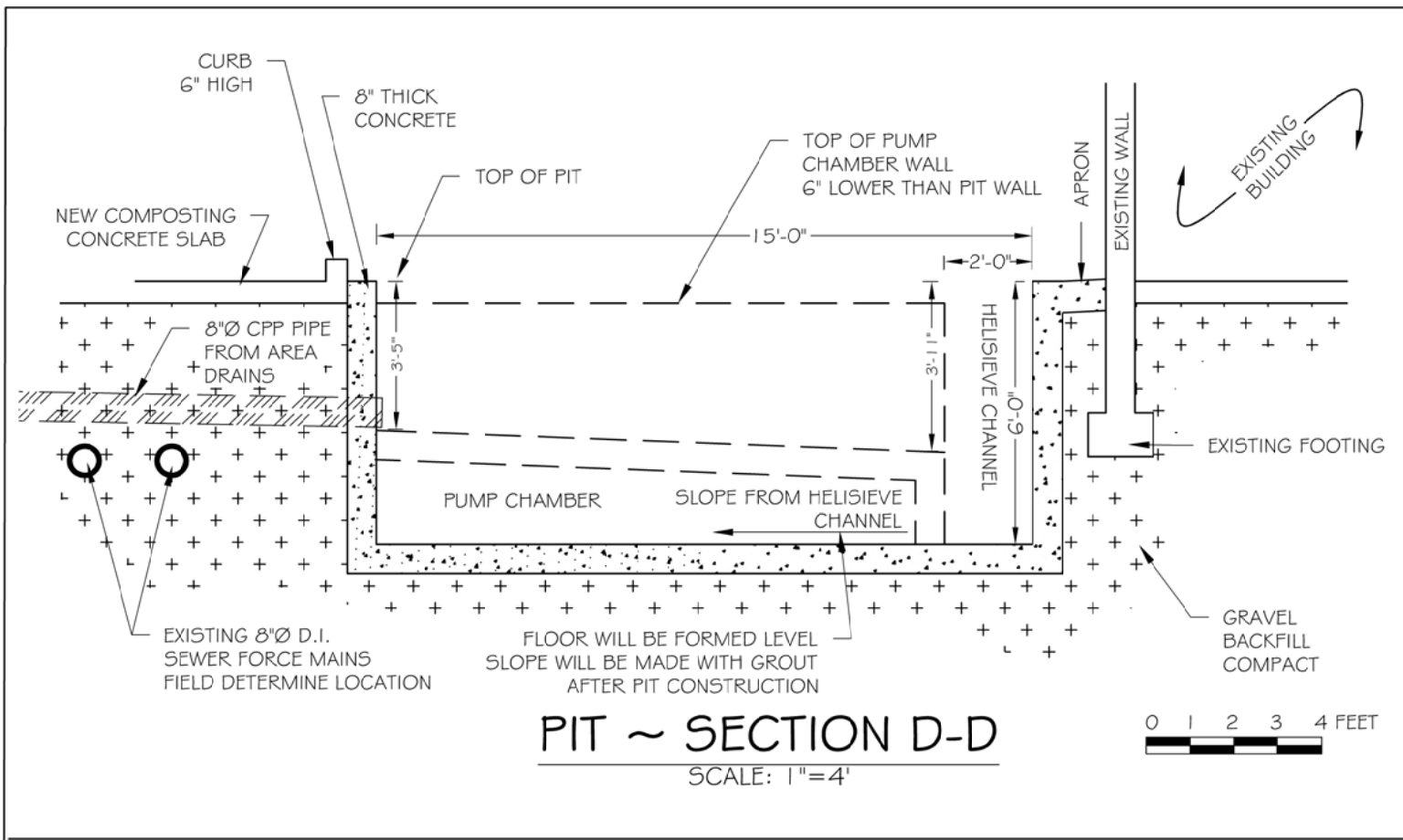


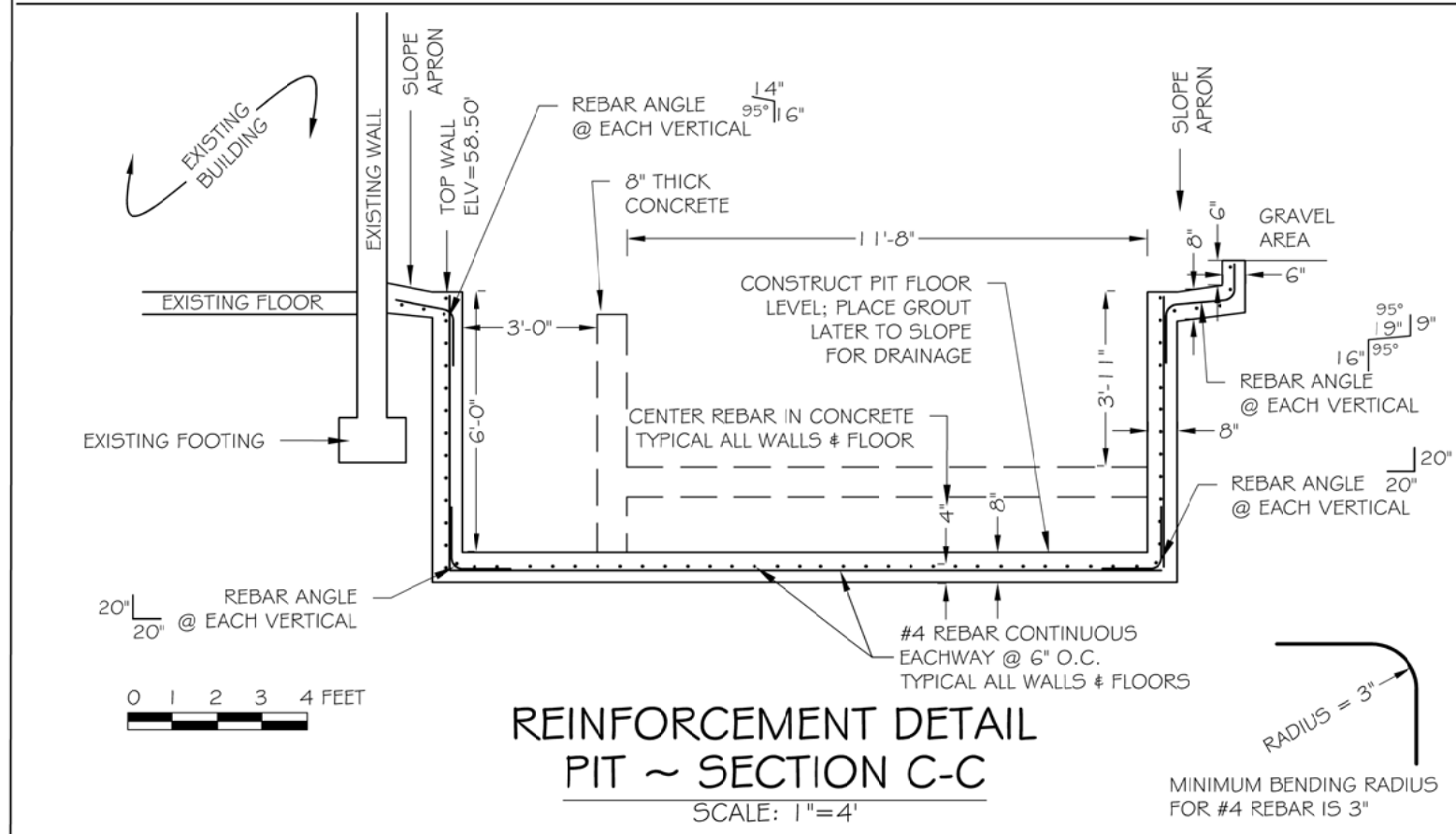
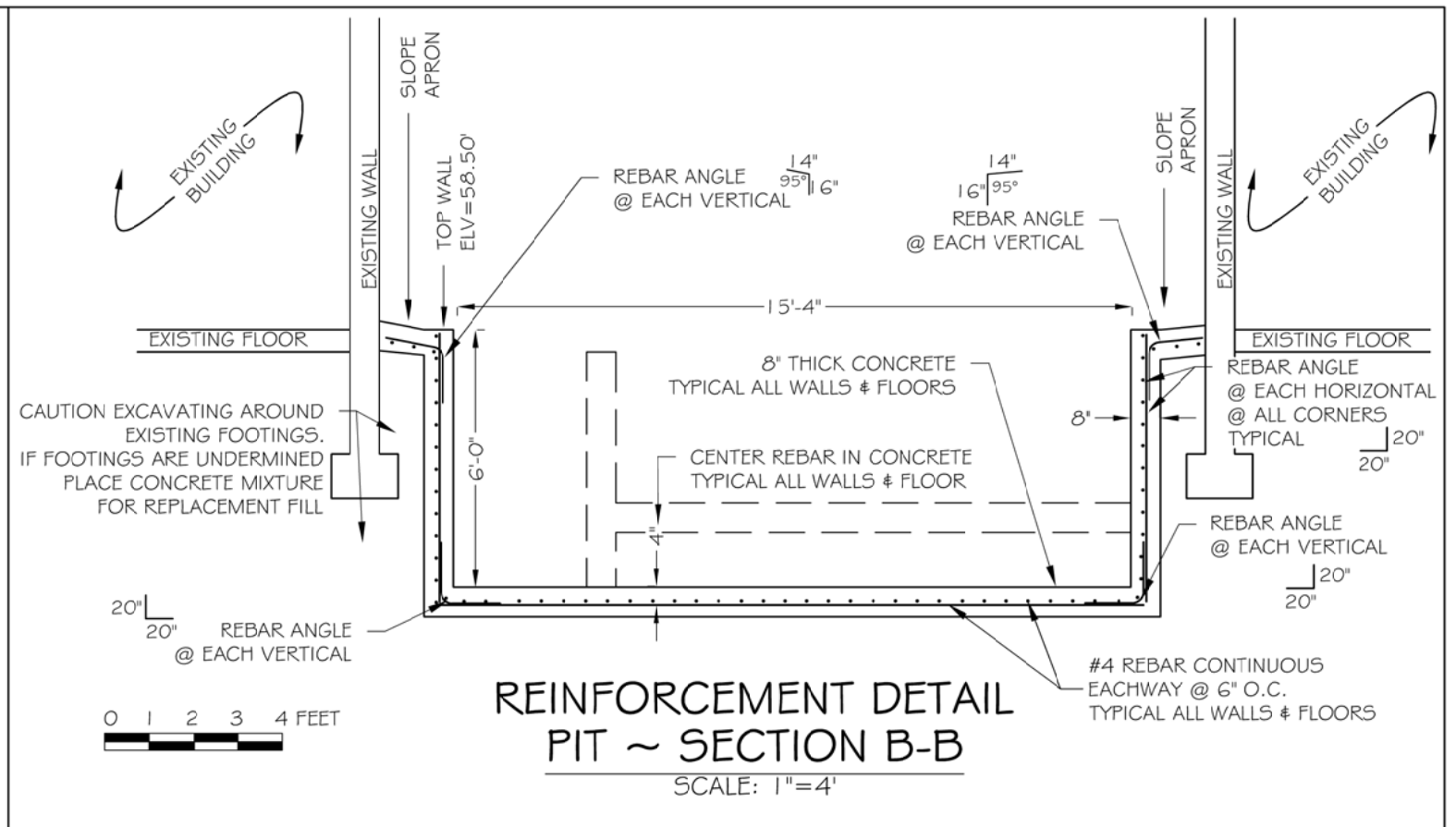
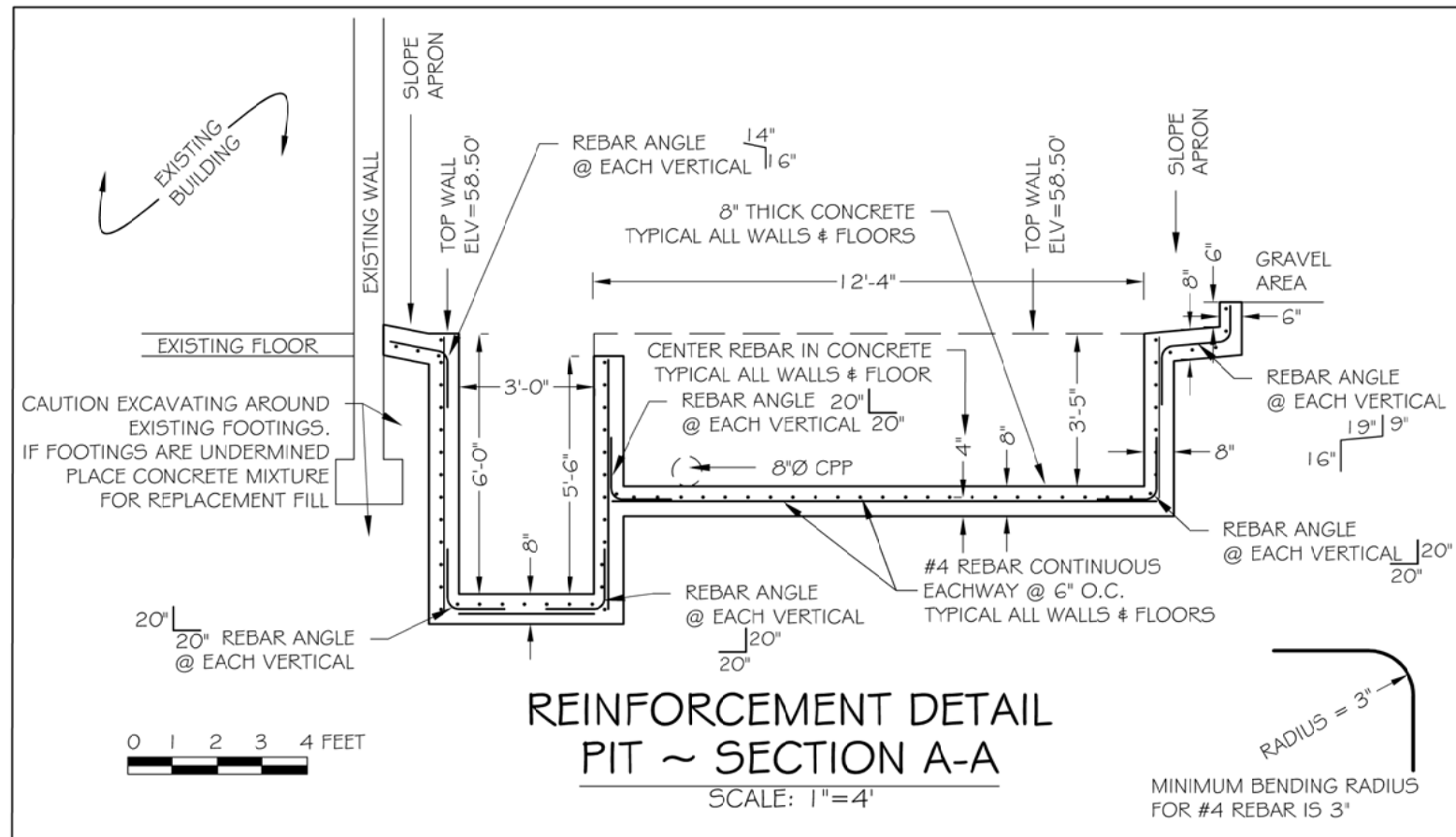
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DATE: JUNE 2016

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4

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PIT
X-SECTIONS
REBAR

PETERSBURG PUBLIC WORKS DEPARTMENT

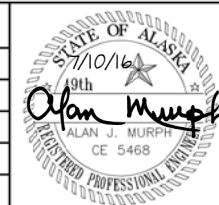
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REV	DATE	DESCRIPTION

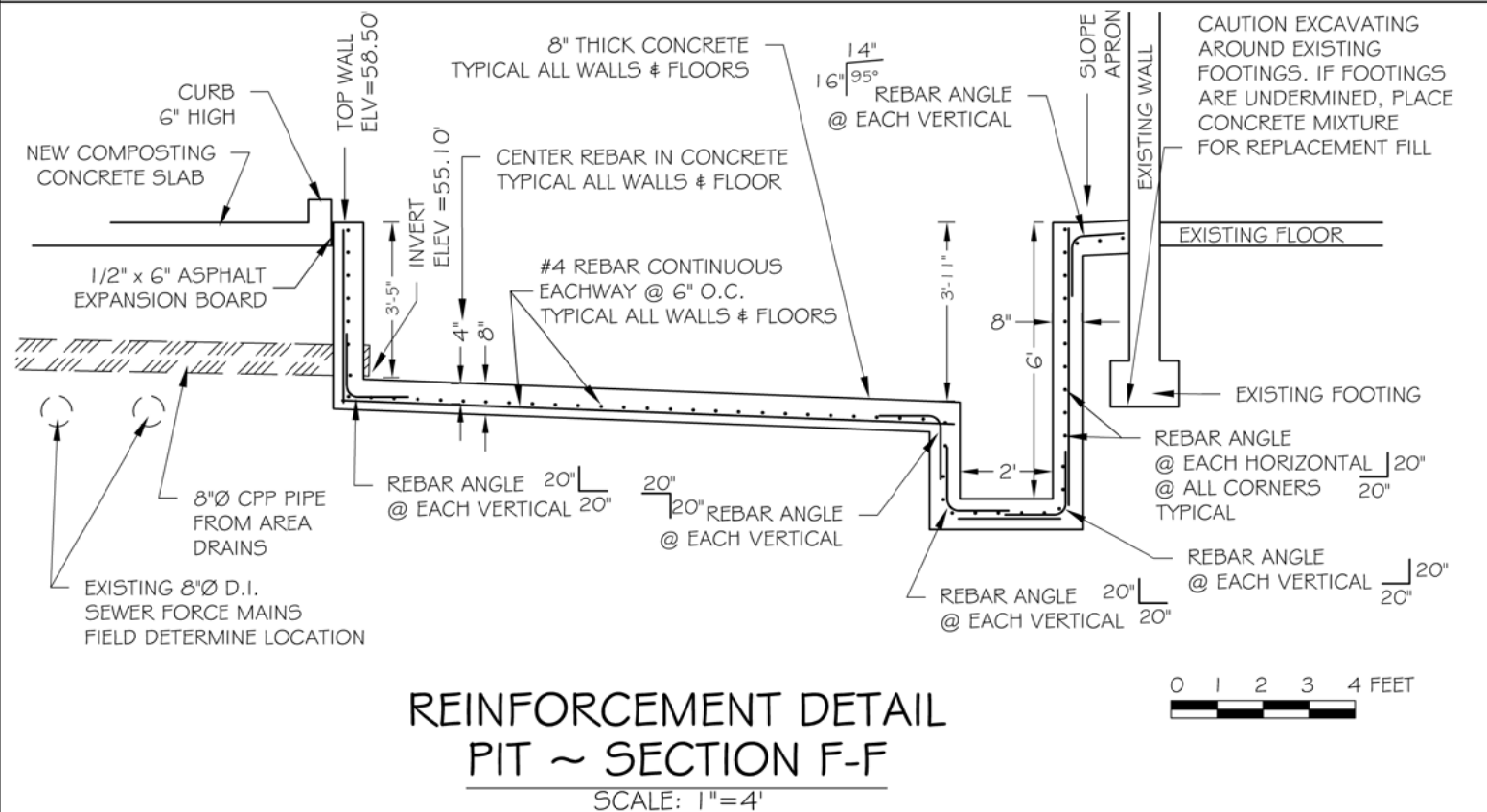
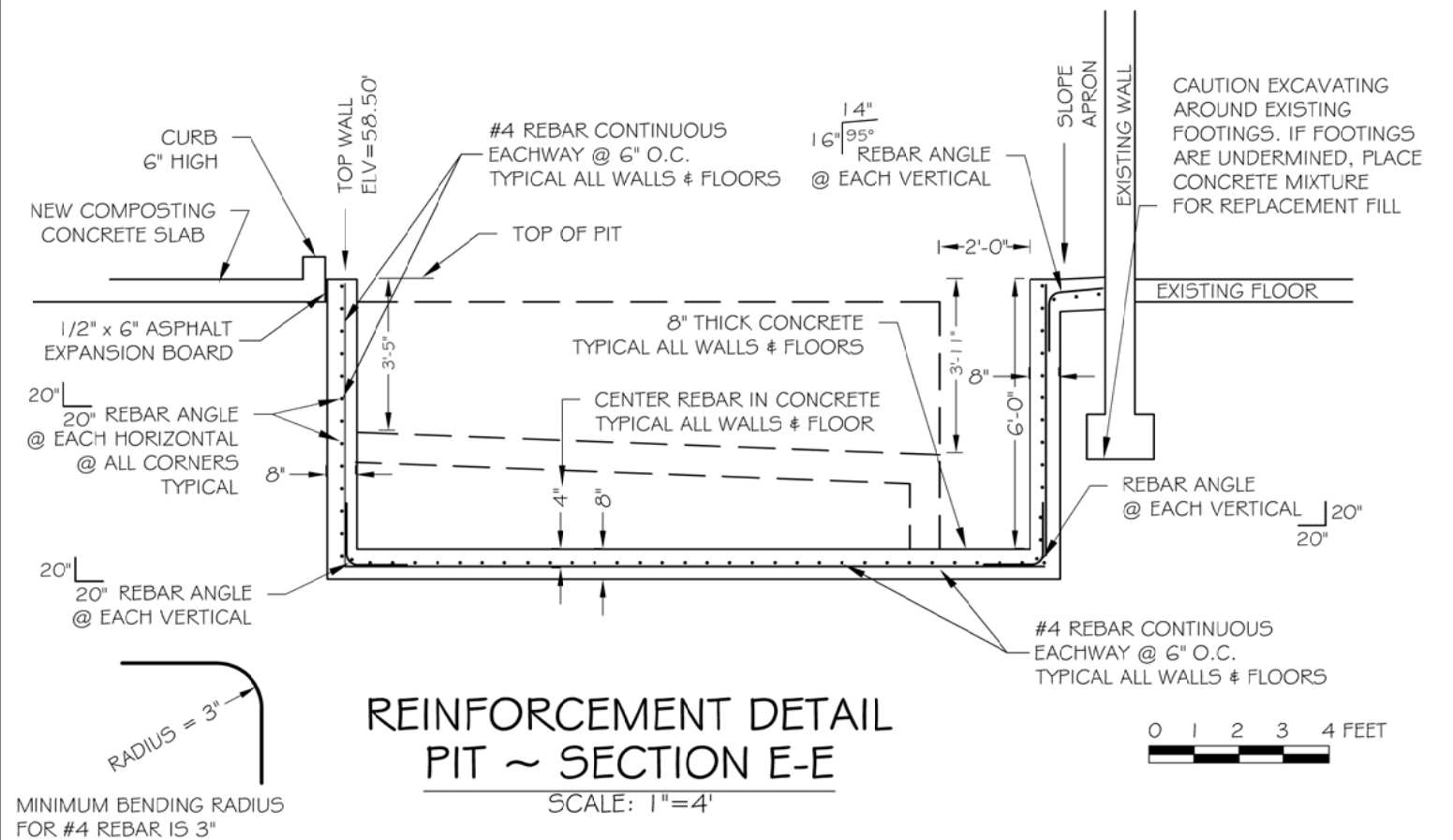
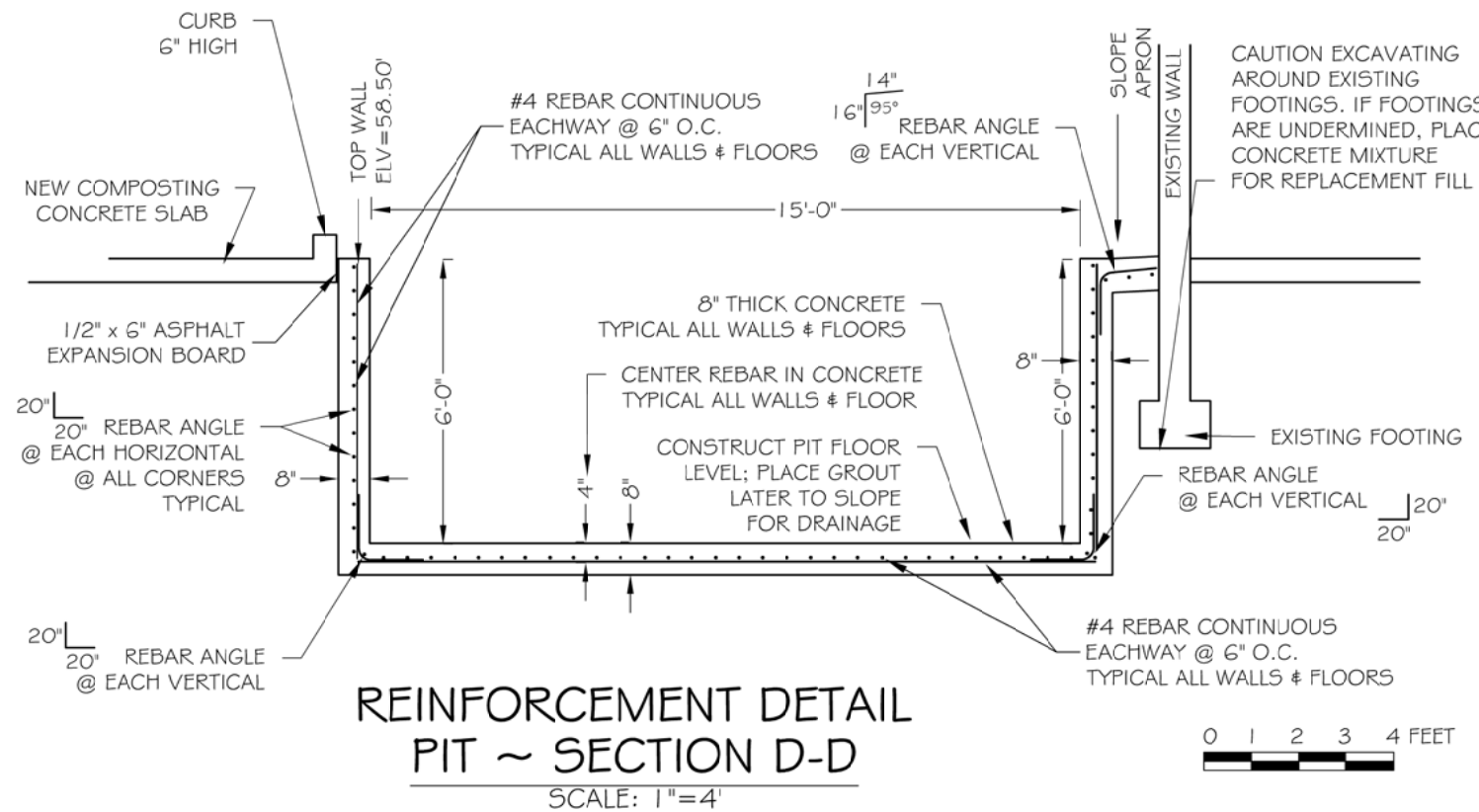


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6

of 10

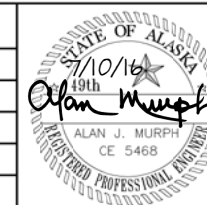


PIT
X-SECTIONS
REBAR

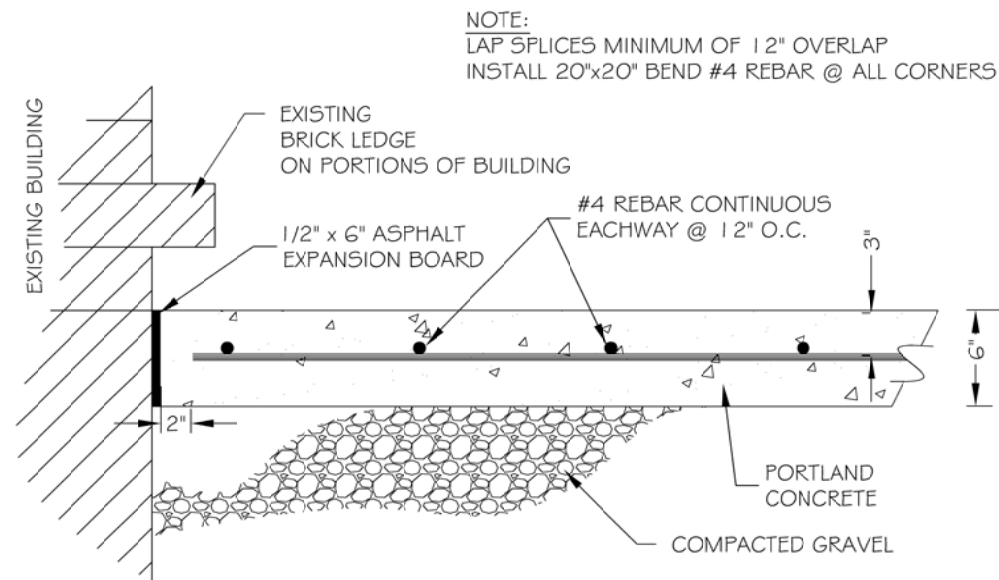
PETERSBURG PUBLIC WORKS DEPARTMENT
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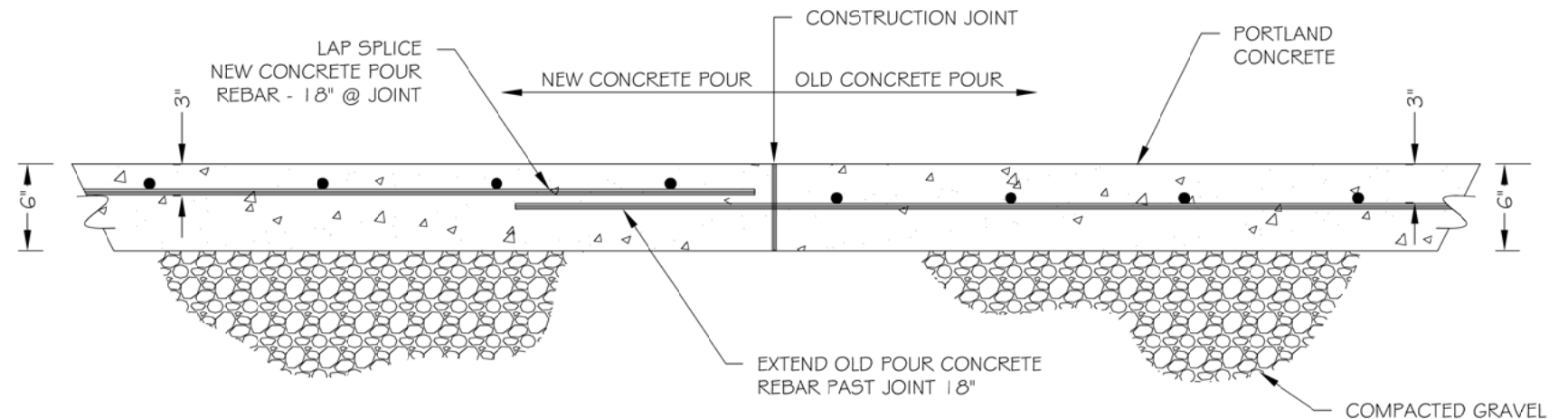
REVISIONS		
REV	DATE	DESCRIPTION



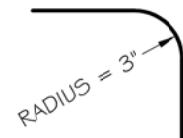
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DATE: JUNE 2016
SHEET NUMBER
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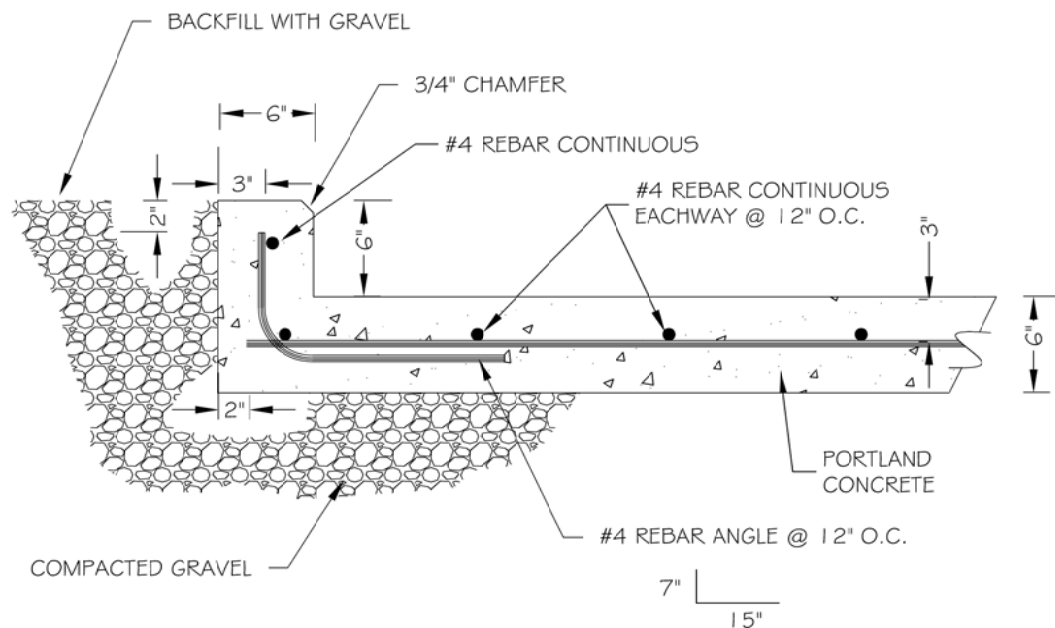
CONCRETE SLAB AGAINST BUILDING ~ TYPICAL
SCALE : 1" = 1'



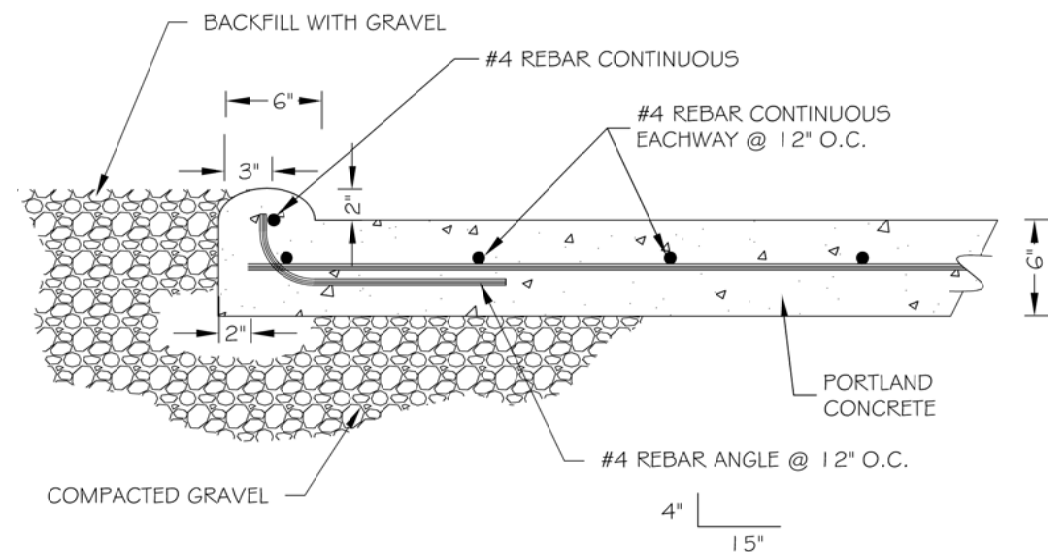
MINIMUM BENDING RADIUS FOR #4 REBAR IS 3"



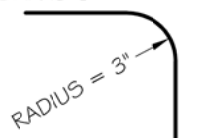
CONCRETE SLAB CONSTRUCTION JOINT ~ TYPICAL
SCALE : 1" = 1'



CONCRETE SLAB ~ TYPICAL
SCALE : 1" = 1'



MINIMUM BENDING RADIUS FOR #4 REBAR IS 3"



CONCRETE SLAB @ CURBCUT ~ TYPICAL
SCALE : 1" = 1'

CONCRETE
SLAB
DETAILS

PETERSBURG PUBLIC WORKS DEPARTMENT

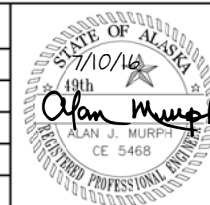
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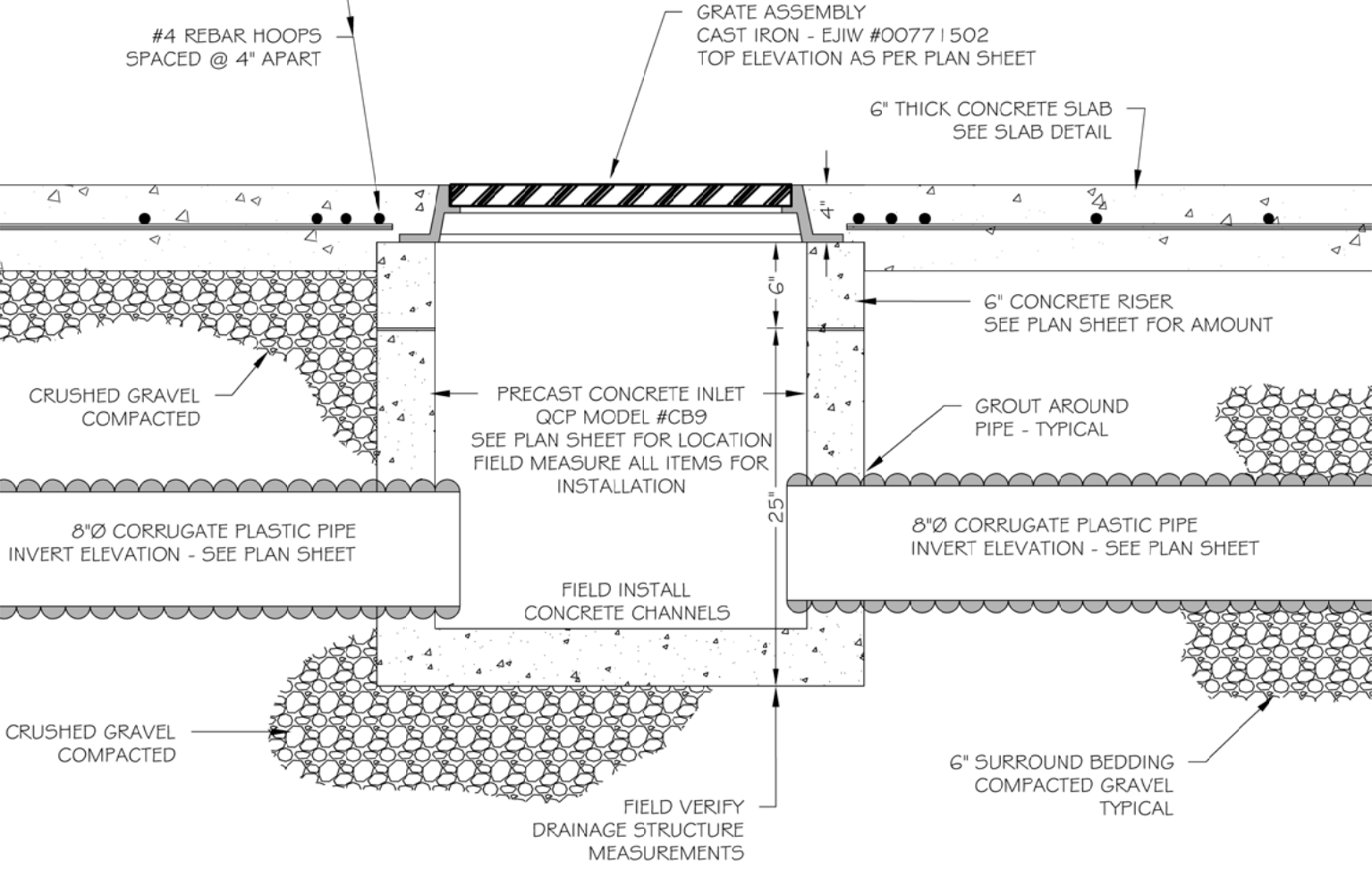
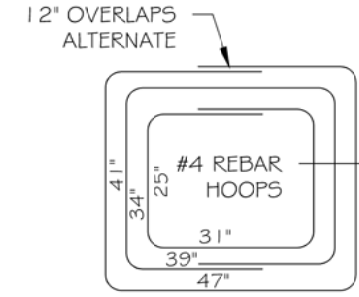


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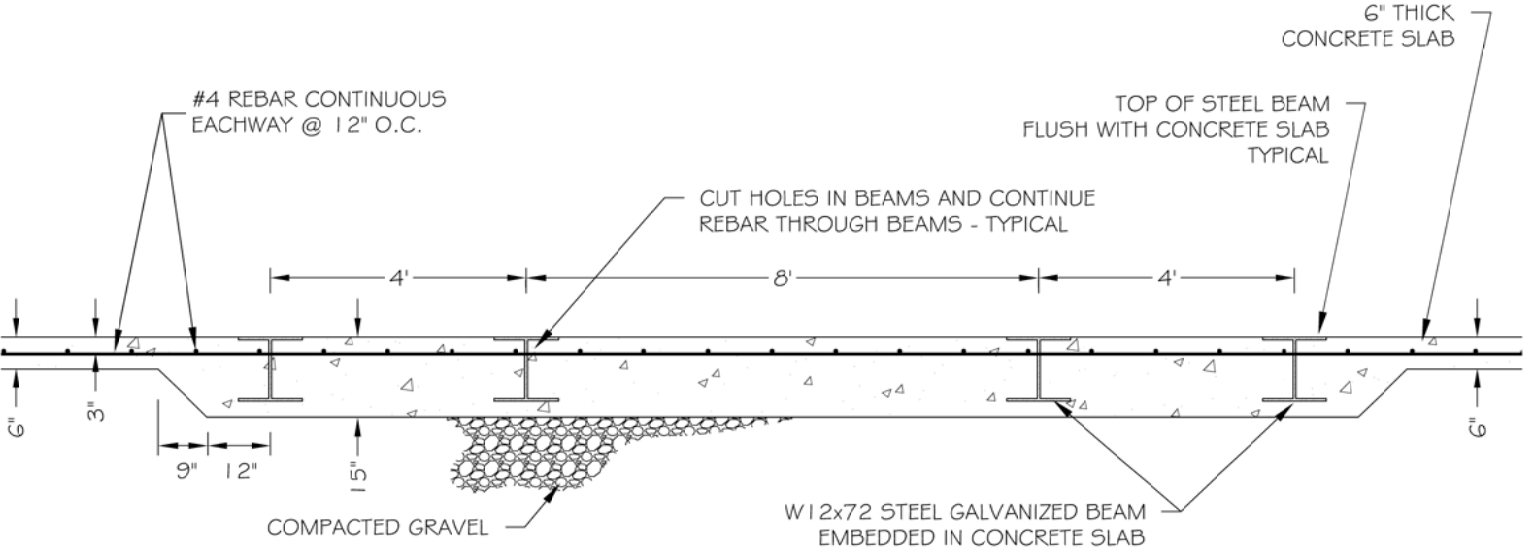
DATE: JUNE 2016

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8

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CATCH BASIN ASSEMBLY
SCALE : 1"= 1'



STEEL BEAM EMBEDMENT DETAIL
SCALE : 1"= 3'

STORM DRAINS
& STEEL BEAMS
EMBEDMENT
IN CONCRETE

PETERSBURG PUBLIC WORKS DEPARTMENT
Waste Water Treatment Plant
Composting Slab Project
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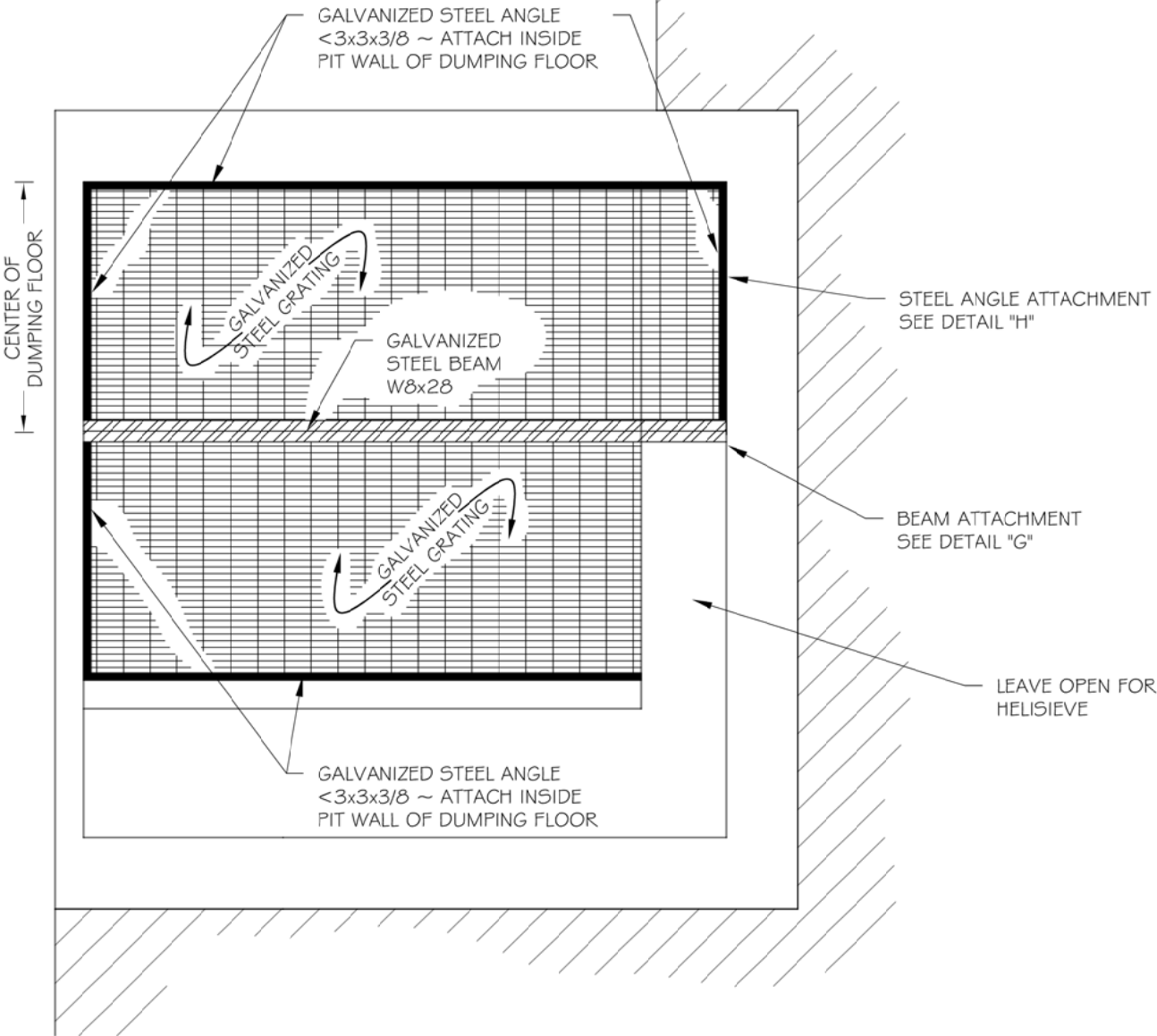
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REV	DATE	DESCRIPTION



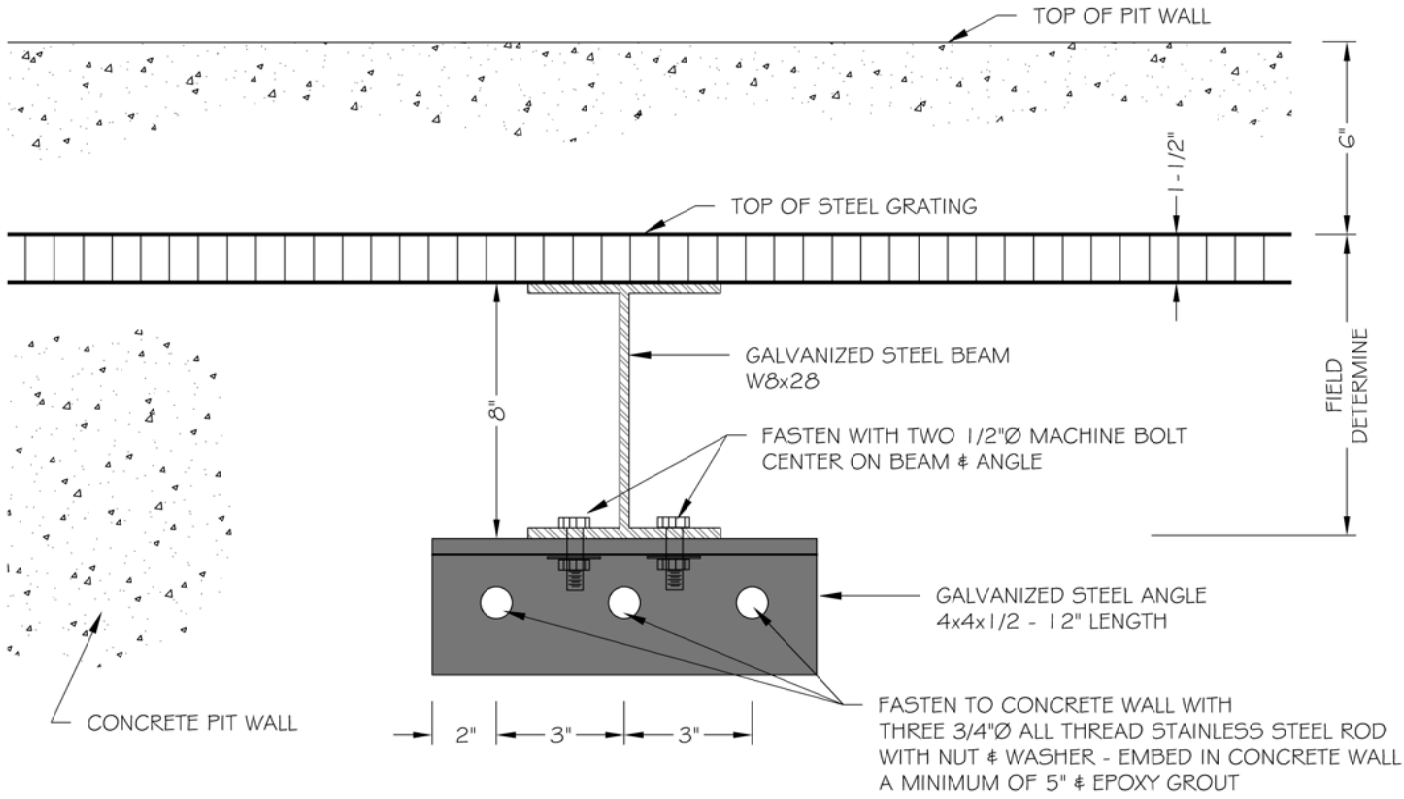
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HARA & ASSOCIATES, INC
P.O. BOX 625, PETERSBURG, ALASKA 99833
DATE: JUNE 2016
SHEET NUMBER 9 OF 10

NOTES:

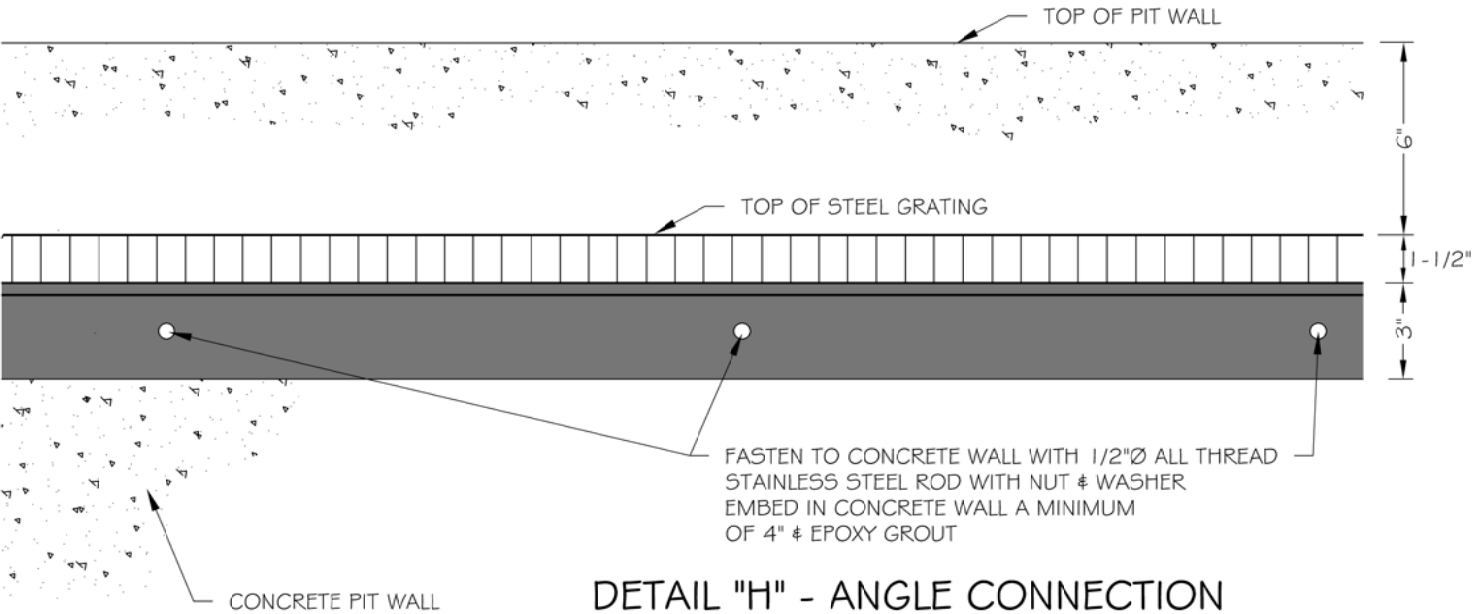
1. STEEL GRATING WILL BE GALVANIZED, 1.5 X 3/16 STEEL BARS. USE MCNICHOLS GRATING, MODEL # GW150 OR EQUAL.
2. STEEL ANGLE AND BEAM WILL BE HOTDIP GALVANIZED. STEEL GRADE WILL BE A36.
3. ALL FASTENINGS WILL BE A316 STAINLESS STEEL.
4. FIELD DRILL & GROUT ANCHORS IN CONCRETE WALL. USE HILTI EPOXY MORTAR (HY 200-R) OR EQUAL.



STEEL GRATING OVER PIT
SCALE: 1"=4'



DETAIL "G" - ANGLE CONNECTION
SCALE: 1"= 6"



DETAIL "H" - ANGLE CONNECTION
SCALE: 1"= 6"

PIT
STEEL GRATE

PETERSBURG PUBLIC WORKS DEPARTMENT
Waste Water Treatment Plant
Composting Slab Project
~2016~

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P.O. BOX 625, PETERSBURG, ALASKA 99833
DATE: JUNE 2016
SHEET NUMBER
10
OF 10

Petersburg Wastewater Utility Biosolids Operations Plan



Contents

1. Access Control.....	2
2. Waste Acceptance and Handling Policy.....	2
3. Sewage Solids Processing Plan	2
4. Biosolids Storage.....	4
5. Odor Control Plan	4
6. Litter, Vector and Nuisance Control Plan	4
7. Surface & Storm Water Control Plan.....	4
8. Corrective Action Plan	4
9. Operator Training.....	5
10. Recordkeeping	5
11. Operating Record	8
12. Reporting	8
13. Facility Closure	8

1. Access Control

- A. PWU composting operations take place at the Petersburg wastewater treatment facility (WWTF). The facility is staffed Monday – Friday from 08:00 – 16:00 and Saturday – Sunday from 07:00 – 15:00. The facility is fenced, and gated and the gate is locked when the facility is not staffed.
- B. All areas of the WWTF are maintained year-round by staff.

2. Waste Acceptance and Handling Policy

- A. Only sewage solids from the WWTF are accepted for the composting operation.
- B. No signage present.

3. Sewage Solids Processing Plan

- A. Aerobically digested sewage solids are dewatered as needed using a belt filter press which discharged into a 5yd dump truck.
- B. Approximately 10 cy ground wood waste transferred to the mixing area and once the dump truck is full it is dumped on the bed of wood waste.
- C. The wood waste and sewage solids are thoroughly mixed using a front-end loader. Additional wood waste is added as needed to achieve the desired consistency. Typical ratio of wood waste to solids 2-4:1 and is determined by experienced operators based on the appearance and consistency of the feed stocks. Generally, wetter solids require more wood waste. The goal is to make compost that has sufficient moisture to promote biological activity but not too much as to create a dense mixture that will not provide adequate airflow through the pile.
- D. Once the compost is well mixed it is transferred to either the Aerated Turned Pile (ATP) or the Aerated Static Pile (ASP) area.
 - 1. Aerated Turned Pile or Windrow Composting involves stacking the sewage sludge/wood waste mixture into a pile about 6 feet high, 6 feet wide and 30 feet long over aeration piping embedded in the concrete floor. The pile is covered with a tarp to prevent precipitation from affecting the pile. The compost in the core of the ATP attains at least 55°C and must remain at that temperature for three consecutive days. Turning the pile moves new material from the surface of the ATP into the core so that this material may also undergo pathogen reduction. After five turnings, all material in the ATP must have spent 3 days at the core of the pile. The time-temperature regime takes place over a period of at least 15 consecutive days during which time the temperature in the core of the ATP is at least 55°C.

2. Aerated static pile composting uses forced air only and no mechanical mixing to both supply sufficient oxygen for decomposition and carry off moisture. The sewage sludge/wood waste mixture is placed on top of a system of perforated piping laid on the composting pad surface and topped with a bed of bulking agent. The entire pile is covered with a layer of finished compost for insulation and odor control before being covered with a tarp. A blower is used to blow air into the compost pile. The pile is maintained at a temperature of at least 40 degrees C with an average temperature of at least 45 degrees C for 14 consecutive days and at least three consecutive days at or above 55 degrees C.
- E. Finished compost must meet the Class A—Alternative 5 fecal coliform limit (40 CFR Part 503.32(a)(7)), meet the Exceptional Quality (EQ) Pollutant Concentration limits shown below (Table 3 of 40 CFR Part 503.13), be treated by a Processes to Further Reduce Pathogens (PFRP) (Appendix B of 40 CFR Part 503) , and comply with vector attraction reduction Option 5 (40 CFR Part 503.33(b)(5)). The Class A—Alternative 5 pathogen reduction regulations require that the density of fecal coliform in the finished compost be less than 1,000 Most Probable Number per gram of total solids (dry weight basis) and that the biosolids be treated by a PFRP.

Pollutant	Monthly avg concentration (mg/Kg)
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

- F. Temperatures are monitored daily. Temperatures are checked in multiple locations and depths throughout each pile using soil thermometers. Temperatures and temperature acquisition location are recorded along with weather conditions, air temperature, precipitation amounts and in the case of the ATP when the pile is turned. Once the time and temperature requirements from D. above have been met samples are collected from multiple locations throughout the pile and the sample are analyzed for fecal coliform. If fecal coliform

concentrations are below the requirements in E. above, the compost is hauled away to be used as cover material at the borough's landfill.

4. Biosolids Storage

- A. Once the compost (treated biosolids) has met the holding times and temperatures and has met the requirements 3.E above, the compost leaves the facility. No storage of finished biosolids occurs at the facility.
- B. All treatment of biosolids takes place on a paved surface at the facility. All runoff or leachate at the facility is collected and pumped into the WWTF influent line for treatment.

5. Odor Control Plan

- A. The use of tarps to cover the piles results in little or no odors leaving the facility.

6. Litter, Vector and Nuisance Control Plan

- A. Compost piles are covered with secured tarps which helps prevent access by anything other than staff.
- B. The WWTF is located at the end of a road that receives little traffic, so dust, noise and traffic are not an issue. The use of tarps to cover the compost piles and the operators focus on cleanliness in and around the facility lead to nuisance or hazard outside the facilities boundaries.

7. Surface & Storm Water Control Plan

- A. The entire composting area is paved and sloped to drains that collect all run-off. Collected run-off is pump into the influent flow of the WWTF for treatment.
- B. Ditches around the outside perimeter of the facility channel off site water around and away from the facility.

8. Corrective Action Plan

- A. Any batch not meeting the Class A EQ requirements detailed above will be adjusted as needed and reprocessed.
- B. Only solids from the WWTF will be accepted for the composting operation.
- C. The WWTF has a very conservative and effective preventative maintenance program designed to ensure long life and efficient operation of all facilities. Emergency maintenance and repairs occur as needed.

- D. Any non-compliance with regulations or permit conditions will be reported within 24 hours of discovery and corrective action will be taken accordingly.

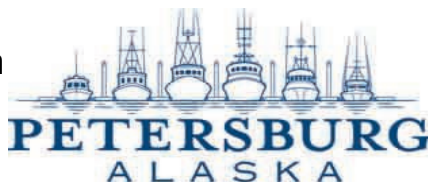
9. Operator Training

- A. Operators receive considerable training to ensure safe and effective operation of all WWTF operations. Online, in person and on-the-job training opportunities are utilized to educate new employees on safety and health, equipment operation and maintenance, laboratory procedures, regulations, and other areas that are relevant to the Water and Wastewater industry including solids handling.
- B. Certificates of completion and any other relevant documents are kept in an employee's personnel file.

10. Recordkeeping

- A. Each batch is tracked using the Compost Report below. Completed reports will be kept on file at the WWTF.

Petersburg Borough Wastewater Treatment Facility



Recipe

Date		:
		:
Batch ID:		:
		:
Operators		:
		:
		:
		:

[illegible]

Date	Analyst				
Sample, gr	1.0	0.1	0.01	0.001	0.0001
# Positive					

Wet Weight, gr _____ Dry Weight, gr _____ % Solids _____

MPN/gr dry _____

I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Wastewater Operations Supervisor or Designee

Date

11. Operating Record

- A. Operating record shall contain.
 - 1. the permit application and the permit
 - 2. inspection records, training procedures, and notification procedures
 - 3. any demonstration, certification, finding, monitoring, testing, or analytical data required by 18 AAC 60.800 – 18 AAC 60.860
 - 4. any permit or record required under the Clean Water Act as that Act applies to leachate and stormwater discharges.
 - 5. financial assurance documentation
 - 6. the operations plan
 - 7. as-built drawings of the treatment facility
 - 8. any other documents required by this chapter to be kept in the operating record.
- B. The operating record will be kept at the WWTF.

12. Reporting

- A. A semi-annual report will be submitted to ADEC as required by the permit.
- B. An annual report will be submitted the EPA in January of the following year.

13. Facility Closure

- A. If the PWWU permanently close the composting facility, the following closure activities will take place:
 - 1. Written closure notification and a written restoration plan that details the intended use for the site and appropriate site restoration activities will be submitted to the ADEC at least 60 days prior to initiating closure.
 - 2. Removal of all compost.
 - 3. Proper disposal of all bulking materials.
 - 4. Cleaning and disinfection of all areas and equipment that have had contact with sewage sludge.
- B. The Petersburg Borough possesses the necessary equipment and employs adequate staff to facilitate a closure of the composting facility as outlined in A. above.
- C. The Petersburg Borough's certified financial statements will be made available to ADEC SWP upon request.

Petersburg Wastewater Utility Biosolids Monitoring Plan



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1. Introduction

A. Monitoring biosolids is crucial for ensuring their safe management and minimizing potential risks to human health and the environment. Here is a general discussion on the purpose and goals of monitoring biosolids:

1. Monitoring biosolids helps ensure compliance with local, state, and federal regulations governing their management, treatment, and disposal.
2. Monitoring helps identify potential health hazards and ensures that biosolids meet safety standards before being used in agriculture, landscaping, or other applications. Biosolids may contain pathogens and harmful substances that can pose health risks if not properly managed.
3. Monitoring helps assess the impact of biosolids on environmental quality and prevents adverse effects on natural resources. Improper management of biosolids can lead to contamination of soil, water, and air, affecting ecosystems and wildlife.
4. Monitoring evaluates the effectiveness of these treatment processes and ensures that biosolids meet quality standards for safe reuse or disposal. Biosolids undergo various treatment processes, such as anaerobic digestion, composting, or thermal drying, to reduce pathogens and stabilize organic matter.
5. Monitoring helps maximize resource recovery while minimizing environmental impacts, supporting sustainable practices. Biosolids contain valuable nutrients, organic matter, and energy that can be recovered and reused in beneficial ways, such as soil amendment or energy generation.
6. Sharing monitoring data and reports with stakeholders fosters trust and engagement, promoting informed decision-making and accountability. Transparent and comprehensive monitoring programs build public awareness and confidence in biosolids management practices.

In summary, monitoring biosolids plays a vital role in ensuring their safe and sustainable management, protecting public health and the environment, and supporting resource recovery and innovation. It is an essential component of responsible biosolids management practices, contributing to a cleaner, healthier, and more sustainable future.

- B. Experienced and ADEC certified wastewater operations staff will conduct all sampling required by the biosolids monitoring plan.
- C. All pathogen and nutrient analysis will be conducted in-house by operations staff. Staff are trained in analytical procedures and must demonstrate proficiency, accuracy and participate in the USEPA DMRQA annual studies. Pollutant analysis is done through Admiralty Environmental.

2. Pathogen Reduction Monitoring

A. Sewage sludge—Class A.

1. 503.32.(a)(1) - The requirement in § 503.32(a)(2) and the requirements in either § 503.32(a)(3), (a)(4), (a)(5), (a)(6), (a)(7), or (a)(8) shall be met for a sewage sludge to be classified Class A with respect to pathogens.

503.32(a)(2) - The Class A pathogen requirements in § 503.32 (a)(3) through (a)(8) shall be met either prior to meeting or at the same time the vector attraction reduction requirements in § 503.33, except the vector attraction reduction requirements in § 503.33 (b)(6) through (b)(8), are met.

503.32(a)(7)(i) - Class A—Alternative 5.

Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella, sp. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in § 503.10(b), (c), (e), or (f).

503.32(a)(7)(ii) - Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in appendix B of this part.

40 CFR Appendix B to Part 503

B - Processes to Further Reduce Pathogens (PFRP)

1. Composting—Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days.

Using the windrow composting method, the temperature of the sewage sludge is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

- B. The density of fecal coliform in the finished compost will be measured prior to leaving the facility using Method 1681: Fecal Coliform in Sewage Sludge (Biosolids) by Multiple Tube Fermentation using A-1 medium.
- C. At least one representative composite sample will be analyzed from each batch of compost.

- D. Once the compost has met the requirements of A. above and prior to leaving the facility samples will be collected from multiple locations throughout the pile.

3. Vector Attraction Reduction Monitoring

- A. § 503.33 (a) Vector attraction reduction.
 - 1. One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.
 - 2. One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when bulk sewage sludge is applied to a lawn or a home garden.
 - 3. One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.
 - 4. One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(11) shall be met when sewage sludge (other than domestic septage) is placed on an active sewage sludge unit.
 - 5. 503.33(b)(5) Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.
- B. No additional testing is required.
- C. No additional sampling is required.
- D. No additional monitoring is required.

4. Pollutant Monitoring

- A. 40CFR Part 503.13 Table 3 and 18 AAC 60.240

Pollutant	Maximum Concentration (mg/Kg)	Test Method	Sample Type	Frequency
Arsenic	41	6020A	Composite	1 / year
Cadmium	39	6020A	Composite	1 / year
Copper	1500	6020A	Composite	1 / year
Lead	300	6020A	Composite	1 / year
Mercury	17	7471A	Composite	1 / year
Nickel	420	6020A	Composite	1 / year
Selenium	100	6020A	Composite	1 / year
Zinc	2800	6020A	Composite	1 / year
PCBs	ND	8082A	Composite	1 / 5 years

- B. One representative composite sample for each monitoring event.
C. Sampling and analysis for metals will occur once per year and should occur at the same time as surface water monitoring at the Borough's landfill.

5. Nutrient Monitoring

- A.

Pollutant	Maximum Concentration (mg/Kg)	Test Method (Hach)	Sample Type	Frequency
pH	NA	8156	Composite	NA
TKN	NA	10242	Composite	NA
NO3-N	NA	10020	Composite	NA
NH4-N	NA	10205	Composite	NA
P	NA	10209	Composite	NA
K	NA	8049	Composite	NA

- B. One representative composite sample for each monitoring event.
C. No monitoring required at this time.

6. Sampling

- A. A front-end loader is used to cut into a finished pile in at least two locations. Ten approximately 30 gram samples are collected from various locations of the pile using a garden trowel. The 30 gram samples are then combined and well mixed to create a representative composite sample.

- B. Samples are placed in a brown glass jar and label with time, date, pile id number, and the sampler's name.
- C. Samplers will follow the safety procedures on PPE and hygiene during sample collection and preservation. All equipment used in sampling will be thoroughly cleaned using hot water and detergent.
- D. Sample storage and preservation.
 - 1. Pollutant monitoring samples can be kept at 4 degrees C for no more than 7 days before analysis.
 - 2. Nutrient monitoring samples can be kept at 4 degrees C for no more than 48 hours before analysis.
- E. Chain of Custody form.



June 2024
Justin Haley
Wastewater Operations Supervisor, PWWU

7. Quality Control

- A. Quality Control Samples or Blanks for Each Sampling Event
 - 1. Field Blanks: Field blanks are samples collected in the field and transported to the laboratory under the same conditions as actual samples but are not exposed to the sample source. They help identify potential sources of contamination during sample collection and handling.
 - 2. Field Duplicates: Field duplicates are replicate samples collected at the same location and time as the original samples. They assess the precision of sample collection and handling procedures.
 - 3. Matrix Spikes: Matrix spikes are samples to which known amounts of analytes are added before analysis. They assess the accuracy of laboratory analysis by evaluating recovery rates for spiked analytes.
 - 4. Matrix Spike Duplicates: Matrix spike duplicates are replicate samples treated with the same spike as the matrix spike. They evaluate the precision of laboratory analysis by comparing the results of spiked samples.
 - 5. Laboratory Control Samples: Laboratory control samples are prepared in the laboratory using certified reference materials or standard solutions. They monitor the performance of analytical instruments and methods over time.
- B. Laboratory Quality Control Samples
 - 1. Method Blank: A method blank is a sample containing all reagents used in the analysis but no sample. It assesses the background contamination introduced during laboratory analysis.
 - 2. Instrument Blank: An instrument blank is a sample of the solvent or carrier gas used in the analysis. It evaluates contamination from the analytical instrument itself.
 - 3. Calibration Standards: Calibration standards are solutions of known concentrations used to calibrate the analytical instruments. They ensure accurate measurement of analytes in samples.
 - 4. Quality Control Reference Materials: Quality control reference materials are certified materials with known concentrations of target analytes. They validate analytical procedures and verify the accuracy of results.
- C. Addressing Samples Outside Control Parameters
 - 1. Investigate Causes: If a sample falls outside control parameters, investigate potential causes such as contamination during sampling, handling errors, or instrument malfunction.
 - 2. Repeat Analysis: Repeat the analysis for samples that fall outside control parameters to verify the results and assess the consistency of findings.
 - 3. Corrective Action: Implement corrective actions to address identified issues and prevent recurrence. This may include improving sampling techniques, recalibrating instruments, or adjusting laboratory procedures.
 - 4. Documentation: Document all deviations from control parameters, investigations, and corrective actions taken. This information helps identify trends, improve procedures, and ensure regulatory compliance.

5. Notification: If samples outside control parameters indicate a potential risk to public health or the environment, notify relevant authorities and stakeholders promptly and act appropriately to mitigate risks.

8. Data Analysis

A. Table of Tested Analytes and Comparison Standards

Analyte	Comparison Standard
Total Solids	EPA Part 503 Regulation
Nutrients	Alaska Water Quality Standards
Heavy Metals	EPA Part 503 Regulation
Pathogens	EPA Part 503 Regulation
Organic Contaminants	EPA Part 503 Regulation

B. Evaluation of Results Against Standards

1. Total Solids: Compare total solids concentrations in biosolids samples with the regulatory limit specified in EPA Part 503. Samples exceeding this limit may indicate inadequate dewatering or excessive moisture content.
2. Nutrients: Evaluate nutrient concentrations (e.g., nitrogen, phosphorus) against Alaska Water Quality Standards or other applicable standards. Excessive nutrient levels may contribute to eutrophication and water quality degradation.
3. Heavy Metals: Assess concentrations of heavy metals (e.g., lead, cadmium) against regulatory limits specified in EPA Part 503. Elevated levels of heavy metals may pose risks to human health and the environment.
4. Pathogens: Test for the presence of pathogens (e.g., fecal coliforms, Salmonella) and compare results with regulatory requirements in EPA Part 503. Elevated pathogen levels may indicate insufficient treatment and potential health hazards.
5. Organic Contaminants: Analyze biosolids for organic contaminants (e.g., PAHs, PCBs) and compare concentrations with regulatory limits in EPA Part 503. Elevated levels of organic contaminants may pose risks to human health and the environment.

C. Addressing Samples that Fail Criteria

1. Immediate Actions: If samples fail to meet regulatory criteria or exceed established standards, take immediate actions to prevent further risks. This may include halting land application, notifying regulatory agencies, and implementing corrective measures.
2. Investigation: Investigate the cause of the exceedance, including potential sources of contamination, operational errors, or equipment malfunction. Thoroughly document all investigative steps and findings.
3. Corrective Actions: Implement corrective actions to address identified issues and prevent recurrence. This may involve adjusting treatment processes, optimizing operational parameters, or enhancing monitoring and control measures.

4. Resampling and Retesting: Resample and retest affected areas to verify the initial results and assess the effectiveness of corrective actions. Ensure that resampling procedures are rigorous and representative.
5. Reporting and Notification: Report exceedances to regulatory agencies and stakeholders as required by law. Provide timely and accurate information on corrective actions taken and any potential risks to public health and the environment.

9. Visual Monitoring

A. Visual Monitoring Procedure

1. Plant Entry – Confirm door is locked upon arrival, be alert to signs of unauthorized entry. Check that lights function properly and repair or replace as needed. Entry should be kept clean and clear of clutter. Disposable glove dispensers should be refilled if necessary. Flashlights should be present and charged. Confirm that the fire extinguisher is present and charged. Recycling container should be emptied when needed.
2. SCADA Room – Check lighting for proper function and repair or replace as needed. Check that safety and health posters are present and up to date. The room should be kept clean and free of clutter, empty trash bin as needed. Confirm that the fire extinguisher is present and charged. Check SCADA computer for system status, alarm condition, and abnormal station operation. Address system concerns as needed. Record daily MGD, PS4 24-hour runtime, outside temperature, and precipitation in the daily log.
3. Laboratory – Check lighting for proper function and repair or replace as needed. Keep the lab clean and free of clutter, empty trash bin as needed. Confirm proper equipment operation for all lab equipment in operation. Confirm that the gas monitor is present and charged. Confirm that the eyewash station is present and properly charged. Record BOD incubator, drying oven, water bath incubator, and dry incubator temperature in the daily log when equipment is operating.
4. Clarifier Room – Check lighting for proper function and repair or replace as needed. Never attempt to work on lighting over the clarifiers without other operators present. Observe the clarifiers for abnormal conditions. Check effluent water temperature and record it in the daily log. Check and record potable water meter total, compare the total to the previous day's and investigate if the usage is higher than expected. Observe potable water system pressure and investigate or notify the water department if the pressure is out of the normal range. Check the effluent composite sampler for proper operation and record the temperature in the daily log. Check the skimmers for leakage and proper function. Check each sludge pump to make sure they are primed, packing gland is adjusted properly, oil levels are appropriate, and the pump functioning properly. Record the number of revolutions for each pump in the daily log. Check the oil storage / spill containment area for cleanliness and abnormal conditions. Remove trash from the spill containment area daily and keep the area free of clutter. Confirm that the fire

- extinguisher is present and charged. Check the influent composite sampler for proper operation and record the temperature in the daily log.
5. Digester Room – Check lighting for proper function and repair or replace as needed. Check that ventilation equipment is operating properly and correct issues as needed. Observe digester level and decant or dewater sludge as needed.
 6. Sludge Press Room - Check lighting for proper function and repair or replace as needed. Check influent piping, valves and flow meter for leaks, loose fasteners, and proper function. Record the total flow on the flow meter in the daily log (this should be done at or about the same time every day). Check the rotating screens for proper function and clogging, repair as needed. Check screenings conveyor for proper function and use it to transfer screenings to the tipping hopper in the Screen Press Room. Alternate screens daily to equalize wear and clean the off screen including the headbox and level sensor. Check the grit separator effluent channel for obstructions and unusual flow conditions, investigate and correct as needed and clean the channel daily. Confirm that the fire extinguisher is present and charged. Check overhead door for proper function and adjust as needed.
 7. Screen Press Room - Check lighting for proper function and repair or replace as needed. Confirm that the eyewash station is present and properly charged. Check overhead door for proper function and adjust as needed.
 8. Blower Room – Check lighting for proper function and repair or replace as needed. Confirm that the eyewash station is present and properly charged. Remove trash daily and keep the room free of clutter. Ensure blowers are functioning properly.
 9. Boiler Room – Check lighting for proper function and repair or replace as needed. Check boiler, air handler and water heater for leaks. Remove trash daily and keep the room free of clutter.
 10. Aerated Turned Pile Area – If actively composting, check the area for unusual conditions. Roll back the tarp and check the temperature in multiple locations throughout the pile. Record the temperature in the report for that pile. Turn pile if needed using the Bobcat and thoroughly clean the Bobcat and the area around the pile when finished. Replace the tarp and secure it.
 11. Aerated Static Pile Area – If actively composting, check the area for unusual conditions. Roll back the tarp and check the temperature in multiple locations throughout the pile. Record the temperature in the report for that pile. Replace the tarp and secure it.
 12. Septage Composting Runoff Receiving Pit – Check pumps for proper operation. Check the screen for proper operation. Clean the pit and pump channel as needed.
 13. Wastewater Treatment Facility – All areas of the facility shall be kept clean and free of clutter. Recycling and trash not otherwise specified shall be removed at least weekly. All walking and working surfaces shall be cleaned regularly to prevent contamination from transferring from one area to another. All hoses shall be properly stowed and valved off when not in use. Lights shall be turned off when no one is working in the area. All tools and equipment shall be properly stowed and/or secured at the end of each day. All equipment needed to for safe and effective operations of the treatment facility in the absence of an operator needs to be check for proper operation prior to leaving the

- facility at the end of the day (e.g. HOA switches in auto, alarms enabled...). All doors and gates shall be secured at the end of the day.
- B. Visual monitoring of the WWTF occurs daily. The operator conducting the monitoring documents that it was done by signing the appropriate line on the back of the Daily Report.

10. Reporting

- A. The Petersburg Wastewater Utility does not distribute composted biosolids to customers.
- B. Monitoring records for the applicable reporting period will be included with the semi-annual report submitted to ADEC.