

Addendum No. 3

Owner: City of Unalaska

Project: **SEWAGE LIFT STATION #3 FORCE MAIN REPLACEMENT (FM)**
DELTA WAY STORM DRAIN (SD)
DPW Project No. 11503-01

Date: April 25, 2014

Please acknowledge receipt of this Addendum No. 3 in the appropriate blanks on the bid form.

The following corrections, changes, additions, deletions, revisions, and/or clarifications are hereby made a part of the contract documents for the **SEWAGE LIFT STATION #3 FORCE MAIN REPLACEMENT (FM) / DELTA WAY STORM DRAIN (SD)**. In case of conflicts between this Addendum and previously issued documents, this Addendum shall take precedence.

Item 1: PROJECT MANUAL, Section 00030 INVITATION TO BID;

Change "Sealed bids will be received until 2:00 p.m., local time on **May 1, 2014** and then will be publicly opened and read." to "Sealed bids will be received until 2:00 p.m., local time on **May 6, 2014** and then will be publicly opened and read."

Narrative: The bid date was previously extended in Addendum 2.

Item 2: PROJECT MANUAL, Section 00800 SUPPLEMENTARY CONDITIONS;

Add the following:

SC-10 ARTICLE 10 – CONTRACT PRICE; COMPUTATION AND CHANGE

Delete Items 10.9.3.a and 10.9.3.b.

Narrative: There will not be a unit price adjustment in the event the installed quantities are increased or decreased by more than 25 percent of the quantity stated in the bid schedule. The Contractor will be paid an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the actual installed quantity of each item as indicated in the Contract.

Item 3: PROJECT MANUAL, Section 00300 BID FORM;

Replace the Bid Proposal – Sewage Lift Station #3 Force Main Replacement (FM) and the Delta Way Storm Drain (SD) with the attachment.

Narrative: The 1st page of the Bid Form (FM) was previously replaced in Addendum 1. No additional changes were made to the FM Bid Form. All three bid form pages are being provided herein. Pay items were adjusted for providing all Type I manholes, the bedding quantity was changed to accommodate the electrical conduits being in a dedicated trench, a bid item was added for geotextile fabric, and a bid item was added for NOT constructing the Contaminated Material Storage Cell. See Specification 01025 for a description of the bid items.

Item 4: PROJECT MANUAL, Technical Specification 01025 MEASUREMENT AND PAYMENT;

Delete this specification in its entirety and replace it with the specification attached to this Addendum. This specification was previously replaced in Addendum 1.

Narrative: Pay item was added for NOT constructing the Contaminated Material Storage Cell and for the addition of Geotextile Fabric. The description required for installing the electrical conduits was modified.

Item 5: PROJECT MANUAL, Technical Specification 03500 SPECIAL PROCEDURES;

Delete this specification in its entirety and replace it with the specification attached to this Addendum.

Narrative: All modifications from the original specification were highlighted in gray.

Item 6: DESIGN DRAWINGS, Sheet C-2 of 10, SHEET LAYOUT, LEGEND, ABBREVIATIONS & NOTES;

Delete this drawing in its entirety and replace it with the revised drawing C-2 attached to this addendum.

Narrative: The Cul-de-Sac on Willow Drive is offered as an alternative location to install the Contaminated Material Storage Cell. The ADEC approved the site provided the stockpile is fenced and signage is installed to preclude public access. If the Contractor opts to use this site, fencing and signage are added to the scope of services for Bid Item 9 on the Delta Way Storm Drain (SD) Bid Proposal. Fencing shall be 6' high chain link suitable to sufficiently prevent public access from the contaminated storage cell area.

Item 7: DESIGN DRAWINGS, Sheet C-5 of 10, DETAILS – PUMP STATION UPGRADES AND NEW VALVE VAULT;

CONSTRUCTION AND PRODUCT NOTES, item 13, change "Install 6" flange x male adapter groove fitting" to "Install 6" flange x 4" male adapter groove fitting".

Narrative: The male adapter Cam lok fitting shall be 4" diameter.

Item 8: DESIGN DRAWINGS, Sheet C-5A of 10 DETAILS PUMP STATION WETWELL PIPING REPLACEMENT;

Replace the drawing C-5A issued as item 6 in Addendum 1 with the revised drawing C-5A

Narrative: The drawing was modified to provide requirements related to providing temporary pumps and handling bypass flows during work required in the existing pump station wet well.

Item 9: DESIGN DRAWINGS, Sheet C-6 of 10, DELTA WAY STORM DRAIN PLAN AND PROFILE;

Delete this drawing in its entirety and replace it with the revised drawing C-6 attached to this addendum.

Narrative: The manhole base elevations were deleted from the profile to reflect elimination of the catch. MH DW-4 was changed from a Type II (6' diameter) to a Type I (4' diameter) manhole. The extent of the contaminated or potentially contaminated soils shown on the profile was modified. Everything above 4' depth has been pre-characterized to be clean material with the condition that visual/olfactory evidence of fuel requires treatment as contaminated or potentially contaminated material. The electrical conduits were moved for installation in a separate trench.

Item 10: DESIGN DRAWINGS, Sheet C-7 of 10 MISCELLANEOUS DETAILS;

Delete this drawing in its entirety and replace it with the revised drawing C-7 attached to this addendum.

Narrative: The electrical conduits were removed from the storm drain pipe trench with the intention of installing them in their own trench. A separate trench section was added.

Item 11: DESIGN DRAWINGS, Sheet C-8 of 10 STORM DRAIN MANHOLE DETAILS;

Detail 1- TYPE I MANHOLE: Delete the 18" minimum catch requirement "18" MIN CATCH" between the pipe inverts and the floor of the manhole. No minimum catch depth is required.

Detail 2- TYPE II MANHOLE: Delete this detail in its entirety.

Narrative: The 18" minimum catch was deleted to shallow the depth of the excavation. The Type II manhole was deleted from the scope of work.

Item 12: DESIGN DRAWINGS, Sheet C-10 of 10, TRAFFIC CONTROL;

NOTES, item 4, third sentence, change "Road closures will be allowed for a defined limited period of 7 days..." to "Road closures will be allowed for a defined limited period of 14 days..."

Narrative: Either Delta Way or Summer Bay Road are approved for full closures limited to the conditions listed in the TRAFFIC CONTROL, Notes, item 4.

Attachments

- Item 3: Revised Bid Proposal Form, Sewage Lift Station #3 Force Main Replacement (FM) (3-pages)
- Item 4: Revised Specification 01025 MEASUREMENT AND PAYMENT (8-Pages)
- Item 5: Revised Specification 03500 SPECIAL PROCEDURES (16-Pages)
- Item 6: Revised Drawing C-2, SHEET LAYOUT, LEGEND, ABBREVIATIONS & NOTES
- Item 8: Revised Drawing C-5A, DETAILS – PUMP STATION WETWELL PIPING REPLACEMENT
- Item 9: Revised Drawing C-6, DELTA WAY STORM DRAIN PLAN AND PROFILE
- Item 10: Revised Drawing C-7, MISCELLANEOUS DETAILS

End of Addendum No. 3

BID PROPOSAL

City of Unalaska - **SEWAGE LIFT STATION #3 FORCE MAIN REPLACEMENT (FM)**

ITEM NO.	EST. QUANT.	DESCRIPTION (Write Unit Bid Price in Words)	UNIT PRICE	TOTAL PRICE
1	600 Ton	Bedding and Surfacing Material (includes disposal of unsuitable material) _____per ton		
2	700 Ton	Backfill Material (includes disposal of unsuitable material) _____per ton		
3	556 LF	Furnish and Install 6" Ductile Iron Sewer Pipe, Class 52 _____per linear foot		
4	All	Construct Valve Vault _____per lump sum		
5	4 EA	Raise Sanitary Sewer Manhole _____per each		
6	All	Relocate Hydrant and Bollards _____per lump sum		
7	All	Stormwater Pollution Prevention Plan _____per lump sum		
8	All	Site Mobilization and Demobilization _____per lump sum		
9	All	Traffic Maintenance _____per lump sum		
10	All	Replace Wet Well Pump Discharge Piping _____per lump sum		

Bid Price Force Main: _____

BID PROPOSAL
City of Unalaska - **DELTA WAY STORM DRAIN (SD)**

ITEM NO.	EST. QUANT.	DESCRIPTION (Write Unit Bid Price in Words)	UNIT PRICE	TOTAL PRICE
1	2,200 Ton	Bedding and Surfacing Material (includes disposal of unsuitable material) _____per ton		
2	392 LF	Furnish and Install 24" Ductile Iron Sewer Pipe, Class 52 _____per linear foot		
3	4 EA	Furnish and Install Storm Drain Manhole, Type I _____per each		
4	-	Not Used _____per each		
5	2 EA	Connect to Existing Storm Drain Lines _____per each		
6	1 EA	Relocate Waterline, 6" Diameter _____per each		
7	1 EA	Relocate Waterline, 12" Diameter _____per each		
8	302	Install (2) 6", (1) 2" Schedule 40 PVC Electrical Conduits _____per linear foot (for three conduits)		
9	All	Construct Contaminated Material Containment Cell _____per lump sum		
10	All	Special Procedures (Specification 03500) _____per each		
11	All	Stormwater Pollution Prevention Plan _____per lump sum		
12	All	Site Mobilization and Demobilization _____per lump sum		

13	All	Traffic Maintenance _____per lump sum		
14	All	Do <u>NOT</u> Construct Contaminated Material Storage Cell _____per contingent sum	\$65,000.00	\$65,000.00
15	400	Install Geotextile Fabric _____per square yard		

Bid Price Storm Drain: _____

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Bid Summary

Total Bid Price (Force Main and Storm Drain): _____

Total Bid Price (in words): _____

Bidding Company: _____

Name (Printed): _____

Signature: _____ Date: _____

Contractors License No. _____ Business License No. _____

Note: The force main and storm drain portions of the project have been separated for budgetary purposes. Costs for common items like the SWPPP, Traffic Control Plan, and Mobilization and Demobilization should be prorated between the different portions. The work itself encompasses both portions so unit costs on one portion are available for use on the other and visa versa. Special Procedures applies to both portions of the project so no extra payment will be made if oil contaminated materials are encountered on the force main portion of the Work. Section 03500 Special Procedures requirements are not necessary on the Force Main portion of the project unless visual or olfactory evidence of oil contaminated materials are encountered, in which case the materials shall be treated as if they are contaminated or potentially contaminated materials as specified.

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PART 1 - GENERAL

1.1 SCOPE

- A. Payment for the various items of the Bid Schedule, as further specified herein, shall include full compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all materials, labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of WORK.

1.2 PAY ITEMS

- A. Pay items indicated in the Bid Form are for bidding and contract purposes only. For Lump Sum bid items, required quantities and measurements supplied or placed in the WORK shall be the full responsibility of the CONTRACTOR.

1.3 PAYMENT

- A. Payment includes full compensation for furnishing all required labor, materials, products, tools, equipment, plant, transportation, services, incidentals, erection, application, or installation of all items of the WORK described or required, and all other costs for the items of WORK completed in place.
- B. Payment for Lump Sum and Unit Cost pay items will be in accordance with the General Conditions and Section 00800 - Supplementary General Conditions.

1.4 NON-PAYMENT FOR REJECTED ITEMS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products placed beyond the lines and grades of the required WORK.
 - 4. Products remaining on hand at the completion of the WORK.
 - 5. Loading, hauling, and disposing of rejected products.
 - 6. Overly wet or frozen material.
 - 7. Excavation or fill made for the convenience of the CONTRACTOR for any purpose or reason.

PART 2 - PRODUCTS (Not Used)

PART 3- MEASUREMENT AND PAYMENT

3.1 Incidental Work

- A. Several items of work not specifically covered in the Contract Documents will be considered incidental to the cost of the contract. These items include, but are not limited to the following:
 - 1. Temporary pumping and/or maintenance of service during construction.

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2. Restoration of disturbed areas and final grading to restore the ground to uniform grades.
3. Site Safety.
4. Board Insulation.
5. Other items not specifically called out but otherwise necessary for proper construction.

Surveying and as-built drawings are included with furnishing and installing pipe. These items are not associated with pay items and are considered incidental to other work performed under this contract. No separate payment will be made.

"FM" and "SD" designations below refer to the Force Main and/or the Storm Drain portions of the Bid Forms.

3.2 Bedding and Surfacing Material

- A. Measurement: Measurement for Bedding and Surfacing Material shall be per ton of material placed and compacted as detailed in the typical trench section. Bedding material installed with the sewer pipes, valve vault, manholes, hydrant relocation, encountered utilities, and other items will be paid for with this item. Disposal of unsuitable material is incidental to this item.

When any vehicle delivers to the project bedding, classified fill, backfill, or surfacing material of any kind, or any other material measured by weight, the driver of the vehicle shall give to the inspector a legible "original" computer-generated or machine-printed weight ticket with the following information:

1. Vehicle identification number.
2. License number & associated trailer license number(s).
3. Tare weight of the vehicle(s).
4. Gross weight of the loaded vehicle(s) as registered on the scale.
5. Maximum allowable vehicle weight (MAVW) or legal gross weight of the vehicle(s) as permitted by AMC 9.46.090 or AMC 9.46.100.
6. Sequential ticket number, date, time of weight, pay item in words, and project location.
7. Bid Schedule and Number of Item
8. Pit location and name of scale operator.

The Owner will not pay for that portion of the load in excess of the legal gross weight. Vehicle(s) shall be tared a minimum of once daily by the scale operator. The Engineer may request additional tares to be done at any time the scale is operational. The Engineer may also require that he be present when tares are done. The accuracy of all scales is the responsibility of the Contractor. The Contractor shall maintain scales according to the specifications, tolerances and regulations for commercial weighing and measuring devices contained in the National Bureau of Standards, Handbook 44, as adopted by AS 45.75.050(d).

No adjustment will be made in the unit price of materials if the final installed quantity varies by more than 25% of the bid quantity.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
1(FM & SD)	Bedding and Surfacing Material	ton

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3.3 Backfill Material

- A. Measurement: Measurement for Backfill Material shall be per ton of imported backfill material placed in the trench and compacted as detailed in the typical trench section. Imported backfill will only be required when the excavated materials are unsuitable for backfill as determined by the Engineer. Backfill material installed with the sewer pipe trench, valve vault, manholes, hydrant relocation and other items will be paid for with this item. Disposal of unsuitable material is incidental to this item.

Requirements for measuring the imported material weight and scale tickets are the same as those outlined above for Bedding and Surfacing Material.

No adjustment will be made in the unit price of materials if the final installed quantity varies by more than 25% of the bid quantity.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
2 (FM)	Backfill Material	ton

3.4 Furnish and Install Sewer Pipe

- A. Measurement: Measurement for Furnish and Install Sanitary Sewer Pipe shall be based on the horizontal distances along the centerline of the pipe to center of manholes and bends, from the valve vault to the discharge connection. Measurement will start at the outside face of the existing wetwell and continue through the valve vault.

The unit price bid for Furnish and Install pipe shall include all labor, equipment and materials to install a functional piping system, including but not limited to the following items: trench excavation and backfill; excavation dewatering; trench support system; compaction; installation of pipe, fittings, adapters, joint restraint and other necessary appurtenances; locator ribbon; locator targets; polyethylene encasement; surveying; testing; protecting, bracing and/or shoring of existing utilities; restoration of existing drainage patterns; removal and replacement of existing culverts, fences, landscaping, and other public or private improvements or natural features affected by the work; preparation of as-built drawings; finish grading; and cleanup.

In the event oil contaminated materials are encountered during excavation, the Special Procedure specification requirements apply and payment will be made under that section.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
3 (FM)	Furnish and Install 6" Ductile Iron Sewer Pipe, Class 52	linear foot
2 (SD)	Furnish and Install 24" Ductile Iron Sewer Pipe, Class 52	linear foot

3.5 Construct Valve Vault

- A. Measurement: No measurement will be made. Payment for Construct Valve Vault will be made on a lump sum basis.

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The lump sum price for Construct Valve Vault shall include all labor, equipment and materials to install a complete functional system, including but not limited to the following items: excavation and backfill; excavation dewatering; excavation support system; demolition of existing piping and valves; installation of pipe sections where valves are removed in the existing wet well; installation of a concrete valve vault with ladder, drains and access hatch; installation of pipe, valves, fittings, adapters, joint restraint and other necessary appurtenances; drywell; compaction; surveying; testing; protecting, bracing and/or shoring of existing utilities; restoration of existing drainage patterns; removal and replacement of existing culverts, guardrails, fences, landscaping, and other public or private improvements or natural features affected by the work; finish grading; and cleanup. Imported earthen materials will be paid for separately. Temporary piping and diversion of the existing sewage flows will be considered incidental to this work.

In the event oil contaminated materials are encountered during excavation, the Special Procedure specification requirements apply and payment will be made under that section.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
4 (FM)	Construct Valve Vault	lump sum

3.6 Raise Sanitary Sewer Manhole

- A. Measurement: Measurement will be per each for raising sanitary sewer manholes as shown on the plans.

The unit price for Raise Sanitary Sewer Manhole includes equipment and materials to adjust the manholes, including but not limited to the following items: exposure and evaluation of as-built conditions and required manhole components; excavation and backfill; excavation dewatering; excavation support system; protecting, bracing and/or shoring of existing utilities; removal of existing manhole components including frames, lids, flow inserts, adjustment rings, cones or reducing slabs; installation of new barrel section(s); reinstallation of cone or reducing slab, adjustment rings, frame and lid and flow insert; compaction; and restoration of existing road section. Measurement also includes waterproofing measures and joint sealing as detailed on the drawings.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
5 (FM)	Raise Sanitary Sewer Manhole	each

3.7 Relocate Hydrant and Bollards

- A. Measurement: No measurement of quantities will be made. Imported backfill will be paid for separately.

Relocation of the hydrant and bollards may or may not be required depending on the exposed dimensions once everything is uncovered. Removal and replacement of the bollards will be considered incidental to other work if the hydrant is not relocated. Relocation will not be required if shoring maintains the existing installation. If hydrant relocation is required, the completed product shall comply with the City of Unalaska standard specifications for new hydrants. The Engineer will designate a new location for the hydrant in the event it needs to be relocated.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

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<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
6 (FM)	Relocate Hydrant and Bollards	lump sum

3.8 Stormwater Pollution Prevention Plan

- A. Measurement: No measurement of quantities will be made. This item includes all work associated with Specification 02370 Erosion, Sediment and Pollution Control.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
7 (FM), 11 (SD)	Stormwater Pollution Prevention Plan	lump sum

3.9 Site Mobilization and Demobilization

- A. Measurement: No measurement of quantities will be made. Mobilization and Demobilization includes costs of transporting, mobilizing, and demobilizing all materials, construction equipment, and personnel necessary to complete this project, bonds, and insurance. No measurement of quantities will be made. The measurement will be split so that 50% of the payment is made with mobilization and 50% is made with Demobilization. Demobilization will be paid for after the project is complete and the site is cleaned up and fully restored.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
8 (FM), 12 (SD)	Site Mobilization and Demobilization	lump sum

3.10 Traffic Maintenance

- A. Measurement: No measurement of quantities will be made. Traffic Maintenance includes all signage, flaggers, candles, cones, barricades and other work to perform traffic control in accordance with the 2011 Alaska Traffic Manual (ATM) and Alaska Traffic Manual Supplement (Supplement) effective January 13, 2012. The 2011 Supplement modifies the 2009 Edition of the federal Manual on Uniform Traffic Control Devices (MUTCD).

The ATM is comprised of the Supplement and the federal MUTCD. Signs, pavement markings, traffic signals, and other traffic control devices on public roads in Alaska are required to conform to the ATM (AS 28.01.010(d)). Both documents are necessary to correctly apply traffic control devices in conformance with Alaska statute.

The 2011 Supplement is available at: <http://www.dot.state.ak.us/stwddes/dcstraffic/atmintro.shtml>. The 2009 federal MUTCD is available at: http://mutcd.fhwa.dot.gov/kno_2009.htm.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
9 (FM), 13 (SD)	Traffic Maintenance	lump sum

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3.11 Furnish and Install Storm Drain Manhole

- A. Measurement: Measurement will be per each. Measurement includes demolition and disposal of existing manhole(s), excavation and backfill,
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
3 (SD)	Furnish and Install Storm Drain Manhole, Type I	each
4 (SD)	Furnish and Install Storm Drain Manhole, Type II	each

3.12 Connect to Existing Storm Drain Lines

- A. Measurement: Measurement shall be per each and includes all work necessary to grout the pipes in place for a watertight connection.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
5 (SD)	Connect to Existing Storm Drain Lines	each

3.13 Relocate Waterline

- A. Measurement: Measurement shall be per each and includes all work to relocate the waterlines to get adequate clearances from the new storm sewer pipe.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
6 (SD)	Relocate Waterline, 6" Diameter	each
7 (SD)	Relocate Waterline, 12" Diameter	each

3.14 Install Electrical Conduits

- A. Measurement for Furnish and Install Electrical Conduits shall be based on the horizontal distances along the centerline of the conduits measured end to end.

The unit price bid for Furnish and Install Electrical Conduits shall include all labor, equipment and materials to install a complete system system, including but not limited to the following items: trench excavation and backfill; excavation dewatering; trench support system; compaction; installation of conduits, fittings, adapters, and other necessary appurtenances; locator ribbon; locator targets; end caps; surveying; protecting, bracing and/or shoring of existing utilities; restoration of existing drainage patterns; removal and replacement of existing culverts, fences, landscaping, and other public or private improvements or natural features affected by the work; preparation of as-built drawings; finish grading; and cleanup.

In the event oil contaminated materials are encountered during excavation, the Special Procedure specification requirements apply and payment will be made under that section.

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- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
8 (SD)	Install (2) 6" & (1) 2" Schedule 40 PVC Electrical Conduits	linear foot

3.15 Construct Contaminated Material Containment Cell

- A. Measurement: No measurement of quantities will be made. This item includes surface preparation, construction of the berms, spreading City supplied fabric and liner, and covering the liner and stockpiled materials as detailed. This item also includes covering the cell, managing water, and covering with top liner as detailed in the design. Stockpiling, material management, handling, survey, sampling, and other requirements outlined in Specification 03500 item 3.7 are included with this item. Fencing and signage are included if the alternative site on Willow Drive is used. Payment for imported earthen materials will be made separately. No payment for this pay item will be made in the event there are no surplus contaminated materials to be disposed of. See Bid Item 14 for payment for NOT Constructing the Contaminated Material Containment Cell.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
9 (SD)	Construct Contaminated Material Containment Cell	lump sum

3.16 Special Procedures

- A. Measurement: Measurement for this item includes all Work required by specification section 03500 Special Provisions, except for Work associated with the contaminated material storage cell.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
10 (SD)	Special Procedures (Specification 03500)	lump sum

3.17 Wet Well Piping Replacement

- A. Measurement: No measurement of quantities will be made. Payment for this item includes all Work required to replace the existing 4" diameter pump discharge piping in the existing wetwell, remove the existing piping, install the anode system, patch holes in the wetwell wall and perform other work for a complete workable system.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
10 (FM)	Replace Wet Well Pump Discharge Piping	lump sum

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3.18 Do NOT Construct Contaminated Material Containment Cell

- A. Measurement: The goal of this pay item is to reward the Contractor in the event the Contaminated Material Containment Cell is NOT constructed. The City desires that all contaminated or potentially contaminated materials be placed back into the trench(s) with no surplus materials necessitating construction of the Contaminated Material Containment Cell. This can be accomplished by construction sequencing or widening the trench(s) nearest the ground surface to accept the necessary volumes of contaminated or potentially contaminated materials. Note that contaminated or potentially contaminated materials can be placed in the trench(s) up to within 6" of finished grade provided the quality of the materials is suitable for road surface subgrade as determined by the Engineer. In the event the Contaminated Material Containment Cell is not constructed, the fixed contingent sum listed in the Bid Proposal will be paid to the Contractor. In the event a Contaminated Material Containment Cell is constructed, no payment will be made for this item.
- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
14 (SD)	Do <u>NOT</u> Construct Contaminated Material Containment Cell	contingent sum

3.19 Install Geotextile Fabric

- A. Measurement: Measurement will be made on a per square yard basis for the actual area of flat ground surface covered. Payment will be made for the area covered based on horizontal measurement. No payment will be made for overlap, sideslopes or increases from an irregular surface area.

Geotextile fabric will be installed if the character of the excavated backfill necessitates the fabric to separate the subgrade from the surfacing material as directed by the Engineer. Fabric shall be installed with suitable overlap to maintain complete coverage. Fabric shall be separation fabric meeting the requirements of Section 729 of the State of Alaska Standard Specifications for Highway Construction.

- B. Basis of Payment: Payment for this work shall be in accordance with the General Conditions and shall include full payment for all work described. Payment will be made under the following Units:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
15 (SD)	Install Geotextile Fabric	square yard

END OF SECTION

PART 1 – GENERAL

1.1 SUMMARY

- A. The Contractor must be or subcontract an environmental consultant to complete the Environmental Work. The Environmental Work is located within an ADEC listed Contaminated site with heavily Contaminated soil and groundwater including separate phase fuel. The Environmental Work must occur concurrently with the Work at a time when precipitation and seasonal groundwater levels are low enough to prevent saturation of excavations with precipitation runoff and/or groundwater to avoid excavation dewatering.

The Environmental Work objectives are to safely and properly handle, minimize, segregate, store, decontaminate, dispose, document, and report in accordance with ADEC approvals previously obtained by the Owner. The Contractor must, in accordance with the specifications set forth below, furnish all directly referenced or incidental labor, training, management, facilities, supplies, equipment, transportation, and material (other than those to be furnished by the Owner), and do all things necessary for, or incidental to, performance of the Environmental Work.

1.2 RELATED DOCUMENTS AND REFERENCES

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- B. Related Sections: The following sections contain requirements that relate to this section.
1. 02200 Earthwork
 2. 02370 Erosion, Sediment and Pollution Control
- C. Related Owner Reports: The following ADEC approved reports for the Environmental Work are by the Owner. Unless noted otherwise; they are for reference, and are required to be reviewed prior to bid but are not a part of the contract documents. Refer to the City of Unalaska webpage for copies during bid: <http://www.ci.unalaska.ak.us/rfps>
1. February 29, 2012. City of Unalaska. *Work Plan for Ilulak Lake/East Point Roads & Delta Way*. Unalaska, Alaska.
 2. September 11, 2012. City of Unalaska. *Characterization Report and Work Plan Addendum for Ilulak Lake/East Point Road & Delta Way*. Unalaska, Alaska.
 3. March 3, 2014. City of Unalaska. *Waste Management Work Plan Addendum for Ilulak Lake/East Point Road & Delta Way*. Unalaska, Alaska.
 4. April 24, 2014. City of Unalaska. *City of Unalaska – Ilulak Lake/East Point Road & Delta Way Addendum*. Unalaska, Alaska.
- D. Related Responsible Party Reports: The following is a partial list of historical reports by responsible parties. Unless noted otherwise; they are for reference, and are required to be reviewed prior to bid but are not a part of the contract documents. Refer to the City of Unalaska webpage for copies during bid: <http://www.ci.unalaska.ak.us/rfps>
1. Chevron 2009. Stantec Consulting Corporation for Chevron Environmental Management Company. *Annual Area Wide Groundwater Monitoring and Operations & Maintenance Report – 2009*. Rocky Point Management Area, Dutch Harbor, Unalaska, Alaska.

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2. Chevron 2013. Stantec Consulting Corporation for Chevron Environmental Management Company. *Annual Area Wide Groundwater Monitoring and Operations & Maintenance Report – 2012*. Rocky Point Management Area, Dutch Harbor, Unalaska, Alaska.
 3. USACE 2005. Jacobs Engineering Group Inc. for USACE. *2005 Report Modeling of Groundwater Flow and Bunker C Oil Migration. Pre-World War II Tank Farm, Amaknak Island, Alaska. Total Environmental Restoration Contract No. DACA 85-95-D-0018 Task Order No. 2.*
 4. USACE 2006. *2006 Contamination Delineation at Pre-WWII Tank Farm Amaknak Island F10AK0841.*
 5. USACE 2009. AECOM Technical Services for USACE, 2009. *FINAL 2009 Groundwater Monitoring Program Report, Amaknak Pre-WWII Tank Farm Contract No. W911KB-08-D-0004 Task Order 0007 FUDS Property No. F10AK084103.*
 6. USACE 2013. Fairbanks Environmental Services for USACE. *Final Groundwater Monitoring Report, Amaknak Pre-WWII Tank Farm Formerly Used Defense Site, Property #: F10AK0841-03, USACE Contract W911KB-08-D-0003 Task Order 25.*
- E. ADEC Publications: The publications listed form part of this Specification to the extent applicable. The publications are referred to in the text by basic designation only. The most recent version of the publication is applicable in all cases. Refer to the ADEC website for copies:

<http://dec.alaska.gov/spar/guidance.htm>

1. 18 AAC 75 *Oil and Other Hazardous Substances Pollution Control*
2. *ADEC Draft Field Sampling Guidance.*
3. *ADEC Laboratory Data Review Checklist.*
4. *ADEC Policy Guidance on Developing Conceptual Site Models.*
5. *ADEC Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites.*
6. *ADEC Technical Memorandum – Environmental Laboratory Data and Quality Assurance Requirements.*
7. *ADEC Technical Memorandum – 08-001. Guidelines for Data Reporting, Data Reduction, and Treatment of Non-Detect Values.*

1.3 DEFINITIONS

- A. AAC means Alaska Administrative Code which refers to laws of the State of Alaska which contain the regulations of the various State of Alaska agencies.
- B. ADEC means Alaska Department of Environmental Conservation Division of Spill Prevention Response Contaminated Sites Program which is the authority having jurisdiction over the Environmental Work.
- C. API means American Petroleum Institute.
- D. Approved Facility means a waste disposal facility approved by the EPA and/or the State of Alaska.
- E. BTEX means benzene, toluene, ethylbenzene, and total xylenes.
- F. CFR means Code of Federal Regulations.
- G. Clean Fill means soil that has been pre-characterized by the Owner and may be excavated and beneficially re-used offsite. Any of this soil that exhibits visual and/or olfactory evidence of contamination must instead be treated as Contaminated.
- H. CoC means chain of custody.
- I. Contaminated means soil or other media which is known or suspected to contain GRO, DRO, RRO, BTEX, and PAHs concentrations in excess of 18 AAC 75.340 Table B1 and/or B2 Method 2

Migration to Groundwater in the over 40 inch Precipitation Zone clean up levels and 18 AAC 75.345 Table C Groundwater Cleanup Levels.

- J. Contaminated Soil Stockpile means excess excavated soil which at the Owner's discretion cannot reasonably be backfilled into the excavation and is segregated by degree of Contamination within an off-site Contaminated Material Storage Cell.
- K. DRO means diesel range organics.
- L. Environmental Work means the portion of the Work referenced in this specification section.
- M. Excavation Stockpile means excavated materials from limits defined in the Drawings which are conditionally stockpiled on the side of the excavation and backfilled into the excavation.
- N. GRO means gasoline range organics.
- O. Ground Water Level means the piezometric level of the groundwater as determined from measurements within excavations and monitoring wells in relation to the Drawing elevations.
- P. HASP means health and safety plan per OSHA requirements.
- Q. HAZWOPER means 24 or 40 hour hazardous waste operations and emergency response training as defined by OSHA CFR 1910.120(e)(3) and includes annual refresher and supervisor training.
- R. Contaminated Material Storage Cell means the earthwork and liner materials used to encapsulate the Contaminated Soil Stockpile.
- S. Oily Waste means investigation derived waste with detectable visual and/or olfactory evidence of Contamination including but not limited to oil stains, oily mud, and fuel odor.
- T. OSHA means Occupational Safety and Health Administration.
- U. PAHs mean polynuclear aromatic hydrocarbons.
- V. PID photo ionization detector.
- W. PPE means personal protective equipment.
- X. Professional Engineer means an Alaska registered professional engineer employed by the environmental consultant who also meets the same requirements as the Qualified Person.
- Y. Project Laboratory is an ADEC approved laboratory.
- Z. Qualified Person means a person who is approved by ADEC, employed by the environmental consultant, and actively practices environmental science or engineering, geology, physical science, hydrology, or a related field in Alaska and who has the following minimum education and experience: a bachelor's degree or equivalent from a nationally or internationally accredited postsecondary institution in environmental science or engineering, geology, hydrology, physical science, or a related field;; and at least 3 years of continuous professional experience in 18 AAC 75 ADEC regulated contaminated sites completed after the degree was obtained. The person must specialize in contaminated sites and working with contaminated waste.
- AA. RCRA means Resource Conservation and Recovery Act.
- BB. Responsible Party means the individual(s) or organization(s) held responsible for cleanup of a contaminated site.
- CC. RRO means residual range organics.
- DD. TCLP means toxicity characteristic leaching procedure.
- EE. US DOT means United States Department of Transportation.
- FF. USACE means United States Army Corps of Engineers.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Perform Environmental Work in accordance with applicable requirements of authorities having jurisdiction.


1.5 PROJECT CONDITIONS

- A. The groundwater elevations must be assessed and verified prior to mobilization and coordinated throughout the duration of the Work and Environmental Work such that excavation dewatering is not necessary.
- B. Groundwater elevations are transient and are tidally influenced as well as highly sensitive to precipitation. **Figure 1** and **Figure 2** show approximate historical groundwater level information based on a partial review of historical reports and other information provided by Chevron and USACE.
- C. Protection of Persons and Property: Create and maintain a physical exclusion zone around the Environmental Work per OSHA regulations.
- D. Do not track Contamination outside of the excavation and Excavation Stockpile limits.

1.6 SUBSURFACE AND PREVIOUS INVESTIGATIONS

- A. See Drawings, Related Owner Reports, and Related Responsible Party Reports. The Bidder shall make their own deductions and conclusions as to the nature of the materials to be excavated and exposed, the difficulties of making and maintaining the required products, the difficulties that may arise from the Contaminated subsurface conditions, and any other work affected by the Contaminated conditions, and accept full responsibility for the Environmental Work thereof.

1.7 SUBMITTALS

- A. The name of the environmental consultant and the resume(s) of the Qualified Person and Professional Engineer in responsible charge including their work experience history. Obtain Owner approval and then obtain and submit written ADEC Contaminated Sites Program site project manager notification and approval before starting Environmental Work.
- B. Before start of Environmental Work a site specific HASP for Owners records, not for review, and  HAZWOPER training certificates with current 8 hour HAZWOPER refresher certificates. HAZWOPER training certificates are required by all Contractor employees doing work on this project.
- C. ADEC approved Project Laboratory if SGS North America is not used and written evidence of ADEC approval.
- D. Bentonite/Sand Seal plan, installation details, mix design, and manufacturer specifications of components.
- E. Decontamination plan, details, and system with manufacturer specifications.
- F. Investigation Derived Waste Management plan and flow chart.
- G. Following Storage Cell characterization and within 4-weeks of receipt of laboratory analytical results, submit a *Storm Drain Installation, Storage Cell Characterization, and Investigation Derived Waste Management Report*. The report must describe the Environmental Work in accordance with ADEC Publications. Following Owner approval obtain and submit ADEC approval. At a minimum include:
 - 1. Cover page stamped by a Professional Engineer.
 - 2. Statement verifying the qualifications of the Qualified Person and the Professional Engineer.
 - 3. Acknowledgement of Owner Related Reports.
 - 4. Site description and background.
 - 5. Narrative description of fieldwork described in these specifications including Owner Related Report deviations, chronology, and photolog.
 - 6. Storage Cell as-built drawings.
 - 7. Results and findings including tabularized field data, tabularized laboratory data, laboratory reports, and quality assurance summary.
 - 8. Assessment of data quality including ADEC's *Laboratory Data Review Checklist*; and

9. Conclusions and recommendations including whether the Contaminated Material Stockpile and/or segregated portions separately are Contaminated or eligible for beneficial reuse as Clean Fill.
10. Decontamination rinsate treatment records.
11. Waste summary and inspection records.
12. Onsite treatment and disposal of decontamination rinsate logs.
13. Field sampling forms, logs, CoC documentation, and laboratory reports.
14. Transportation and offsite disposal documentation, including the following:
 - a. Transportation logs.
 - b. Copies of the profiles and associated characterization data.
 - c. The transporter signed manifest as well as the fully executed manifests.
 - d. Designated offsite facility waste receipts and/or certificates of disposal or destruction.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. Bottom Liner means a liner that meets the specifications of Table D of 18 AAC 75.370 for short-term storage of petroleum-contaminated soil (less than 180 days).
- B. Bentonite means ultrafine natural clay whose principal mineral constituent is sodium cation montmorillonite which meets API Standard 13A API Specifications for Oil-Well Drilling-Fluid Materials.
- C. Bentonite/Sand Seals consist of an admixture of 3% powdered bentonite to dry Sand by weight with 25-40% moisture content added and mixed prior to placement until all clods are broken down and all Sand particles are coated in slurry.
- D. Carbon Drum means a Drum type Granular Activated Carbon liquid phase adsorber vessel which is plumbed and rated by the manufacturer for service conditions. Acceptable manufacturers include Tigg, Siemens, Calgon, or EnviroSupply.
- E. Containment means a leak tight Rain4Rent Standard SpillGuard temporary spill Containment berm with a floor protected above and below with Layfield LP 16 non-woven geotextile fabric and 6-inches of Surfacing Material below.
- F. Storage Cell is as shown in the Drawings.
- G. Drum means new or reconditioned US DOT approved 55 gallon open top steel Drum.
- H. Excavation Stockpile means excavated soil and rock placed on the Bottom Liner and covered with the Top Liner which must be re-emplaced into the excavation as Unclassified Backfill.
- I. Granular Activated Carbon means a minimum of 200-pounds of 8x30 to 12x40 virgin acid washed coconut-shell carbon recommended for liquid phase treatment of dissolved phase hydrocarbons by the manufacturer. Minimum iodine number of 1,000 mg/g.
- J. Oil Sorbent Boom means a hydrophobic oil only sorbent boom designed by the manufacturer to be compatible with petroleum based liquids and lubricants employing a polypropylene filler and nylon outer mesh.
- K. Oil Sorbent Pad means a hydrophobic oil only sorbent pad designed by the manufacturer to be compatible with petroleum based liquids and lubricants employing polypropylene materials.
- L. SAP/QAP means Sampling Analysis Plan and Quality Assurance Procedures in accordance with ADEC requirements.
- M. Sediment Filter means 10 micron 30% efficiency sediment filter.
- N. Top Liner means 6 mil woven or reinforced polyethylene liner.
- O. Plastic Bags means 10 mil clear low density polyethylene Drum liners.
- P. Project Detergent means Simple Green, Citrosol, or Alconox.

PART 3 - EXECUTION

3.1 QUALIFICATIONS

A. General:

1. During the execution of the Environmental Work, the Contractor shall provide full time professional supervision and quality control to assure the accuracy, quality, completeness, and progress of the Environmental Work.
2. The Contractor must plan, perform, document, and report on the Environmental Work under the field supervision and direction of a Qualified Person. The Qualified Person must advise the Contractor; and witness and document all Environmental Work.
3. The Qualified Person must be directly supervised by a Professional Engineer registered in Alaska, who must be in responsible charge of the Environmental Work under 12 AAC 36.990 (36).

3.2 HEALTH AND SAFETY

A. General:

1. As required by OSHA "Hazardous Waste Operations and Emergency Response" guidelines 29 CFR 1910.120 and OSHA 29 CFR 1926.65, prepare and comply with a site specific HASP and follow HAZWOPER training requirements.

3.3 GROUNDWATER LEVEL GAUGING

A. General:

1. Locate and gauge the groundwater water levels in adjacent USACE monitoring wells MW-2, MW-8R, and MW-19.

<u>Monitoring Well</u>	<u>Easting</u>	<u>Northing</u>	<u>Top of Casing Elevation</u>
MW-2	5316369.40	1189374.29	13.13
MW-8R	5315984.91	1189557.66	13.66
MW-19	5316135.56	1189628.21	13.24

2. The monitoring wells are located on private property for which the Owner **will obtain** temporary access. Coordinate access with property owner and/or their lessee.
3. The static water levels and/or free fuel thickness inside the monitoring wells must be measured by lowering an electronic water level indicator into each monitoring well until the instrument indicates the groundwater surface has been encountered.
4. A water level or interface probe cannot be used if there is viscous oily fuel floating in the monitoring well. In that case, an optical measurement device or a sterile disposable string and weight system must be used to gauge the monitoring well.
5. Do not contaminate or cross contaminate monitoring wells. Before, between wells, and after monitoring well gauging, the gauging equipment must be properly disposed of and/or decontaminated. The well plug and lock must be replaced and secured and the vault lid refastened with proper bolts so as to prevent surface water intrusion into the wells.

3.4 MITIGATION OF PREFERENTIAL PATHWAYS FOR OILY WATER

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- A. General: Bentonite/Sand Seals prevent abandoned storm drain piping and new storm drain pipe Bedding Material from transporting water.
1. Excavation water and other subsurface liquids and materials must be blocked from entering the new storm drain lines or existing storm drain lines by temporarily sealing upstream ends during construction.
 2. Bentonite/Sand Seals are required around the new storm drain pipe at locations shown in the Drawings. Bentonite/Sand Seals must be a minimum of 1-foot hydrated thickness Bentonite/Sand mixture extending for a minimum of the width of the trench, and from the base of the trench to at least 6-inches above the top of pipe or 5-feet below ground surface, whichever is closest to ground surface.
 3. At locations shown in the Drawings completely fill a minimum 3-feet long pipe section at each abandoned pipe end with a Bentonite/Sand seal. Following installation of the seals the pipe ends must also be crushed. After installation of the Bentonite/Sand seals and pipe end crushing an exterior Bentonite/Sand Seal must be installed over the crushed end. The crushed end Bentonite/Sand Seals must be a minimum of 1-foot hydrated thickness and must extend for a minimum of 1-foot in all directions beyond the cut.

3.5 SEGREGATION, STOCKPILING, AND BACKFILL OF CONTAMINATED SOIL

A. General:

1. Segregate excavated material taken from selected locations shown in the Drawings. In selected locations:
 - a. Re-use all Contaminated or Potentially Contaminated soil as Unclassified Backfill unless the Owner approves construction of the Storage Cell.
 - b. Where indicated on the Drawings as Contaminated or Potentially Contaminated Soil, excavated materials removed from locations shallower than 4 feet below ground surface must be used as Unclassified Backfill material.
 - c. Where indicated on the Drawings as Clean Fill, excavated materials removed from locations shallower than 4 feet below ground surface must be immediately removed for beneficial reuse to a location determined by the Owner within 6 miles of the Site.
2. Do not mix or allow contact between Contaminated or Potentially Contaminated Soil and Clean Fill.
3. Store all Contaminated or Potentially Contaminated Soil in the Excavation Stockpile.
4. Contaminated or Potentially Contaminated Soil must not be used as Unclassified Backfill more than 200 feet from the original excavation location unless they pass field screening. Field screen with a PID meter at a rate of 1 screen per 10 cubic yards in accordance with the SAP/QAP from the adopted *Work Plan for Ilulak Lake/East Point Roads & Delta Way*. Soil which screens less than 20 ppmv passes and may be moved and used as Unclassified Backfill within the excavation more than 200 feet from the original location.
5. All backfill above 4 inches below ground surface must be clean Surfacing Material.

3.6 EXCAVATION STOCKPILE

- A. The Excavation Stockpile is composed of all excavated materials which are Contaminated or Potentially Contaminated Soil and are to be re-emplaced in the excavation as Unclassified Backfill.

1. The Excavation Stockpile must be handled as Contaminated or Potentially Contaminated Soil regardless of appearance.
2. Prevent Contaminated or Potentially Contaminated Soil from contacting the ground and/or surface water outside the excavation.
3. The Excavation Stockpile must be installed on a temporary Bottom Liner located next to the excavation.
4. The Bottom Liner must be installed on positively sloped Surfacing Material that contains and drains all liquids which contact the Bottom Liner directly into the excavation.
5. The Surfacing Material beneath the Bottom Liner must be shaped and bermed with sufficient freeboard to prevent surface water from contacting the Excavation Stockpile and to prevent any other materials from sloughing or flowing from the Excavation Stockpile outside of the excavation.
6. The Bottom Liner must not be torn and/or punctured. Use Surfacing Material, geotextile fabrics, or other materials as needed.
7. The Excavation Stockpile must be covered with the Top Liner by the end of each work day. The Top Liner must be in good condition and secured against wind and precipitation at all times.
8. The Top Liner must overlap the Bottom Liner so that precipitation runoff is directed off of the Bottom Liner and does not pool on the Top Liner.

3.7 CONTAMINATED MATERIAL STOCKPILE AND STORAGE CELL

A. The Contaminated Material Stockpile and Storage Cell must only be constructed and used if Contaminated or Potentially Contaminated soil cannot be re-emplaced into the excavation as Unclassified Backfill:

1. The Contaminated Material Stockpile and Contaminated Material Storage Cell must be constructed as shown in the Drawings.
2. The Contaminated Material Stockpile must be installed inside the Contaminated Material Storage Cell near the City of Unalaska Landfill or Willow Drive on a location determined by the Owner that is greater than 100 feet from surface water.
3. The Contaminated Material Stockpile and Contaminated Material Storage Cell must be covered with a temporary Top Liner by the end of each work day. The Top Liner must be maintained and secured against damage, wind, and precipitation at all times.
4. The Top Liner must be lapped over the Contaminated Material Stockpile and Contaminated Material Storage Cell so that precipitation runoff is directed out of the Contaminated Material Storage Cell and does not pool on the Top Liner.
5. Each load sent to the Contaminated Material Storage Cell must be evaluated and managed so that grossly Contaminated material identified by olfactory evidence and appearance (sheen, oily appearance, globules of oil, etc.) is segregated to one side of the Contaminated Material Storage Cell with separation from apparently cleaner material provided by minimum Bottom Liner material.
6. Following completion of the Contaminated Material Stockpile, it must be topographically surveyed for volume calculation and opened for soil sampling.
7. Confirmation samples of the Contaminated Material Stockpile segregated units must be collected in accordance with ADECs *Draft Field Sampling Guidance*, the SAP/QAP in the *Work Plan for Iluluaq Lake/East Point Roads & Delta Way*, and the table below.

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Table - Contingency Stockpile Soil Sample Collection

By Volume (cubic yards)	# of Screening Samples	# of Laboratory Samples
0-10	5	1
11-50	5	2
51-100	1 per 10 cubic yards	3
More than 100	1 per 10 cubic yards	3, plus 1 sample per each additional 200 cubic yards

8. Confirmation soil samples must be analyzed for GRO by method AK101, BTEX by EPA method 8021, PAHs by EPA method 8270D, DRO by method AK102, and RRO by method AK103 as shown in the table below.

Table - Contingency Stockpile Analytical and Sample Requirements (Soil)

Method	Matrix	Container (jars)	Preservative	Hold time
AK101/EPA 8021 (GRO/BTEX)	Soil	(1) 4-oz amber wide mouth jar with septa lid	Methanol, Temperature 4 °C +/- 2 °C	14 days
AK102/AK103 (DRO/RRO)	Soil	(1) 4oz amber wide mouth jar	Temperature 4 °C +/- 2 °C	14 days
EPA 8270D (PAHs)	Soil	(1) 4oz amber wide mouth jar	Temperature 4 °C +/- 2 °C	7 days

9. On completion of sampling, the Contaminated Material Storage Cell must be closed and secured per the Drawings and returned to the Owner.
10. Within 12 months of closure the Owner will be responsible to develop and implement a plan for disposal of the Contaminated Material Stockpile with ADEC concurrence and to characterize the under cell soil in accordance with 03500 3.8(D) 5 through 7 and these Specifications.

3.8 INVESTIGATION DERIVED WASTE MANAGEMENT

- A. General: Investigation derived waste must be handled in accordance with these specifications. Minimize quantities, segregate waste by apparent Contamination levels, and properly recycle or dispose of all. The expected waste streams are as follows:
1. Excavated materials are described in previous sections.
 2. Disposable or recyclable equipment and materials.
 3. Decontamination rinsate and incidental rainwater captured by Containment.
- B. Based on historical information, knowledge of processes, and past activities by others, the generation of RCRA hazardous waste by this project is unlikely and must be avoided. Free fuel encountered during decontamination activities is expected to be less than the 40 CFR 261.5 small quantity generator exemption of less than 100 kilograms per month.

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1. Where required, composite samples must be collected and analyzed for waste profiling of used equipment and/or materials as either hazardous or non-hazardous based on EPA, RCRA, and ADEC regulations.
 2. During storage, Drums used to contain waste must be labeled with Drum label stickers for “pending analysis”, “non-hazardous waste”, or as required by RCRA for hazardous materials. At a minimum the labels must be pre-manufactured for this purpose, rated for outdoor use, be legible, be visible, and at a minimum contain the following information:
 - a. Date of generation.
 - b. Contents description.
 - c. Site identification.
 - d. Project contact number.
 - e. Name and telephone of designated or emergency contact.
 3. Used disposable equipment and materials exposed to Contamination must be segregated within separate plastic bag lined Drums based on whether they are Oily or non-Oily Waste.
 4. Drums of used disposable equipment, lined with Plastic Bags, do not need to be stored in additional Containment as the plastic bag liner and drum system act as secondary containment.
 5. Drums containing non-Oily Waste must have labels annotated “non-Oily Waste” and Drums containing Oily Waste must have labels annotated with “Oily Waste”.
- C. Following field activities the Drum contents must be profiled as necessary, properly labeled, and disposed of at an Approved Facility.
1. Non-Oily Waste may be disposed of at the City of Unalaska Class I Municipal Solid Waste Landfill. Landfill must be notified of delivery and has right of inspection and refusal.
 2. Used oil sorbent materials must be classified as Oily Waste. They may either be profiled and transported off-island for disposal at an Approved Facility or disposed of by incineration in an ADEC approved safe ash burner.
 3. Sediment Filters must be classified as Oily Waste. They may either be profiled and transported off-island for disposal at an Approved Facility or disposed of by incineration in an ADEC approved safe ash burner.
 4. Granular Activated Carbon must be profiled as necessary and recycled off-island at an Approved Facility.
 5. All other Oily Waste must be properly transported off-island and disposed of at an Approved Facility as determined by the profiling results.
- D. Containment: Drums of decontamination rinsate and any water treatment equipment or conveyance must be stored, operated, and maintained within Containment or approved over pack Drums.
1. The Containment and Drums must be located within 200 feet of the excavation and not closer than 100 feet to surface water.
 2. The Containment must not leak. Use all additional measures and equipment or materials necessary to prevent leakage.
 3. The soils beneath Containment must be screened and sampled once before installation. If Containment fails hydrostatic testing before commissioning, repairs must be made and retesting performed until it passes. The soils beneath Containment will be re-screened and re-sampled following decommissioning only if the Containment fails final hydrostatic testing. Soil samples will be collected from a decision unit comprising the area under the Containment 0.5 to 1 foot below ground surface.

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4. Hydrostatic testing will consist of a 2-hour leak integrity test. The Containment will be filled with potable water to the highest level possible during hydrostatic testing.
 - a. If after 2-hours the water level has not dropped more than 1/8-inch the Containment passes.
 - b. If after 2-hours the water level has dropped more than 1/8-inch the Containment fails.
5. Personnel will field screen soils with the PID, in accordance with pages 9-10, of ADEC's May 2010 *Draft Field Sampling Guidance*. Confirmation samples must be collected in accordance with ADEC's *Draft Field Sampling Guidance*, the SAP/QAP in the *Work Plan for Ilulak Lake/East Point Roads & Delta Way*, and the table below.

Table – Containment Soil Sample Collection Frequency

Surface Area (square feet)	# of Screening Samples	# of Laboratory Samples
0-50	5	2
51-124	5	3
125-250	1 per 25 sq ft	3
More than 250	10 plus 1 per additional 100 sq ft.	3 plus one sample for each additional 250 sq ft

6. Field screens and confirmation samples must be biased towards visual and olfactory evidence of contamination and extra confirmation samples must be collected from the location of any leaks or tears in the Containment. If no evidence is apparent, remaining sample locations must be randomly selected from a grid of at least 100 increments.
7. Confirmation soil samples must be analyzed for GRO compounds by method AK101, BTEX by EPA method 8021B, PAHs by EPA Method 8270D, DRO by method AK102, and RRO by method AK103 as shown in the table below.

Table – Containment Soil Sample Analytical Methods and Sample Requirements

Method	Matrix	Container (jars)	Preservative/Extraction	Hold time
EPA 8021B (BTEX)	Soil	(1) 4-oz amber wide mouth jar with septa lid, shared with GRO	4 degrees C / Methanol	14 days
AK101 (GRO)	Soil	(1) 4-oz amber wide mouth jar with septa lid, shared with BTEX	4 degrees C / Methanol	14 days
AK102/AK103 (DRO/RRO)	Soil	(1) 4oz amber wide mouth jar	4 degrees C.	14 days
EPA 8270D (PAHs)	Soil	(1) 4oz amber wide mouth jar	4 degrees C.	7 days

E. Decontamination Methods. Decontaminate or properly dispose of all equipment which comes in contact with Contamination. Follow at least one of the 3 decontamination options below.

1. Option #1 – Dry Decontamination Methods

- a. Non-disposable equipment such as hand tools, excavator buckets, loader buckets, and others must be decontaminated using dry decontamination techniques. Dry decontamination techniques include brushing, wiping with Oil Sorbent Pads, and wiping with other hand tools to remove visible and olfactory evidence of Contamination. A Project Detergent may be used during dry decontamination so long as no free liquid is generated.
- b. Dry decontamination must be considered complete when a clean Oil Sorbent Pad wiped against the equipment does not pick up an oily stain.
- c. Soils generated during dry decontamination must be collected in buckets or tarps and re-emplaced into the excavation.

2. Option #2 – Onsite Treatment and Disposal of Decontamination Rinsate.

- a. Non-disposable equipment must be decontaminated using high pressure water and/or steam, a project detergent, and scrubbing inside Containment. Liquid generated during decontamination must be considered Contaminated and may be composed of free fuel, water containing dissolved fuel, or incidental rain water which falls into the Containment.
- b. Follow the conditions of the *Waste Management Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way Attachment E Manual Treatment System Flow Diagram*. This a minimum treatment system design and the Contractor is responsible for performance of the treatment system and all improvements needed to address field conditions and to meet the monitoring standards.
- c. The Granular Activated Carbon must be pre-soaked for 24 hours with potable tap water prior to use. The purpose is to settle the granules and prevent short circuiting of water i.e. treatment bypass.

3. Option #3 – Off-Island Disposal of Decontamination Rinsate

- c. Non-disposable equipment must be decontaminated using high pressure water and/or steam, a project detergent, and scrubbing inside Containment. Liquid generated during decontamination must be considered Contaminated and may be composed of free fuel, water containing dissolved fuel, or incidental rain water which falls into the Containment.
- d. Decontamination rinsate and any floating separate phase Contamination must be profiled and disposed of at an Approved Facility.
- e. Any rainwater which collects in the Containment and does not exhibit an oily sheen can be discharged within the storm drain installation excavation where it must infiltrate more than 100 feet from Iliuliuk Bay. If an oily sheen is exhibited, the rainwater must be disposed of as decontamination rinsate.

F. Offsite Shipping

1. Hazardous or non-hazardous wastes or recyclable materials must be transported in accordance with industry standards, state(s), and federal regulations.
2. Prior to offsite disposal of any waste, an approval package for each waste stream being shipped must be prepared. This package must include a waste profile naming the Owner as the generator of the waste, analytical summary table(s) applicable to the waste, land disposal restriction

notification for any hazardous wastes, a completed waste manifest (when possible), and any other applicable information necessary for a responsible person representing the Owner to complete review of the disposal package and sign as the generator.

3. The signed profile must then be submitted to the designated offsite facility operator for acceptance and approval. Once the approval letter is received from the designated facility operator, transportation can be scheduled. RCRA hazardous wastes must be transported using a uniform hazardous waste manifest and must be manifested separately from non-RCRA wastes. Where allowed by law, some non-hazardous wastes can be shipped on a bill-of-lading only.
 4. Wastes (hazardous or non-hazardous) that cannot be recycled or otherwise used must be manifested to an Approved Facility. An Approved Facility notification/certification is required for hazardous wastes. This form also requires the Owner's responsible person's signature and submission to the designated facility.
- G. Shipping Manifests: Hazardous and non-hazardous materials, substances, or wastes identified for handling and removal from the site must be packaged, labeled, marked, and manifested according to applicable state and federal regulations (40 CFR 263). The Owner will sign the manifest after verifying its accuracy and completeness. The original generator copy of the hazardous waste manifest, signed by transporters and the Approved Facility, and certificates of disposal, destruction, and/or treatment must be provided to the Owner.
1. The manifest form must also include the following information:
 - a. Transporter information including name, address, contact name and the telephone number, and EPA ID number.
 - b. Designated facility information including name, address, telephone number, and EPA ID number.
 - c. Site name including street and mailing address (if different).
 - d. DOT proper shipping name.
 - e. Type and number of containers.
 - f. Quantity of waste (volumetric estimate).
 - g. Profile reference number.
 - h. 24-hour emergency phone number.
 1. Document the following::
 - a. Obtaining necessary profiles.
 - b. Preparing exception reports when required by 40 CFR 262.42 and 40 CFR 761.215.
 - c. Preparing Land Disposal Restriction Notification forms (required for hazardous waste).
 - d. Confirming that the waste (both hazardous and non-hazardous) is ultimately disposed of at the Approved Facility.
 - e. Hazardous and non-hazardous wastes must be manifested separately. Provide ADEC a copy of the manifest within the time limit specified by 18 AAC 60 and 62.
 - f. Sign the manifest prior to a load of waste leaving the site. The original signed manifest must be returned to the Owner.
 - g. If a signed hazardous waste manifest from the designated facility is not received within 35 days, contact the transporter or the designated facility to determine the status of the waste. If the signed hazardous waste manifest has not been received within 45 days, issue an exception report to the State of Alaska, as required under 40 CFR 262.42.

H. Transportation.

**SEWAGE LIFT STATION #3 FORCE MAIN REPLACEMENT -
DELTA WAY STORM DRAIN**

**DIVISION 1
SITE WORK
Section 03500
SPECIAL PROCEDURES**

1. Only subcontractors licensed for commercial transportation may transport non-hazardous wastes.
2. If wastes are hazardous, the transporter must have an EPA identification number, and must comply with transportation requirements outlined in 49 CFR 171-179 (DOT) and 40 CFR 263.11 and 263.31 (Hazardous Waste Transportation).
3. Weights must be recorded on the waste manifest as necessary.

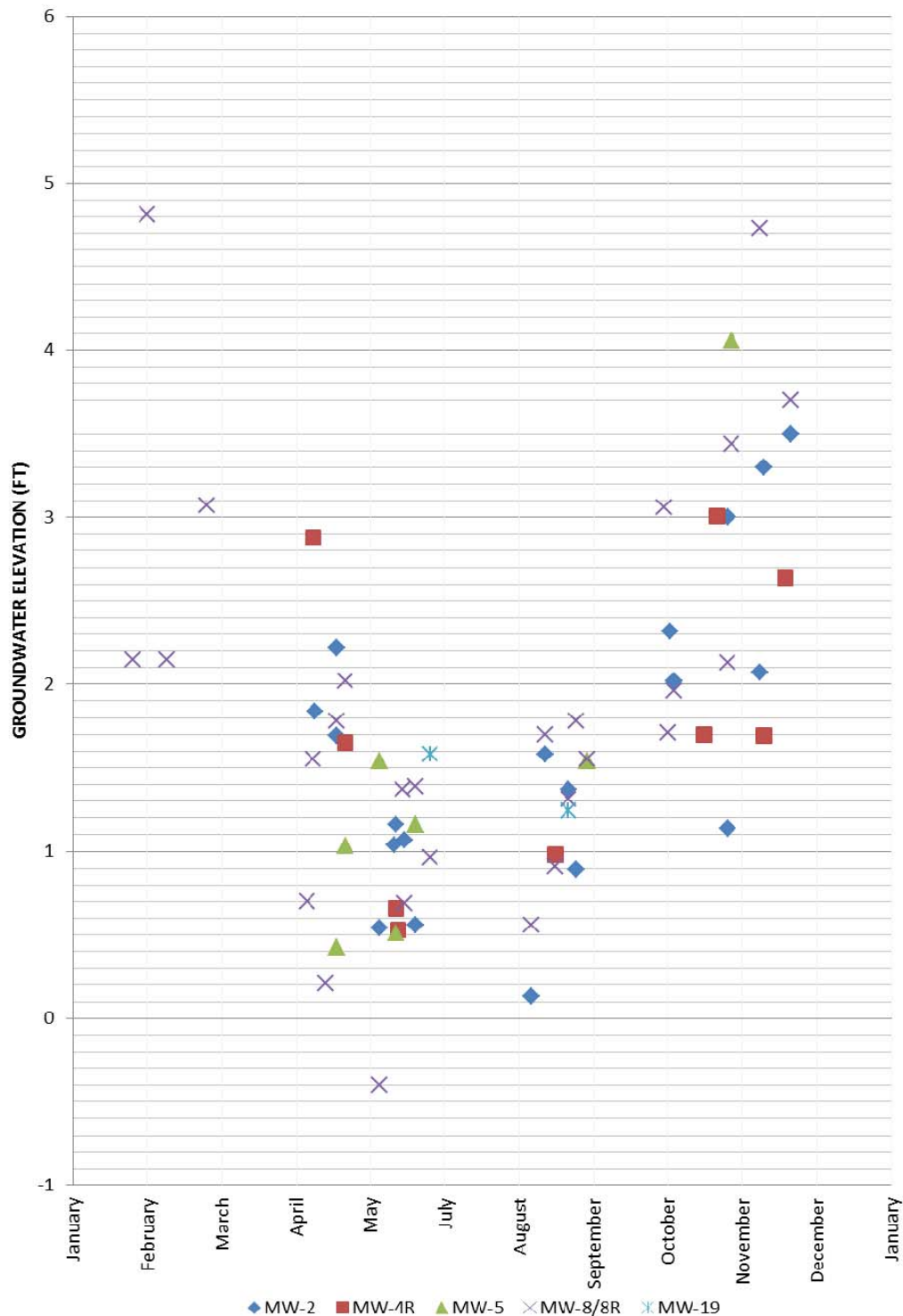
3.9 QUALITY CONTROL

1. Quality Control Testing During Construction: Allow Engineer to inspect the Environmental Work; however, satisfaction of the requirements of the authority having jurisdiction is the sole responsibility of the Contractor. The Engineers inspection will in no way relieve the Contractor of the responsibility of performing tests necessary to meet the Construction Quality Control requirements.

SEWAGE LIFT STATION #3 FORCE MAIN REPLACEMENT -
DELTA WAY STORM DRAIN

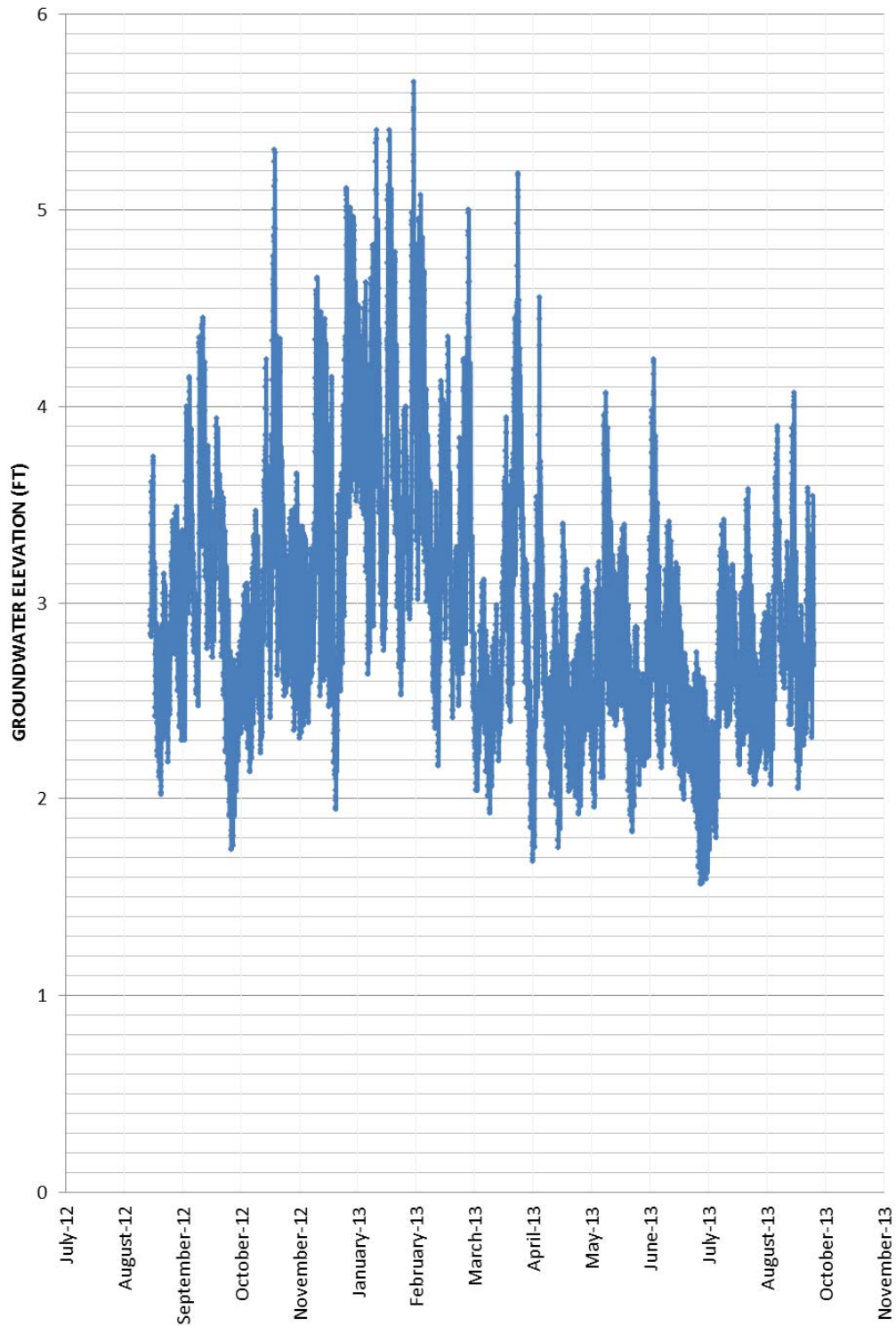
DIVISION 1
SITE WORK
Section 03500
SPECIAL PROCEDURES

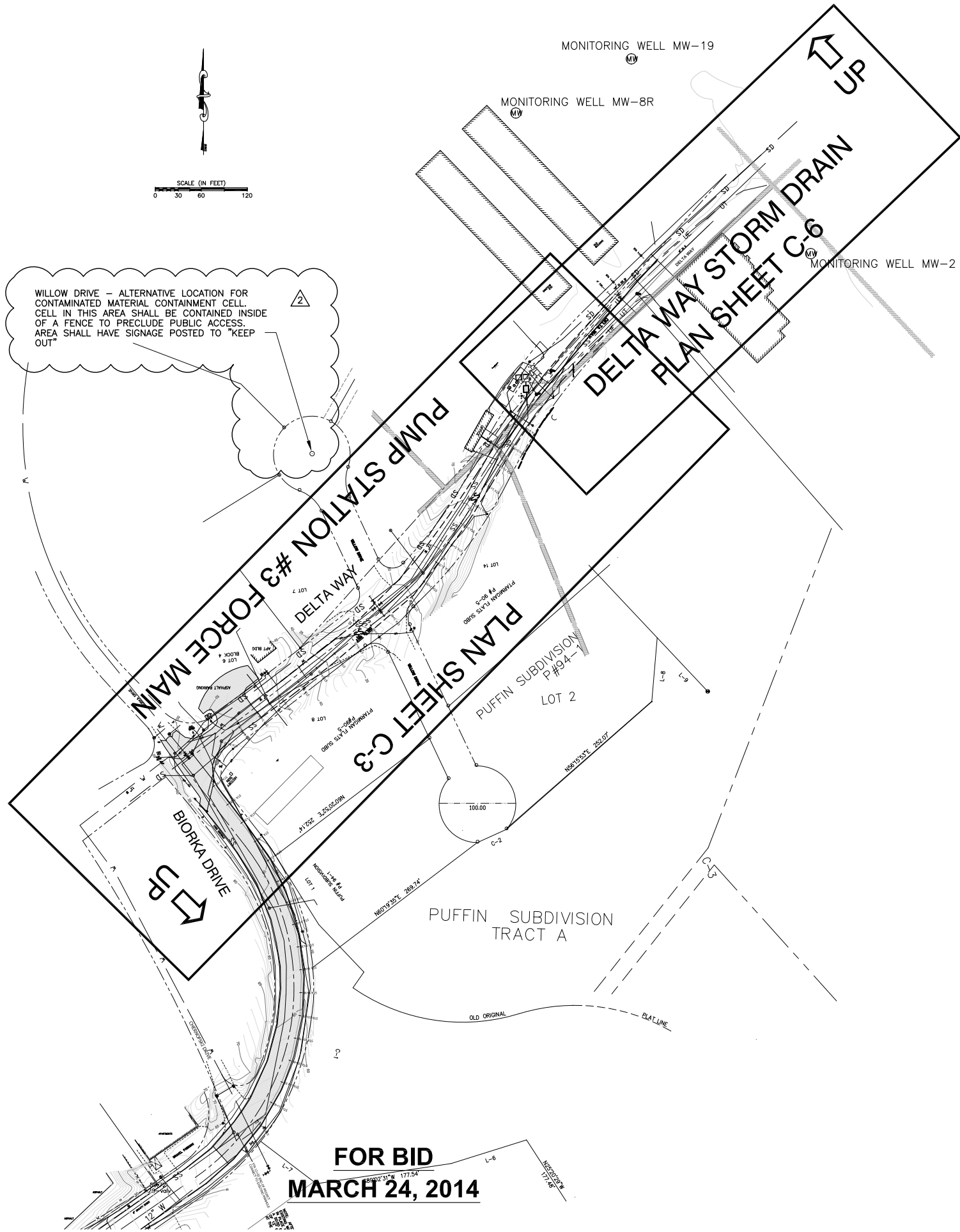
Figure -1 Scatter Plot of Partial Compilation of Approximate Historical
Groundwater Elevations from Intermittent Monitoring.
See USACE Reports for locations.



SPECIAL PROCEDURES
03500-15

Figure 2 Hourly Groundwater Elevations in MW-8R.



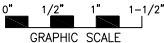


ABBREVIATIONS	
AC	ALUMINUM CAP
APPROX	APPROXIMATE
ABND.	ABANDONED
ADOT, DOT	AK DEPARTMENT OF TRANSPORTATION
ALUM	ALUMINUM
A.T.S.	ALASKA TIDELAND SURVEY
BLDG	BUILDING
B.P.	BOTTOM OF PIPE
CB	CATCH BASIN
CL	CENTERLINE
CL	CLASS
CMP	CORRUGATED METAL PIPE
CPP, CPEP	CORRUGATED PLASTIC PIPE
CNTR	CENTER
CO	CLEANOUT
CONC	CONCRETE
CULV	CULVERT
DEG	DEGREE
DIA.	DIAMETER
DIP	DUCTILE IRON PIPE
E, ELECT, ELE	ELECTRIC
ELEV, EL	ELEVATION
E	EAST
E	ELECTRIC
EX, EXIST	EXISTING
FH	FIRE HYDRANT
FF	FINISH FLOOR
FM	FORCE MAIN
FDN	FOUNDATION
FT.	FEET
FTG	FOOTING
GV&VB	GATE VALVE AND VALVE BOX
HYD	HYDRANT
INSUL	INSULATION
INV.	INVERT
L.F.	LINEAR FEET
LT, L	LEFT
L	LENGTH
MAX	MAXIMUM
MH	MANHOLE
MHW	MEAN HIGH WATER
MIN.	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH, NORTHING
N.T.S.	NOT-TO-SCALE
NIC	NOT-IN-CONTRACT
O.C.	ON CENTER
PC	POINT OF CURVE
PCO	PRESSURE CLEANOUT
PID	PHOTOIONIZATION DETECTOR
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
ROW, R/W	RIGHT OF WAY
RT, R	RIGHT
S	SLOPE
S	SEWER
S	SOUTH
SD	STORM DRAIN
STA., STN	STATION
SDMH	STORM DRAIN MANHOLE
S.S.	STAINLESS STEEL, SANITARY SEWER
T	TELEPHONE
TBM	TEMPORARY BENCH MARK
TH	TESTHOLE
TOG	TOP OF GRATE
TON	TOP OF NUT
TP	TEST PIT (SOILS EXPLORATION)
TYP.	TYPICAL
UE, UGE	UNDERGROUND ELECTRIC
UT, UGT	UNDERGROUND TELEPHONE
UTV	UNDERGROUND TELEVISION
UTS	UNALASKA TIDELAND SURVEY
VERT	VERTICAL
W	WEST
W	WITH
W	WATER
W	WATER VALVE

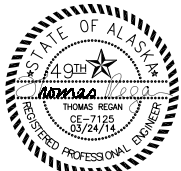
LEGEND	
EXISTING	PROPOSED
FOUND 3" ALUMINUM CAP	FOUND 3" ALUMINUM CAP
FOUND ALUMINUM CAP	FOUND ALUMINUM CAP
FOUND 5/8" REBAR	FOUND 5/8" REBAR
EDGE OR ROAD	EDGE OR ROAD
TELEPHONE/CABLE PEDESTAL	TELEPHONE/CABLE PEDESTAL
ELECTRICAL BOX	ELECTRICAL BOX
SANITARY SEWER LINE	SANITARY SEWER LINE
WATER LINE	WATER LINE
UNDERGROUND ELECTRIC	UNDERGROUND ELECTRIC
UNDERGROUND TELEPHONE	UNDERGROUND TELEPHONE
SANITARY CLEANOUT	SANITARY CLEANOUT
ELEVATION CONTOUR (FROM SURVEY)	ELEVATION CONTOUR (FROM SURVEY)
LUMINAIRE	LUMINAIRE
SANITARY SEWER MANHOLE	SANITARY SEWER MANHOLE
STORM MANHOLE	STORM MANHOLE
STORM DRAIN MANHOLE (TYPE I)	STORM DRAIN MANHOLE (TYPE I)
STORM DRAIN MANHOLE (TYPE II)	STORM DRAIN MANHOLE (TYPE II)
WATER VALVE	WATER VALVE
WATER SERVICE	WATER SERVICE
HYDRANT	HYDRANT
CATCH BASIN	CATCH BASIN
BOLLARD	BOLLARD
SOILS TESTHOLE	SOILS TESTHOLE
JERSEY BARRIER	JERSEY BARRIER
STORM DRAIN OR CULVERT	STORM DRAIN OR CULVERT
SIGN	SIGN
BUILDING OR STRUCTURE	BUILDING OR STRUCTURE
LIGHT POLE	LIGHT POLE
HYDRANT	HYDRANT
SIGN	SIGN
GROUNDWATER MONITORING WELL	GROUNDWATER MONITORING WELL
CONCRETE UTILIDOR	CONCRETE UTILIDOR
STORM DRAIN PIPE	STORM DRAIN PIPE
PROPERTY LINE	PROPERTY LINE

GENERAL NOTES

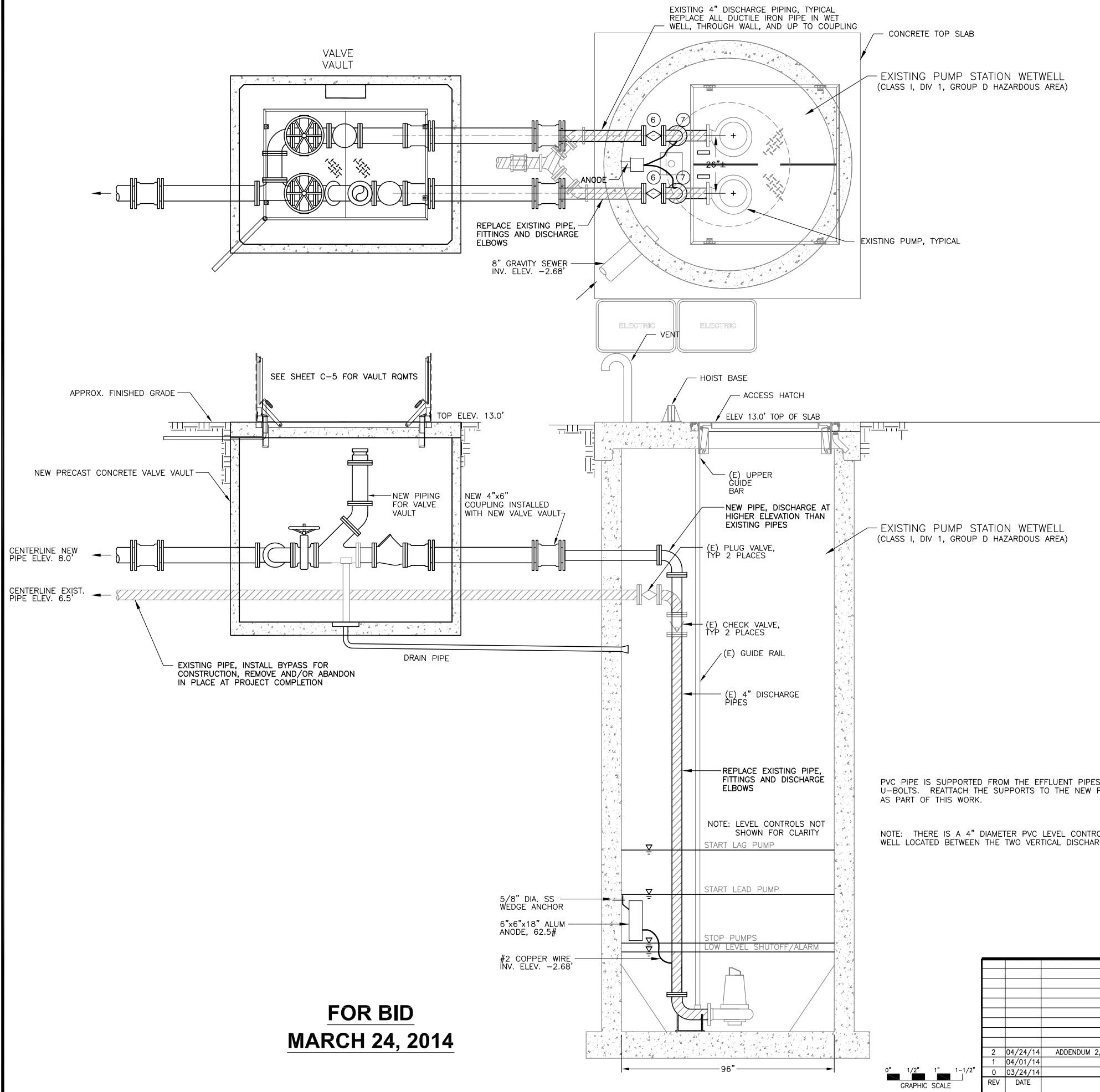
- ALL UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL OBTAIN UTILITY LOCATES AND VERIFY THE EXACT LOCATION OF UTILITIES PRIOR TO ANY EXCAVATION. OBTAIN LOCATES FROM CHEVRON AND DELTA WESTERN FOR BURIED FUEL LINES.
- THE CONTRACTOR IS RESPONSIBLE TO REPAIR AND/OR REPLACE ANY UTILITIES SHOWN THAT ARE DAMAGED DURING CONSTRUCTION.
- AT A SUFFICIENT DISTANCE PRIOR TO ENCOUNTERING A KNOWN OBSTACLE OR A TIE INTO AN EXISTING PIPE, THE CONTRACTOR SHALL EXPOSE AND VERIFY THE EXACT LOCATION OF THE OBSTACLE OR PIPE SO THAT ALIGNMENT AND/OR GRADE MAY BE DETERMINED BEFORE THE PIPE SECTIONS ARE LAID IN THE TRENCH AND BACKFILLED. NO EXTRA PAYMENT WILL BE MADE FOR REWORK OF NEWLY INSTALLED UTILITIES REQUIRED BY FAILURE TO EXPOSE EXISTING UTILITIES.
- THERE MAY BE MULTIPLE CONDUITS WHERE THE DRAWINGS SHOW ELECTRICAL OR TELEPHONE UTILITIES AS A SINGLE LINE ON THE PLAN AND PROFILE DRAWINGS.
- STATIONING FOR THE STORM DRAIN SYSTEM AND FORCE MAIN ARE ALONG THE CENTERLINE OF THE UTILITY.
- SOILS TESTHOLE INFORMATION WAS OBTAINED FROM THE TRYCK-NEIMAN-HAYES/WINCE-CORTHELL-BRYSON PAVING DESIGN CONDUCTED IN 2000-2001. THE TESTHOLES WERE LOGGED BY GOLDER ASSOCIATES IN MAY OF 2000. TESTHOLES WERE EXCAVATED BY NORTHERN MECHANICAL.
- ALL UTILITY INTERRUPTIONS SHALL BE COORDINATED WITH THE DEPARTMENT OF PUBLIC UTILITIES. ALL VALVES SHALL BE OPERATED BY CITY PERSONNEL ONLY.
- THE CONTRACTOR SHALL MAINTAIN A VERTICAL SEPARATION AND MINIMUM CLEARANCE OF 18" BETWEEN THE FORCE MAIN/STORM DRAIN PIPES AND THE WATER MAIN AT ALL CROSSINGS. IN ADDITION, THE PIPE SECTIONS SHALL BE LOCATED SO THAT NO PIPE JOINT IS CLOSER THAN 9' FROM THE POINT OF THE CROSSING. WATER MAINS AND SEWER PIPES SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 10' CLEAR.
- STORM DRAIN WORK IS IN AN ADEC LISTED CONTAMINATED SITE. SEE SPECIFICATIONS FOR ADEC CONTAMINATED SITES PROGRAM REQUIREMENTS.



REV	DATE	DESCRIPTION
2	04/24/14	ADDENDUM 2
0	03/24/14	FOR BID



REGAN ENGINEERING, P.C.	
PROJECT:	CITY OF UNALASKA SEWAGE LIFT STATION #3 FORCE MAIN MAIN REPLACEMENT - DELTA WAY STORM DRAIN
TITLE:	SHEET LAYOUT, LEGEND, ABBREVIATIONS & NOTES
DESIGNED BY:	TR DATE: 03/24/14 SHEET NO:
CHECKED BY:	TR DPW PROJECT NO: 11503-01 C-2 of 10



GENERAL NOTES:

1. FIELD MEASUREMENT -- THE ELEVATIONS PROVIDED ON THE DRAWINGS ARE FROM CH2MHILL AS-BUILT DRAWINGS PRODUCED IN 1989. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING MATERIALS.

INSTALLATION NOTES:

1. ALL MISCELLANEOUS NUTS, BOLTS, HARDWARE AND METALS IN THE WET WELL AND VALVE VAULT THAT ARE NOT IDENTIFIED OTHERWISE SHALL BE STAINLESS STEEL.

WET WELL UPGRADE REQUIREMENTS:

1. THE EXISTING PIPING IN THE WET WELL HAS BEEN NOTED TO BE CORRODED AND IN NEED OF REPLACEMENT. THE INTENT OF THIS WORK IS TO REPLACE THE DISCHARGE ELBOWS AND THE DUCTILE IRON PIPE & FITTINGS BETWEEN THE PUMPS AND THE EXTERIOR 4x6 COUPLINGS INSTALLED AS PART OF THE VALVE VAULT CONSTRUCTION.
2. ALL MISCELLANEOUS NUTS, BOLTS, METALS AND HARDWARE INSTALLED IN THE WET WELL THAT ARE NOT IDENTIFIED OTHERWISE SHALL BE STAINLESS STEEL.
3. ALL PIPE SHALL BE MINIMUM CLASS 52 DUCTILE IRON MEETING REQUIREMENTS OF ANSI/AWWA C110/A21.10. FITTINGS SHALL BE FLANGED AND SHALL BE FACED AND DRILLED IN ACCORDANCE WITH ANSI CLASS 125 B16.1. ALL DUCTILE IRON FITTINGS SHALL BE RATED FOR WATER PRESSURE OF 250 PSI. PIPE AND FITTINGS SHALL BE CEMENT LINED AND SEAL COATED IN ACCORDANCE WITH ANIS/AWWA C104/A21.4
4. AN ANODE SHALL BE INSTALLED WITH LEADS TO EACH PIPE RISER. THE ANODE SHALL BE CONNECTED TO THE RISERS WITH CADWELDED NUMBER 2 BRAIDED COPPER WIRES. ANODE TO BE MINIMUM 30 POUND ALUMINUM WITH A MINIMUM 4--AMPERE YEAR RATING. MOUNT TO TO WALL USING A MIN. 5/8" DIAMETER STAINLESS STEEL WEDGE ANCHOR THROUGH STEEL TAB. REPAIR CADWELD LOCATIONS ON PIPES WITH COAL TAR EPOXY COATING.
5. REINSTALL STILLING WELL SUPPORTS TO NEW PIPE.

TEMPORARY PUMPING REQUIREMENTS:

1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY SEWAGE PUMPING AND HANDLING DURING WET WELL WORK. THE EXISTING PUMPS ARE 10-HP FLYGT C-3127 WITH 481 IMPELLERS. THE EXISTING FORCE MAIN IS 1200 LF OF 4" DIP, STARTING AT AN ELEVATION OF -2.5' (CENTERLINE INVERT) AT MANHOLE AI-15 AND DISCHARGING AT AN ELEVATION OF 60' AT MANHOLE AI-14 LOCATED AT THE INTERSECTION OF BIORKA DRIVE AND CHERNOFSKI DRIVE. PEAK FLOWS ARE ESTIMATED TO BE APPROXIMATELY 100 GPM.

2. MANHOLE AI-15 IS THE MANHOLE JUST UPSTREAM FROM THE PUMP STATION WETWELL. ELEVATION DATA IS SHOWN ON THE PLAN DRAWING. ONE METHOD OFFERED FOR HANDLING SEWAGE FLOWS DURING WORK IN THE WETWELL IS TO INSTALL A TEMPORARY PUMP OR PUMPS IN THIS MANHOLE THAT DISCHARGE FLOWS INTO THE EXISTING FORCE MAIN. THE EXISTING PUMP(S) WILL BE MADE AVAILABLE FOR THIS APPLICATION PREDICATED ON IN-KIND REINSTALLATION IN THE WETWELL AT CONCLUSION OF THIS WORK.

THE CITY DOES NOT HAVE SEPARATE PUMP CONTROLS FOR REUSE OF THE EXISTING PUMPS. THE CONTRACTOR IS WELCOME TO USE THE EXISTING CONTROLS TO THE EXTENT PRACTICAL PROVIDED IN-KIND RESTORATION IS PROVIDED AT THE CONCLUSION OF THIS WORK.

3. TEMPORARY PIPING FROM THE TEMPORARY PUMPS TO THE EXISTING FORCE MAIN SHALL BE INSTALLED AS NECESSARY.

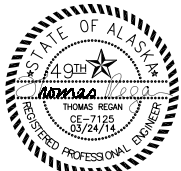
4. PAYMENT FOR TEMPORARY PUMP(S) AND PIPING WORK WILL ME MADE WITH WORK IN THE WETWELL AND REPLACEMENT OF THE WETWELL PUMP DISCHARGE PIPING.

PVC PIPE IS SUPPORTED FROM THE EFFLUENT PIPES WITH STRUT AND U-BOLTS. REATTACH THE SUPPORTS TO THE NEW PIPE TO BE INSTALLED AS PART OF THIS WORK.

NOTE: THERE IS A 4" DIAMETER PVC LEVEL CONTROL STILLING WELL WELL LOCATED BETWEEN THE TWO VERTICAL DISCHARGE PIPES. THE

FOR BID
MARCH 24, 2014

REV	DATE	DESCRIPTION
2	04/24/14	ADDENDUM 2, ADDED TEMPORARY PUMPING RGMT.
1	04/01/14	ADDENDUM 1
0	03/24/14	FOR BID
		DESCRIPTION

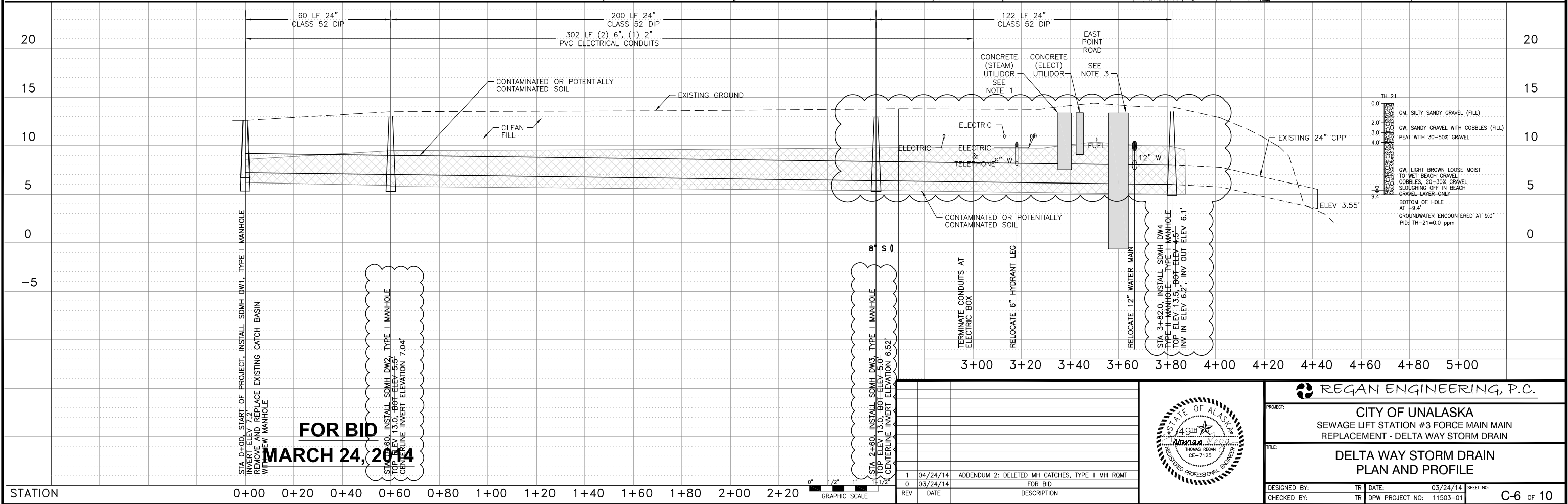
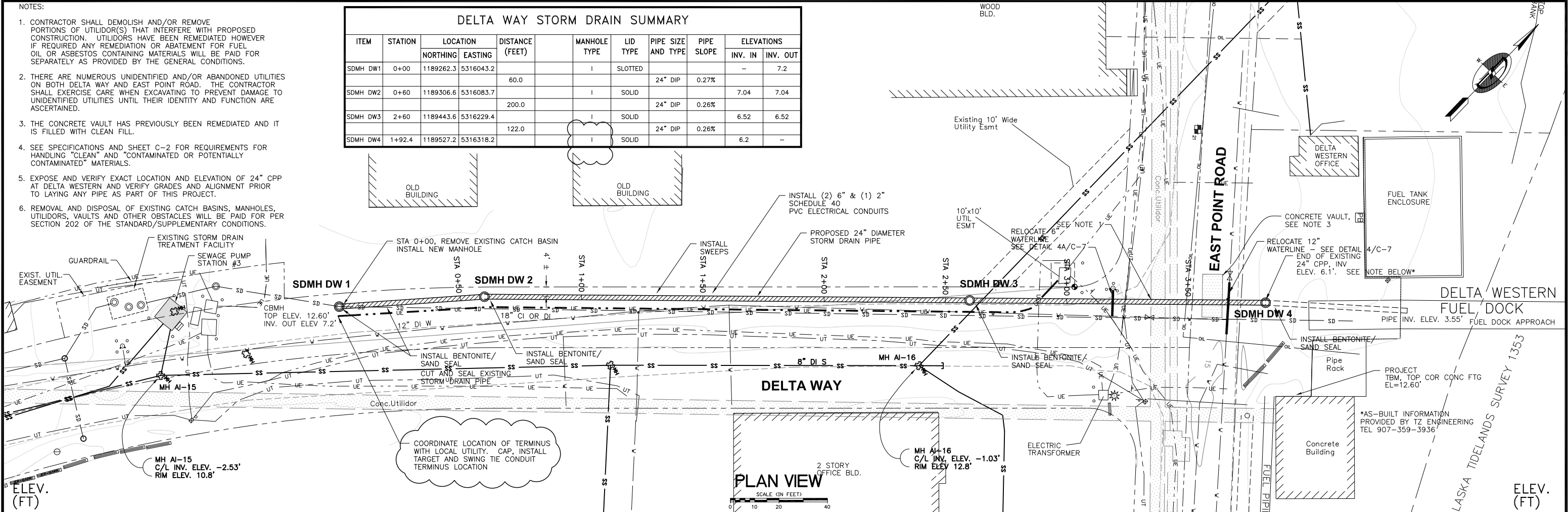


PROJECT:	CITY OF UNALASKA		
	SEWAGE LIFT STATION #3 FORCE MAIN MAIN		
	REPLACEMENT - DELTA WAY STORM DRAIN		
TITLE:	DETAILS - PUMP STATION WETWELL		
	PIPING REPLACEMENT		
DESIGNED BY:	TR	DATE:	03/24/14
CHECKED BY:	TR	DPW PROJECT NO:	11503-01
		SHEET NO:	C-5A of 10

NOTES:

1. CONTRACTOR SHALL DEMOLISH AND/OR REMOVE PORTIONS OF UTILIDOR(S) THAT INTERFERE WITH PROPOSED CONSTRUCTION. UTILIDORS HAVE BEEN REMEDIATED HOWEVER IF REQUIRED ANY REMEDIATION OR ABATEMENT FOR FUEL OIL OR ASBESTOS CONTAINING MATERIALS WILL BE PAID FOR SEPARATELY AS PROVIDED BY THE GENERAL CONDITIONS.
2. THERE ARE NUMEROUS UNIDENTIFIED AND/OR ABANDONED UTILITIES ON BOTH DELTA WAY AND EAST POINT ROAD. THE CONTRACTOR SHALL EXERCISE CARE WHEN EXCAVATING TO PREVENT DAMAGE TO UNIDENTIFIED UTILITIES UNTIL THEIR IDENTITY AND FUNCTION ARE ASCERTAINED.
3. THE CONCRETE VAULT HAS PREVIOUSLY BEEN REMEDIATED AND IT IS FILLED WITH CLEAN FILL.
4. SEE SPECIFICATIONS AND SHEET C-2 FOR REQUIREMENTS FOR HANDLING "CLEAN" AND "CONTAMINATED OR POTENTIALLY CONTAMINATED" MATERIALS.
5. EXPOSE AND VERIFY EXACT LOCATION AND ELEVATION OF 24" CPP AT DELTA WESTERN AND VERIFY GRADES AND ALIGNMENT PRIOR TO LAYING ANY PIPE AS PART OF THIS PROJECT.
6. REMOVAL AND DISPOSAL OF EXISTING CATCH BASINS, MANHOLES, UTILIDORS, VAULTS AND OTHER OBSTACLES WILL BE PAID FOR PER SECTION 202 OF THE STANDARD/SUPPLEMENTARY CONDITIONS.

DELTA WAY STORM DRAIN SUMMARY									
ITEM	STATION	LOCATION		DISTANCE (FEET)	MANHOLE TYPE	LID TYPE	PIPE SIZE AND TYPE	PIPE SLOPE	ELEVATIONS
		NORTHING	EASTING						INV. IN INV. OUT
SDMH DW1	0+00	1189262.3	5316043.2		I	SLOTTED			- 7.2
SDMH DW2	0+60	1189306.6	5316083.7	60.0	I	SOLID	24" DIP	0.27%	7.04 7.04
SDMH DW3	2+60	1189443.6	5316229.4	200.0	I	SOLID	24" DIP	0.26%	6.52 6.52
SDMH DW4	1+92.4	1189527.2	5316318.2	122.0	I	SOLID	24" DIP	0.26%	6.2 -



FOR BID
MARCH 24, 2014



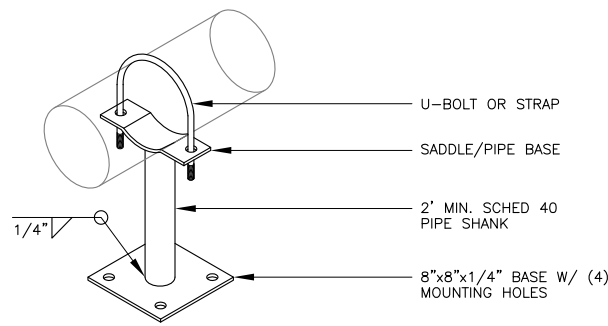
REGAN ENGINEERING, P.C.

PROJECT: CITY OF UNALASKA
SEWAGE LIFT STATION #3 FORCE MAIN MAIN
REPLACEMENT - DELTA WAY STORM DRAIN

TITLE: DELTA WAY STORM DRAIN
PLAN AND PROFILE

DESIGNED BY: TR DATE: 03/24/14 SHEET NO: C-6 OF 10
CHECKED BY: TR DPW PROJECT NO: 11503-01

REV	DATE	DESCRIPTION
1	04/24/14	ADDENDUM 2: DELETED MH CATCHES, TYPE II MH RQMT
0	03/24/14	FOR BID



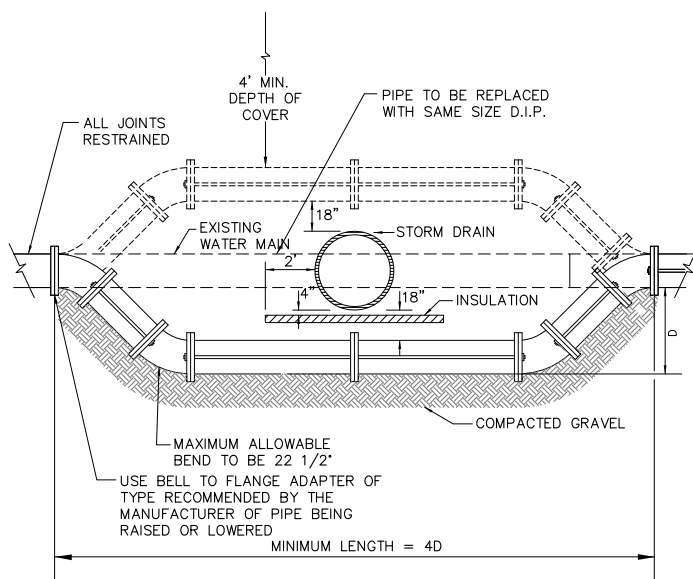
NOTE: ALL MISCELLANEOUS METALS, FABRICATIONS, HARDWARE, BOLTS AND METAL MATERIALS SHALL BE STAINLESS STEEL.

INSTALL NON-SHRINK GROUT UNDER PIPE SUPPORT TO PROVIDE UNIFORM BEARING.

MOUNT BASE WITH (4) 1/2" DIAMETER BOLTS EPOXIED INTO VALVE VAULT FLOOR.

1 DETAIL - PIPE SUPPORT

NOT-TO-SCALE



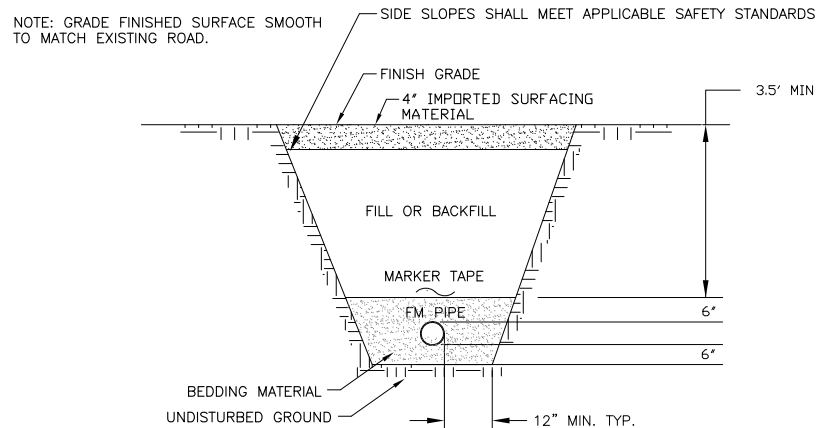
NOTES:

1. ALL JOINTS SHALL BE RESTRAINED WITH MEGALUG STYLE RETAINING GLANDS OR EQUAL.
2. RELOCATED WATER LINE SHALL BE NO LESS THAN 18-INCHES DISTANCE FROM STORM SEWER LINE WITH 4" OF RIGID BOARD INSULATION INSTALLED 2- FEET EITHER SIDE OF THE CROSSING LOCATION.
3. INSULATION SHALL CONSIST OF INSULATION BOARD (R-18) AND SHALL BE POSITIONED NO LESS THAN (4) FOUR INCHES FROM STORM SEWER.
4. EIGHTEEN (18") INCHES IS THE MINIMUM INSULATED SEPARATION DISTANCE.

4 DETAIL - WATERLINE RELOCATION

NOT-TO-SCALE

FOR BID
MARCH 24, 2014

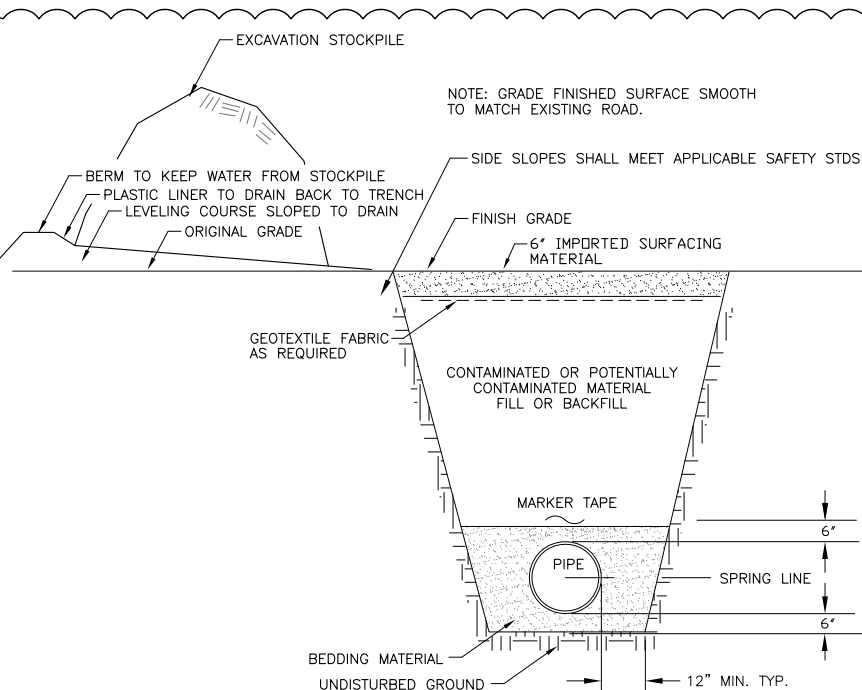


NOTE: MAINTAIN 4' OF COVER OVER TOP OF THE PIPE. IN THE EVENT 4' OF COVER IS UNATTAINABLE, BURY DEPTH MAY BE REDUCED TO AS LITTLE AS 3' WITH INSTALLATION OF A 2" THICK BY 4' WIDE SECTION OF RIGID BOARD INSULATION IN ANY AREAS WHERE LESS THAN 4' OF COVER IS ATTAINED. LOCATE BOARD INSULATION ON TOP OF BEDDING MATERIAL.

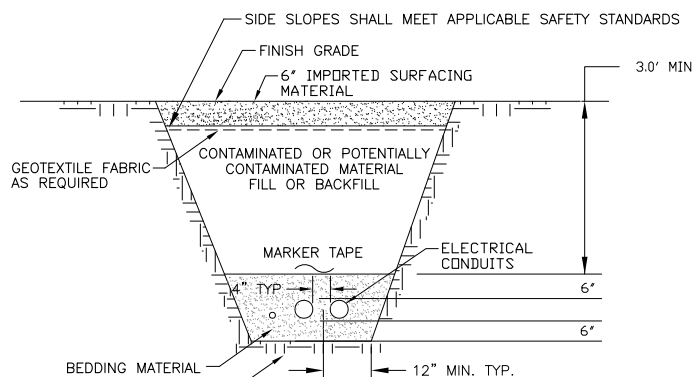
WHERE FORCE MAIN PIPE CROSSES EXISTING STORM DRAIN PIPES, INSTALL 2" THICK RIGID BOARD INSULATION 4' WIDE x 4' LONG AT THE CROSSING LOCATION.

RIGID BOARD INSULATION SHALL BE DOW HI OR EQUAL SUITABLE FOR 40 PSI COMPRESSIVE STRENGTH.

FORCE MAIN PIPE



STORM DRAIN PIPE

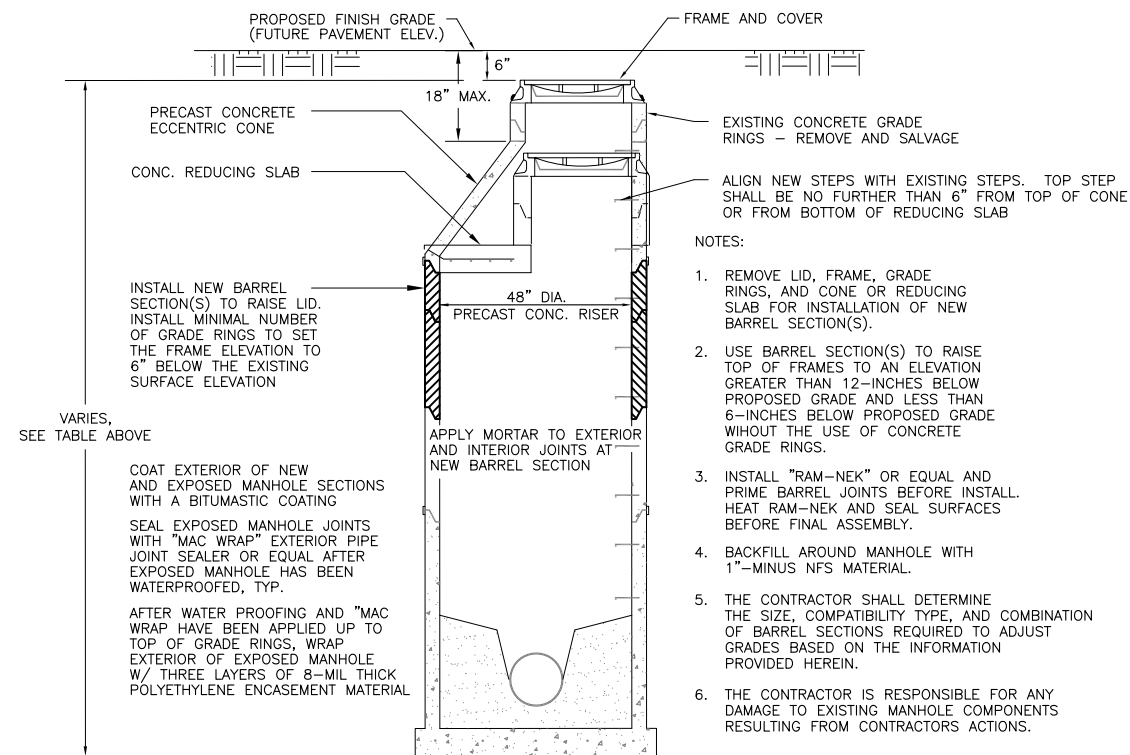


ELECTRICAL CONDUITS

2

NOT-TO-SCALE

GRAPHIC SCALE



VARIES, SEE TABLE ABOVE

COAT EXTERIOR OF NEW AND EXPOSED MANHOLE SECTIONS WITH A BITUMASTIC COATING

SEAL EXPOSED MANHOLE JOINTS WITH "MAC WRAP" EXTERIOR PIPE JOINT SEALER OR EQUAL AFTER EXPOSED MANHOLE HAS BEEN WATERPROOFED, TYP.

AFTER WATER PROOFING AND "MAC WRAP" HAVE BEEN APPLIED UP TO TOP OF GRADE RINGS, WRAP EXTERIOR OF EXPOSED MANHOLE W/ THREE LAYERS OF 8-MIL THICK POLYETHYLENE ENCASMENT MATERIAL

NOTES:

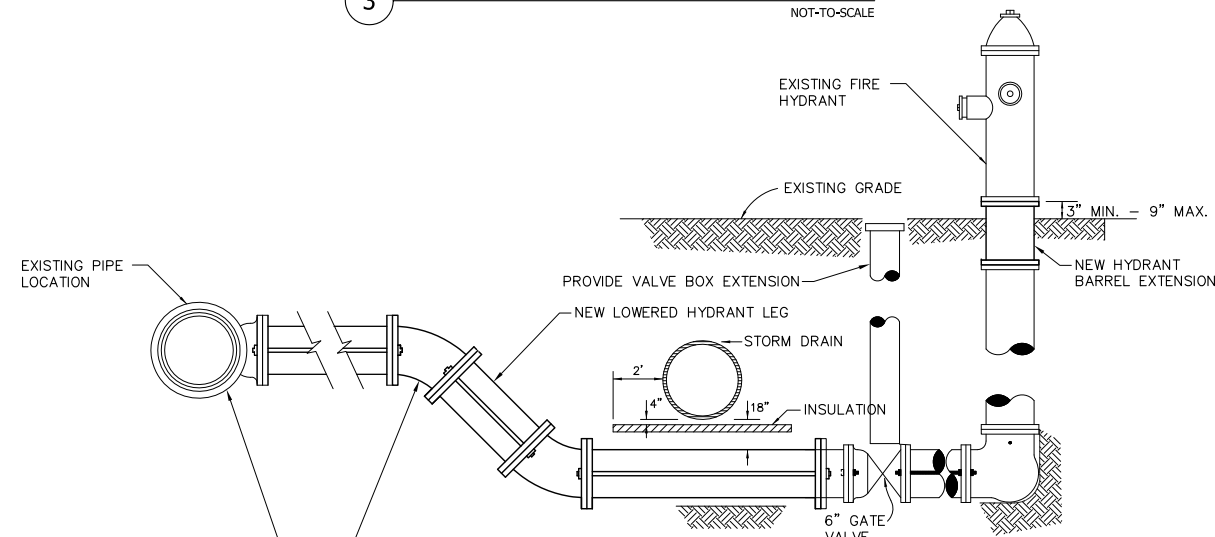
1. REMOVE LID, FRAME, GRADE RINGS, AND CONE OR REDUCING SLAB FOR INSTALLATION OF NEW BARREL SECTION(S).
2. USE BARREL SECTION(S) TO RAISE TOP OF FRAMES TO AN ELEVATION GREATER THAN 12-INCHES BELOW PROPOSED GRADE AND LESS THAN 6-INCHES BELOW PROPOSED GRADE WITHOUT THE USE OF CONCRETE GRADE RINGS.
3. INSTALL "RAM-NEK" OR EQUAL AND PRIME BARREL JOINTS BEFORE INSTALL. HEAT RAM-NEK AND SEAL SURFACES BEFORE FINAL ASSEMBLY.
4. BACKFILL AROUND MANHOLE WITH 1"-MINUS NFS MATERIAL.
5. THE CONTRACTOR SHALL DETERMINE THE SIZE, COMPATIBILITY TYPE, AND COMBINATION OF BARREL SECTIONS REQUIRED TO ADJUST GRADES BASED ON THE INFORMATION PROVIDED HEREIN.
6. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING MANHOLE COMPONENTS RESULTING FROM CONTRACTORS ACTIONS.

NOTE: THE CONTRACTOR SHALL EXCAVATE AND UNCOVER OR OTHERWISE CONFIRM THE TYPE OF REQUIRED BARREL SECTIONS AND THE REQUIRED QUANTITY AND SIZE OF BARREL SECTIONS REQUIRED PRIOR TO ORDERING MATERIALS.

THE CONTRACTOR SHALL REQUEST AND ASSURE A DEPT OF PUBLIC UTILITIES CITY EMPLOYEE INSPECTS AND SIGNS OFF ON EACH OF THE RAISED MANHOLES. IF THE MANHOLES ARE COVERED BEFORE CITY INSPECTION, THE CONTRACTOR SHALL EXPOSE EACH MH LID FOR INTERIOR ACCESS AT NO ADDITIONAL COST TO THE OWNER.

3 MANHOLE ADJUSTMENT DETAIL

NOT-TO-SCALE



HYDRANT RE-INSTALLATION NOTES:

1. HYDRANT BARREL MUST BE INSTALLED PLUMB AND THE LEG MUST BE INSTALLED LEVEL.
2. ALL PIPES, VALVES AND FITTINGS BETWEEN THE MAIN AND THE HYDRANT SHALL BE MECHANICAL JOINT WITH MEGALUG STYLE RETAINING GLANDS.

4A DETAIL - WATERLINE RELOCATION AT HYDRANT

NOT-TO-SCALE

REV	DATE	DESCRIPTION
2	04/24/14	ADDENDUM 2, ADDED SEPARATE TRENCH FOR CONDUITS
0	03/24/14	FOR BID
		DESCRIPTION



REGAN ENGINEERING, P.C.

PROJECT: CITY OF UNALASKA
SEWAGE LIFT STATION #3 FORCE MAIN MAIN
REPLACEMENT - DELTA WAY STORM DRAIN

TITLE: MISCELLANEOUS DETAILS

DESIGNED BY: TR DATE: 03/24/14 SHEET NO: C-7 of 10
CHECKED BY: TR DPW PROJECT NO: 11503-01