

**2024 SEWER IMPROVEMENTS**

**AWWTF BRINE/CAUSTIC HEADER REPLACEMENT**

**INVITATION TO BID NO. 2024C019**



**Municipality of Anchorage  
Anchorage Water and Wastewater Utility  
3000 Arctic Boulevard  
Anchorage, AK 99503**



**Municipality of Anchorage**  
**Anchorage Water and Wastewater Utility**



**2024 SEWER IMPROVEMENTS**

**AWWTF BRINE/CAUSTIC HEADER REPLACEMENT**

**AWWU PROJECT NUMBER WM00000246**

**INVITATION TO BID NUMBER 2024C019**

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**SPECIFICATIONS AND CONTRACT DOCUMENTS**

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**Prepared For:**

**Municipality of Anchorage**

**Anchorage Water and Wastewater Utility**

**3000 Arctic Boulevard**

**Anchorage, Alaska 99503**





# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT



01 FEBRUARY 2024

These documents were prepared under the supervision of a registered Professional Engineer.





# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT

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- X. EEO Contract Compliance Specifications
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- XIII. Temporary Construction Permits and Easements (NOT USED)
- XIV. Permits (NOT USED)
- XV. Traffic Control Plans (NOT USED)
- XVI. Annotated Site Photos
- XVII. Hazardous Materials Survey Report (NOT USED)
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The most current version of the Municipality of Anchorage Standard Specifications (M.A.S.S.) is provided on the Municipality website at

[http://www.muni.org/departments/project\\_management/pages/mass.aspx](http://www.muni.org/departments/project_management/pages/mass.aspx).

Notifications will be sent when updates are made to the document, but each user of M.A.S.S. is responsible to verify that they are using the most current version.





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION I**

## **INVITATION TO BID**





# MUNICIPALITY OF ANCHORAGE

## PURCHASING DEPARTMENT

Invitation to Bid

**No. 2024C019**

Sealed bids will be received in accordance with the time schedule shown below by the Municipality of Anchorage at the Purchasing Department, 632 W. 6th Ave., Suite 520, Anchorage, Alaska 99501 for:

### **AWWTF BRINE/CAUSTIC HEADER REPLACEMENT**

The Work that is presented in the Bid Proposal for this Contract consists of: the Contractor to furnish and install approximately 40 linear feet each of 2-inch and 3-inch convoluted flanged PTFE hose assemblies; 50 LF each of 3-inch CPVC and 3-inch PPR-CT pipe and fittings to be assembled locally; and all needed pipe fittings, fasteners, ancillary supports, as required for a complete functioning system.

ESTIMATED CONSTRUCTION COST: **Between: \$100,001 - \$500,000**

**Site Visit:** 10:00 A.M. Local Time, April 2, 2024  
**Pre-Bid Conference:** 2:00 P.M. Local Time, April 4, 2024  
**Questions Due:** 12:00 P.M. Local Time, April 9, 2024  
**Bid Opening:** 2:00 P.M. Local Time, April 18, 2024

**\*\*\*Mandatory Site Visit\*\*\*  
Asplund WWTF  
2300 Hutson Drive,  
Anchorage, AK 99502**

**All Pre-Bid Conferences and/or Bid Openings may be attended in person or via conference call at this number (907) 343-6089. You may call in five (5) minutes before any scheduled conference. EMAILED BIDS WILL NOT BE ACCEPTED.**

**ALL QUESTIONS SHALL BE SUBMITTED PRIOR TO THE QUESTION DUE DATE THIS WILL BE THE FINAL OPPORTUNITY TO ASK QUESTIONS OR REQUEST CLARIFICATIONS.**

Requests for interpretation or clarification of the bidding Documents shall be made in writing to the Purchasing Office ([wwpur@muni.org](mailto:wwpur@muni.org)). Please reference the Invitation to Bid Number & Project Title. Do not contact the specified department directly.

To maintain the project schedule, Interpretations, corrections, or changes to the Bidding Documents shall be made by Addendum and shall not be binding unless included in the Addendum. It is your responsibility to periodically check the website for addenda.

At the above indicated time, the bids will be opened publicly and read. Bids must be received by the Purchasing Officer prior to the time fixed for opening of the bids to be considered. Time of receipt will be as determined by the time stamp in the Purchasing Office, Suite 520.

The Municipality of Anchorage reserves the right to reject any and all bids and to waive any informalities in the bids. No bidder may withdraw his bid after the hour set for the opening of bids or before the award of contract unless said award is delayed for a period exceeding sixty (60) days from the time of the opening.

The Municipality shall not be responsible for bid preparation costs, nor for costs, including attorney fees, associated with any (administrative, judicial or otherwise) challenge to the determination of the lowest responsive and responsible bidder and/or award of contract, and/or rejection of bids. By submitting a bid, each bidder agrees to be bound in this respect and waives all claims to such costs and fees.

Contracts shall be awarded by written notice issued by the Purchasing Officer to the lowest responsive and responsible bidder; however, preference will be given to local bidders in compliance with Anchorage Municipal Code Section 7.20.040.

The Municipality of Anchorage assumes no responsibility for any interpretations or presentations made by any of its officers or agents unless such interpretations or presentations are made by written addendum to this Invitation to Bid.

Bonding Requirements are per MASS or as per special provisions.

**THE MUNICIPALITY OF ANCHORAGE IS AN “EQUAL OPPORTUNITY EMPLOYER”**

PUBLISH ONE TIME

Date: March 26, 2024

Senior Buyer Assigned to this Project:  
Jared Brunelle



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Chris Hunter  
Deputy Purchasing Director





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION II**

## **SPECIAL PROVISIONS**





# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT

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## **GENERAL PROVISIONS**

### **GENERAL STATEMENT AND EXTENT OF WORK**

All proposed Work for the AWWTF Caustic/Brine Header Replacement Project is located in Anchorage, Alaska. The Work included in this Contract consists of furnishing all labor, equipment, materials, supervision, and other facilities necessary to complete the Work set forth in the Plans, and Specifications, and terms of the Contract successfully. The Work will be performed inside an operating chemical production facility at the Asplund WWTF.

The Work that is presented in the Bid Proposal for this Contract consists of the Contractor to furnish and install approximately 40 linear feet each of 2-inch and 3-inch convoluted flanged PTFE hose assemblies; 50 LF each of 3-inch CPVC and 3-inch PPR-CT pipe and fittings to be assembled locally; and all needed pipe fittings, fasteners, ancillary supports, as required for a complete functioning system.

It shall be the responsibility of the bidder to prepare the bid so that all materials and working arrangements harmoniously conform to the intent of the Contract Specifications and Special Provisions.

### **SPECIFICATIONS, CODES, ORDINANCES, AND STANDARDS**

The Contractor shall perform all Work in accordance with the Contract Documents, which include the most current edition of the **Municipality of Anchorage Standard Specifications**, (hereinafter referred to as M.A.S.S.), and herein revised and supplemented as the Special Provisions.

The Contractor shall perform all Work in accordance with the latest edition of all applicable codes, ordinances, standards, and associated addenda including the AWWU Design and Construction Practices Manual (hereinafter referred to as D.C.P.M.).

The M.A.S.S. and D.C.P.M. are available for download at the following links:

M.A.S.S.

[http://www.muni.org/departments/project\\_management/pages/mass.aspx](http://www.muni.org/departments/project_management/pages/mass.aspx)

D.C.P.M.

<https://www.awwu.biz/about-us/reliable-infrastructure/design-and-construction-practices-manual>

### **CHANGES TO THE MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS (MASS)**

The following enumerated provisions of MASS are amended as hereinafter stated.

## **DIVISION 10            STANDARD GENERAL PROVISIONS**

### **SECTION 10.01        DEFINITIONS**

*Add the following item to the list of definitions:*

**Record Drawings** – Detailed drawings that accurately depict all changes in location (both horizontal and vertical), material, equipment, and other elements of Work accomplished by the Contractor. The drawings shall also depict the horizontal and vertical locations of all other utilities and obstructions encountered during construction. Final elevations and locations shall be clearly marked with actual dimensions.

### **SECTION 10.02        BIDDING REQUIREMENTS AND CONDITIONS**

#### **Article 2.1    Examination of Bidding Documents and Site**

*Add the following paragraph to the end of the Article:*

The Anchorage Water and Wastewater Utility will conduct mandatory pre-bid site visits so that Contractor might develop a full appreciation for the materials, tasks, hazards, and environmental conditions involved in the performance of the work.

### **SECTION 10.03        AWARD AND EXECUTION OF CONTRACT**

#### **Article 3.7    Contractor's Warranty**

*Delete the first sentence of the first paragraph and replace with the following:*

The Contractor shall warranty all materials and workmanship for three (3) years from the Final Acceptance Date.

### **SECTION 10.04        SCOPE OF WORK**

#### **Article 4.8    Work Incidental to the Contract**

*Delete the numbered item thirteen and replace with the following:*

13. Removal and disposal of all existing process pipe shown to be removed.
14. Connections to existing items specified in the Contract Documents.
15. Other items indicated on the Drawings or in these Specifications, but not specifically listed as a bid item in these Contract Documents.

*Add the following new Article:*

#### **Article 4.22   Responsibility of Contractor to Act in Emergency**

In case of an emergency that threatens loss and/or injury of property and/or safety of life, the Contractor shall act, without previous instructions from the Engineer, as the situation may warrant. The Contractor shall notify the Engineer thereof immediately thereafter. Any claim for compensation by the Contractor, together with substantiating documents in regard to expense, shall be submitted to the Owner through the Engineer. The amount of compensation shall be determined by agreement.

The Contractor shall supply the Engineer, prior to commencement of Work, with an emergency telephone number through which a responsible Contractor's representative can be contacted on a twenty-four (24) hour a day basis.

#### **Article 4.23 Daily Progress Reports**

The Contractor shall submit daily progress reports to the Engineer. The reports for the current workweek shall be submitted no later than the following Monday by 12:00 p.m. The development, preparation, and presentation of all daily progress reports are incidental to the Contract and no separate payment shall be made. Each daily report shall include:

1. Names and hours worked for all personnel on site, including personnel for all subcontractors.
2. Construction equipment on hand, including utility vehicles such as pickup trucks, maintenance vehicles, etc.
3. Documentation of weather conditions and any resulting impacts to the Work.
4. General progress of the Work, including a list of activities started and completed, mobilization and demobilization of subcontractors, and major milestones achieved.
5. Contractor's plan for management of site (e.g., lay down and staging areas, construction traffic, etc.), utilization of construction equipment, buildup of trade labor, and identification of potential Contract changes.
6. Identification of new activities and sequences as a result of executed Contract changes (if any).
7. Description of actual or potential delays, including related causes, and the steps taken or anticipated to mitigate their impact.
8. Changes to activity logic.
9. Changes to the critical path.
10. Identification of, and accompanying reason for, any activities added or deleted since the last report.
11. Steps taken to recover the schedule from Contractor caused delays.

### **SECTION 10.05 CONTROL OF WORK**

#### **Article 5.3 Construction Progress Schedule and Schedule of Values**

*Add the following paragraphs after the second paragraph:*

The Contractor shall also deliver, at the same time as the Construction Progress Schedule, in a form satisfactory to the Engineer, a Schedule of Values detailing the costs of providing all labor, equipment, supplies, transportation, handling, and disposal in connection with the removal of system plant infrastructure as listed in the table below.

Plant system category	Plant system subcategory
Wastewater treatment and disposal plant	<ul style="list-style-type: none"> <li>• Treatment structures and improvements</li> <li>• Treatment and disposal equipment</li> <li>• Outfall sewer lines</li> </ul>

Work items not listed in a subcategory shall be incidental to the subcategory item.

A. Schedule of values format and content:

1. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
  - a. Related specification section or division.
  - b. Description of Work.
  - c. Name of subcontractor.
  - d. Name of manufacturer or fabricator.
  - e. Name of supplier.
  - f. Change orders (numbers) that affect value.
  - g. Dollar value (percentage of contract sum to nearest percent, adjusted to total 100 percent).
2. Provide a breakdown of the contract sum in sufficient detail to facilitate continued evaluation of applications for payment and progress reports. Coordinate with the project manual table of contents. Break principal subcontract amounts down into several line items.
3. Round amounts to nearest whole dollar. The total shall equal the contract sum.
4. Provide a separate line item in the schedule of values for each part of the Work where applications for payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
5. Provide separate line items on the schedule of values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
6. Margins of cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in applications for payment. Each item in the schedule of values and applications for payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be either shown as separate line items in the

schedule of values or distributed as general overhead expense, at the Contractor's option.

7. Schedule updating: Update and resubmit the schedule of values prior to the next applications for payment when Change Orders or construction change directives result in a change in the contract sum.
8. Refer also to Technical Specification 01 20 00 PRICE AND PAYMENT PROCEDURES.

#### **Article 5.4 Non-Working Hours, Holidays, Saturdays, and Sundays**

*Add the following sentence to the end of the last paragraph:*

A standard workday is a ten (10) hour workday (excluding meal times) within the timeframe of no earlier than 7:00 a.m. and no later than 7:00 p.m.

#### **Article 5.5 Shop Drawings**

*Add the following sentence to the end of the last paragraph:*

Reference Section 013300 – Submittals Procedures of the Technical Specifications for additional requirements.

#### **Article 5.6 Product Data**

*Add the following sentence to the end of the last paragraph:*

Reference Section 013300 – Submittals Procedures of the Technical Specifications for additional requirements.

#### **Article 5.7 Materials**

*Add the following sentence to the end of the last paragraph:*

Reference Section 01 60 00 – Product Requirements of the Technical Specifications for additional requirements.

#### **Article 5.22 Time for Completion of Work**

*Add the following sentence to the end of the first paragraph:*

The Substantial Completion Date for this contract shall be November 30, 2024. The Contractor shall complete all Work under this contract by December 31, 2024.

#### **Article 5.27 Liquidated Damages**

*Delete the first two sentences of the first paragraph and replace with the following:* The Owner may deduct out of any progress payment the sum of Five Hundred Dollars (\$500.00) per day as Liquidated Damages for each and every calendar day that the Substantial Completion Date is delayed beyond the Substantial Completion Date specified in Article 5.22, Time for Completion of Work. The Owner may deduct out of any progress payment the sum of Two Hundred Fifty Dollars (\$250.00) per day as Liquidated Damages for each and every calendar day that the Final Acceptance Date is delayed beyond the Contract Completion Date.

## **SECTION 10.06 LEGAL RELATIONS AND RESPONSIBILITIES**

### **Article 6.6 Permits**

*Add the following sentence to the end of the sixth paragraph:*

The Contractor shall identify the “Anchorage Water and Wastewater Utility” as the applicant on any permit application forms.

### **Article 6.9 Insurance**

*Remove and replace the fifth sentence of the first paragraph with the following:*

The insurance company must provide written notification to the MOA contract administrator of any material change, cancellation, or non-renewal of the insurance policies. If the insurer does not notify the MOA in these circumstances, it will be the contractor’s responsibility to make that notification.

## **SECTION 10.07 MEASUREMENT AND PAYMENT**

### **Article 7.5 Progress Payments**

*Add the following paragraphs after the second paragraph:*

#### **A. Applications for payment**

1. Each application for payment shall be consistent with previous applications and payments as certified by the Owner’s representative and paid for by the Owner.
  - a. The initial application for payment, the application for payment at time of Substantial Completion, and the final application for payment involve additional requirements.
2. Application preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor.
  - a. Entries shall match data on the schedule of values and the Contractor’s construction schedule. Use updated schedules if revisions were made.
  - b. Include amounts of Change Orders and construction change directives issued prior to the last day of the construction period covered by the application.
3. Transmittal: Submit one (1) signed and notarized original copy of each application for payment to the Owner’s representative by a method ensuring receipt within twenty-four (24) hours. One copy shall be complete, including OEO reports and similar attachments, when required.
  - a. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Engineer.
4. Initial application for payment: Administrative actions and submittals, that must precede or coincide with submittal of the first application for payment, include the following:

- a. List of subcontractors.
  - b. List of principal suppliers and fabricators.
  - c. Schedule of values.
  - d. Contractor's construction schedule (preliminary if not final).
  - e. Schedule of principal products.
  - f. Schedule of unit prices.
  - g. Submittal schedule (preliminary if not final).
  - h. List of Contractor's staff assignments.
  - i. List of Contractor's principal consultants.
  - j. Copies of permits.
  - k. Initial progress report.
5. Application for payment at substantial completion: Submit an application for payment following issuance of substantial completion.
- a. This application shall reflect certificates of partial substantial completion issued previously for Owner occupancy of designated portions of the Work.
  - b. Administrative actions and submittals that shall precede or coincide with this application include:
    - i. Occupancy permits and similar approvals.
    - ii. Warranties (guarantees) and maintenance agreements.
    - iii. Maintenance instructions.
    - iv. Changeover information related to Owner's occupancy, use, operation, and maintenance.
    - v. Final cleaning.
    - vi. List of incomplete Work, recognized as exceptions to Engineer's issuance of substantial completion.

Contractor shall submit, with the first application for payment, a copy of the Notice of Work executed by the State Department of Labor, Wage & Hour Administration. Failure to submit a copy of this form with the first application for payment will result in the withholding of \$5,000 from the progress payment. Additionally, a filing may be issued to the Wage & Hour Administration for failure to provide such notice.

*Add the following to the list of Withholdings, the fourth paragraph:*

- 6. Failure to submit the detailed Schedule of Values consisting of several elements as required. (The Engineer cannot pay on any of the items specified to be broken down until the breakdown is received and accepted).
- 7. A maximum of \$5,000 for failure to provide a Notice of Work and/or a Notice of Completion as required by Alaska Statute 36.05.045. For final payments,

the difference between \$5,000 and the actual amount paid for the Notice of Work filing shall be withheld until such time as the Contractor provides a copy of the Notice of Completion executed by the Wage & Hour Administration to the Engineer.

8. The value of items missing by the contract documents. Examples include, but are not limited to, record drawings; operations and maintenance manuals; Department of Labor Notice of Work and/or Notice of Completion, ADEC Notice of Completion form, or other items as listed in the schedule of values or elsewhere required in the contract documents.

*Add the following sentence to the end of the list of withholdings:*

Monies withheld under Article 7.5 - Progress Payments, shall be paid to the Contractor by subsequent pay estimates that follow the date on which the Contractor satisfactorily corrects the deficiencies causing the withholding.

*Delete the fifth paragraph and replace with the following:*

The amount of any withholding for items one (1) through eight (8) above shall be the reasonable value of the Work or remedy to be accomplished as estimated by the Engineer, without regard to bid amount or cost to the Contractor. The amount of withholding for items nine (9) through eleven (11) shall be in accordance with the claimed amount or the applicable Contract provisions.

*Add the following paragraph to the end of the Article:*

The monthly pay estimate shall be computed on the basis of Work completed. All quantities shall be subject to review by the Engineer prior to approval for payment. Monthly price allocation for payment of lump sum items shall be based on the approved construction progress schedule and schedule of values.

## **Article 7.7 Final Payment**

*Add the following paragraphs after the first paragraph:*

Additional administrative actions and submittals that must precede or coincide with submittal of the final application for payment include the following:

1. Evidence of completion of project closeout requirements.
2. Completion of items specified for completion after substantial completion and all applicable punchlist(s) from the Engineer.
3. Proof that incomplete Work has been completed and accepted by the Owner.
4. Transmittal of required project construction records to the Owner's representative.
5. Removal of temporary facilities and services, surplus materials, rubbish, and similar elements.
6. Approved redlines for record drawings.



## **Article 7.8 Correction of Work after Final Acceptance Date**

*Delete the first sentence of the first paragraph and replace with the following:*

Placement of the Project on warranty shall not relieve the Contractor of his responsibility for paying all costs resulting from defects in materials or workmanship supplied under the terms of the Contract, and for correction of those defects, for a period of two (2) years following the Final Acceptance Date.

## **SECTION 10.08 FORMS**

*Delete this Section. All forms required for this Project are provided in Section IV of the Contract Documents.*

## **DIVISION 70 MISCELLANEOUS**

### **SECTION 70.01 GENERAL**

Add the following new Article:

#### **Article 1.3 Utility Facilities**

Prior to commencing any Work covered under this division or impacting utility facilities, the Contractor shall contact the Utility and obtain any permits, approvals, or other conditions as required by the Utility to complete any Work on or in the vicinity of their facilities.

**\*END OF SPECIAL PROVISIONS\***





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



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### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

### **SECTION III**

### **TECHNICAL SPECIFICATIONS**





# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT

## INDEX TO TECHNICAL SPECIFICATIONS

### SPECIFICATIONS GROUP

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01 20 00	Price and Payment Procedures	1 - 4
01 31 00	Project Management and Coordination	1 - 7
01 32 00	Construction Progress Documentation	1 - 7
01 33 00	Submittal Procedures	1 - 11
01 52 00	Construction Facilities	1 - 4
01 60 00	Product Requirements	1 - 13
01 75 00	Starting and Adjusting	1 - 5
01 78 00	Contract Closeout	1 - 2

#### FACILITY CONSTRUCTION SUBGROUP

##### Division 02 – Existing Conditions

02 41 19	Selective Demolition	1 - 4
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##### Division 06 – Wood, Plastics, and Composites

06 60 00	FRP Fabrications	1 - 3
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#### FACILITY SERVICES SUBGROUP

NOT USED

#### SITE AND INFRASTRUCTURE SUBGROUP

NOT USED

#### PROCESS EQUIPMENT SUBGROUP

##### Division 40 – Process Integration

40 05 01	Process Piping	1 - 7
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SECTION 01 10 00  
SUMMARY OF WORK

PART 1 GENERAL

1.1 OVERVIEW

- A. The Project is the Asplund Wastewater Treatment Facility (AWWTF) Brine/Caustic Header Replacement.
- B. The Work to be performed under this Contract consists generally of removal of CPVC pipe headers on 12.5% strength sodium hypochlorite production equipment at the Asplund Wastewater Treatment Facility (AWWTF) at 2300 Hutson Drive, Anchorage, Alaska. The pipes will be replaced with a variety of pipe materials dependent upon process medium within each header.
- C. Under this contract, the Contractor will supply all labor, tools, equipment, materials, supplies, manufactured articles, Manufacturers' Services, transportation, and services, including fuel, power, water, and essential communications, for performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents.
- D. When in these Supplemental Technical Specifications there is reference made to General Requirements or General Conditions, this shall refer to the requirements of Division 01 of these Supplemental Technical Specifications. Where reference is made to General Provisions or Special Provisions, this shall refer to the MASS Division 10.00.

1.2 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Special Provisions
- B. Division 01 – General Requirements; and all Technical Specifications
- C. Division 02 through Division 46, as applicable

1.3 GENERAL

- A. Specifications and Drawings in these Contract Documents establish the performance, quality requirements, location, and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance.
- B. Piping, mechanical, and electrical Work shown on the Drawings is intended to be depictive and may not be an exact and complete representation of the actual finished Work. Include fittings, joints, supports, hardware, and other appurtenances and accessories to provide complete and functioning systems.
- C. Under this contract, the CONTRACTOR will supply all labor, tools, equipment, materials, supplies, and manufactured articles, transportation, and services, including fuel, power, and essential communications, for performing all Work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

## 3.1 REQUIREMENTS FOR SUBSTANTIAL COMPLETION

- A. MASS Division 10, Section 10.05 Control of Work, Article 5.22 Time for Completion of Work – substantially complete means:
1. All new pipe materials have been installed, tested, and proven trouble free for the 'in-service' period defined in the contract.
  2. The following shall be fulfilled before the Work is considered substantially complete:
    - a. Successful completion of work scope described in Section 01 75 00, STARTING AND ADJUSTING for all systems and equipment.
    - b. Submittals have been completed and approved.
    - c. Spare parts and expendable supplies and test equipment have been delivered to OWNER.
    - d. Punch-list items have been corrected.
    - e. Red-lines/record drawings in both hard-copy and electronic format have been submitted and approved.
    - f. Revisions to the Technical Manuals that may have resulted from the field tests have been made and reviewed and approved.
    - g. Operator training for new equipment has been completed.
    - h. Construction debris has been removed.
    - i. Field test report shall be submitted.

END OF SECTION



SECTION 01 14 00  
PROJECT CONSTRAINTS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Contractor shall furnish a Narrative Work Plan that describes the Contractor's phasing, and sequence of demolition and construction activities in the various areas at the facility. The Narrative Work Plan must identify those activities that may be performed concurrently and those that must be deferred or delayed until completion of other activities. The Narrative Work Plan must complement the Contractor's schedule, to be developed in accordance with Section 01 32 00, CONSTRUCTION PROGRESS DOCUMENTATION.
- B. The Narrative Work Plan must also discuss equipment the Contractor will use to support prosecution of the work, addressing means and methods for removing the materials to be demolished. It must consider equipment dimensions and weights, proposed lifting methods, and mitigation of damage to other process components and equipment in the Disinfection Building.
- C. A purpose of the Narrative Work Plan is to identify physical and scheduling constraints in the work beyond what is suggested or identified in these Technical Specifications and drawings.

1.2 RELATED SECTIONS

- A. Section 01 31 00 – Project Management and Coordination
- B. Section 01 32 00 – Construction Progress Documentation
- C. Division 01 – General Requirements; and all Technical Specifications
- D. Division 02 through Division 46

1.3 PROJECT CONSTRAINTS

- A. The existing treatment facility is to be maintained in continuous operation during construction of the Project.
- B. To complete the Work, the CONTRACTOR will need to have one or more unit processes temporarily removed from service. In anticipation of these interruptions in normal operations, CONTRACTOR shall coordinate with OWNER for needed lockouts and returning unit processes back to service. OWNER will lead in these activities with CONTRACTOR's participation and assistance, and per requirements of Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION.
- C. To this end, the CONTRACTOR shall establish a schedule of proposed unit process shut-downs in cooperation with the ENGINEER and OWNER's plant operating staff, to minimize shutdown times through advanced planning. CONTRACTOR shall have all equipment, materials, and labor on hand at time of any planned shutdown. Work shall not proceed prior to the approval of

associated submittals. Scheduled shutdown activity shall be included in the overall Project Schedule. The Project Schedule is to be updated and maintained as specified in Section 01 32 00, CONSTRUCTION PROGRESS DOCUMENTATION.

- D. The CONTRACTOR shall minimize the need for and duration of shutdown(s) through advanced planning. Work shall not proceed prior to the approval of associated submittals as specified in Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION and Section 01 32 00, CONSTRUCTION PROGRESS COORDINATION. For example, piping installation drawings shall be approved prior to the initiation of piping installation, etc. CONTRACTOR shall have all equipment, materials, and labor on hand at time of shutdown.
- E. The existing wastewater treatment facilities where CONTRACTOR's work is to be done will be occupied by the OWNER throughout the construction period. The CONTRACTOR shall provide all necessary access to the OWNER'S personnel as required to safely and efficiently operate/maintain the facilities. At all times during the Contract duration, the CONTRACTOR is to provide the OWNERS' personnel and representatives safe and immediate access to all process control equipment. Additionally, the CONTRACTOR is to provide for unimpeded access for all delivery vehicles transporting materials, chemicals, and/or equipment to the facility for the OWNER's operations.
- F. Bypassing of untreated or partially treated wastewater to the plant's effluent is not permitted.

#### 1.4 ADDITIONAL PROJECT CONSTRAINTS

- A. The chemicals used and made in the sodium hypochlorite production process are irritants that can cause severe chemical burns. At any given time there is a small amount of chlorine gas within some of the pipes held under vacuum pressures for use in the process and for delivery to the wastewater effluent. There are several gas monitors throughout the area and all personnel working in this space wear personal monitors clipped to clothing near their face. Personnel also carry emergency cartridge respirators in the event there is a catastrophic pipe failure while they are in the room.
- B. There are two process production skids (electrolyzer skids) on which pipe replacement work will be required. One of the two skids must remain in service at all times
- C. AWWU Treatment personnel will, upon scheduling the work, purge skid piping of all chemicals, flush existing lines with water, and will pickle the electrolyzers to protect the membranes while the contractor performs the required work.
- D. Lock out/tag out procedures will be in place to de-energize the DC rectifiers.
- E. Salvage all existing convoluted PTFE flanged flexible fittings; place in salt storage room as directed by Engineer.
- F. Prefabricate pipe to the limit practical to minimize the duration of the shutdown.
- G. The work must take place during a period of low chemical demand, typically during the winter months.

- H. There will be a minimum period of two weeks between starting up the first skid and taking the second skid out of service to:
  - 1. Allow a break in period on the new fabrications to allow finding and correcting leaks.
  - 2. Allow the Treatment operators to generate sufficient chemical to make up for any diminution in supply that may have occurred during the shutdown.

1.5 SHUTDOWNS

- A. Plant operation shutdowns in this project will include:
  - 1. Unit process(es) removed from operation.
  - 2. Work for each electrolyzer skid will require a separate shutdown
- B. A process shut down may include lockout/tag out of pumps, electrolyzers, and other electrical equipment; operational controls and/or other equipment (both permanent and/or temporary) to maintain an area suitable for entry, access, maintenance, repair, rehabilitation, installation, and/or inspection. The anticipated shutdowns affect single treatment unit processes, and do not affect the overall treatment capability of the WWTF. Implement tight controls to limit the number and duration of outages.
- C. Shutdowns shall be accomplished by the CONTRACTOR in cooperation with the Plant Superintendent/Foreman only when properly coordinated in advance by the CONTRACTOR with the OWNER and ENGINEER in accordance with the requirements of this section and Section 01 32 00, CONSTRUCTION PROGRESS COORDINATION.
- D. The CONTRACTOR shall submit a detailed shutdown plan and time schedule for chemical production interruptions, unit process(es) removed from operation, and power outages, at least three (3) weeks prior to the scheduled shutdown or power outage.
- E. The CONTRACTOR shall provide all temporary power circuits to minimize power outages.
- F. The CONTRACTOR shall provide all temporary communication circuits to minimize plant shutdowns.
- G. Unless otherwise coordinated with and approved by the OWNER/Plant Superintendent/Foreman, the following shall apply:
  - 1. Shutdowns and power outages shall be initiated and completed only during normal working hours of plant operating personnel.
  - 2. Shutdowns and power outages shall be coordinated with and approved at least 48 hours prior to the scheduled interruption.
  - 3. Power outages shall not exceed two (2) hours, and not more than one in a day. Total number of power outages shall not exceed four (4), or as otherwise coordinated with and approved by the OWNER.

1.6 SEQUENCE OF ACTIVITIES

- A. The intent of the sequence of activities is the orderly progression of the Work with a minimization of temporary facilities, the completion of activities in a logical fashion that eliminates rework, coordination of all new installations to complete the overall project within the time frame outlined in the contract documents.
- B. The OWNER must continue to operate the wastewater treatment system, except for very limited shutdowns. As such, this sequence of activities tries to provide a scenario where interruptions to plant operations are minimized, by providing temporary work-arounds as needed, and completing major portions of construction prior to making relatively quick cut-ins when temporarily interrupting process flows.
- C. While there are operational and contractual constraints to the progression of the Work, the sequence of activities outlined herein is not mandatory as presented and shall not be interpreted to preclude CONTRACTOR's alternative approaches to sequencing the Work. The CONTRACTOR is to prepare and submit the CONTRACTOR's recommended sequence of activities that optimizes efficiency for the CONTRACTOR while limiting operational impacts to the OWNER.
- D. The work of this project is reasonably segregated because it involves rehabilitation of redundant unit processes. In each of the work areas there are many discrete work activities that might be performed in parallel while there is a sequential flow that will drive the most efficient effort. A general Sequence of Activities for major Work items of this Project is addressed in the following paragraphs.
  - 1. Measure existing pipe assemblies for replication using new materials;
  - 2. Produce fabrication drawings; field check prior to release;
  - 3. Fabricate new pipe assemblies; ship to site; inventory upon receipt to confirm all needed materials are on hand;
  - 4. Request process shutdown of one electrolyzer skid; lockout/tag out procedures for all appropriate equipment;
  - 5. Remove existing pipes and flexible connectors; salvage items shown;
  - 6. Install new pipe headers, fittings, flex connectors, and supports;
  - 7. Install temporary blind flanges for pressure and vacuum testing;
  - 8. Clean and test installed piping
  - 9. Connect flexible elements to electrolyzers;
  - 10. Return equipment to Operators control and allow for 14 days of running time to expose any issues that did not arise during testing.
  - 11. Repeat for the other electrolyzer skid.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 GENERAL

- A. Provide for the following:
  - 1. Area lighting must be provided at all times to support construction and on-going treatment operations
  - 2. Control of dust and shavings from cutting and similar activities must be provided to prevent debris entry into the drainage system in various parts of the building
- B. No physical Work will be allowed to commence at the project site prior to approval of the CONTRACTOR's schedule and Narrative Work Plan.

END OF SECTION



SECTION 01 20 00  
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 ADMINISTRATIVE SUBMITTALS

- A. Schedule of Values
- B. Schedule of Estimated Progress Payments
- C. Application for Payment

1.2 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Division 10 – General Provisions, Section 10.07 Measurement and Payment; Special Provisions; and Division 1 - General Requirements.
- B. 01 11 00 – Summary of Work
- C. 01 14 00 – Project Constraints
- D. 01 31 00 – Project Management and Coordination
- E. 01 32 00 – Construction Progress Documentation
- F. 01 33 00 – Submittal Procedures
- G. 01 78 00 – Contact Closeout

1.3 SCHEDULE OF VALUES

- A. Format: Prepare a schedule of values that includes each of the following items as a minimum:
  - 1. Each specification section from Division 01 through Division 40.
  - 2. Separate items in sub-paragraph “1” (above) into major components within each specification section. Include at least one line each for “procured and stored materials” and at least one line for installation of each such item.
  - 3. Mobilization and Demobilization. Total payment shall not exceed 5 percent of the total project amount, with an allocation as follows:
    - a. Mobilization is limited to a maximum of 3.25% of the total project amount. Mobilization includes financing the work, obtaining all bonds, permits, and insurance; furnishing, erecting, and maintaining all temporary buildings, including the cost of property and all temporary utilities; pre-construction condition assessments, development of required safety plans, and move-in of all equipment, tools, and personnel and other items as described in specification Section 01 52 00, FACILITIES AND TEMPORARY CONTROLS.
    - b. Demobilization is limited to a minimum of 1.75% of the total project amount. Demobilization includes disassembling,

disconnecting, and move-out of all temporary buildings, equipment, and supplies, and final cleanup of the site.

4. Submittals, maximum of 3 percent of all Items (in PAYMENT paragraph of this specification Section)
  5. Temporary facilities
  6. Contract changes
  7. Record Drawings
  8. Functional Testing and Start-up
  9. Performance Testing
  10. Training
  11. Close-out documents
  12. Contingent Sum
- B. An unbalanced or front-end loaded schedule of values will not be acceptable. Include proportional amount of Contractor's overhead and profit in each line item. Round amounts to the nearest dollar.
- C. Summation of the complete schedule of values representing all Work under this agreement shall equal the Contract Price.
- D. Coordinate Schedule of Value items with Bid Items and activities in the progress schedule.
- E. Submit schedule of values via electronic transmission, in a spreadsheet format compatible with Microsoft Excel®.

#### 1.4 SCHEDULE OF ESTIMATED PROGRESS PAYMENTS

- A. Show estimated payment requests throughout Contract Times aggregating initial Contract Price.
- B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.

#### 1.5 APPLICATION FOR PAYMENT

- A. Refer to MASS Standard Construction Specifications, Division 10 – General Provisions, Section 10.07 Measurement and Payment; and Special Provisions.
- B. Submittal Tracking Record: Attach one Submittal Tracking Record to each detailed Application for Payment for each submission. Include Request for Payment of Materials and Equipment on Hand as applicable. Execute certification by authorized officer of Contractor.
- C. Use detailed Application for Payment Form suitable to Owner. Include accepted Schedule of Values for each portion of Work, the unit price breakdown for Work to be paid on unit price basis, a listing of Owner-selected equipment, if applicable, and allowances, as appropriate.
  1. Form(s) to conform to the examples furnished by Owner for Lump Sum Work, Unit Price Work, and materials on hand.
    - a. Progress schedule shall be progressed to date showing actual work progress.



- b. Narrative report that references and supports the progress schedule.
  - c. Contractor Design Clarification/Verification Request (DCVR) log.
  - d. Contractor Submittal log.
- D. Preparation
  - 1. Round values to nearest one dollar.
  - 2. List each Change Order and Written Amendment executed prior to date of submission as separate line item. Totals to equal those shown on the Summary Sheet.
  - 3. Submit Application for Payment, including a Transmittal Summary Form, a detailed Application for Payment Form, a listing of materials on hand, and such supporting data as may be required.

1.6 MEASUREMENT – GENERAL

- A. For items paid on a lineal foot basis, coordinate with Engineer to measure these items for payment in the field. Work with Engineer’s staff to ensure fair, accurate and equitable measurements. Agree to methods and process prior to beginning the work.
- B. For items paid on a square foot basis, coordinate with Engineer to measure these items for payment in the field. Work with Engineer’s staff to ensure fair, accurate and equitable measurements. Agree to methods and process prior to beginning the work.
- C. For items paid on a cubic foot basis, coordinate with Engineer to measure these items for payment in the field. Work with Engineer’s staff to ensure fair, accurate and equitable measurements. Agree to methods and process prior to beginning the work.
- D. For items paid on a lump sum basis, there will be no measurement required.

1.7 PAYMENT

- A. Refer to the Municipality of Anchorage Standard Specifications (MASS), Division 10 – General Provisions, Section 10.07 Measurement and Payment; and Special Provisions.
- B. The Schedule of Values will be the basis for payment.
- C. Payment will not be made for following:
  - 1. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
  - 2. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents. Loading, hauling, and disposing of rejected material.
  - 3. Defective Work not accepted by Owner.
- D. Payment will be made for the following items on a percent complete basis, which shall be supported by the Schedule of Values. The scope of work is generally described in Specification Section 01 10 00 Summary of Work, paragraph 1.4.

Items	Description
Item 1  Brine/Caustic Header Replacement	Item 1, shall be paid on a lump sum basis.  The lump sum price shall include full compensation for: furnishing of all labor, materials, equipment, and incidentals associated with the facility as defined by Work specified and shown on the Drawings, including but not limited to, project management; development of work plans, schedules, submittals, O&M manuals, regular maintenance of red line records, construction progress photos, coordination with OWNER/ENGINEER, and contract closeout; temporary installations, temporary process operations, including related equipment, hose, pipe, valves, and appurtenances, and other falsework; install, start-up and testing of upgrades, related structural, mechanical, electrical systems and appurtenances; and all other Work complete and functional.  Brine/Caustic Header Replacement; Miscellaneous Items. See detailed scope in Section 01 10 00 Summary of Work.
Item 2  Contingent Sum	Item 2, shall be paid on a time and materials basis.  The time and materials price shall include full compensation for: furnishing of all labor, materials, equipment, and incidentals associated with the facility for additional pipe replacement work as may be directed by the engineer. This item is intended to address unforeseen pipe failures on the hypochlorite production skids beyond what the Engineer and Owner have previously identified.  Contingent Sum will replace existing piping with new materials as may be discovered necessary upon the prosecution of the work.

1.8 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

- A. Refer to MASS Division 10 – General Provisions, Section 10.07 Measurement and Payment; and Special Provisions.
- B. Payments will be made for materials and equipment delivered or stored after submittals and shop drawings are acceptable to the Engineer, and only for materials and equipment to be permanently incorporated into the work.

1.9 FINAL APPLICATION FOR PAYMENT

- A. Refer to the Standard General Provisions, MASS Division 10 Article 7.7.
- B. Prior to submitting final application, make acceptable delivery of required documents. Refer to Section 01 78 00, CONTRACT CLOSEOUT.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 00  
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This Section addresses the project management and coordination efforts the CONTRACTOR will perform as part of the Work; including:
1. Coordination with the OWNER.
  2. Coordination with the ENGINEER and OWNER's Facility Operators to manage Project Constraints, process Shutdowns, and Sequencing of Activities and Construction, as summarized in the specification Sections 01 10 00, SUMMARY OF WORK and 01 14 00, PROJECT CONSTRAINTS.
  3. Providing as required: temporary utilities, temporary facilities, material and equipment staging, maintenance of treatment plant operations, protection of the OWNER's property, and maintenance of access ways for emergency response vehicles, such as fire and ambulance.

1.2 OTHER WORK

- A. Other work will be performed at the Project Site by entities other than the CONTRACTOR prior to, during, in sequence with, and following performance of the work of this Contract.
1. This other work involves the various agencies with which the CONTRACTOR shall coordinate to complete the work of this Contract.
  2. CONTRACTOR shall submit to the OWNER and ENGINEER a list of persons contacted at the various utilities and agencies, and date of contact per the requirements of specification Section 01 33 00, SUBMITTAL PROCEDURES.
- B. Utilities and agencies include but are not limited to the following:
1. Chugach Electric Association
  2. AWWU Operations & Maintenance
  3. Ongoing delivery of chemicals and supplies
- C. Coordination with other work ongoing at the project site while this Work is in progress. This may include, but is not limited to the following:
1. Normal day-to-day maintenance activities at the Asplund WWTF
  2. Truck operations at the WWTF (solid waste collection, deliveries, etc)

### 1.3 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Division 10 – General Provisions, Section 10.05 Control of Work, Article 5.3 Construction Progress Schedule and Schedule of Values; Special Provisions; and Division 1 - General Requirements.
- B. 01 10 00 – Summary of Work
- C. 01 14 00 – Project Constraints
- D. 01 32 00 – Construction Progress Documentation
- E. 01 33 00 – Submittal Procedures
- F. 01 75 00 – Starting and Adjusting
- G. 01 78 00 – Contract Closeout (Record Documents)
- H. 02 41 19 – Selective Demolition
- I. Division 40 – Process Interconnections

### 1.4 REFERENCES

- A. Throughout these specifications, there are references to various standards and codes. CONTRACTOR shall use the most current edition of specified standards and codes (as amended by the Municipality of Anchorage) whether these are specifically noted within the specifications or not.

### 1.5 OWNER COORDINATION

- A. The CONTRACTOR is to coordinate with the OWNER as the Work progresses. OWNER coordination will include:
  - 1. CONTRACTOR participation in meetings
  - 2. CONTRACTOR's access and use of OWNER facilities
  - 3. CONTRACTOR's impacts on operations at the Asplund Wastewater Treatment Facility (AWWTF).

### 1.6 MOBILIZATION

- A. Mobilization shall include, but is not limited to the items listed herein:
  - 1. Obtain Permits, Licenses and Approvals (other than those provided by OWNER in Section XIV) in accordance with the requirements of the General Conditions and retain onsite.
  - 2. Moving CONTRACTOR's equipment and facilities to site
  - 3. Installing separately-metered temporary construction power, wiring, and lighting facilities
  - 4. Providing onsite communication facilities, including telephones
  - 5. Providing onsite sanitary and potable water facilities
  - 6. Posting OSHA required notices and establishing safety program

### 1.7 PROTECTION OF WORK AND PROPERTY

- A. Comply with OWNERS' safety rules while on OWNER's property.

- B. Inform OWNER of accidents at the Project Site and of related claims.
- C. In the performance of Work, CONTRACTOR is responsible for adapting the means, methods, techniques, sequences, and procedures of the construction to allow the OWNER to maintain the continuous operation of the Wastewater Treatment Plant consistent with Environmental Protection Agency and Alaska Department of Environmental Conservation permits and approvals. In performing such Work, it may be necessary for the CONTRACTOR to plan, design, and provide various temporary services, utilities, connections, temporary piping, temporary pumping, heating, access, and similar items which shall be included in the Contract Price.

#### 1.8 CONTRACTOR MEETING PARTICIPATION

- A. General: The OWNER will arrange for facilities to be used for all meetings, will prepare a meeting agenda with input from the CONTRACTOR and ENGINEER, will preside at meetings, will record minutes to include significant proceedings and decisions, and will distribute minutes of these meetings within 5 days of the meeting.
- B. Preconstruction Conference: Within 21 days after contract time begins and before commencement of Work. Representatives of OWNER, ENGINEER, CONTRACTOR, and key Subcontractors shall attend as needed. CONTRACTOR shall be prepared to discuss:
  - 1. Schedules, submittals, applications for payment, and record keeping
  - 2. Status of bonds and insurance
  - 3. Status of permits and approvals necessary for construction, including CONTRACTOR submitted review documents to the Municipality of Anchorage Building Safety Department and resulting permits/approvals
  - 4. Summary of Work, Sequencing of Construction, Sequencing of critical path items, and near term (3-week) schedule and sequence of work
  - 5. Anticipated impacts on wastewater treatment operations
  - 6. Use of site, access, office and storage areas, security, and temporary facilities
  - 7. CONTRACTOR's safety plan and representative
  - 8. CONTRACTOR's quality control plan and personnel qualifications
- C. Progress Meetings: Weekly meetings will be conducted at the site during construction activities to determine construction impacts to wastewater treatment operations, review work progress, review progress on record redline drawings and documents, evaluate the schedule, review shop drawings and submission requirements, review pay applications, and other matters requiring discussion and resolution.
- D. Quality Control Meetings:
  - 1. Monthly meetings will be conducted either on site or by teleconference to review the following:

- a. Test and inspection reports'
  - b. Progress photographs,
  - c. Maintenance of, and presentation of progress on CONTRACTOR's record red line drawings and documents,
  - d. Other matters related to the quality of the Work.
2. Additional quality control meetings may be requested by the ENGINEER.
- E. Pre-Installation Meetings:
- 1. When required in individual Specification sections, convene at site prior to commencing Work of that section.
  - 2. Require attendance of entities directly affecting, or affected by, Work of that section.
  - 3. Notify OWNER and ENGINEER seven (7) days in advance of meeting date.
  - 4. Provide suggested agenda to OWNER and ENGINEER to include reviewing conditions of installation, preparation and installation or application procedures, and coordination with related work and work of others.
- F. Other Meetings: In accordance with Contract Documents and as may be required by OWNER and ENGINEER.

1.9 ACCESS AND USE OF OWNER FACILITIES

- A. OWNER maintains security at all its facilities including the Asplund WWTF. All buildings and gates are required to be securely locked at all times.
- B. CONTRACTOR will be responsible for coordinating with OWNER's security staff to receive instruction in the required security requirements and obtain pass keys for use during the execution of the Work to enable passage through gates and doorways.
- C. Conduct Work outside regular working hours only with consent of OWNER.
- D. CONTRACTOR may use the following OWNER facilities at AWWTF during the course of the Work, as coordinated with the OWNER and within the limitations noted further below.
  - 1. Utility Water
- E. When using OWNER facilities at the Asplund WWTF:
  - 1. Priority for concurrent use of facilities must be given to OWNER staff.
  - 2. CONTRACTOR must maintain OWNER facilities in clean and operable condition. Failure to do so will result in forfeiture of CONTRACTOR access to OWNER facilities.

### 1.10 IMPACTS TO FACILITY OPERATIONS

- A. The Asplund WWTF is a wastewater treatment facility. Unit processes within the Asplund WWTF are those portions of the overall treatment plant infrastructure which when operated together comprise the overall treatment process. Do not proceed with Work affecting a unit process operation without obtaining OWNER's advance approval per the SHUTDOWNS paragraph of specification Section 01 14 00, PROJECT CONSTRAINTS.
- B. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of OWNERS' treatment operations. Under no circumstances cease Work at the end of a normal working day if such actions may inadvertently cause a cessation of any facility operating process, in which case, remain onsite until necessary repairs are complete.
- C. Do not close lines or gates, open valves or gates, or take other action which would affect the operation of the existing treatment systems/unit processes, except as specifically required by the Contract Documents and after approval of OWNER.

### 1.11 OWNER USE OF THE SITE

- A. The OWNER may utilize all or part of the existing facilities during the entire period of construction for the conduct of the OWNER's normal operations.
- B. The CONTRACTOR shall cooperate and coordinate with the OWNER to facilitate the OWNER's operations and to minimize interference with the CONTRACTORS' operations at the same time.
- C. In any event, the OWNER shall be allowed access to the Site during the period of construction.

### 1.12 CONTRACTOR USE OF SITE

- A. The CONTRACTOR's use of the Site shall be limited to its construction operations and on-site storage of materials.
- B. Health and Safety: The CONTRACTOR shall develop a Confined Space Entry Plan, in accordance with State and Federal OSHA regulations, as part of an overall health and safety plan for this project. Entry into all below-ground facilities shall include continuous air monitoring.
  - 1. Owner will furnish staff to monitor CONTRACTOR personnel at all times they are in the sodium hypochlorite production room. Access to this room will not be allowed without such staff on hand.
- C. Interference With Work on Utilities: The CONTRACTOR shall cooperate fully with all Utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities that interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.
- D. No Early Start: The CONTRACTOR shall not commence any construction activities until all submittals required in MASS Section 10.05 – Control of Work, have been completed.

### 1.13 PHYSICAL CONDITIONS

- A. Exercise reasonable care to verify locations of existing subsurface structures and facilities embedded within and/or beneath floor slabs. Thoroughly check immediate and adjacent areas subject to disturbance by visual examination for indications of subsurface structures and embedded facilities.
- B. Make exploratory examinations where existing underground or embedded facilities or structures may potentially conflict with the Work. Conduct exploratory examinations in the presence of OWNER and sufficiently ahead of construction to avoid possible delays to CONTRACTOR's Work.
- C. Historic record drawings may be furnished to the CONTRACTOR upon request, but shall not be relied upon exclusive of complete and comprehensive investigative efforts and confirmation of installation, details, materials, and dimensions.

### 1.14 EQUIPMENT SALVAGE

- A. Provide OWNER first right of refusal on all salvageable materials and equipment to be removed from the existing treatment system. Dispose of all other materials and equipment as required by State and local regulations.
- B. Items to be salvaged include:
  - 1. 2 inch and 3 inch PTFE flex connectors
  - 2. Stainless steel fasteners

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.1 PARKING AREAS

- A. Control vehicular parking to preclude interference with OWNER's operations, construction operations, or access by utility trucks and emergency vehicles. Protect OWNER's existing property including site and buildings.

### 3.2 TEMPORARY UTILITIES AND FIRE PROTECTION

- A. Lighting: Provide temporary lighting to meet all applicable safety requirements during Work.
- B. Protection of Systems, Finishes, and Coatings from Weather: Provide covers and enclosures as required to protect the Work from rain, snow, and wind, to maintain adequate environmental conditions to facilitate the Work, to meet specified minimum conditions for the installation of materials, and to protect materials, equipment, finishes, and coating systems from damage due to moisture, wind, or temperature.
- C. Provide Heating, Cooling, Ventilation and Dehumidification as required to maintain adequate environmental conditions to facilitate the Work, to meet specified minimum conditions for the installation of materials, and to protect materials, equipment, finishes, and coating systems from damage due to temperature and/or humidity.



- D. Fire Protection: Furnish and maintain on site, adequate firefighting equipment for extinguishing incipient fires.

### 3.3 CUTTING, FITTING, AND PATCHING

- A. Execute work by methods to avoid damaged to other Work and adjacent existing materials, surfaces, and finishes.
- B. Cut, fit, adjust, or patch Work as required, to make Work complete.
- C. Restore existing equipment and facilities impacted by the Work, including:
  - 1. Repair of blemishes to walls or other finished surfaces,
  - 2. Replacement of materials and/or equipment defaced, damaged, or otherwise negatively impacted in the execution of the Work.
- D. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use best-recommended practice of manufacturer or appropriate trade association.
- E. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.
- F. See specification Section 02 41 19 SELECTIVE DEMOLITION, 01 78 00 CONTRACT CLOSEOUT, as well as individual technical Specifications and Drawings for other requirements related to cutting, patching, and surface finishing related to the Work of this Project.

### 3.4 DISPOSITION OF CONSTRUCTION WASTES

- A. Provide OWNER/ENGINEER-approved containers for collection of waste materials, debris, and rubbish. CONTRACTOR to remove waste generated in the execution of the Work from the project site and dispose at an Alaska Department of Environmental Conservation/US Environmental Protection Agency approved disposal facility, at minimum one-week intervals for the duration of the Project.

END OF SECTION



SECTION 01 32 00  
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 SUBMITTALS

- A. Preliminary Progress Schedule: Submit at least 3 work days prior to preconstruction conference.
- B. Detailed Progress Schedule including Narrative Work Plan:
  - 1. Submit initial Detailed Progress Schedule within 10 days after Effective Date of the Notice to Proceed.
  - 2. Submit an Updated Progress Schedule with each pay application, in accordance with Article DETAILED PROGRESS SCHEDULE AND NARRATIVE WORK PLAN (see below).
- C. Submit with Each Progress Schedule Submission electronic files for the following:
  - 1. CONTRACTOR's certification that the progress schedule submission is the actual schedule being utilized for execution of the Work.
  - 2. Project schedule compatible with latest version of Project Professional by Microsoft Corporation unless otherwise approved by ENGINEER.
  - 3. Narrative Progress Report as a Microsoft Office Word text document.

1.2 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Division 10 – General Provisions, Section 10.05 Control of Work, Article 5.3 Construction Progress Schedule and Schedule of Values; Special Provisions; and Division 1 - General Requirements.
- B. 01 10 00 – Summary of Work
- C. 01 14 00 – Project Constraints
- D. 01 20 00 – Measurement and Payment
- E. 01 31 00 – Project Management and Coordination
- F. 01 33 00 – Submittal Procedures
- G. 01 75 00 – Starting and Adjusting

1.3 PRELIMINARY PROGRESS SCHEDULE

- A. In addition to basic requirements outlined in General Provisions, show a detailed schedule, beginning with Notice to Proceed, for minimum duration of 40 days, and a summary of balance of Project through Final Completion.
- B. Coordinate activities in the progress schedule with the Schedule of Values.

- C. Show activities including, but not limited to the following:
  - 1. Notice to Proceed.
  - 2. Permits.
  - 3. Submittals, with review time.
  - 4. Initial site work.
  - 5. Specified Work sequences and construction constraints.
  - 6. Contract Milestone and Completion Dates.
  - 7. Major structural, mechanical, equipment, electrical, architectural, and instrumentation and control Work.
  - 8. System startup summary.
  - 9. Project close-out summary.
  - 10. Demobilization summary.
- D. Update and submit Progress Schedule monthly; as part of progress payment application process. Failure to do so may cause OWNER to withhold all or part of the monthly progress payment until the Progress Schedule is updated in a manner acceptable to ENGINEER.
- E. Format: In accordance with Article in this Specification entitled PROGRESS SCHEDULE - CRITICAL PATH NETWORK.

#### 1.4 DETAILED PROGRESS SCHEDULE AND NARRATIVE WORK PLAN

- A. In addition to requirements of General Provisions, submit Detailed Progress Schedule beginning with Notice to Proceed and continuing through Final Completion to be based upon Narrative Work Plan.
- B. Show the duration and sequences of activities required for complete performance of the Work reflecting means and methods chosen by CONTRACTOR.
- C. When accepted by ENGINEER, Detailed Progress Schedule and Narrative Work Plan will replace Preliminary Progress Schedule and become Baseline Schedule. Subsequent revisions will be considered Updated Progress Schedules.
- D. Format per Article PROGRESS SCHEDULE - CRITICAL PATH NETWORK.
- E. Update monthly to reflect actual progress, occurrences, and any weather delays.

#### 1.5 PROGRESS SCHEDULE - CRITICAL PATH NETWORK

- A. General: Comprehensive computer-generated schedule using CPM, generally as outlined in Associated General CONTRACTORS of America (AGC) Publication No. 1107.1, "Construction Planning and Scheduling", latest edition. If a conflict occurs between the AGC publication and this specification, this specification shall govern.
- B. Contents:
  - 1. Schedule shall begin with the date of Notice to Proceed and conclude with the date of Final Completion.
  - 2. Identify Work calendar basis using days as a unit of measure.

3. Show complete interdependence and sequence of construction and Project-related activities reasonably required to complete Work.
  4. Identify Work of separate stages and other logically grouped activities, and clearly identify critical path of activities.
  5. Reflect sequences of Work, restraints, delivery windows, review times, Contract Times and Project Milestones set forth in the Agreement, Section 01 31 00, PROJECT MANAGEMENT AND COORINDINATION.
  6. Develop a Work Breakdown Structure (WBS) aligned with the contract bid items and the Schedule of Values as identified in Section 01 20 00, MEASUREMENT AND PAYMENT.
  7. Include as applicable, at a minimum:
    - a. Work deviations from those presented in Contract Documents.
    - b. Obtaining permits.
    - c. Submittals for early product procurement and long lead time items.
    - d. Mobilization and other preliminary activities.
    - e. Initial site Work, and temporary facilities and utilities.
    - f. Specified Work sequences, constraints, coordination of trades, and Milestones, including Substantial Completion date(s) Subcontract Work, plant shutdown events.
    - g. Submittal/procurement cycle.
    - h. Equipment design, fabrication, factory testing, and delivery dates.
    - i. Demolition.
    - j. Process/Equipment Work.
    - k. Mechanical Work.
    - l. Electrical Work.
    - m. Equipment and system startup and test activities.
    - n. Record Documents.
    - o. Project closeout and cleanup.
    - p. Demobilization.
  8. No activity duration, exclusive of those for Submittals review and product fabrication/delivery, shall be less than 1 day or more than 30 days, unless otherwise approved.
  9. Activity duration for Submittal Review shall not be less than review time specified unless clearly identified and prior written acceptance has been obtained from ENGINEER.
- C. Network Graphical Display:
1. Plot or print on paper a hard copy of electronic submittal.

2. Title Block: Show name of Project, OWNER, date submitted, revision or update number, and the name of the scheduler. Updated schedules shall indicate data date.
  3. Identify horizontally across the top of the schedule the time frame by year, month, and day.
  4. Identify each activity with a unique number and a brief description of the Work associated with that activity.
  5. Indicate the critical path.
  6. Show, at a minimum, the controlling relationships between activities.
  7. Plot activities on a time-scaled basis, with the length of each activity proportional to the current estimate of the duration.
  8. Plot activities on an early start basis unless otherwise requested by ENGINEER.
  9. Provide a legend to describe standard and special symbols used.
- D. Schedule Report:
1. Print on paper hard copy of electronic submittal.
  2. List information for each activity in tabular format, including, at a minimum:
    - a. Activity Identification Number.
    - b. Activity Description.
    - c. Original Duration.
    - d. Remaining Duration.
    - e. Early Start Date (Actual start on Updated Progress Schedules).
    - f. Early Finish Date (Actual finish on Updated Progress Schedules).
    - g. Late Start Date.
    - h. Late Finish Date.
    - i. Total Float.
  3. Sort reports, in ascending order, as listed below:
    - a. Activity number sequence with predecessor and successor activity.
    - b. Activity number sequence.
    - c. Early-start.
    - d. Total float.

## 1.6 PROGRESS OF THE WORK

- A. Updated Progress Schedule must reflect:
  - 1. Progress of Work to within 5 working days prior to submission.
  - 2. Approved changes in Work scope and activities modified since submission.
  - 3. Delays in Submittals or resubmittals, deliveries, or Work.
  - 4. Adjusted or modified sequences of Work.
  - 5. Other identifiable changes.
  - 6. Revised projections of progress and completion.
  - 7. Report of changed logic.
- B. Produce detailed sub-schedules during Project, upon request of OWNER or ENGINEER, to further define critical portions of the Work such as facility shutdowns, etc.
- C. If CONTRACTOR fails to complete activity by its latest scheduled completion date and this failure is anticipated to extend Contract Times (or Milestones), CONTRACTOR will, within 7 days of such failure, submit a written statement as to how CONTRACTOR intends to correct nonperformance and return to acceptable current progress schedule. Actions by CONTRACTOR to complete Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.
- D. OWNER may order CONTRACTOR to increase plant, equipment, labor force or working hours if CONTRACTOR fails to: (1) Complete a Milestone activity by its completion date, (2) Satisfactorily execute Work as necessary to prevent delay to overall completion of Project, at no additional cost to OWNER.

## 1.7 NARRATIVE PROGRESS REPORT AND PHOTOGRAPHS

- A. Format: Organize same as Progress Schedule. Identify, on a cover letter, reporting period, date submitted, and name of author of report.
- B. Contents:
  - 1. Number of days worked over the period, work force on hand, construction equipment on hand (including utility vehicles such as pickup trucks, maintenance vehicles, stake trucks, etc.).
  - 2. General progress of Work, including a listing of activities started and completed over the reporting period, mobilization/demobilization of SUB-CONTRACTORS, and major milestones achieved.
  - 3. Photographs showing general progress of Work.
  - 4. CONTRACTOR'S plan for management of site (e.g., lay down and staging areas, construction traffic, etc.), utilization of construction equipment, buildup of trade labor, and identification of potential Contract changes.
  - 5. Identify new activities/sequences as a result of executed Contract changes.

6. Documentation of weather conditions over the reporting period, and any resulting impacts to the Work.
7. Description of actual or potential delays, including related causes, and the steps taken or anticipated to mitigate their impact.
8. Changes to activity logic and/or the critical path.
9. Identification of, and accompanying reason for, any activities added or deleted since the last report.
10. Steps taken to recover the schedule from CONTRACTOR-caused delays.

## 1.8 SCHEDULE ACCEPTANCE

- A. ENGINEER'S acceptance will demonstrate agreement that the proposed schedule conforms to requirements of Contract including, but not limited to, the following:
1. Contract Times, including Final Completion and all intermediate Milestones are within the specified times.
  2. Specified Work sequences and constraints are shown as specified.
  3. Complete Scope of Work is included.
  4. Access restrictions are accurately reflected.
  5. Start-up and testing times are as specified.
  6. Training time is as specified.
  7. Level of detail is as specified herein.
  8. Submittal submission and review times are as specified.
  9. Duration of Activities are reasonable.
  10. Sequencing is reasonable, compatible with specified construction sequencing, and does not include preferential logic contrary to the contingency /float sharing clauses of this Specification.
  11. Meets all administrative requirements of Contract Documents.
  12. Updated schedules reflect actual dates and duration of Work performed.
- B. Schedule Review Disposition:
1. Accepted.
  2. Rejected as Noted:
    - a. Make requested corrections; resubmit within ten days.
    - b. Until acceptable to ENGINEER as the Baseline Progress Schedule, continue the review and revision process, during which time CONTRACTOR shall update the schedule on a monthly basis to reflect actual progress and occurrences to date.
- C. Narrative Report: All changes to activity duration and sequences, including the addition or deletion of activities subsequent to ENGINEER's acceptance of the Baseline Progress Schedule, shall be delineated in the Narrative Report current with the proposed Updated Progress Schedule.



## 1.9 ADJUSTMENT OF CONTRACT TIMES

- A. Reference MASS Division 10 General Provisions.
- B. Evaluation and reconciliation of Adjustments of Contract Times shall be based on the Updated Progress Schedule at the time of proposed adjustment or claimed delay.
- C. Float: Float time is a Project resource available to both parties to meet contract Milestones and Contract Times.
  - 1. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of OWNER and CONTRACTOR.
  - 2. Pursuant to above float-sharing requirement, no time extensions will be granted nor delay damages paid until a delay occurs which (i) impacts Project's critical path, (ii) consumes available float or contingency time, and (iii) extends Work beyond contract completion date.
- D. Claims Based on Contract Times:
  - 1. Where ENGINEER has not yet rendered formal decision on CONTRACTOR'S claim for adjustment of Contract Times, and parties are unable to agree as to amount of adjustment to be reflected in progress schedule, CONTRACTOR shall reflect an interim adjustment in the progress schedule as acceptable to ENGINEER.
  - 2. It is understood and agreed that such interim acceptance will not be binding on either CONTRACTOR or OWNER, and will be made only for the purpose of continuing to schedule Work until such time as formal decision has been rendered as to an adjustment, if any, of the Contract Times.
  - 3. CONTRACTOR shall revise progress schedule prepared thereafter in accordance with ENGINEER's formal decision.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION



SECTION 01 33 00  
SUBMITTAL PROCEDURES

PART 1      GENERAL

1.1      GENERAL

- A.      Inquiries: Direct submittal inquiries to Engineer regarding procedure, purpose, or extent of Submittal.
- B.      OWNER's Authorization: At any time, OWNER may authorize changes to procedures and requirements for Submittals. Such authorization will be in writing.
- C.      Timeliness: Schedule and make submissions in accordance with requirements of individual Specification sections and in such sequence as to cause no delay in Work or in work of other contractors. CONTRACTOR shall have the completed and approved submittals and shop drawings on site prior to installation of such materials into the work.
- D.      Identification of Submittals
  - 1.      Complete, sign, and transmit with each Submittal package, one Transmittal of Contractor's Submittal Form, and a copy of the Contractor's submittal log pertaining to submitted section.
  - 2.      Submittal Number Format: SSSSSS-NNN-V.
    - a.      SSSSSS: Specification Section under which information is submitted
    - b.      NNN: Sequential Submittal Number (01 through 999).
    - c.      V: Resubmission version with sequential alphabetic suffix.
  - 3.      Format: Orderly, indexed with labeled tab dividers.
  - 4.      Show date of submission and dates of previous submissions.
  - 5.      Show Project title and OWNER's contract identification and number and Project ID number.
  - 6.      Show names of CONTRACTOR, Subcontractor or Supplier, and manufacturer as appropriate.
  - 7.      Identify Contract Document section and paragraph to which Submittal applies.
  - 8.      Identify whether or not the submitted item or items are a substitution or an or-equal alternative to the item specified in the Contract Documents.
  - 9.      Clearly identify revisions from previous submissions.
  - 10.     When a submittal package spans several sections, submit each item under its respective specification heading and paragraph. Clearly note on each item transmittal that it is part of a larger package and include references to the additional submittals made in the relevant sections.
- E.      Non-specified Submissions: Submissions not required or requested under these Contract Documents will not be reviewed and will be returned to CONTRACTOR.
- F.      Incomplete Submittal Submissions

1. At ENGINEER's sole discretion, ENGINEER will either (i) request the entire Submittal be revised and resubmitted with Contractor's revision/correction and resubmission, or (ii) request only portions of the Submittal be revised and resubmitted for review.
2. Stamp each submittal with uniform approval stamp before submitting to ENGINEER. Stamp to include CONTRACTOR's reviewer name, date of CONTRACTOR's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with Contract Documents.
3. Submittals which do not clearly bear CONTRACTOR's specific written indication of CONTRACTOR review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to CONTRACTOR unreviewed for resubmission in accordance with Contract Documents.
4. Delays, re-sequencing, or other impact to Work resulting from CONTRACTOR's submission of unchecked or unreviewed, incomplete, inaccurate or erroneous, or nonconforming Submittals, which will require CONTRACTOR's resubmission of a Submittal for ENGINEER's review, shall not constitute a basis of claim for adjustment in Contract Price or Contract Times.

G. Electronic Submittal Service and Procedures

1. Shop drawing and product data submittals shall be transmitted to OWNER in electronic (PDF) format using email for smaller (less than 10MB) submissions and DropBox, Google One, or similar services for larger submissions.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The electronic submittal process is not intended for color samples, color charts, or physical material samples. The submittal may be electronically posted to allow for reviewer to respond, but the physical submittals must be delivered to the OWNER/reviewer as directed (contact Engineer Project Lead for address for mailing).
4. Various submittals will be tracked in tabular format using Excel® spreadsheets. This will include:
  - a. Submittals: Administrative, Product Data, Shop Drawing, and Record Drawing Submittals
  - b. Substitution Requests (SRs)
  - c. Design Clarification/Verification Requests (DCVRs)
  - d. Change Orders and Field Orders
  - e. Proposals
    - 1) In response to Requests for Proposals (RFPs)
    - 2) In response to Change Orders (COs)
5. Electronic project document exchange will require the CONTRACTOR to:

- a. Acquire and maintain internet access for sharing information.
- b. Prepare and post all submittal documents in an electronic portable document file (PDF) format. Single files may be posted in alternative (native application) formats or multiple files with multiple formats may be posted using file archiving (ZIP) tools.

6. Procedures:

- a. Submittal Preparation - CONTRACTOR may use any or all of the following options:
  - 1) File format: PDF generated directly from originating application; files must be searchable. Scanned pages will be accepted on an "exception basis" only.
  - 2) Subcontractors and Suppliers provide electronic (PDF) submittals to Contractor via the web-based project document exchange service.
  - 3) Subcontractors and Suppliers provide original Word, Excel, or other application files to General Contractor who electronically converts to PDF format.
- b. CONTRACTOR shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
- c. CONTRACTOR shall transmit each submittal to Engineer by email or cloud storage service.
- d. Engineer review comments will be returned to the contractor using similar transport mechanisms.
- e. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the CONTRACTOR.
- f. In addition to electronic submissions, submit paper copies of the Certificates of Installation, Final Technical Manuals, Spare Parts Lists, Marked-up Record Drawings, and Quality Control Submittals as described later in this Specification

7. Costs:

- a. The cost of cloud storage service shall be borne by the contractor.
- b. Internet Service and Equipment Requirements:
  - 1) Email address and Internet access at CONTRACTOR's main office.
  - 2) Adobe Acrobat ([www.adobe.com](http://www.adobe.com)), Bluebeam PDF Revu ([www.bluebeam.com](http://www.bluebeam.com)), or other similar PDF review software for applying electronic stamps and comments.

H. Disposition of Submittals: ENGINEER will review and indicate requirements for resubmission or acceptance on Submittal as follows:

- 1. No Exceptions Taken (NET)
  - a. The submittal was reviewed and no exceptions were taken.
  - b. The work may proceed may proceed without modification.

2. Make Corrections Noted (MCN)
  - a. The submittal was reviewed and annotations made to clarify the information submitted.
  - b. The work may proceed with the clarifications and corrections made to the information submitted.
3. Amend and Resubmit (AR)
  - a. The submittal was reviewed and comments made to identify incorrect submitted information.
  - b. The CONTRACTOR is to revise the submittal and resubmit for further review by the ENGINEER.
4. Rejected: Resubmit (RR):
  - a. The submittal was reviewed and found to be unacceptable.
  - b. The CONTRACTOR is to revise the submittal and resubmit for further review by the ENGINEER.
- I. ENGINEER's Review: ENGINEER will act upon Contractor's Submittal and transmit response to CONTRACTOR not later than fifteen (15) working days after receipt, unless: (i) specified otherwise or (ii) accepted by ENGINEER as set forth in Paragraph ENGINEER's Duties below and identified on current accepted submissions. Re-submittals will be subject to the same review time.
- J. ENGINEER's Duties
  1. Review Submittals with reasonable promptness and in accordance with current accepted submissions from Contractor's Project Manager.
    - a. No adjustment of Contract Times or Price will be allowed due to ENGINEER's review of Submittals, unless all of following criteria are met:
      - 1) CONTRACTOR has notified ENGINEER in writing that timely review of Submittal in question is critical to progress of Work, and has received ENGINEER's written acceptance to reflect such on current accepted submissions and progress schedule. Written agreement by the ENGINEER to reduce the above Submittal review time will be made only for unusual and Contractor-justified reasons. Acceptance of a progress schedule containing Submittal review times less than specified above or less than agreed to in writing by ENGINEER will not constitute ENGINEER's acceptance of the review times.
      - 2) ENGINEER has failed to review and return the first submission of a Submittal within the agreed time indicated on current accepted schedule of submissions or, if no time is indicated thereon, within twenty-one (21) calendar days.
      - 3) CONTRACTOR demonstrates that delay in progress of Work is directly attributable to ENGINEER's failure to return Submittal within time indicated and accepted by ENGINEER.

- b. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmission of Submittals, including multiple resubmissions.
    - 2. Indicate the disposition of submittal reviews as set forth above.
    - 3. Indicate requirements for resubmission as required.
    - 4. Post reviewed submittals with review comments back to CONTRACTOR using agreed to methods.
  - K. Excessive Review
    - 1. Review of the first submission and two resubmissions of Shop Drawings, test procedures, training plans, and O&M manuals will be performed by ENGINEER and ENGINEER's Consultants, as appropriate, at no cost to CONTRACTOR.
    - 2. Subsequent additional resubmissions of such Submittals will be reviewed by ENGINEER and ENGINEER's Consultants; however, ENGINEER will document work hours and other expenses required to perform such additional review(s) and CONTRACTOR shall reimburse OWNER for these costs.

1.2 SHOP DRAWINGS

- A. CONTRACTOR Shop Drawing Submittals to Identify and Indicate:
  - 1. Pertinent Drawing sheet(s) and detail number(s), products, model numbers, part numbers, units and assemblies, and system or equipment identification or tag numbers.
  - 2. Mark out information not germane to this project or include clear indication of only specific elements intended for this Project.
  - 3. Field dimensions and relationships to other critical features of Work
- B. Resubmissions: Clearly identify each correction or change made from the previous submittal.
- C. All Manufacturers: Complete Inventory of spare parts and accessories for each piece of equipment.
- D. Preparation
  - 1. Format: Whenever possible, schedule for and combine Shop Drawings required for submission in each specification section or division into a single Submittal package. Also combine product data for like items into a single Submittal package.
  - 2. Present in a clear and thorough manner and of sufficient detail to show kind, size, arrangement, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to plan sheet and detail, and schedule or room numbers shown on Drawings.
  - 3. Electronic Drawing File Format:
    - a. PDF electronic file format required.

4. False work drawings and load calculations for temporary supports; lifting capacity of equipment proposed for demolished equipment removal; shop drawings for new access elements.
  5. Product Data: Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, dimensions and clearances required, wiring or piping diagrams and controls, and external connections, anchorages, and supports required. The CONTRACTOR shall complete the Item Data Sheet at the end of this Section.
  6. Manufacturer's standard schematic drawings and diagrams as follows:
    - a. Modify to delete information that is not applicable to Work.
    - b. Supplement standard information to provide information specifically applicable to Work.
- E. Design Data
1. Provide an appropriately licensed professional ENGINEER to perform design, oversee preparation of Shop Drawings, manufacturing, and installation, as appropriate, and to stamp and certify Shop Drawings conform to design requirements and requirements of Laws and Regulations and governing agencies.
  2. When specified, provide Project-specific information as required and as necessary to clearly show calculations, dimensions, logic and assumptions, and referenced standards and codes upon which design is based.

### 1.3 SAMPLES

- A. Submit to ENGINEER
- B. Description: Physical examples of materials, equipment, or workmanship that are representative of some portion of work and that establish the standards by which such portion of the Work will be judged.
- C. Copies: Submit two copies to ENGINEER, unless otherwise specified in individual Specification section or in sufficient quantity and of size to enable examination as required and to establish quality or equality thereof.
- D. Reference: Meet requirements specified in Contract Documents.
- E. Procedure: Submit in accordance with current accepted submissions so as not to delay Work and with sufficient time to allow examination.
- F. CONTRACTOR: Responsible for safe and proper delivery of Samples and to prepay cartage charges. Submit additional Samples as may be required.
- G. Identification: Clearly indicate Specification section, source, location, date taken, by whom, certification as required, and other appropriate information to facilitate ENGINEER's review.
- H. Use: Approved Sample items may be incorporated into Work when no longer needed by ENGINEER for reference.

### 1.4 QUALITY CONTROL SUBMITTALS

- A. Submit to OWNER and ENGINEER.



- B. Schedules required by specification Section 01 32 00, CONSTRUCTION PROGRESS DOCUMENTATION, including Narrative Work Plan.
- C. List of utilities and agencies contacted by CONTRACTOR as required by specification Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION.
- D. Certificates
  - 1. Manufacturer's Certificate of Compliance
    - a. When specified in individual specification sections or where products are specified to a recognized standard or code, submit prior to shipment of product or material to the site.
    - b. Signed by product manufacturer certifying that materials, manufacture, and product specified conforms to or exceeds specified requirements and intent for which product will be used. Submit supporting reference data, affidavits, and certifications as appropriate.
  - 2. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual specification sections.
- E. Written procedures for maintaining and markup of record documents per the requirements of specification Section 01 78 00, CONTRACT CLOSEOUT.
- F. Written Test Reports of Each Test and Inspection: As a minimum, include the following:
  - 1. Date of test and date issued, project title and number, testing laboratory name, address, and telephone number; and name and signature of laboratory inspector.
  - 2. Date and time of sampling or inspection, and record of temperature and weather conditions.
  - 3. Identification of product and Specification section, location of Sample, test, or inspection in the Project; type of inspection or test with referenced standard or code, certified results of test.
  - 4. Compliance with Contract Documents, and identifying corrective action necessary to bring materials and equipment into compliance.
  - 5. Provide an interpretation of test results, when requested by ENGINEER.

#### 1.5 OPERATION AND MAINTENANCE MANUAL

- A. As required by specific technical specifications sections and Drawings, and as required herein.
  - 1. 8-1/2 x 11-inch, three-ring bound manual. Two paper copies of Final Submittal.
  - 2. Electronic form-factor on compact disk or USB drive: PDF format.
  - 3. Preliminary submittal: Submit at least 15 days prior to request for final inspection. In the case of equipment being placed in service prior to project completion, submit the manual at least 15 days in advance of the service date at which CONTRACTOR would have OWNER personnel assume operational control.

4. Final submittal: Submit within 10 days of final inspection.
5. For each piece of equipment or system described in these specifications, provide a description of component including controls, accessories, and appurtenances; identify component by its Maximo and Tag Numbers, and include:
  - a. Safety precautions.
  - b. Function, normal operating characteristics, and limiting conditions.
  - c. Performance curves, engineering data, nameplate data, and test information and results.
  - d. Installation and operation instructions.
  - e. Alignment, adjustment, calibration, and programming requirements.
  - f. Actual control and alarm set points used in this installation.
  - g. Startup, normal operation, and trouble-shooting procedures.
  - h. List of recommended lubricants, spare parts, and special tools.
  - i. Parts list, parts numbers, and ordering instructions with contact names, phone numbers, and addresses.
  - j. Maintenance and overhaul procedures.
  - k. Assembly diagrams and procedures for removal, repair, and reinstallation or reassembly.
  - l. Electrical interconnecting wiring diagrams, including power and control systems.
  - m. Maintenance Summary form for each applicable piece of equipment. An electronic copy of this form will be furnished upon request.
6. For each material or finish system described in these specifications, provide:
  - a. Catalog or product number
  - b. Manufacturer's data on coating system, including chemical compositions, applicable standards, and details of installation
  - c. Manufacturer's recommendations for inspection, care, maintenance, repair, and cleaning of coating system

1.6 SUBSTITUTE AND "OR-EQUAL" PRODUCTS

- A. Meet the requirements of the Standard General Provisions as modified by the Special Provisions, the Specification sections, and as set forth herein.
- B. Post substitution request data on the Project document exchange service web site.
- C. Indicate for each item the status (substitute or "or-equal") and submission date.
- D. Include all supporting data to allow ENGINEER's review. Complete, sign, and transmit with each proposed substitute or "or-equal" item/method submission.

- E. Disposition procedure of "Or-Equal" Item: In accordance with specification section under paragraph "Disposition of Submittals".

1.7 CONTRACT CLOSEOUT SUBMITTALS

- A. In accordance with specification Section 01 78 00, CONTRACT CLOSEOUT.

1.8 SUPPLEMENT

- A. The Transmittal of Contractor's Submittal form included in Part IV of the Contract Documents is part of this specification.
- B. Item Data Sheet form following this section is a part of this specification.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION





9. LUBRICANT LIST

Reference Symbol	Shell	Standard Oil	Gulf	Arco	Or Equal
List symbols used above.	List equivalent lubricants, as distributed by each manufacturer for the specific use recommended.				

10. RECOMMENDED SPARE PARTS FOR OWNER'S INVENTORY.

Part No.	Description	Unit	Quantity	Unit Cost
Note: Identify parts provided by this Contract with two asterisks.				

SECTION 01 52 00  
CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This section includes the work required to support the CONTRACTORS' construction activities on the Asplund WWTF site. It includes temporary utilities, temporary facilities, material and equipment staging, maintenance of treatment plant operations, and protection of the OWNER's property.

1.2 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Division 10 – General Provisions, Special Provisions; and Division 1 - General Requirements.
- B. 01 31 00 – Project Management and Coordination

1.3 SUBMITTALS

- A. Prepare, deliver, and process under provisions of Section 01 33 00, SUBMITTAL PROCEDURES.
- A. Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies, local, State, and Federal.
- B. Complete list of all deviations from the Drawings and Specifications.
- C. Shop Drawings:
1. Construction Facilities Submittals:
    - a. Project site plan illustrating locations of job trailers, power source, and temporary stairs, and including:
      - 1) Contractor's field office
      - 2) Construction staging area(s)
      - 3) Construction storage yard(s)
  2. Temporary Control Submittals:
    - a. Plans for the following at a minimum:
      - 1) interior dust and debris control measures
      - 2) maintaining AWWU access to adjacent spaces
      - 3) staging of lifting and hauling equipment
    - b. Details of protective barriers and fencing

1.4 PERMITS

- A. Permits, Licenses and Approvals: Obtain required permits other than those provided by OWNER in Section XIV in accordance with the requirements of the General Conditions, and retain onsite.

## 1.5 MOBILIZATION

- A. Mobilization shall include, but is not limited to the items listed herein:
  - 1. Obtaining required permits except those provided by Owner in Section XIV
  - 2. Moving Contractor's equipment and facilities to site, including onsite communication facilities/telephones, sanitary (lavatory), potable water, and breakroom
  - 3. Installing separately-metered temporary construction power, wiring, and lighting facilities
  - 4. Posting OSHA required notices and establishing safety program
  - 5. CONTRACTOR's superintendent shall be at the site full time

## 1.6 PROTECTION OF WORK AND PROPERTY

- A. Comply with OWNER's safety rules while on OWNER's property.
- B. Inform OWNER of accidents at the Project Site and of related claims.
- C. In the performance of Work, CONTRACTOR is to:
  - 1. Be responsible for adapting the means, methods, techniques, sequences, and procedures of the construction to allow the OWNER to maintain the continuous operation of the Treatment Plant consistent with Environmental Protection Agency and Alaska Department of Environmental Conservation permits and approvals.
  - 2. Plan, design, and provide various temporary services, utilities, connections, temporary piping, temporary pumping, heating, access, and similar items as may be needed to support continuous operation of the wastewater treatment process. Such measures shall be considered as incidental to the lump sum price bid for completion of the Work.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. Products and materials employed for temporary construction facilities need not be new, but shall be clean, serviceable, fit for purpose, and safe for use at the facility.

### 2.2 CONTRACTOR'S FIELD OFFICES

- A. Ownership of equipment furnished under this article will remain, unless otherwise specified, that of CONTRACTOR.
- B. Minimum Features:
  - 1. 110-volt lighting and wall plugs.
  - 2. Adequate ceiling lights.
  - 3. Electric heating properly sized for Project locale and conditions. Provide ample electric power to operate installed systems.
  - 4. Railed stairways and landings at entrances.



- 5. Exterior Door(s):
  - a. Number: One, minimum.
  - b. Type: Insulated.
  - c. Lock(s): Cylindrical; keyed alike.
- 6. Minimum Interior Height: 8 feet.
- C. Office Equipment-General:
  - 1. Bottled Water Service: One, with cooler capable of producing hot water and cold water.
  - 2. Paper Cup Dispenser with Cups: One.
  - 3. Paper Towel Dispenser with Towels: One.
  - 4. Folding Table for meetings: Two, 36 inches by 72 inches.
  - 5. Chairs: Twelve.
  - 6. Coat Rack: One.
  - 7. First-Aid Kit: One.
  - 8. Carbon Dioxide (10-Pound) Fire Extinguisher: One.
  - 9. Telephone: One with one incoming/outgoing line, Touch-Tone, with conference speaker, and 12-foot coiled handset cord.
  - 10. Broadband internet connectivity with minimum download speeds of 2 Mbps and minimum upload speeds of 1 Mbps. Connection may be using a wireless card or connection to a wired network supporting CONTRACTOR's entire facility. Wireless signals are limited at the AWWTF, but antenna raised at the west end of the treatment plant have been successful in securing wireless service for construction contractors active at the plant.

2.3 ENGINEER'S FIELD OFFICES

- A. Engineer will secure a work space within the treatment facility in coordination with plant personnel.
- B. Conference Room: AWWU's conference will be available for meetings on a scheduled basis.

PART 3 EXECUTION

3.1 TEMPORARY UTILITIES FOR CONSTRUCTION FACILITIES

- A. Electrical Power: Provide temporary power as necessary.
- B. Lighting: Provide temporary lighting to meet all applicable safety requirements.
- C. Telephone Service: Arrange for and pay initial, monthly, and cancellation cost of Contractor's onsite telephone service.
- D. Fire Protection: Furnish and maintain on site, adequate firefighting equipment for construction facilities.

- E. Utilities: The Owner will allow the Contractor use of existing site utilities at the AWWTF including potable water, natural gas, and electrical power on the condition that these utilities are available without Owner modification of existing utility infrastructure, that the Contractor's use of these utilities is only for advancing the work at the AWWTF project site, and that the Contractor's use of these utilities does not interfere with the Owners' operations at the AWWTF. Under these terms, the Contractor's use of these utilities will not be billed to the Contractor. The Owner will provide a water meter to monitor potable water used by the Contractor. The Contractor will provide whatever temporary infrastructure and/or utility connection modifications necessary to utilize any of the existing utilities at the project site.
- F. Sanitary Facilities: Provide facilities for Contractor's employees, Subcontractors, and all other onsite personnel (including lavatory, water, and break room). Service, clean, and maintain facilities daily.

### 3.2 TEMPORARY CONTROLS

- A. Provide, operate, and maintain temporary facilities to handle, treat, and dispose of runoff, dewatering and other construction waste waters in accordance with US Environmental Protection Agency and Alaska Department of Environmental Conservation guidelines and applicable regulatory requirements.
- B. Provide temporary barriers and fencing, as required to protect the Work and in accordance with applicable safety standards.

### 3.3 PARKING AREAS

- A. Control vehicular parking to preclude interference with OWNER's operations, construction operations, or access by emergency vehicles. Protect OWNER's existing property, site, and wastewater treatment buildings.

### 3.4 DISPOSITION OF WASTES

- A. Provide OWNER-approved containers for collection and disposal of waste materials, debris, and rubbish. Disposal at an Alaska Department of Environmental Conservation or US Environmental Protection Agency approved landfill or disposal facility shall occur at a maximum of one-week intervals for the duration of the Project.

END OF SECTION

SECTION 01 60 00  
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 PRODUCTS

- A. All items to be incorporated in the Work to be new, of recent manufacture, and unused in a previous application unless specifically indicated otherwise in the Drawings or Project Specifications. Items to be incorporated in the Work are referenced by the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent.
- B. Product items to be incorporated in the Work are:
  - 1. CONTRACTOR furnished and CONTRACTOR installed equipment and components
  - 2. Referenced by the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent, or
  - 3. Items identified by manufacturer's product name, make or model designation.

1.2 DESIGN REQUIREMENTS

- A. Provide systems, equipment, and components, including supports and anchorages, in accordance with the provisions of the most current version of the International Building Code (IBC) as amended by the Municipality of Anchorage.
- B. Seismic Restraint, Load and Design: Per Seismic Design Category D.

1.3 EQUIPMENT MECHANICAL AND ELECTRICAL REQUIREMENTS

- A. Third Party Listings
  - 1. ALL equipment, systems, assemblies, controls and instrumentation, electrical drivers, and appurtenant electrical components MUST be third party listed and labeled by a Nationally Recognized Testing Laboratory (NRTL) per the requirements of:
    - a. National Electric Code
    - b. Federal Department of Labor, Occupational Safety and Health Administration regulations
    - c. State of Alaska Department of Public Safety, Division of Fire and Life Safety, Plan Review Bureau
    - d. ASME pressure vessel code compliance
  - 2. Use only listed and labeled components and equipment in the Work according to the criteria for these listings.
- B. Code Conformance

1. All work shall be configured and assembled in accordance with applicable electrical codes observed in the United States and Alaska at the time the equipment is fabricated. Codes that apply include the National Electric Code, the National Electrical Contractors Association Standards and other codes may apply as appropriate to the Work.
  2. System, controls and instrumentation, and electrical drivers. Meet requirements for class, group, and division location in accordance with NFPA 70 and NFPA 820, and classifications of areas as indicated in the Contract Documents.
- C. Manufacturer shall verify equipment to be shipped to job site conforms to NEC/NFPA requirements and meets the State of Alaska third party listing and labeling requirements. Equipment not meeting the requirements of this specification shall be replaced with equipment compliant with this specification, or be certified by a third party inspector at the Manufacturer's expense.

#### 1.4 SUBMITTALS

- A. Prepare, deliver, and process under provisions of Section 01 33 00, SUBMITTAL PROCEDURES
- B. Administrative Submittals:
1. List of all proposed substitute or "or-equal" items/methods.
  2. Schedule of factory tests required by Contract Documents. Identify tests for which ENGINEER's presence has been specified.
- C. Quality Control Submittals:
1. Factory Tests: As specified in the individual Specifications.
    - a. Procedures: Submit such that approval may be granted prior to start of factory testing.
    - b. Test Documentation: Results of successful testing, including certification of procedures and results.

#### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Altitude: Provide materials and equipment suitable for installation and operation under rated conditions at about 42 feet above sea level.
- B. Provide equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an ambient temperature range of minus 40-degrees F to plus 90-degrees F.
- C. All system component materials of construction shall be fully compatible for exposure to chemicals deployed in normal operation and maintenance of that component within the environment in which it is installed without corroding. In this sense, corrosion is considered to include de-lamination, spalling, scaling, tuberculation, discoloration, cracking, pitting, embrittlement, loss of structural integrity, and/or loss of functionality.

#### 1.6 PREPARATION FOR SHIPMENT

- A. When practical, factory assemble products. Mark separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package products to facilitate handling and protect from damage during ocean shipping, handling, and storage. Mark each package or crate to indicate its bill of lading number, contents, Project and CONTRACTOR, equipment number, and approximate weight.
- C. ALL plastic materials shall be covered or wrapped to protect against exposure to ultra-violet (UV) radiation.
- D. Include complete bill of materials with each shipment.
- E. Spare Parts, Special Tools and Start-Up Materials.
  - 1. Furnish as required by the Specifications prior to functional check out.
  - 2. Mark each package with:
    - a. Manufacturer's part description and number.
    - b. Quantity of parts in package.
    - c. Equipment manufacturer.
    - d. Applicable Specification section.
    - e. Name of CONTRACTOR.
    - f. Project name.
  - 3. Notify Resident ENGINEER upon arrival.
- F. Request a minimum 7-day advance notice of shipment from manufacturers. Upon receipt of manufacturer's advance notice of shipment, promptly notify ENGINEER of anticipated date and place of equipment arrival.
- G. Factory Test Results: Reviewed and accepted by ENGINEER before product shipment as required in individual Specification sections.

#### 1.7 DELIVERY AND INSPECTION

- A. Deliver products in accordance with the accepted current progress schedule and coordinate to avoid conflict with Work and conditions at the site. Anchor bolts and templates shall be provided to permit setting prior to placement of structural concrete.
- B. Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label date of manufacture and shelf life, where applicable. Include UL and NSF labels on products so specified.
- C. Unload products in accordance with manufacturer's instructions for unloading, or as specified. Record the receipt of products at the site. Inspect for completeness and evidence of damage during shipment.
- D. Remove damaged products from the site and expedite delivery of identical new undamaged products and remedy incomplete or lost products to provide specified products so as not to delay the progress of the Work.

## 1.8 HANDLING, STORAGE, AND PROTECTION

- A. Handle and store products in accordance with the manufacturer's written instructions. Store delivered products in accordance with specification Section 01 52 00, CONSTRUCTION FACILITIES.
- B. Store electrical, instrumentation, and control products, and equipment with bearings in weather-tight structures maintained above 60-degrees F. Protect electrical, instrumentation, and control products, and insulation against moisture, water, and dust damage.
- C. Store fabricated products aboveground, on blocking or skids, and prevent soiling or staining. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- D. Store finished products that are ready for installation in dry and well ventilated areas.

## 1.9 SUBSTITUTE AND "OR-EQUAL" PRODUCTS

- A. Meet the requirements of MASS, General Provisions as modified by the Special Provisions, the project specifications, and as set forth herein.
- B. Submit substitution request per Section 01 33 00, SUBMITTAL PROCEDURES.
- C. Indicate for each item the status (either substitute or "or-equal") and submission date.
- D. Include all supporting data to allow ENGINEER's review. Complete, sign, and transmit with each proposed substitute or "or-equal" item/method submission.
- E. Disposition of "Or-Equal" Item: In accordance with specification Section 01 33 00, SUBMITTAL PROCEDURES.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. Provide manufacturer's standard materials suitable for service conditions unless otherwise specified in the individual Specifications.
- B. Where product specifications include a named manufacturer, with or without model number, and also include performance requirements, named manufacturer's products must meet the performance specifications.
- C. Like items of products furnished and installed in the Work shall be end products of one manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, and manufacturer's services and implement same or similar process instrumentation and control functions in same or similar manner.
- D. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

- E. Equipment, Components, Systems, and Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, state, and local health and safety regulations.
- F. Regulatory Requirement: Coating materials shall meet state and local requirements limiting the emission of volatile organic compounds and for worker exposure. Environmental controls shall be employed as required to protect CONTRACTOR's workforce and OWNER's personnel.
- G. Safety Guards: Provide for all belt or chain drives, fan blades, couplings, or other moving or rotary parts. Design for easy installation and removal.
- H. UL Compliance: Materials manufactured within the scope of Underwriters Laboratories shall conform to UL Standards and have an applied UL Listing mark at the required location on each item.
- I. Equipment Finish:
  - 1. Provide manufacturer's standard finish and color, except where coating system is indicated.
  - 2. When no standard color is indicated, provide equipment with ANSI light gray color.
- J. Special Tools and Accessories: Furnish to OWNER, upon acceptance of equipment, all accessories required to place each item of equipment in full operation. These accessory items include, but are not limited to, adequate oil and grease (as required for fresh lubrication of equipment after field testing), chemicals for startup, light bulbs, fuses, hydrant wrenches, valve keys, hand wheels, chain operators, special tools, and other spare parts as required for maintenance.

## 2.2 SOURCE QUALITY CONTROL

- A. For factory testing to be witnessed by ENGINEER, notify ENGINEER not less than 14 days prior to scheduled test date, unless otherwise specified. Perform in accordance with accepted test procedures and document successful completion.
- B. Calibration Instruments: Sealed by a reputable laboratory certifying that instrument has been calibrated within the previous 12 months to standards of the National Institute of Standards and Technology (NIST).

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Inspect materials and equipment for signs of damage due to storage. Do not install damaged material or equipment and remove from the site for expedited delivery of identical new material or equipment. Delays to the Work resulting from material or equipment damage which necessitates procurement of new products will be considered delays within CONTRACTOR's control.

### 3.2 INSTALLATION

- A. Equipment Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. Do not shim between machined surfaces.
- C. Repaint painted surfaces that are damaged prior to equipment acceptance.
- D. Handle, install, connect, clean, condition, and adjust products in accordance with manufacturer's instructions and as may be specified. Retain a copy of manufacturers' instruction at site, available for review at all times.

### 3.3 FIELD FINISHING

- A. In accordance with manufacturer's recommendations.

### 3.4 ADJUSTMENT AND CLEANING

- A. Perform adjustments, tests, operation checks, and other startup activities.

### 3.5 LUBRICANTS

- A. Fill lubricant reservoirs and replace consumption during testing, startup, and operation prior to acceptance of equipment by OWNER.

### 3.6 CHEMICALS

- A. Provide chemicals for startup, functional check-out, and operation prior to acceptance of equipment by OWNER.

### 3.7 PRODUCT INFORMATION FORMS

- A. Attached forms are part of this specification.
- B. Complete the forms attached to this Section as applicable to the equipment and components approved by the OWNER for use in the Work and furnished as part of CONTRACTOR's scope of supply.

END OF SECTION





9. LUBRICANT LIST

Reference Symbol	Shell	Standard Oil	Gulf	Arco	Or Equal
List symbols used above.	List equivalent lubricants, as distributed by each manufacturer for the specific use recommended.				

10. RECOMMENDED SPARE PARTS FOR OWNER'S INVENTORY.

Part No.	Description	Unit	Quantity	Unit Cost
Note: Identify parts provided by this Contract with two asterisks.				



## *Mechanical Equipment Summary Form*

Equipment Item: \_\_\_\_\_

Equipment Supplier: \_\_\_\_\_

OWNER (MAXIMO) EQUIPMENT NUMBER: \_\_\_\_\_

OWNER (MAXIMO) LOCATION NUMBER: \_\_\_\_\_

<b>Component Information: Nameplate Data</b>	
Manufacturer:	Serial No.:
Model/Part No.:	Rated Output:
Type:	RPM:
Size:	Operation:
Capacity:	Service:
<b>Component Information: Drive Motor Data</b>	
Manufacturer:	Serial No.:
Model/Part No.:	Rated Output:
Frame:	RPM:
Type:	Voltage:
Enclosure:	Amperage:
Service Factor:	Phase:
AC/DC:	Hertz:
<b>Lubrication Requirements (Type)</b>	
Nameplate:	
Drive Motor:	
<b>Recommended Spare Parts List (Provide on Separate Sheet)</b>	
<b>Warranty Start Date:</b>	<b>Warr</b>
<b>Comments:</b> _____	

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*Electrical Equipment  
Summary Form*

Equipment Item: \_\_\_\_\_

Equipment Supplier: \_\_\_\_\_

<b>Component Information: Nameplate Data</b>
Manufacturer:
Serial No.:
Model/Part No.:
Type:
Size:
Frame:
Power (KV/KVA):
Primary Voltage:
Secondary Voltage:
Amperage:
Phases:
Hertz:
Input:
Output:
Degrees C Rise:
Percent Impedance:
<b>Lubrication Requirements (Type):</b>
<b>Recommended Spare Parts List (Provide on Separate Sheet)</b>
<b>Comments:</b> _____

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***Instrument Equipment  
Summary Form***

Equipment Item: \_\_\_\_\_

Equipment Supplier: \_\_\_\_\_

<b>Component Information: Nameplate Data</b>
Manufacturer:
Serial No.:
Model/Part No.:
Size:
Function:
Span:
Set Point:
Reset Time:
Ration/Factor:
Input:
Output:
Rev/Dir:
Integral:
Proportional Band:
Derivative:
<b>Lubrication Requirements (Type):</b>
<b>Recommended Spare Parts List (Provide on Separate Sheet)</b>
<b>Comments:</b> _____

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## *Equipment Installation Certification*

OWNER (MAXIMO) EQUIPMENT NUMBER:

--

OWNER (MAXIMO) LOCATION NUMBER:

--

Name of Project: \_\_\_\_\_

Equipment Item: \_\_\_\_\_

Equipment Number: \_\_\_\_\_

Location: \_\_\_\_\_

Service: \_\_\_\_\_

Specification Section: \_\_\_\_\_

Drawing Reference: \_\_\_\_\_

The CONTRACTOR and Equipment Manufacturer (and/or Supplier) Hereby Certify That the Specified Equipment Has Been (as Applicable) Properly Anchored/Mounted, Lubricated, Aligned, Adjusted, Balanced, Rotated, and Electrical and Piping Connections Inspected, Pressure Switches and/or Pressure Relief Devices Installed, Proper Power Supply Provided, Motor Protection and Limit Switches Installed and that the Equipment is Ready for Start-up, Testing and Normal Operation.

Equipment Manufacturer/Supplier (or EQUIPMENT SUPPLIER)

By: \_\_\_\_\_

CONTRACTOR

By: \_\_\_\_\_





SECTION 01 75 00  
STARTING AND ADJUSTING

PART 1 GENERAL

1.1 WORK INCLUDED

- A. The CONTRACTOR shall perform facility Starting and Adjusting as described herein.
- B. Equipment and systems startup and testing shall be done in accordance with the requirements of the applicable specification Divisions.

1.2 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Special Provisions, and Division 1 - General Requirements apply to Work of this Section.
- B. 01 32 00 – Construction Progress Documentation
- C. 01 33 00 – Submittal Procedures
- D. 01 43 33 – Manufacturers' Field Services
- E. 40 05 01 – Process Piping

1.3 DEFINITIONS

- A. Facility Startup: Facility Startup is the process of putting the Project in operating order. For this project, a phased sequence of construction is to be completed and will require a separate facility startup effort for each completed phase of work.
- B. Items of Work to be completed prior to Facility Startup include but are not limited to demolition of existing infrastructure, procurement and installation of the new system infrastructure, cleaning, flushing, and pressure testing of piping systems and process equipment.
- C. Facility Startup is to include the following items:
  - 1. Verification by AWWU Treatment Division staff that their equipment is properly installed and ready for startup
  - 2. Confirmation that all electrical power and control communications connections are correctly terminated.
  - 3. Configuration of all instrumentation and control devices, and rotating equipment operation upon being energized.
  - 4. Confirmation of process flow rates over the entire range of specified system operating conditions.
  - 5. Supporting the OWNER in confirmation of control system operation and equipment performance for all specified control sequences.
  - 6. Operation of the system over the period specified for Facility Startup to verify system operation and performance.
  - 7. Performance Testing to verify performance goals specified for the Project.
- D. Functional Test: A test or tests in the presence of the OWNER to demonstrate that the installed equipment or system meets operational performance

requirements including, but not limited to flow rates, noise, vibration, alignment, speed, proper electrical and mechanical connections, thrust and thermal restraint, proper rotation, and initial servicing.

- E. Operation Period: The operation period begins when the facility has been successfully started up as defined under Paragraph Startup Test Period and has met all Substantial Completion requirements.
- F. Performance Test: A test performed in the presence of the OWNER and after any required Functional Test specified, to demonstrate and confirm that the equipment and/or system meets the specified performance requirements.
- G. Significant Interruption: May include any of the following events:
  - 1. Failure of CONTRACTOR to maintain qualified onsite startup personnel as scheduled.
  - 2. Failure to meet specified performance for more than 2 consecutive hours.
  - 3. Failure of any critical equipment unit, system, or subsystem that is not satisfactorily corrected within 5 hours after failure.
  - 4. Failure of noncritical unit systems, or subsystem that is not satisfactorily corrected within 8 hours after failure.
  - 5. As may be determined by OWNER.
- H. Startup Test Period:
  - 1. Startup of the entire facility or any portion thereof includes coordinated operation of the facilities by the CONTRACTOR, Subcontractors, OWNER, operating personnel, and manufacturers' representatives for equipment items and systems after all required Functional Tests have been completed and those Performance Tests deemed necessary for the safe operation of the entire and/or upgraded facility have been completed.
  - 2. Startup of the entire facility or any portion thereof shall be considered complete when, in the opinion of the OWNER, the facility or designated portion has operated in the manner intended for 14 continuous days without Significant Interruption. This period is in addition to any training, Functional Testing, or Performance Test periods specified elsewhere. A Significant Interruption will require the startup then in progress to be stopped and restarted after corrections are made.
- I. System: The overall process, or a portion thereof, that performs a specific function. A system may consist of two or more subsystems as well as two or more types of equipment. Examples of Systems on this Project are:
  - 1. Chlorine gas and brine piping
  - 2. Caustic return piping
  - 3. Brine supply piping
  - 4. Caustic drain piping

#### 1.4 SUBMITTALS

- A. Prepare, deliver, and process under provisions of Section 01 33 00, SUBMITTAL PROCEDURES.
- B. Administrative Submittals:

1. Functional and performance test plan for temporary equipment, and replacement equipment and systems. Submit at least 14 calendar days prior to start of related testing.
2. Schedule for Facility Startup to address:
  - a. Completion date for pre-startup activities including scheduled plant shut downs and preparation activities, temporary equipment installation, new equipment installation completion, and pressure testing, as applicable.
  - b. Verification of installation by Manufacturer/Equipment Suppliers.
  - c. Startup and Functional Testing
- C. Quality Control Submittals
  1. CONTRACTOR's pressure/vacuum testing results for new process pumping/piping systems

1.5 CONTRACTOR FACILITY STARTUP RESPONSIBILITIES

- A. Complete installation of all systems and equipment identified in the Contract Documents.
- B. Prepare and submit testing plans and schedules.
- C. Coordinate the Equipment Manufacturers' efforts to visit the site, review the installation of equipment they have supplied for the Project, and assist with functional testing
- D. Conduct pressure testing of all wetted systems affected by Project.
- E. Correct any deficiencies identified before system start up including:
  1. Leaks and/or other breaches in installed system integrity

1.6 OWNER FACILITY STARTUP RESPONSIBILITIES

- A. General:
  1. Review CONTRACTOR's test plan and schedule.
  2. Witness each functional or performance test.
- B. Startup Test Period:
  1. Operate process equipment with support of CONTRACTOR.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 TESTING PREPARATION

- A. General:
  1. Complete installation of equipment and components identified in the Contract Documents including electrical power, instrumentation and automation communications, process piping, and instrument systems.

2. Complete and secure certificates of approval for installed components from Manufacturer's Representatives for CONTRACTOR furnished installed equipment and components.
  3. Designate and furnish one or more persons to be responsible for coordinating and expediting CONTRACTOR's Facility Startup duties. The person or persons shall be present during facility startup meetings and shall be available at all times during the Facility Startup period.
  4. Provide temporary valves, gauges, piping, test equipment and other materials and equipment required to conduct testing
- B. Cleaning and checking: prior to starting Functional Testing:
1. Calibrate testing equipment
  2. Inspect and clean equipment, devices, connected piping, and structures so they are free of foreign material.
  3. Lubricate equipment in accordance with manufacturer's instructions.
  4. Turn rotating equipment by hand and check motor-driven equipment for correct rotation.
  5. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.
  6. Check power supply to electric-powered equipment for correct voltage.
  7. Adjust clearances and torques.
  8. Test for leaks.
  9. Obtain completion of applicable portions of Manufacturer's Certificate of Proper Installation.
- C. Ready-to-test determination will be by OWNER based at least on the following:
1. Notification by CONTRACTOR of equipment and system readiness for testing.
  2. Acceptable testing plan.
  3. Acceptable Operation and Maintenance Manuals.
  4. Adequate completion of Work adjacent to, or interfacing with, equipment to be tested.
  5. Availability of Equipment Supplier's Representative to assist in inspection and testing of installed equipment.
  6. Equipment and electrical tagging complete.
  7. All spare parts and special tools delivered to OWNER.

### 3.2 FUNCTIONAL TESTING – GENERAL

- A. Begin testing at a time mutually agreed upon by the OWNER, Equipment Supplier, and CONTRACTOR.
- B. Notify in writing OWNER and Representative(s) at least 10 days prior to scheduled date of Functional Tests.

- C. Separate items of equipment demonstrated to function properly during subsystem testing may require no further Functional Test if documentation of subsystem testing is acceptable to OWNER.
- D. Conduct Functional Tests as specified for each equipment item or system.
- E. Provide the following:
  - 1. As a condition of Substantial Completion, demonstrate all operational features and instrumentation and control functions while in manual operational mode
- F. Performance Testing shall not commence until the equipment or system meets the specified Functional Tests.

### 3.3 PERFORMANCE TEST – GENERAL

- A. Begin testing at times mutually agreed upon by the OWNER and CONTRACTOR.
- B. OWNER will be present during tests. Notify in writing OWNER and Manufacturer's Representative(s) at least 14 days prior to scheduled date of Functional Tests.
- C. Conduct performance tests as specified for each equipment item or system.
- D. Unless otherwise indicated, furnish all labor, materials, and supplies for conducting the test and taking all samples and performance measurements.
- E. Prepare Performance Test report summarizing test method. Include test logs, pertinent calculations, and certification of performance.

### 3.4 STARTUP ACTIVITIES

- A. Designate and furnish one or more persons to be responsible for coordinating and expediting CONTRACTOR's Facility Startup duties.
- B. When Facility Startup has commenced, schedule remaining Work so as not to interfere with or delay the completion of Facility Startup. Support the Facility Startup activities with adequate staff to prevent delays and process upsets.
- C. Supply and coordinate specified manufacturer's Facility Startup services.
- D. Make adjustments, repairs, and corrections necessary to complete Facility Startup.
- E. After the facility is operating, complete the testing of those items of equipment, systems, and subsystems which could not be or were not adequately or successfully tested prior to startup test period.

### 3.5 CONTINUOUS OPERATIONS

- A. OWNER will accept equipment and systems as ready for continuous operation only after successful startup is complete, and reports submitted, and manufacturers' services completed for training of OWNER's personnel.

END OF SECTION



SECTION 01 78 00  
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SUBMITTALS

- A. Contract Closeout Submittals: Submit prior to application for final payment.
  - 1. Approved Shop Drawings and Samples: As required in the General Provisions.
  - 2. Record Drawings.
  - 3. ADEC Certification of Construction Form (contractor(s) signature(s) required).
  - 4. Special bonds, warranties, and service agreements.
  - 5. Final Application for Payment: Submit per the requirements of Section 01 20 00, PRICE AND PAYMENT PROCEDURES.

1.2 RECORD DOCUMENTS

- A. Maintain record documents through the duration of the Work as required in the General Provisions, Article 4.19 Record documents shall document factual information regarding the Work performed by the CONTRACTOR, both concealed and visible.
- B. Prior to submitting each progress payment request, CONTRACTOR shall request ENGINEER review status of current record documents. Failure to maintain record documents may result in ENGINEER's refusal of part of CONTRACTOR's application for partial or final payment.

1.3 RELEASE FROM AGREEMENTS

- A. Furnish OWNER written releases from property owners or public agencies where special agreements or easements have been made.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 RECORD DOCUMENTS

- A. Identify the contact person responsible for maintaining the record documents and as-builts.
- B. Maintain one set of full size drawings and specifications concurrently with the construction progress, labeled "RECORD DOCUMENTS" as required in the General Provisions, Article 4.19. Record document markups shall include but are not limited to the following:
  - 1. Depths and elevations of foundation features and structures.

2. Horizontal and vertical locations of existing and new features, both visible and concealed, such as pipes, channels, underground facilities, utilities, and related appurtenances, and equipment. Provide swing tie to permanent existing surface structures.
  3. Dimensions of existing and new features, both visible and concealed, such as pipes, channels, underground facilities, utilities, and related appurtenances, and equipment
  4. Changes made through Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications.
  5. Materials, equipment, and supplies actually installed in the Work.
- C. Make entries within 24 hours after receipt of information that a change in Work has occurred.
- D. Make dated entries on drawings and specifications legibly with erasable colored pencil based on the following color coding:
1. Green. Shows information deleted from documents.
  2. Red. Shows information added or changes made to the documents.
  3. Blue. Shows notes to ENGINEER/Drafter.
- E. Furnish Certification in accordance with Special Provisions Division 10 Article 4.19.

### 3.2 FINAL CLEANING

- A. At completion of Work and prior to CONTRACTOR's request for recognition of Substantial Completion, or completion of the Work, clean the entire site.
1. Leave the Work and adjacent areas affected by the Work in a cleaned condition satisfactory to OWNER.
  2. Remove grease, dirt, dust, splatter, or other foreign material from exposed surfaces.
  3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
  4. Clean all windows.
  5. Replace air-handling filters and clean ducts, blowers, and coils of ventilation units operated during construction.
  6. Fill and repair gravel drive and parking areas to provide a smooth surface free of ruts and holes.
  7. Broom clean exterior paved driveways and parking areas.

END OF SECTION



SECTION 02 41 19  
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This section addresses work scope to be undertaken as demolition and removal of existing infrastructure as shown in the Drawings and/or otherwise specified in the Contract Documents.

1.2 DEFINITIONS

- A. Demolition is the removal of existing infrastructure from its current location at the Project Site.
1. Demolition does not include destroying the items to be removed, nor altering the ability of these items to be reused elsewhere for similar purpose.
- B. Salvage is the transport and storage of items scheduled for demolition.
1. Salvaged items are to be removed using means and methods which do not alter the useful function of the item after removal and storage.
  2. Salvaged items are to be transported by the Contractor to a storage location designated by the Owner and/or otherwise indicated in these Contract Documents.
  3. Salvaged items are to be protected by the Contractor against damage or loss
    - a. During removal of the salvaged items from the Project Site
    - b. During transport to the Owner's storage location.
- C. Disposal is the transport of all items from the project site not scheduled for salvage, and delivery to a waste disposal site permitted to receive the items. Alternately, at the Contractor's choosing, items scheduled for disposal may be salvaged by the Contractor for his own use. The Contractor's election to salvage items scheduled for disposal shall not require interim storage of those items at the project site nor placement at a location where authority for that purpose has not been granted to the Contractor.

1.3 RELATED SECTIONS

- A. Municipality of Anchorage Standard Specifications (MASS), Special Provisions, and Division 1 - General Requirements apply to Work of this Section.
- B. 01 14 00 – Project Constraints
- C. 01 31 00 – Project Management and Coordination
- D. 01 32 00 – Construction Progress Documentation
- E. 01 33 00 – Submittals

#### 1.4 SUBMITTALS

- A. Prepare, deliver and process submittals under provisions of Section 01 33 00, SUBMITTALS.
- B. Complete list of all deviations from the Drawings and Specifications.
- C. Schedule of Selective Demolition Activities: Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Include indication of items to be disposed and salvaged.
  - 1. Submit minimum of 21 calendar days prior to initiating demolition work scope.
  - 2. Plan approval required prior to initiating demolition work scope.
  - 3. Plan must demonstrate accommodation of continued Owner operations at the Treatment Plant.
- D. Pre-demolition Photographs: Submit photo images showing existing conditions of adjoining construction relative to proposed demolition/upgrade work, including finished surfaces that might be misconstrued as damage caused by selective demolition operations.
- E. Debris Control Plan
  - 1. Submit minimum of 21 calendar days prior to initiating demolition work scope.
  - 2. Plan approval required prior to initiating demolition work scope.
  - 3. Plan must demonstrate accommodation of continued Owner operations at the Treatment Plant.
  - 4. Address the following in the plan submittal
    - a. Schedule for deployment of debris control measures and materials.
    - b. Manufacturer's product data sheets for materials proposed for use in the work. Information to address:
      - 1) Flame spread
      - 2) Chemical Resistance
    - c. Monitoring and maintenance procedures to be deployed by the Contractor to confirm control of debris.
    - d. Project closeout procedures for debris control
      - 1) Cleaning procedures.
      - 2) Removal of debris control materials.

#### 1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable codes for demolition of structure, safety of adjacent structures, dust control, lead coatings removal, service utilities, discovered hazards, and safety of personnel.
- B. Do not disable or disrupt building fire or life safety systems without prior written notice from the OWNER.

- C. Conform to state and federal procedures upon discovery of hazardous or contaminated materials.

1.6 ITEMS TO BE SALVAGED

- A. Stainless steel fasteners, various sizes
- B. Flanged convoluted PTFE fittings

1.7 STORAGE LOCATIONS FOR SALVAGED ITEMS

- A. Items to be salvaged are to be stored at the Asplund WWTF in the salt storage room or as otherwise requested by Plant Operators.

1.8 PRE-DEMOLITION MEETING

- A. Prior to starting any demolition work, conduct a meeting with the OWNER. As a minimum discuss the demolition to be performed; the sequence of activities; temporary systems/unit process shutdown or bypass; operations and duration; items to be retained by OWNER; protection of items to be retained by OWNER; and items to be disposed, and disposal location. See Section 01 14 00, PROJECT CONSTRAINTS for additional requirements.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 REQUIREMENTS

- A. Protect existing items that are to remain in the area of the Work and are not to be removed or demolished.
- B. Prevent movement or settlement of adjacent structures and foundations. Provide sheeting, shoring, and bracing.
- C. To prevent damage, carefully remove materials and equipment indicated to be salvaged, reused, or relocated. Dispose of all other materials according to approved plan.
- D. Conduct demolition to minimize interference with adjacent structures and appurtenances, and access.
- E. Maintain egress and access at all times.
- F. Cease operations immediately and notify the OWNER if adjacent systems appear to be in danger.

3.2 SELECTIVE DEMOLITION

- A. Demolish and remove components in an orderly and careful manner, per the approved plan.
- B. Remove appurtenances of items scheduled for demolition when said appurtenance serves no other function or supports no other item or piece of equipment.
- C. Protect existing ancillary facilities and appurtenances.

3.3 DEBRIS AND DUST CONTROL

- A. Keep dust from entering existing electrical enclosures including MCC equipment.
- B. Provide weekly removal of dust and debris from Owner's bleach production process equipment throughout the duration of the Project.

3.4 CLEAN UP

- A. Remove demolished materials from site as work progresses.
- B. Leave areas of work in clean condition at the end of each shift.

END OF SECTION

SECTION 06 60 00  
FIBERGLASS FABRICATIONS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This section includes the work required to support the Contractor's construction activities on the Asplund WWTF site. It includes field investigations, fabrication, and installation of pipe and valve supports as may be required in the prosecution of the work, whether shown on drawings or not, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCES

- A. ASTM D638 - Tensile Properties of Plastics
- B. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics
- C. ASTM D2344 - Apparent Interlaminar Shear Strength of Parallel Fiber Composites by Short Beam Method
- D. ASTM E84 - Surface Burning Characteristics of Building Materials

1.3 SUBMITTALS

- A. Prepare, deliver and process submittals under provisions of Section 01 30 00 SUBMITTALS.
- B. Complete list of all deviations from the Drawings and Specifications.
- C. Submit the manufacturer's published literature including structural design data, structural properties data, corrosion resistant tables, and certificates of compliance.
- D. Submit detailed shop drawings of all structural shapes and plate, to include material sizes, types, styles, and complete details for the erection of the supports; include type and size of fasteners, clip angles, member sizes, and connection details.

1.4 QUALITY ASSURANCE

- A. The installing contractor shall assure that all field dimensions are taken accurately and communicated properly to the fiberglass Fabricator and that all of the manufacturer's instructions and recommendations are followed.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Strongwell Corporation, [www.strongwell.com](http://www.strongwell.com)
- B. Fibergrate Composite Structures, Inc: [www.fibergrate.com](http://www.fibergrate.com)
- C. Substitutions: See Section 01 60 00 - Product Requirements

## 2.2 GENERAL

- A. Materials used in the manufacture of the fiberglass products shall be raw materials in conformance with the specification.
- B. Use FM Approved Class 1 materials for all new construction and retrofit applications.
- C. All materials shall be of the kind and quality specified. All fiberglass products shall be manufactured using vinyl ester resin with flame retardant and ultraviolet (UV) inhibitor additives. A synthetic surface veil shall be the outermost layer covering the exterior surface. The flame retardant fiberglass shapes shall achieve a flame spread rating of 25 or less in accordance with ASTM test method E-84.
- D. After fabrication, all cut ends, holes and abrasions of FIBERGLASS shapes shall be sealed with a compatible resin coating; this includes all field cut and drilled items.
- E. Fasteners: ASTM F593 Group 2 bolts; ASTM F594 Group 2 nuts; anti-seize compound at all assemblies.

## 2.3 STRUCTURAL SHAPES AND PLATE

- A. Material
  - 1. Structural shapes and plate shall be pultruded from vinyl ester resin with fire retardant additives to meet a flame spread rating of less than 25 per ASTM E-84 and meet the self-extinguishing requirements of ASTM D-635. All structural shapes shall contain a UV inhibitor.
  - 2. All structural shapes shall be fabricated per the drawings with good workmanship, closely fitted joints, and finished true to lines and in accurate position to permit the installation and proper joining of parts in the field.

## 2.4 PIPE SUPPORTS

- A. CONTRACTOR may reuse existing support systems as proven adequate for replacement pipe installation. However, the process piping is over-restrained: See Part 3 for additional requirements for re-use of supports. Otherwise use appropriate type of support as approved through the SUBMITTALS process.
- B. Install additional supports to bear the flexible hoses to prevent sagging and maintain a continuous flow line. This will be with FRP or SS as submitted and approved by the Engineer. Additional horizontal and vertical supports will be necessary to carry new CPVC piping at east and west ends of the skids, particularly for the top chlorinated brine header.
- C. CONTRACTOR shall obtain the services of a registered structural professional engineer for design of the supports for any CONTRACTOR revised drawing support details, or proposed support systems, or as otherwise required to provide code compliant pipe support. Loading and bracing shall be in accordance with the IBC and MOA as amended and adopted by the MOA.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Prior to starting fabrication drawings, perform detailed field measurements to develop most accurate fabrications possible, with the intent of minimizing field repairs after shipment to the site.
- B. During installation, perform regular, daily clean up in the process production room; clear wastes from the site, daily. Place tarps or drop clothes to capture cuttings, dropped fasteners, and the like; retrieve debris and items lost beneath process skids to prevent introduction into the area drainage system.
- C. Cutting, fitting, and placement: Perform cutting, drilling and fitting required for installation of miscellaneous fiberglass fabrications. Set fiberglass fabrication accurately in location, alignment and elevation; with edges and surfaces level, plumb, true and free of rack; measured from established lines and levels.
- D. If required, all field cut and drilled edges, holes and abrasions shall be sealed with a catalyzed resin compatible with the original resin as recommended by the manufacturer.

### 3.2 PIPE SUPPORTS

- A. Contractor may reuse existing pipe supports subject to the following:
  - 1. Where pipes lie in plastic-plate cradles, the contractor must grind out the plate so that the pipe moves freely within the 'guide and bearing plate.'
  - 2. Where pipes are supported with metallic pipe clamps, the contractor shall install a spacer (conduit, pipe nipple, etc.) between brackets and provide longer bolts at the top of the clamp. This will allow the brackets to function as a 'slide and guide' rather than an anchor. On each header, one pair of brackets will function as an anchor, all others shall function as slides/guides. Coordinate anchor location with Engineer.
  - 3. In the top brine header, additional supports will be required to support the convoluted PTFE hose, in maintaining a uniform flow line. Contractor may propose solutions for the Engineers review and approval. All materials shall be as described in this specification and/or as specified for pipes in Division 40.
  - 4. For the top headers, appropriate support elements may span north to south across the skid to carry hoses and fittings on both sides. This particular solution appears to be appropriate near the east end of the skids. See marked up sketches.
  - 5. For new vertical members that extend down to the coated concrete floor below, furnish a 12" x 12" x 3/4" plastic bearing plate (PVC, CPVC, VE-FRP, or other approved) to prevent long term damage to the concrete coating.

END OF SECTION





SECTION 40 05 01  
PROCESS PIPING

PART 1 GENERAL

1.1 WORK INCLUDED

- A. This section includes the work required to support the Contractor's construction activities on the Asplund WWTF site. It includes field investigations, fabrication, and installation of process pipe of varied materials, for use in an electrolytic process to carry chlorinated brine solutions, wet chlorine gas, and sodium hydroxide complete and in place, in accordance with the Contract Documents.

1.2 QUALITY ASSURANCE

- A. Tubing and appurtenances shall, as applicable, meet the current requirements of the following industry standards, codes, and regulations:
- B. American Society of Testing and Materials (ASTM) Standard Specifications:
1. ASTM-D1710 Extruded Polytetrafluoroethylene (PTFE) Rod, Heavy-Walled Tubing, and Basic Shapes
  2. ASTM-D2116 FEP-Fluorocarbon Molding and Extrusion Materials
  3. ASTM-D4101 Polypropylene Injection and Extrusion Materials
  4. ASTM-F439 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
  5. ASTM-F441 Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
  6. ASTM-F493 Standard Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
  7. ASTM-F2389 Standard specification for pressure rated polypropylene (PP) piping systems
- C. American National Standards Institute (ANSI); American Society of Mechanical Engineers (ASME)
1. ANSI/ASME B31.3, Process Piping
- D. Manufacturers' Standardization Society (MSS)
1. MSS SP-58 Pipe Hangers and Supports -Materials, Design, Manufacture, Selection, Application, and Installation
  2. ANSI/MSS SP-69 Pipe Hangers and Supports - Selection and Application
  3. MSS SP-89 Pipe Hangers and Supports - Fabrication and Installation Practices
- E. Pressure and vacuum testing to levels described elsewhere in this specification.

### 1.3 SUBMITTALS

- A. Prepare, deliver and process submittals under provisions of Section 01 33 00 SUBMITTALS.
- B. Complete list of all deviations from the Drawings and Specifications.
- C. Shop Drawings. Provide the following:
  - 1. Field Verification and Report to OWNER
    - a. Verify connecting flanges to remain in place, and to which new piping and flanges will be connected: class, drilling, and face-type
  - 2. Detailed fabrication drawings for each type and size of flex connector.
  - 3. Contractor is responsible for extensive field measurements to ensure proper alignment with other fixed points of connection in the process.
  - 4. Recommended assembly instructions if deemed appropriate.
  - 5. Special shipping, storage, protection, and handling instructions.
- D. Fabricators statement of qualifications
- E. Quality Control: Provide the following:
  - 1. Material Certification: All items manufactured of 100% virgin materials.
  - 2. Written reports of testing and inspections for all fabrications; shop testing shall include the following at a minimum:
    - a. Thickness measurements after convoluting the tubing
  - 3. Post installation pressure and leak testing for each header; Written certification of leak testing.
- F. Construction schedule: Will require close coordination with the Treatment Operators to perform work during a low-demand period in the wastewater treatment process.
  - 1. Include minimum two week operating window between work on each skid to allow break-in period of new piping and to allow curing any latent defects.

### 1.4 QUALIFICATIONS

- A. Fluoropolymer hose fabricator: Minimum of ten (10) years' continuous experience in fabrication of similar assemblies in comparable chemical operations. Minimum 5 years of satisfactory operation at the facilities at which fabrications are in service.
- B. Installer: Minimum of five (5) years' experience in the preparation, assembly, mounting, and anchoring of solvent glued CPVC pipe systems and heat welded PP-RCT piping systems

### 1.5 OPERATING PARAMETERS

- A. Chemical media and flow rate:
  - 1. Saturated sodium chloride brine
  - 2. Sodium chloride brine with chlorine in solution and wet chlorine gas
  - 3. Sodium hydroxide, 15-20% solution strength

## 4. 3-5 GPM

- B. Likely maximum temperature: 75°C
- C. Typical operating temperature: ~65°C
- D. Likely maximum vacuum: 1.5 psi
- E. Potential maximum pressure: 20 psi

## 1.6 PERMITS

- A. Permits, Licenses and Approvals: Obtain in accordance with the requirements of the General Conditions and retain onsite.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials and appurtenances from damage while handing, shipping, and storing as per the Manufacturer's recommendations. All materials shall be protected from exposure to sunlight.
- B. Flanges: Securely attach metal, hardboard, or wood protectors over entire gasket surface.
- C. Gaskets: Store gaskets in cool, dry, well-ventilated area with no exposure to direct sunlight. Do not allow gasket contact with petroleum products (oil, fuel, and solvents).
- D. Store equipment in clean, dry, well-ventilated area.

## 1.8 PROTECTION OF WORK AND PROPERTY

- A. Comply with Owner's safety rules while on Owner's property.
- B. Inform Owner of accidents at the Project Site and of related claims.
- C. In the performance of Work, Contractor is responsible for adapting the means, methods, techniques, sequences, and procedures of the construction to allow the Owner to maintain the continuous operation of the Wastewater Treatment Plant consistent with Environmental Protection Agency and Alaska Department of Environmental Conservation permits and approvals.

## 1.9 PRE-INSTALLATION MEETING

- A. Prior to starting work under this section on site, Contractor shall conduct a pre-installation meeting with the Owner and treatment plant Operators. As a minimum, discuss the operating environment and inherent safety concerns associated with the process equipment; the work to be performed, the sequence of activities, coordination of work with other trades and the Owner and treatment plant Operators, and testing and reporting procedures as applicable.

## 1.10 WARRANTY

- A. Warranty shall include corrective action for pipe material defects and/or fabrication workmanship for a period of 3 years.

## PART 2 PRODUCTS

### 2.1 GENERAL SCOPE

- A. The project generally consists of the removal of 1 inch, 2 inch, and 3 inch diameter CPVC pipes and fittings, flexible fittings, and valves. These will be replaced with new CPVC and PP-RCT pipe and fittings; CPVC valves, and convoluted PTFE hoses. Each assembly will be cleaned and pressure and vacuum tested.

### 2.2 MATERIALS

- A. General: Plastic pipe and materials shall be a maximum of two years old from date of manufacture if protected from UV exposure for the entire period it is in storage. Said materials shall be a maximum of 6 months old from date of manufacture if not protected from UV exposure for the period it is in storage. This shall be supported with notarized certifications in support of manufacturer and suppliers handling practices, with specific reference to the lots and batches furnished for this project.
- B. Polytetrafluoroethylene (PTFE)
1. Service: Chlorinated brine service lines; flexible connectors for all chemical pipe lines.
  2. ASTM-D1710 Extruded Polytetrafluoroethylene (PTFE) Rod, Heavy-Walled Tubing, and Basic Shapes
  3. Virgin materials in accordance with ASTM standard cited in Part 1
  4. 1.5 mm minimum wall thickness, corrugated or convoluted
  5. Pressure and vacuum rated for three (3) times the operating parameters identified in Part 1.
- C. Fluorinated Ethylene Propylene (FEP)-Fluorocarbon
1. Service: Chlorinated brine service lines; flexible connectors for all chemical pipe lines.
  2. ASTM-D2116 FEP-Fluorocarbon Molding and Extrusion Materials
  3. Virgin materials in accordance with ASTM standard cited in Part 1
  4. 1.5 mm minimum wall thickness, corrugated or convoluted
  5. Pressure and vacuum rated for three (3) times the operating parameters identified in Part 1.
- D. Flanges for use with fluoropolymer tubing, 150# pattern:
1. Process fluid non-contacting, Lap Joint, 304 SS; pressure and vacuum rated for three (3) times the operating parameters identified in Part 1.
  2. Process fluid non-contacting, vinyl-ester fiber reinforced plastic; pressure and vacuum rated for three (3) times the operating parameters identified in Part 1.
  3. Blind flanges: CPVC and Titanium, Grade 2 are acceptable
- E. Flange Gaskets:
1. Garlock 3500 Series, specific model appropriate for this service
  2. Asahi AV Gaskets, PTFE bonded EPDM

- F. Chlorinated Polyvinyl Chloride (CPVC)
1. Service: Brine supply to electrolyzers; flange tees in chlorine return line (for connecting 2 inch to 3 inch fluoropolymer hoses); terminal connections at anolyte tanks, and end of line drains in brine system.
    - a. 3 inch x 2 inch tees used in the chlorine/brine header shall be made up in the shortest possible run length for the material approved; CPVC tees shall be practically identical in dimensions to allow for ease of replacement in the future.
  2. Schedule 80 pipe and fittings; solvent welded using primer and adhesive specifically approved for use with chlorinated brine, chlorine gas, and sodium hypochlorite.
  3. Flanges: Two-piece Van Stone Style CPVC flange conforming to the physical properties of the fittings, faced and drilled to 150-pound ANSI B16.5.
- G. Polypropylene Random Copolymer with modified Crystallinity and Temperature resistance (PP-RCT)
1. Service: 3 inch Caustic supply header; 2 inch branch lines to electrolyzers; 1 inch drain lines from the electrolyzer branch lines.
    - a. Branch and drain lines may be of CPVC if make-up of PP-RCT fittings will not accommodate available space in the field.
  2. SDR-9 pipe and fittings, heat welded in socket or butt-fusion process. Solid interior and exterior layers of PP-RCT resin, with a center core containing fiberglass added to the PP-RCT resin.
  3. Nupi Niron Clima or approved equal.
- H. Fasteners: ASTM F593 Group 2 bolts; ASTM F594 Group 2 nuts; anti-seize compound at all assemblies.

## 2.3 MANUFACTURER/FABRICATOR

- A. Pre-qualified manufacturer: Tef Cap Industries, 1155 Phoenixville Pike, Suite 103, Westchester, PA, 19380; 610-692-2576. Heavy wall convoluted PTFE tubing.
- B. Pre-qualified manufacturer: PureFlex, Inc., 4855 Broadmoor Ave, Kentwood, Michigan, 49512; 616-554-1100. Ultra-Flex.
- C. Or Equal Manufacturers shall comply with the project specifications. CONTRACTOR shall demonstrate to the Engineer and the OWNER that all requirements of materials, qualifications, past performance, and workmanship have been met or exceeded by the proposed fabricator.

## 2.4 IDENTIFICATION LABELS

- A. Pipe Labels and Flow Direction Arrows
- B. Material: Manufacture from or encase in outdoor grade plastic or vinyl that will resist damage or fading from wash down, sunlight, mildly corrosive atmosphere, dirt, grease, and abrasion.
- C. Message: Match and replace existing.
- D. Label, Lettering Size, and Color: ANSI A13.1.

1. Snap-Around Type: Size for finished outside diameter of pipe and insulation.
  2. For 6-inch and larger diameter pipe: May furnish strap-on type fastened without use of tools, with plastic or Type 316 stainless steel straps.
  3. Firmly grip pipe so labels remain fixed in vertical pipe runs.
- E. Manufacturers and Products:
1. Seton Identification Products, Branford, CT; Setmark Pipe Markers.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Prior to starting fabrication drawings, perform detailed field measurements to develop most accurate fabrications possible, with the intent of avoiding field repairs after shipment to the site.
- B. Inspect tube and fittings before installation, clean ends thoroughly, and remove foreign matter and dirt from inside. Foreign materials in these pipes can destroy the membranes in the electrolyzers or, at the least, greatly reduce the operating life of the electrolyzers. Cleaning pipe is critical.
- C. During installation, perform regular, daily clean up in the process production room; clear wastes from the site, daily. Retrieve items lost beneath process skids to prevent introduction into the area drainage system.

### 3.2 STORAGE AND HANDLING

- A. Store all tubing materials as per the manufacturer's recommendations.
- B. Handle tubing to prevent contact with sharp or cutting objects.

### 3.3 INSTALLATION

- A. 3 inch x 2 inch tees used in the chlorinated brine header shall be made up in the shortest possible run length for the material approved; CPVC tees shall be practically identical in dimensions. The hard piping in this header is subject to relatively short life spans; the switch to the convoluted hoses is intended to reduce the amount of maintenance associated with replacing these headers.
- B. CPVC assembly shall be done using pipe/fitting manufacturer's best practices with particular attention to limiting application of primer and adhesives beyond the weld zone within socket fittings; properly beveling the end of pipes prior to assembly; deburring and cleaning pipe ends to eliminate detritus from inside the pipes.
- C. PP-RCT shall be done using pipe/fitting manufacturer's best practices with particular attention to deburring and cleaning pipe ends to eliminate detritus from entering the pipes. Do not exclusively rely on hydraulic flushing to clean the lines.
- D. Existing pipe supports may be re-used. However, the pipe systems are currently over-restrained. Refer to Division 06 and Section XVI for additional details and requirements.
- E. All assemblies shall be free of stress and distortions that might negatively impact the operation of the system.

- F. Flush clean the assembled piping using available W1 water prior to pressure testing.

### 3.4 TEST AND INSPECTIONS

#### A. Factory

1. Material manufacturing reports
2. Post-heat forming thickness measurements
3. Furnish reports prior to shipment

#### B. On-site Testing

1. Following flushing of installed elements, install temporary blind flanges on all open flanges. Perform a positive pressure test, with water, at 2 times the maximum pressure noted in Part 1.
2. Following the pressure test, perform a vacuum test to 2 times the maximum anticipated vacuum noted in Part 1.
3. The order of these test shall be in accordance with contractor's approved test plan.
4. Repair all leaks discovered during this effort.

### 3.5 RECORD DRAWINGS

- A. CONTRACTOR shall maintain a current set of construction drawings and specifications that reflect any changes, modifications, clarifications, additions, or deletions from the Contract Documents and provide to OWNER at substantial completion.

### 3.6 IDENTIFICATION LABELS

#### A. Pipe Labels and Flow Indication Arrows:

1. Locate at equipment connections and valves.
2. At 10-feet on center with at least one label applied to each exposed horizontal run of pipe.
3. Installation: In accordance with manufacturer's instructions.

END OF SECTION







# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION IV**

### **SUBMITTAL LIST AND STANDARD FORMS**

**Submittal List**

**Submittal Transmittal**

**Certificate of Compliance**

**Design Clarification & Verification Request**

**Deviation Request**

**Substitution Request**

**Subcontractor & Supplier List**

**Initiator Change Order Request**





# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT

Job WM00000246  
#: SWR

Contractor: \_\_\_\_\_

Submittal No.	Description	Submittal Schedule
10.03.2	Bid Submittals	Prior to the time of opening specified in the Invitation to Bid and the exact date and time of receipt of Bids shall be recorded.
10.04.19	Record Documents	Within thirty (30) days after Substantial Completion or prior to Final Acceptance of the project, whichever is earlier.
10.05.3	Construction Progress Schedule	Within ten (10) days of the effective Notice to Proceed, and prior to the commencement of Work.
10.05.3	Critical Path Method (CPM) Schedule	No later than twenty-one (21) days from the effective date of the Notice to Proceed and at least monthly thereafter.
10.05.4	Unusual Working Hours	At least forty-eight (48) hours advance notice.
10.05.5	Shop Drawings	Within reason and in such sequence as to cause no delay in the Work or in the work of the Owner or any other contractor.
10.05.6	Product Data	Within reason and in such sequence as to cause no delay in the Work or in the work of the Owner or any other contractor.
10.05.7	Materials Substitutions	Within ten (10) calendar days of the effective date of the Notice-to-Proceed (or such time as may be approved in writing by the Engineer.)
10.05.10	Subcontractor List	Within ten (10) days after the effective date of the Notice-To-Proceed, and



# Municipality of Anchorage

## Anchorage Water and Wastewater Utility



### 2024 SEWER IMPROVEMENTS

### AWWTF CAUSTIC/BRINE HEADER REPLACEMENT

		prior to the commencement of the Work.
10.05.18	Changed Conditions	No later than two (2) working days, and before such conditions are disturbed.
10.05.20	Change Order Proposal	Prior to payment of changed Work
10.05.21	Claims for Additional Compensation	Initial Notification - Immediately.
10.05.26	Pre-Final Inspection Notification	After completion of Work
10.05.29	Termination of Work for Owners Convenience	Immediately after receiving a Notice of Termination.
10.06.8	24-Hour Emergency Contact Number*	Prior to commencement of work * Found in Construction Specifications
10.06.9	Insurance	Prior to execution of the Contract.
10.07.4	Change Order Proposal/ Negotiated Changes	Prior to payment of the changed Work.
10.07.5	Application for Partial Payment	
10.07.7	Final Payment	Upon completion of the Work and issuance of a certificate of completion by the Engineer.
65.02.14	As-built Surveys and Record Drawings	Upon completion of construction activity.

NOTE: The above list of submittals is not all-inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans, Technical Specifications, Special Provisions, MASS, or as directed by the Engineer. (See Division 10, Section 10.04, Article 4.3.)

# SUBMITTAL TRANSMITTAL

PROJECT: \_\_\_\_\_ SUBMITTAL NO.: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_ CONTRACT NO.: \_\_\_\_\_  
 ORIGINATOR: \_\_\_\_\_ SPEC. SECTION: \_\_\_\_\_  
 DATE SUBMITTED: \_\_\_\_\_ DRAWING NO.: \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_

TO: ANCHORAGE WATER & WASTEWATER UTILITY  
 Engineering Division  
 3000 Arctic Boulevard

ATTN: \_\_\_\_\_

ITEM: _____		REVIEW ACTION						
		COPIES SENT	NO EXCEPTION TAKEN	MAKE CORRECTIONS AS NOTED	AMEND AND RESUBMIT	REJECTED RESUBMIT	COPIES RETURNED	NOTES ATTACHED
SUPPLIER/CONTRACTOR:  <input type="checkbox"/> Original Submittal <input type="checkbox"/> 3rd <input type="checkbox"/> 2nd <input type="checkbox"/> 4th								
ID. NO.	DETAILED DESCRIPTION (Provide Itemized List of Contents of this Submittal)		A	B	C	D		

Complete either (a) or (b), following:

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions).

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (list deviations, attach a separate sheet if necessary).

Corrections or comments made relative to submittals during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This submittal is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

CONTRACTOR: \_\_\_\_\_  
(Signature)

ENGINEER: \_\_\_\_\_  
(Signature)

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

# AWWU SUBMITTAL REVIEW ACTION

PROJECT \_\_\_\_\_

SUBMITTAL NO. \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

CONTRACT NO. \_\_\_\_\_

ORIGINATOR \_\_\_\_\_

SPEC. SECTION \_\_\_\_\_

DATE SUBMITTED \_\_\_\_\_

DRAWING NO. \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

A-NO EXCEPTION TAKEN

B-MAKE CORRECTIONS AS NOTED

C-AMEND AND RESUBMIT

D-REJECTED RESUBMIT

REVIEW ACTION	ID. NO.	COMMENT:

ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

# CERTIFICATE OF COMPLIANCE

Project Name: \_\_\_\_\_ Contract No. C-\_\_\_\_\_

I (WE) CERTIFY THAT ALL WORK HAS BEEN PERFORMED AND MATERIALS SUPPLIED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE ABOVE WORK, AND THAT:

- A. Not less that the prevailing rates of wages as ascertained by the governing body of the contracting agency has been paid to laborers, workmen, and mechanics employed on this work;
- B. There have been no unauthorized substitutions of subcontractors; nor have any subcontracts been entered into without the names of the subcontractors having been submitted to the Engineer prior to the start of such subcontracted work;
- C. No subcontract was assigned or transferred or performed by any subcontractor other than the original subcontractor, without prior notice having been submitted to the Engineer together with the names of all subcontractors;
- D. All claims for material and labor and other services performed in connection with these specifications have been paid;
- E. All monies due the State Industrial Accident Fund, the State Unemployment Compensation Trust Fund, the State Tax Commission, hospital associations and/or other have been paid.

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Contractor's Signature) (Date)

STATE OF ALASKA            )  
                                          )ss.  
THIRD JUDICIAL DISTRICT    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_, by \_\_\_\_\_  
to be the \_\_\_\_\_ of the company.

\_\_\_\_\_  
Notary Public  
My commission expires: \_\_\_\_\_

## DESIGN CLARIFICATION/VERIFICATION REQUEST (DC/VR)

PROJECT \_\_\_\_\_ DC/VR NO. \_\_\_\_\_

CONTRACTOR \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_

ORIGINATOR \_\_\_\_\_ SPEC. SECTION \_\_\_\_\_

DATE SUBMITTED \_\_\_\_\_ DRAWING NO. \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_

**DESCRIPTION OF DC/VR**

RESPONSE REQUESTED BY (Date) \_\_\_\_\_

**RESPONSE TO DC/VR**

RESPONSE BY (Name/Company) \_\_\_\_\_

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

**DIRECTION**

Proceed per Engineers Response. No change in contract price or time is recognized.

Do not proceed until \_\_\_\_\_

\_\_\_\_\_



# DEVIATION REQUEST (DR)

PROJECT \_\_\_\_\_ DR NO. \_\_\_\_\_  
 CONTRACTOR \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_  
 ORIGINATOR \_\_\_\_\_ SPEC. SECTION \_\_\_\_\_  
 DATE SUBMITTED \_\_\_\_\_ DRAWING NO. \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_

**DESCRIPTION OF DR**

**A. Original Contract Requirements:**

**B. Reason for Deviation Request:**

**C. Proposed Deviation:**

**D. Any Changes in Contract Time or Cost**       YES       NO

CONTRACTOR SIGNATURE - \_\_\_\_\_      RESPONSE REQUIRED BY (Date) \_\_\_\_\_  
 Date \_\_\_\_\_

**RESPONSE TO DR**

RESPONSE BY (Name/Company) \_\_\_\_\_

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

**DIRECTION**

Approved

Approved as Noted

Disapproved

BY \_\_\_\_\_  
(Signature)

# SUBSTITUTION REQUEST (SR)

PROJECT \_\_\_\_\_ SR NO. \_\_\_\_\_  
CONTRACTOR \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_  
ORIGINATOR \_\_\_\_\_ SPEC. SECTION \_\_\_\_\_  
DATE SUBMITTED \_\_\_\_\_ DRAWING NO. \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_

**SPECIFIED ITEM:**

SECTION	PAGE	PARAGRAPH	DESCRIPTION
---------	------	-----------	-------------

The undersigned requests consideration of the following:

**PROPOSED SUBSTITUTION:** \_\_\_\_\_

Attached data includes product description, specifications, drawings, photographs and performance and test adequate for evaluation of the request. Applicable portions of the data are clearly identified.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on Drawings and will not require any change in any of the Contract Documents.
2. The undersigned will pay for changes to the design, including engineering design, detailing, and construction costs caused by the requested substitution which is estimated to be \$ \_\_\_\_\_.
3. The proposed substitution will have no adverse affect on other contractors, the construction schedule (specifically the date of substantial completion), or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The incorporation or use of the substitution in connection with the work is not subject to payment of any license fee or royalty.

The undersigned further states that the function, appearance, and quality of the Proposed Substitution are equivalent or superior to the Specified Item.

**Submitted by CONTRACTOR**

Signature: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Date: \_\_\_\_\_  
Telephone: \_\_\_\_\_

Attachments  
:

\_\_\_\_\_  
\_\_\_\_\_

**Reviewed by ENGINEER**

- Accepted
- Accepted as Noted
- Not Accepted
- Received too Late

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_  
Remarks: \_\_\_\_\_

# ANCHORAGE WATER AND WASTEWATER UTILITY

## Subcontractor/Supplier List

Project Name:

Project Number:

List all suppliers, subcontractors, their mailing addresses and a summary of the extent and character of the work to be performed by each:

<b><u>Supplier/Subcontractor</u></b>	<b><u>Address</u></b>	<b><u>Extent/Character of Work</u></b>
--------------------------------------	-----------------------	----------------------------------------

# Initiator Change Order Request No. Enter ICOR No.

**Project Name:** Enter Project Name

**Project ID:** Enter Project ID

**Contractor:** Enter Contractor Name

**Contract No.:** Contract No.

**Contract Date:** Contract Date

**Proposed By:** Enter Proposer Name

**Date:** Select Date

**Initiator:**

**Submitted By:** Enter Submitter Name

**Date:** Select Date

Owner

Design Engineer

Construction Manager

Contractor

## Actual job conditions in area of proposed work:

Enter Job Conditions

## Change order justification:

Enter Justification for Change Order

## Description of work to be performed:

Enter Work to be Performed

Any changes in contract time or cost acknowledged?  **NO**  **YES**

Contractor authorized to proceed with this change?  **NO**  **YES** on

Other contracts involved are as follows (List Contracts by No.):

Is drawing required?  **NO**  **YES** **Sheet No.**

## Contractor Approval

\_\_\_\_\_  
Enter Contract Approver

\_\_\_\_\_  
Date

## AWWU Approval

\_\_\_\_\_  
Enter AWWU Approver

\_\_\_\_\_  
Date





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION V**

### **CONTRACT AND BID DOCUMENTS**

**Contract**

**Bid Bond**

**Performance & Payment Bond**

**Certificate of Insurance**

**Bidder's Checklist**

**Responsible Bidder's Questionnaire**



# CONTRACT

Invitation to Bid No. **2024C**\_\_\_\_\_

Contract No. **C-2024**\_\_\_\_\_

NAME AND ADDRESS OF CONTRACTOR:

Check appropriate box:

Incorporated in the State of

MUNICIPALITY OF ANCHORAGE, acting through

(hereinafter the Owner).

Contract for

<b><u>BID SCHEDULES</u></b>	<b><u>ITEMS</u></b>	<b><u>PLAN SHEET FILE NUMBERS</u></b>	<b><u>AMOUNT</u></b>
Item A1	Construction Services		\$ _____
Item A2	Contingent Sum		\$ _____ 20,000
			Total Amount : \$ _____

THIS CONTRACT, entered into by the MUNICIPALITY OF ANCHORAGE, ALASKA, acting through the Owner named above, and the individual, partnership, or corporation named above, hereinafter called the Contractor, WITNESSETH that the parties hereto do mutually agree as follows:

Statement of Work: The Contractor shall furnish all labor, equipment and materials and perform the Work above described, for the amount stated, in strict accordance with the Contract Documents.



## CONTRACT DOCUMENTS

- I. This CONTRACT consisting of 4 pages.
- II. The Bid Proposal Section\_\_\_\_consisting of\_\_\_\_pages numbered as\_\_\_\_, **as contained in ITB 2024C\_\_\_\_\_.**
- III. The Contract Performance and Payment Bond .
- IV. The Contractor's Certificate of Insurance Dated .
- V. Municipality of Anchorage Standard Specifications dated 2015 (MASS) Incorporated by Reference, **as contained in ITB 2024C\_\_\_\_\_.**
- VI. Specifications consisting of the following:  
  
Supplemental Provisions Section\_\_\_\_consisting of \_\_\_\_\_ pages, with attachments Exhibit A through F, **as contained in ITB 2024C \_\_\_\_\_.**
- VII. Equal Opportunity Special Provisions and Forms Section \_\_\_\_\_ consisting of\_\_\_\_pages, **as contained in ITB 2024C \_\_\_\_\_.**
- VIII. Disadvantaged/Women-Owned Business Enterprise (DBE/WBE) Specification Section \_\_\_\_\_ consisting of\_\_\_\_pages, **as contained in ITB 2024C\_\_\_\_\_.**
- IX. The Laborers' and Mechanics' Minimum Rates of Pay dated September 1, 2015 Section \_\_\_\_\_ consisting of \_\_\_\_\_ pages, **as contained in ITB 2024C\_\_\_\_\_.**
- X. Submittal List Section \_\_\_\_\_ consisting of\_\_\_\_page, **as contained in ITB 2024C\_\_\_\_\_.**
- XI. The Drawings consisting of \_\_\_\_\_ sheets numbered\_\_\_\_\_, **as contained in ITB 2024C\_\_\_\_\_.**

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the Contract Date entered below.

MUNICIPALITY OF ANCHORAGE, ALASKA

VENDOR \_\_\_\_\_

BY \_\_\_\_\_  
Signature

BY \_\_\_\_\_  
Signature

\_\_\_\_\_  
Purchasing Officer or designee  
Title

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date of Signature

Date of Signature and Contract Date:

\_\_\_\_\_

SAMPLE

**CONTRACT AND PERFORMANCE AND PAYMENT  
BOND SIGNATURE INSTRUCTIONS**

1. The full name and business of the Contractor shall be inserted on Page 1 of the Contract and on the Performance and Payment Bond, hereinafter the Bond.
2. Two copies of the Contract and the Bond shall be manually signed by the Contractor. If the Contractor is a partnership or joint venture, all partners or joint ventures shall sign the Contract and the Bond except that one partner or one joint venturer may sign for the partnership or joint venture when all other partners or joint venturers have executed a Power-of-Attorney authorizing one partner or joint venturer to sign. The Power-of-Attorney shall accompany the executed contract and the Bond.
3. If the Contractor is a corporation, the President of the corporation shall execute the Contract and the Bond unless a Power-of-Attorney or corporate resolution shall accompany the executed Contract and Bond.
4. The Bond shall be returned to the Purchasing Division undated. The Contract Date shall be inserted on the Contract when the Municipality signs the Contract and the Bond shall be dated the same as the Contract Date.

SAMPLE

# BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, \_\_\_\_\_  
as Principal, and \_\_\_\_\_ a  
corporation organized under the laws of the \_\_\_\_\_ and  
authorized to transact surety business in the State of Alaska, of \_\_\_\_\_  
\_\_\_\_\_ as Surety, are held and firmly bound unto the MUNICIPALITY OF  
ANCHORAGE, as Obligee, in the full and just sum of \_\_\_\_\_  
\_\_\_\_\_ (\$ \_\_\_\_\_) Dollars, lawful  
money of the UNITED STATES, for the payment of which sum, well and truly to be made, we bind  
ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly  
by the presents.

WHEREAS, the said Principle is herewith submitting its proposal for \_\_\_\_\_  
\_\_\_\_\_.

The condition of this obligation is such that if the aforesaid Principal will, within the time required enter  
into a formal contract and give a good and sufficient bond to secure the performance of the terms and  
conditions of the contract, then this Obligation to be void; otherwise the Principal and Surety will pay  
unto to the Obligee the amount stated above.

Signed, sealed, and delivered \_\_\_\_\_, 20\_\_\_\_\_.

WITNESS AS TO PRINCIPAL:

\_\_\_\_\_

(AFFIX CORPORATE SEAL)

(AFFIX SURETY SEAL)

\_\_\_\_\_  
Contractor Name

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
Corporate Surety

\_\_\_\_\_  
Surety Business Address

BY: \_\_\_\_\_  
(Attorney-In-Fact)

# CONTRACT PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That we \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_  
as Principal, and \_\_\_\_\_  
a corporation organized under the laws of the \_\_\_\_\_  
\_\_\_\_\_ and authorized to transact surety business in the State of Alaska,  
of \_\_\_\_\_  
as Surety, are held and firmly bound unto the MUNICIPALITY OF ANCHORAGE, as Obligee, in the full and  
just sum of \_\_\_\_\_  
(\$ \_\_\_\_\_) Dollars, lawful money of the UNITED STATES, for the payment  
which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and  
assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH, that whereas the principal has entered into a certain  
contract dated the \_\_\_\_\_ date of \_\_\_\_\_ 20 \_\_\_\_\_, with the Obligee for the  
construction of \_\_\_\_\_  
\_\_\_\_\_

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at  
length herein.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants,  
terms, conditions, and agreements of said contract, and shall promptly make payments to all persons  
supplying labor and material in the prosecution of the work provided for in said contract, during the original  
term of said contract and any extensions of modifications thereof that may be granted by the Municipality, with  
or without notice to the Surety, then this obligation to be void; otherwise to remain in full force and effect.

This obligation is made for the use of said Obligee and also for use and benefit of all persons who may perform  
any work or labor or furnish any material in the execution of said Contract and may be sued on thereby in the  
name of said Obligee.

This said Surety, for the value received, hereby stipulates and agrees that no change, extension of time,  
alteration or addition to the terms of the contract or to the work to be performed thereunder or the  
specifications accompanying the same, shall in anywise affect its obligations on this bond, and it does hereby  
waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the  
work or to the specifications.

Whenever Principal shall be, and declared by Obligee to be in default under the Contract the Obligee having performed Obligee's obligations thereunder, the Surety may promptly remedy the default or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for submission to Obligee for completing the Contract in accordance with its terms and conditions and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by Obligee and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph, shall mean the total amount payable by Obligee to Principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to Principal.

IN TESTIMONY WHEREOF, the parties hereunto have caused the execution hererof in \_\_\_\_\_  
\_\_\_\_\_ original counterparts as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

WITNESS AS TO PRINCIPAL:

\_\_\_\_\_

(AFFIX CORPORATE SEAL)

(AFFIX SURETY SEAL)

\_\_\_\_\_

Principal Name

\_\_\_\_\_

Principal Signature

\_\_\_\_\_

Corporate Surety

\_\_\_\_\_

\_\_\_\_\_

Surety Business Address

BY:

\_\_\_\_\_

(Attorney-In-Fact)



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No. Ext):	FAX (A/C, No):
INSURED	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	NAIC #	
	INSURER A :	
	INSURER B :	
	INSURER C :	
INSURER D :		
INSURER E :		
INSURER F :		

**COVERAGES**

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> Y / N If yes, describe under DESCRIPTION OF OPERATIONS below		N / A				WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

ADDITIONAL INSURED:

1. ADDITIONAL INSURANCE: The Municipality of Anchorage is an additional insured on all policies, and shall contain a WAIVER OF SUBROGATION against the Municipality except Professional Liability and Worker's Compensation.
2. CANCELLATION: "Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the Policy Provisions."

**CERTIFICATE HOLDER****CANCELLATION**

	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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## INSURANCE

By submitting a bid, the bidder agrees, if they are the successful bidder, to obtain and maintain the insurance required by this section. The bidder also agrees to provide the Municipality a copy of their Certificate of Liability Insurance prior to signing the contract and prior to commencement of any work under this contract.

**GENERAL:** The Contractor will not allow any subcontractor to commence work until the subcontractor has obtained insurance as listed in this section. The contractor and each subcontractor shall maintain this insurance throughout the life of this contract, including any maintenance and/or guarantee/warranty period. The contractor shall obtain separate insurance certificates for each contract.

**ADDITIONAL INSURED:** The Municipality of Anchorage shall be listed as an additional insured on all General and Auto Liability policies required by this contract. All policies shall contain a waiver of subrogation against the Municipality, except Professional Liability. All policies shall remain in effect during the life of the contract. The Contractors insurance certificate shall also indicate the Municipality of Anchorage as a certificate holder of the policy.

**WORKERS COMPENSATION:** The Contractor shall purchase and maintain during the life of this contract, workers compensation insurance for all employees who will work on this project and, if any work is sublet, the Contractor shall require the subcontractor similarly to provide such insurance. Employers' Liability with a minimum limit of \$500,000 shall be maintained and Workers Compensation with minimum limits as required by Alaska State Workers Compensation Statutes. The policy shall contain a waiver of subrogation against the Municipality.

**NOTICE TO "OUT-OF-STATE" CONTRACTORS WORKING IN ALASKA:** The Contractor shall provide evidence of Workers Compensation insurance, either State of Alaska Workers Compensation coverage or an endorsement to the Contractor's home state Workers Compensation policy, evidencing coverage for "other states" including Alaska, prior to execution of a contract or, if approved, before commencement of contract performance in Alaska.

**GENERAL LIABILITY:** The Contractor shall purchase and maintain, in force, during the life of this contract such general liability insurance as shall protect the Owner and the Contractor against losses which may result from claims for damages for bodily injury, including accidental death, as well as from claims for property damages which may arise from any operations under this contract whether such operations be those of the Contractor, a subcontractor or anyone directly or indirectly employed by either of them.

<b><u>Commercial General Liability</u></b>	<b><u>Minimum Limits</u></b>
Products/Completed Operations	\$2,000,000
Personal & Advertising Injury	\$1,000,000
Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000
Medical Payments	\$5,000
<b><u>Commercial Auto Liability</u></b>	<b><u>Minimum Limits</u></b>
Combined single limit (Bodily Injury and Property Damage)	\$1,000,000
Including all owned, hired, and non-owned	
<b><u>Workers Compensation and Employers Liability</u></b>	<b><u>Minimum Limits</u></b>
Per Alaska statute	\$500,000
<b><u>Errors and Omissions</u></b>	<b><u>Minimum Limits</u></b>
Professional Liability (Not required unless limits appear in space provided)	
<b><u>Umbrella Liability</u></b>	<b><u>Minimum Limits</u></b>
(Not required unless limits appear in space provided)	
\$ _____ S.I.R.	

Each insurance policy required by this section shall require the insurer to give advance notice to the MOA/Contract Administrator prior to the cancellation of the policy. IF the insurer does not notify the MOA upon policy cancellation, it shall be the Contractor's responsibility to notify the MOA of such cancellation.



### **COMPLIANCE WITH LAWS**

The Contractor shall observe and abide by all applicable laws, regulations, ordinances and other rules of the State of Alaska and/or any political subdivisions thereof, or any other duly constituted public authority wherein work is done or services performed, and further agrees to indemnify and save the Municipality of Anchorage harmless from any and all liability or penalty which may be imposed or asserted by reason of the Contractor's failure or alleged failure to observe and abide thereby.

(Remainder of Page Initially left Blank)

## **BIDDER'S CHECKLIST** **INSTRUCTION TO BIDDER**

### **I. GENERAL:**

Bidders are advised that notwithstanding any instructions or implications elsewhere in this Invitation to Bid only the documents shown and detailed on this sheet need be submitted with and made part of their bid. Other documents may be required to be submitted after bid time, but prior to award. Bidders are hereby advised that failure to submit the documents shown and detailed on this sheet shall be justification for rendering the bid nonresponsive. Evaluation of bids for responsiveness shall be accomplished in accordance with Anchorage Municipal Code, Title 7.

### **II. REQUIRED DOCUMENTS FOR BID**

**NOTE:** "Only the following listed items as marked with an "X" are required to be completely filled out and submitted with the bid."

- Bid Proposal consisting of three (3) pages numbered BP-1 of 3 through BP-3 of 3. Bid Proposal Page 2 **must be manually signed**.
- Erasures or other changes made to the Bid Proposal Sheet must be initialed by the person signing the bid.
- Bid Bond, certified check, cashier's check, money order or cash shall be submitted with the bid in the amount indicated.
- All Addenda issued shall be acknowledged in the space provided on the Bid Proposal sheet or by manually signing the Addenda sheet and submitting it prior to the bid opening in accordance with Anchorage Municipal Code 7.20.020C.
- Certificate of Insurance (COI) **MUST** be submitted with the bid.
- A copy of your Business License **MUST** be submitted with bid.
- A copy of your SAM report **(If available)** should be submitted with bid.
- Your SAP vendor number **(If available)** should be submitted with bid.
- In accordance with AO No. 2019-130 (S), Anchorage Municipal Code 7.20.030 and 7.20.070, Contractor Questionnaire consisting of three (3) Pages, Prime Contractor Form Filled out by Prime Contractor **and** all known subcontractors.

**NOTICE: As of December 3, 2019, there are new requirements for determining contractor responsibility. Please review AO NO. 2019-130 (S), AMC 7.20.030 and 7.20.070, and the attached Contractor Questionnaire before submitting a bid.**

### **III. REQUIRED DOCUMENTS AFTER BID OPENING**

The following documents are required within five (5) working days of notification by the Purchasing Office. Failure, in whole or in part, to submit the documents required below shall be grounds to determine the Bidder as non-responsible.

**Municipality of Anchorage  
Contractor Questionnaire**

---

Contractors/Vendors wishing to qualify for award of a bid or proposal offered by the Municipality of Anchorage shall submit this completed form and any supplemental information requested by this form within five days following a request by the Purchasing Officer.

This form is to be filled out by the prime, and subcontractors that perform work "on-site". On-site is defined as the physical place or places where the building or work called for in the contract will remain, and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project.

Contractor/Vendor Name: \_\_\_\_\_

Owner(s) of Company (if sole proprietorship or partnership): \_\_\_\_\_

---

List all Alaska construction contractor's registration numbers, registration types and expiration dates of the Alaska business licenses held by your company in the past three years:

---

---

Has your company changed names, business license number, or contractor registration number in the past three years?

Yes       No

If "Yes," explain on a separate signed page, including the reason for the change.

Has any owner, partner or (for corporations) officer of your company operated any business offering similar services outlined in the bid or proposal under any other name in the past three years?

Yes       No

If "Yes," explain on a separate signed page, including the reason for the change.

**Certifications & Disclosures**

For these questions & certifications, "company" includes any entity that shares or has shared majority ownership or control with your company. "Determination of violation" includes any citations, orders or recommendations issued to or against the company.

**Debarment**

1. In the last three years has your company been debarred from bidding on, or being awarded, a state or federal project?

Yes       No

**Occupational Safety & Health**

**Note: Only willful violations of state or federal occupational safety and health laws will result in disqualification; disclosure of other violations does not lead to automatic disqualification.**

2. In the last three years has your company been determined to have committed a **willful violation** of state or federal occupational safety and health law? For purposes of this question, a state or federal occupational safety and health law includes laws enforced by the Occupational Safety and Health Administration (OSHA), Alaska Occupational Safety and Health (AKOSH), or another state’s occupational safety and health agency.

Yes       No

3. In the last three years, has the federal Occupational Safety and Health Administration (OSHA), Alaska Occupational Safety and Health (AKOSH), or another state’s occupational safety and health agency, made a determination of violation against your company?

**Note: If you have filed an appeal of a citation and the appropriate appeals board has not yet ruled on your appeal, you need not include information about it.**

Yes       No

If “Yes,” attach a separate signed page describing each citation.

**Wage & Hour**

**Note: Only willful violations of state or federal wage and hour laws will result in disqualification; disclosure of other violations does not lead to automatic disqualification.**

4. In the last three years has your company been determined to have committed a **willful violation** of state or federal wage and hour law?

Yes       No

5. In the last three years has there been a determination of violation of wage and hour laws against your company? Wage and hour violations include failure to pay minimum wages, overtime, or prevailing wages.

Yes       No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

**Unemployment Insurance & Workers’ Compensation**

6. In the last three years has there been a determination of violation of unemployment insurance or workers’ compensation requirements against your company?

Yes       No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

**Licensing & Registration**

7. If a license or certificate of fitness is required to perform any services provided by your company, has there been a determination of violation of any certificate of fitness requirements against your company in the last three years?

Yes       No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

**Subcontracting**

8. I certify that all independent subcontractors engaged by my company meet the definition of an independent contractor under Alaska Statute 23.30.230.

Yes       No

9. I understand that my company is responsible for ensuring that each subcontractor my company uses on the project completes this form and associated documentation. I will submit any disclosures required by Anchorage Municipal Code.

I understand

10. I understand that my company is responsible for providing this form and any associated documentation for each subcontractor hired after award within 30 days of hire, and that the subcontractor may not begin work on the project until such information is provided.

I understand

11. I understand that my company is responsible for ensuring that if any event, such as a violation or loss of coverage, causes the information submitted by the subcontractor to change, the subcontractor shall submit updated certifications or disclosures within 30 days of occurrence to the department contract administrator.

I understand

I declare under penalty of perjury that the foregoing is true and correct.

Dated: \_\_\_\_\_ (Signature)

\_\_\_\_\_  
(Printed name and title)

Right to Appeal: Anchorage Municipal Code provides that any person adversely affected in connection with the award of a municipal contract, including the Municipality’s determination on responsibility, may request that the mayor or assembly refer the matter to the bidding review board.





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



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### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION VI**

## **BID PROPOSAL**





BID PROPOSAL  
(CERTIFICATION)

TO: MUNICIPALITY OF ANCHORAGE \_\_\_\_\_, 2024  
PURCHASING DEPARTMENT  
632 W. 6TH AVENUE, SUITE 520  
ANCHORAGE, ALASKA 99501

**SUBJECT: Invitation to Bid No. 2024C019**

**PROJECT TITLE: AWWTF BRINE/CAUSTIC HEADER REPLACEMENT**

Pursuant to and in compliance with subject Invitation to Bid, and other bid documents relating thereto, the bidder hereby proposes to furnish all labor and materials and to perform all work for the construction of the above referenced project in strict accordance with the bid documents at the prices established in the Bid Proposal, page **BP- 1 of 3 through BP- 3 of 3** submitted herewith.

The bidder agrees, if awarded the contract, to commence and complete the work within the time specified in the bid documents.

**Basic Bid: Schedule A, Total Amount:** \$ \_\_\_\_\_

The bidder acknowledges receipt of the following addenda:

Addenda No. _____	Addenda No. _____
Addenda No. _____	Addenda No. _____
Addenda No. _____	Addenda No. _____

Enclosed is a Bid Bond in the amount of \_\_\_\_\_.  
(Dollar Amount or Percentage of Bid)

Type of Business Organization

The bidder, by checking the applicable box, represents that it operates as ( ) a corporation incorporated under the laws of the State of \_\_\_\_\_, ( ) an individual, ( ) an LLC, ( ) a partnership, ( ) a nonprofit organization, or ( ) a joint venture. If a partnership or joint venture, identify all parties on a separate page.

**Is this project Federally Funded?**

**Yes**   
**No**

\_\_\_\_\_  
Company Name

BID PROPOSAL  
(CERTIFICATION)  
Continued

**SUBJECT: Invitation to Bid No. 2024C019**

**PROJECT TITLE: AWWTF BRINE/CAUSTIC HEADER REPLACEMENT**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Alaska Contractor's License Number

\_\_\_\_\_  
Company Name (Printed)

\_\_\_\_\_  
Employer's Tax Identification Number

\_\_\_\_\_  
Authorized Representative Signature

\_\_\_\_\_  
Printed Name & Title

\_\_\_\_\_  
Company **Mailing** Address

\_\_\_\_\_  
Company Phone Number

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Company Fax Number

\_\_\_\_\_  
Company **Physical** Address  
(if different from mailing address)

\_\_\_\_\_  
Company Email Address

\_\_\_\_\_  
City, State, Zip Code

**MUNICIPALITY OF ANCHORAGE**  
**Anchorage Water and Wastewater Utility**  
**AWWTF Brine/Caustic Header Replacement**  
**AWWU Project Number: WM00000246**

**Schedule A: Basic Bid**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	ESTIMATED QUANTITY	UNIT BID PRICE	TOTAL BID PRICE
A-1		Construction Services per L.S.	1		\$ -
A-2		Contingent Sum per C.S.	1	\$ 20,000.00	\$ 20,000.00

TOTAL: \$                     -

CONTRACTOR: \_\_\_\_\_

DATE: \_\_\_\_\_





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

#### **SECTION VII**

#### **OTHER UTILITY REQUIREMENTS**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION VIII**

### **MINIMUM RATES OF PAY**

**State of Alaska Wage Rate**





## Laborers' & Mechanics' Minimum Rates of Pay

Title 36. Public Contracts AS 36.05 & AS 36.10 Wage & Hour Administration Pamphlet No. 600 (Pamphlet 600) is hereby incorporated in its entirety. Pamphlet 600 is available for free download at <http://labor.state.ak.us/lss/pamp600.htm>.

The Municipality of Anchorage will include a paper copy of the wage rates in the signed Contract.





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

#### **SECTION IX**

#### **AWWU DISADVANTAGED BUSINESS ENTERPRISE PROGRAM (MBE/WBE)**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

## **SECTION X**

### **EEO CONTRACT COMPLIANCE SPECIFICATIONS**

#### **EEO Special Provisions**



# **EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS CONTRACT COMPLIANCE SPECIFICATIONS**

Every municipal contract shall include language substantially the same as the following: The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability. The contract will comply with all laws concerning the prohibition of discrimination including, but not limited to, Title 5 and Title 7 of the Anchorage Municipal Code.

Every municipal contract shall state, in all solicitations or advertisements for employees to work under the contract, that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability.







# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

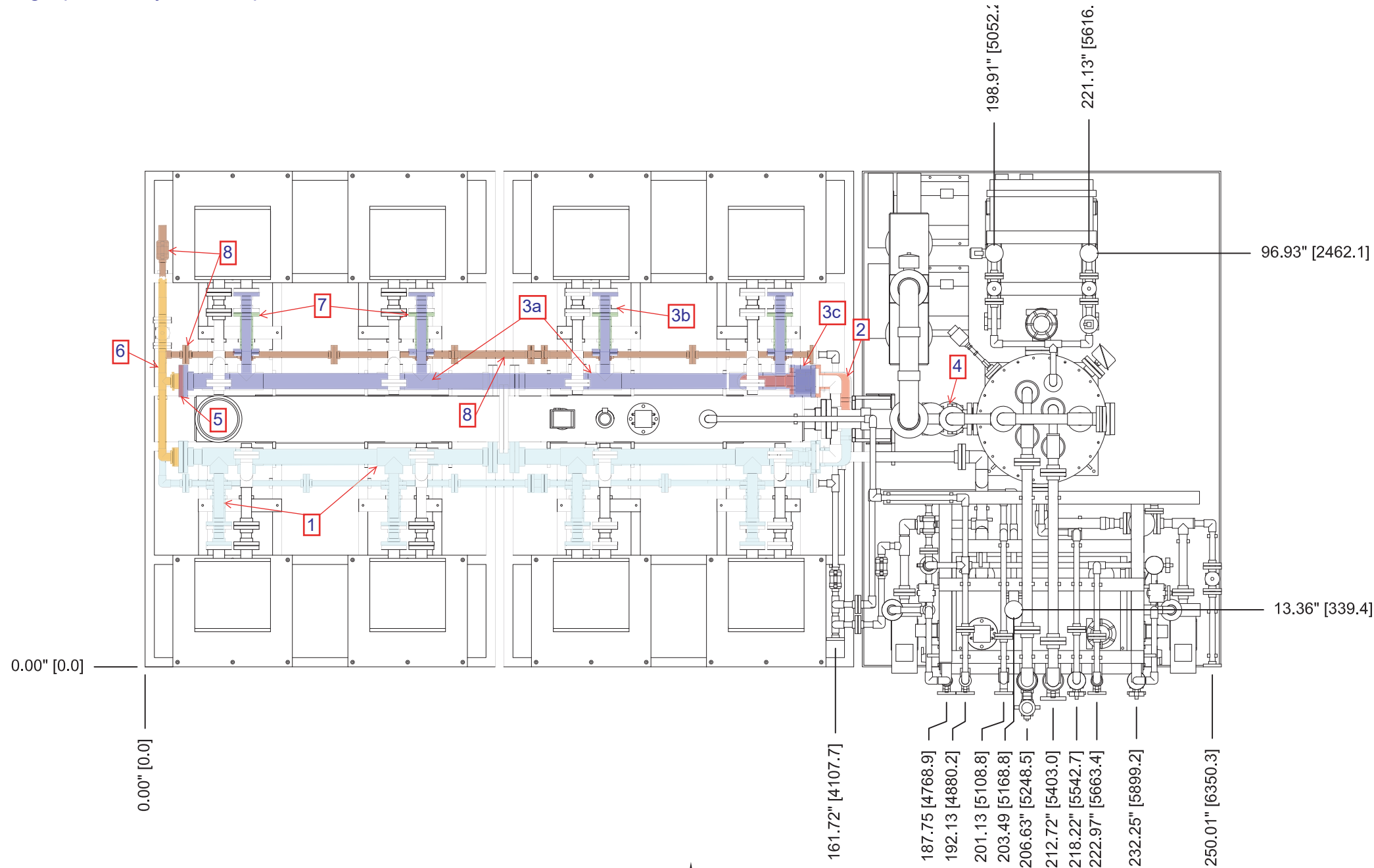
## **SECTION XI**

## **RECORD DRAWINGS**



This drawing was developed by the original equipment vendor during the equipment procurement process. It is an approximate representation of the equipment as installed at the Asplund WWTF. Markups, highlighting, and notes herein are intended to guide the contractor to a basic understanding of the scope of the project, respecting which headers are to be replaced with which material types. There will be variances found in the field and the Contractor is directed to account for these variations in his bid. Further, detailed field measurement for materials to be fabricated off-site are required to ensure proper fit up of the electrolyzers to the new pipe headers; the nature of the assembly is such that there is not a lot of room for error.

Subject to modifications described in the technical specifications, the existing pipe supports may be re-used. However, new pipe supports will be necessary to support the new convoluted hose headers and the 2 x 3 pipe tees that are part of those assemblies. The Engineer envisions the bulk purchase of 3 inch VE-FRP angle material, which might be used to span across the skids in appropriate locations to carry rigid piping elements, but the Contractor is encouraged to consider other approaches to supporting hose and fittings, particularly on the top chlorinated brine header.



See Drawing 3

See Drawing 2

ISO2 VIEW

SKID A

**DRAWING 1**

FOR INFORMATION ONLY

**TYPICAL CHLORINATED BRINE PIPE TOP HEADER, PLAN VIEW**

1. Light cyan shows approximate limits of removal of existing CPVC pipe on both sides of each skid.
2. Red shows approximate limits of new CPVC pipe on both sides of each skid.
3. Blue shows new flexible fluoropolymer hoses.
  - a. 3 x 2 tees are CPVC, FRP, or other approved material and not differentiated here. **These are to be of the shortest possible dimensions, TYP.**
  - b. Two inch diameter drops to the electrolyzers are nominally 15 inches long. Contractor to coordinate with the fabricators to ensure final makeup.
  - c. Two and three inch diameter fitting connecting to pipe on the east end of the skid shall be a minimum of 5 inches long.
4. New CPVC pipe connects to new butterfly-valve with a van Stone flange in this vicinity. Valve stem shall be horizontal
5. New blind flange at west end of header, typical.
6. This orange piping is not installed as shown, but existing drains shall be removed and reinstalled. There may be other minor elements not shown or shown on this drawing that do not accurately reflect what is installed in the field.
7. Green shows caustic header replacement using PP-RCT. NOTE: The current header has CPVC branches from header through to a flexible connector at the electrolyzer. (a) For the rebuild, the Contractor will relocated the flexible piece at the header, rotate the existing pipe support 180 deg, and install the new branch piping with a direct connection to the electrolyzer.
8. Brown shows new 1 inch drain line connected to caustic supply line at each electrolyzer. This may be of PP-RCT or CPVC, but must include short flexible elements positioned to insure no thermal stresses are forced into the hard piping.

REVISIONS	

PRIMARY DIMENSIONS IN INCHES, SECONDARY DIMENSIONS IN MILLIMETERS

MUNICIPALITY OF ANCHORAGE  
WATER AND WASTEWATER UTILITY

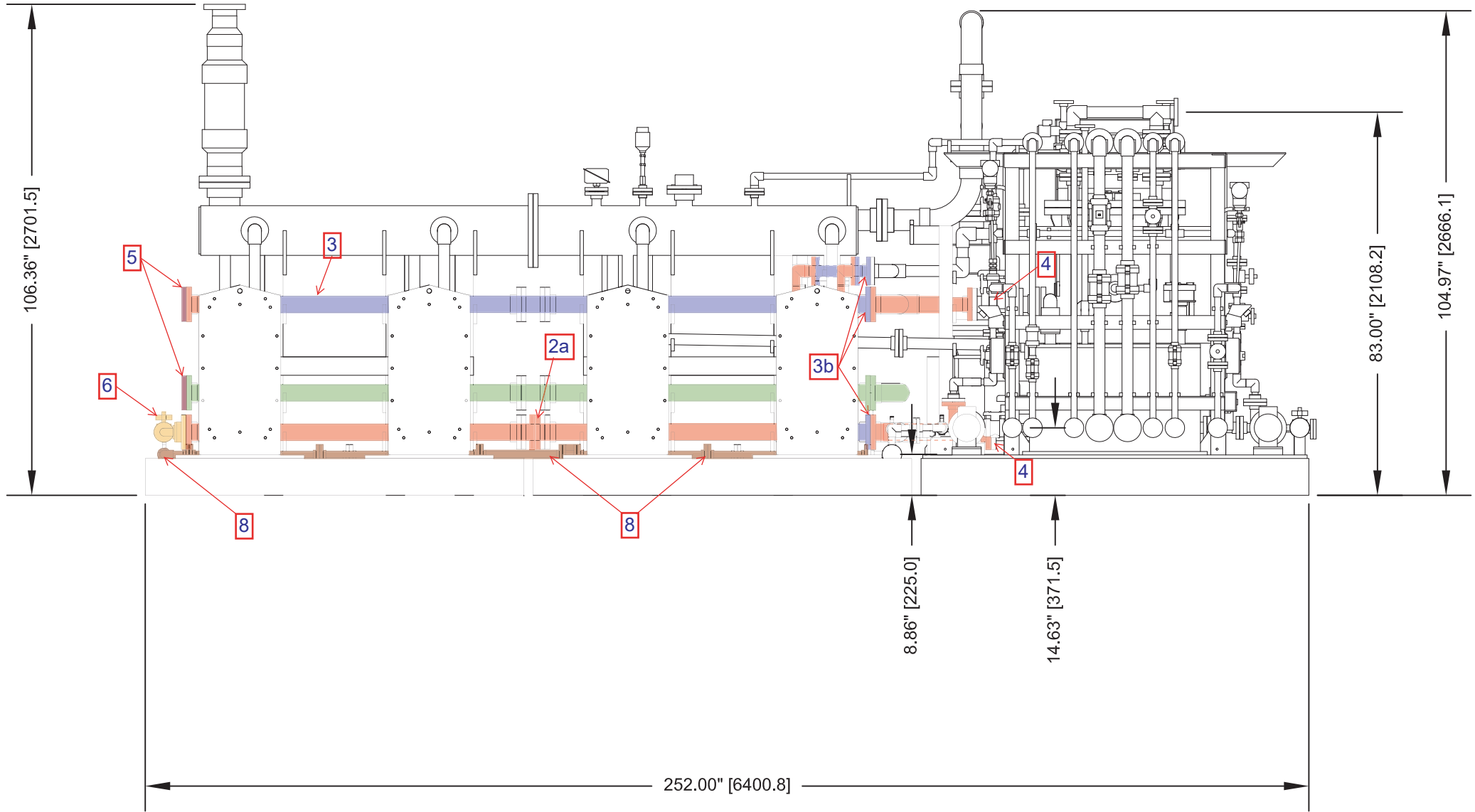
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DRAWN AA	TITLE	Electrolytic Technologies Corporation
CHECKED AA	ANOLYTE ELECTROLIZER PLAN VIEW	
APPROVED AFW	DRAWING NO.	8-100-ASP-001
DATE 2.27.12	SCALE	
SHEET 1	OF 4	REV



This drawing was developed by the original equipment vendor during the equipment procurement process. It is an approximate representation of the equipment as installed at the Asplund WWTF. Markups, highlighting, and notes herein are intended to guide the contractor to a basic understanding of the scope of the project, respecting which headers are to be replaced with which material types. There will be variances found in the field and the Contractor is directed to account for these variations in his bid. Further, detailed field measurement for materials to be fabricated off-site are required to ensure proper fit up of the electrolyzers to the new pipe headers; the nature of the assembly is such that there is not a lot of room for error.

Subject to modifications described in the technical specifications, the existing pipe supports may be re-used. However, new pipe supports will be necessary to support the new convoluted hose headers and the 2 x 3 pipe tees that are part of those assemblies. The Engineer envisions the bulk purchase of 3 inch VE-FRP angle material, which might be used to span across the skids in appropriate locations to carry rigid piping elements, but the Contractor is encouraged to consider other approaches to supporting hose and fittings, particularly on the top chlorinated brine header.



- TYPICAL PIPE HEADERS, SOUTH SIDE SHOWN
1. Light cyan shows approximate limits of removal of existing CPVC pipe on both sides of each skid.
  2. Red shows approximate limits of new CPVC pipe installation on both sides of each skid.
    - a. Note installation flanges in the middle of the span.
  3. Blue shows new flexible fluoropolymer hoses.
    - a. Two inch diameter drops to the electrolyzers are nominally 15 inches long. Contractor to coordinate with the fabricators to ensure final makeup.
    - b. Two and three inch diameter fitting connecting to pipe on the east end of the skid shall be a minimum of 5 inches long.
  4. New CPVC pipe connects to new butterfly valve with a van Stone flange in this vicinity. Valve stem shall be horizontal.
  5. New blind flange at west end of header, typical.
  6. This orange piping is not installed as shown, but existing drains shall be removed and reinstalled. There may be other minor elements not shown or shown on this drawing that do not accurately reflect what is installed in the field.
  7. Green shows caustic header replacement using PP-RCT.
  8. Brown shows new 1 inch drain line connected to caustic supply line at each electrolyzer. This may be of PP-RCT or CPVC, but must include short flexible elements positioned to insure no thermal stresses are forced into the hard piping.

PRIMARY DIMENSIONS IN INCHES, SECONDARY DIMENSIONS IN MILLIMETERS

MUNICIPALITY OF ANCHORAGE  
WATER AND WASTEWATER UTILITY

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DRAWN AA	TITLE ANOLYTE ELECTROLYZER ELEVATION VIEW	
CHECKED AA	DRAWING NO. 8-100-ASP-001	
APPROVED AFW	DATE 2.27.12	REV
SHEET 2	OF 4	SCALE 1:30
		<b>Electrolytic Technologies Corporation</b>

SKID A

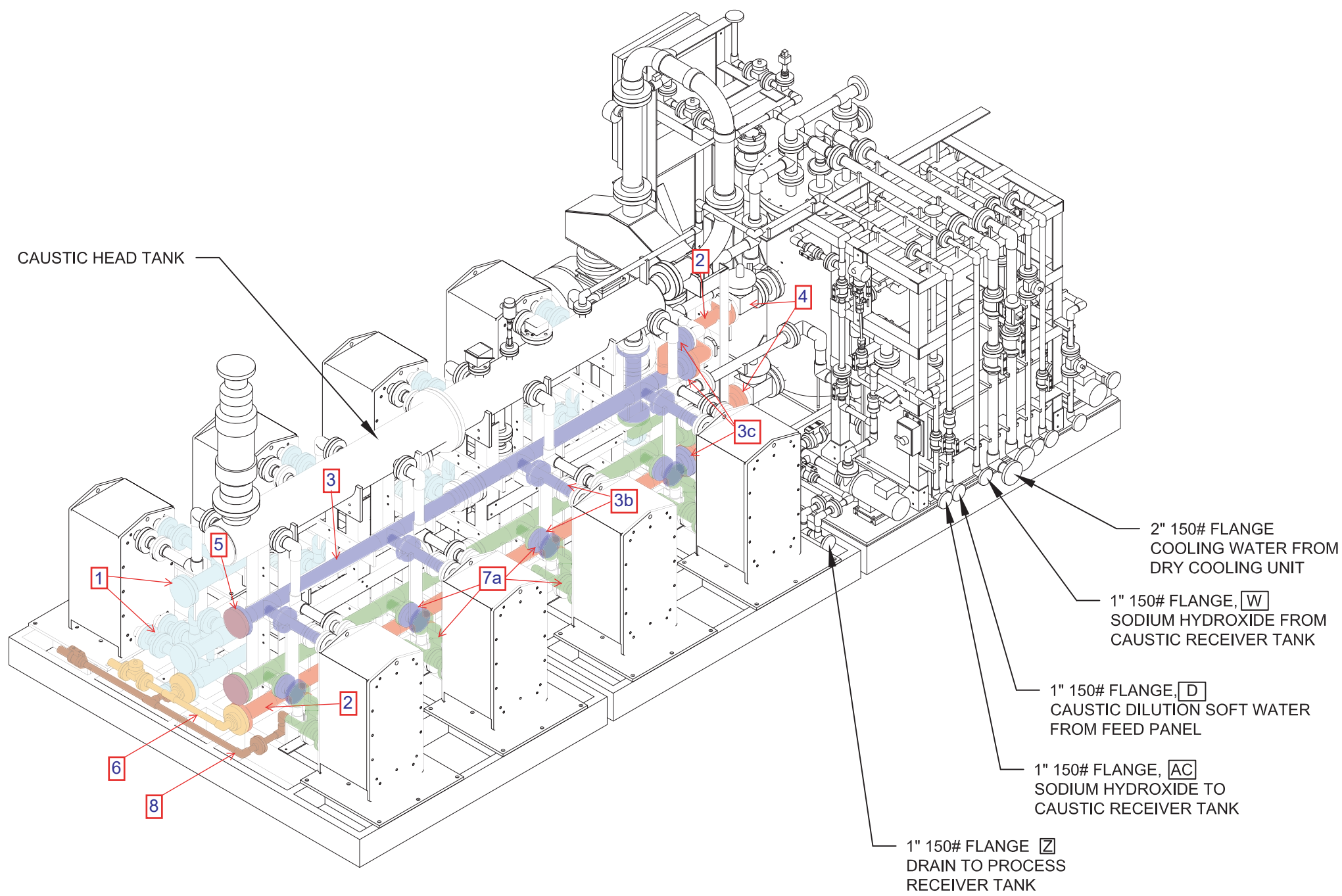
**DRAWING 2**

FOR INFORMATION ONLY



This drawing was developed by the original equipment vendor during the equipment procurement process. It is an approximate representation of the equipment as installed at the Asplund WWTF. Markups, highlighting, and notes herein are intended to guide the contractor to a basic understanding of the scope of the project, respecting which headers are to be replaced with which material types. There will be variances found in the field and the Contractor is directed to account for these variations in his bid. Further, detailed field measurement for materials to be fabricated off-site are required to ensure proper fit up of the electrolyzers to the new pipe headers; the nature of the assembly is such that there is not a lot of room for error.

Subject to modifications described in the technical specifications, the existing pipe supports may be re-used. However, new pipe supports will be necessary to support the new convoluted hose headers and the 2 x 3 pipe tees that are part of those assemblies. The Engineer envisions the bulk purchase of 3 inch VE-FRP angle material, which might be used to span across the skids in appropriate locations to carry rigid piping elements, but the Contractor is encouraged to consider other approaches to supporting hose and fittings, particularly on the top chlorinated brine header.



- TYPICAL PIPE HEADERS, ISOMETRIC
1. Light cyan shows approximate limits of removal of existing CPVC pipe on both sides of each skid.
  2. Red shows approximate limits of new CPVC pipe installation on both sides of each skid. The bulk of this is for the low brine header, but there is additional piping at the east end where they merge.
    - a. Note installation flanges in the middle of the span are not visible in this view.
  3. Blue shows new flexible fluoropolymer hoses.
    - a. Two inch diameter drops to the electrolyzers are nominally 15 inches long. Contractor to coordinate with the fabricators to ensure final makeup.
    - b. Two and three inch diameter fitting connecting to pipe on the east end of the skid shall be a minimum of 5 inches long.
  4. New CPVC pipe connects to new butterfly-valve with a van Stone flange in this vicinity. Valve stem shall be horizontal
  5. New blind flange at west end of header, typical.
  6. This orange piping is not installed as shown, but existing drains shall be removed and reinstalled. There may be other minor elements not shown or shown on this drawing that do not accurately reflect what is installed in the field.
  7. Green shows caustic header replacement using PP-RCT. NOTE: The current header has CPVC branches from header through to a flexible connector at the electrolyzer. (a) For the rebuild, the Contractor will relocate the flexible piece at the header, rotate the existing pipe support 180 deg, and install the new branch piping with a direct connection to the electrolyzer.
  8. Brown shows 1 inch drain line connected to caustic supply line at each electrolyzer. This may be of PP-RCT or CPVC, but must include short flexible elements positioned to insure no thermal stresses are forced into the hard piping.

PRIMARY DIMENSIONS IN INCHES, SECONDARY DIMENSIONS IN MILLIMETERS

MUNICIPALITY OF ANCHORAGE  
WATER AND WASTEWATER UTILITY

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**DRAWING 3**

FOR INFORMATION ONLY

DRAWN AA	TITLE	ANOLYTE ELECTROLIZER ISOI VIEW	
CHECKED AA	DRAWING NO.	8-100-ASP-001	
APPROVED AFW	DATE	2.27.12	REV
DATE	SCALE	1:30	REV
SHEET 3	OF 4	SCALE	REV
			<b>Electrolytic Technologies Corporation</b>







# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

### **SECTION XII**

### **SOIL BORING LOGS**

### **(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

### **SECTION XIII**

### **TEMPORARY CONSTRUCTION PERMITS AND EASEMENTS**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

**SECTION XIV**

**PERMITS**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

#### **SECTION XV**

#### **TRAFFIC CONTROL PLANS**

**(NOT USED)**







# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



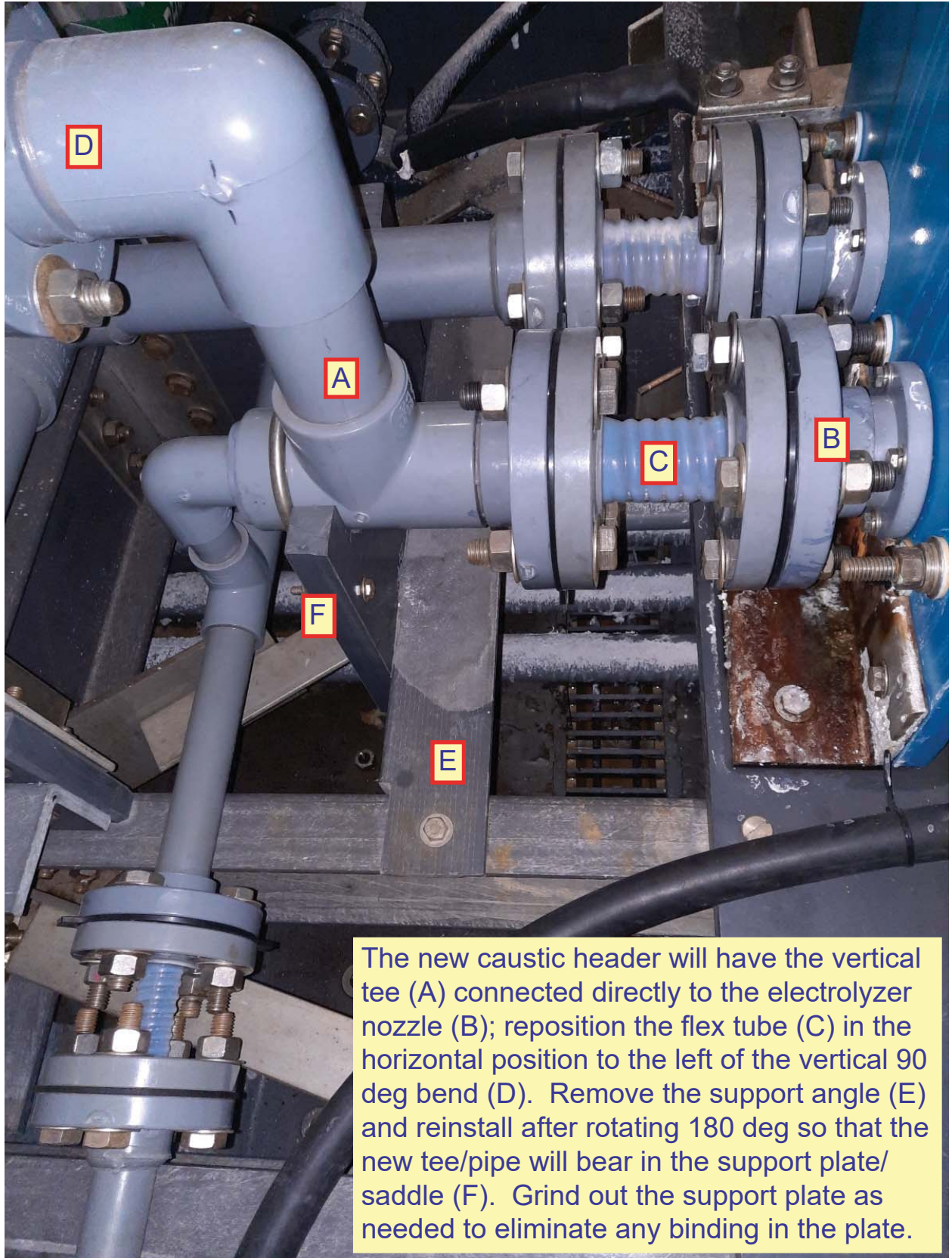
### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

### **SECTION XVI**

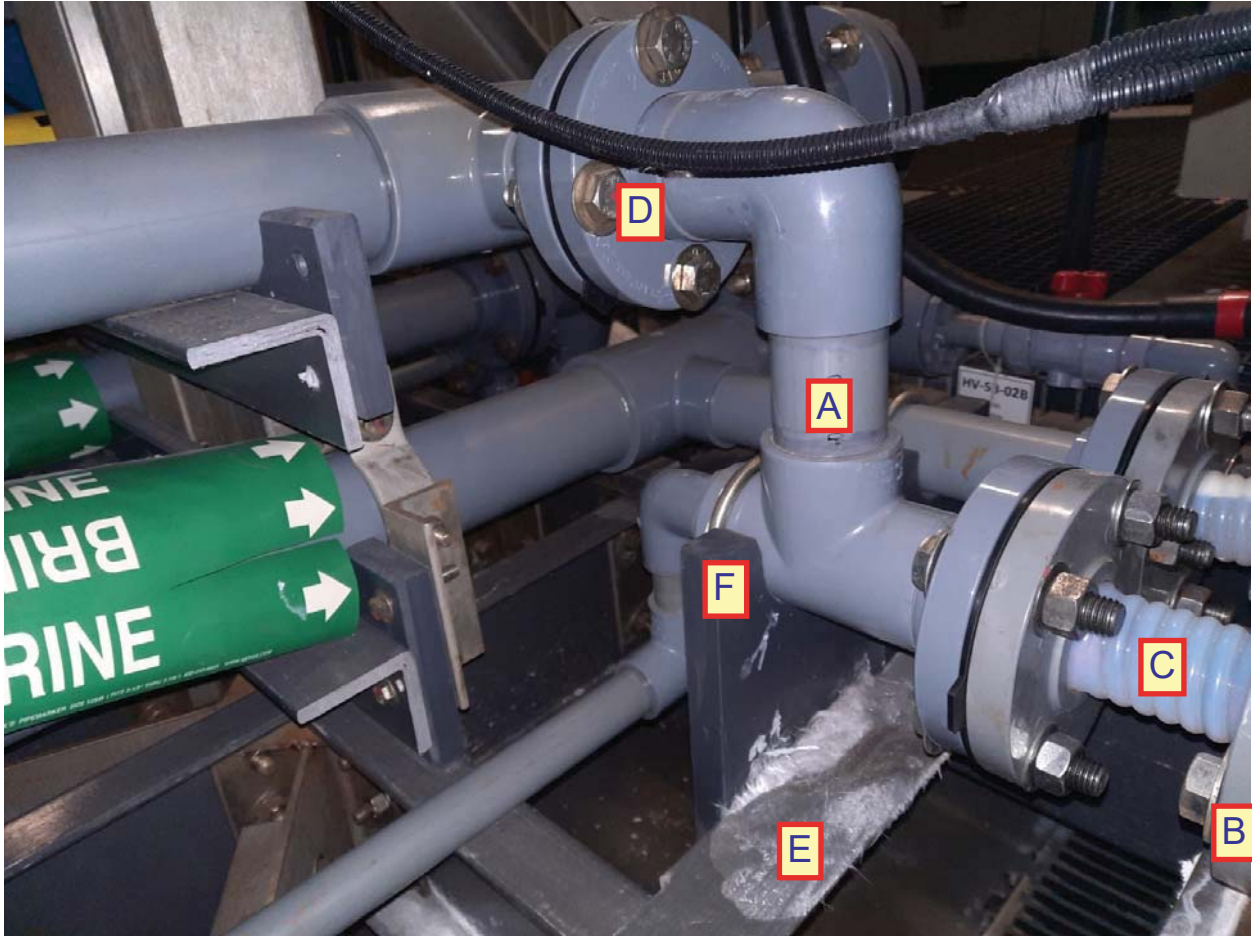
### **ANNOTATED SITE PHOTOGRAPHS**





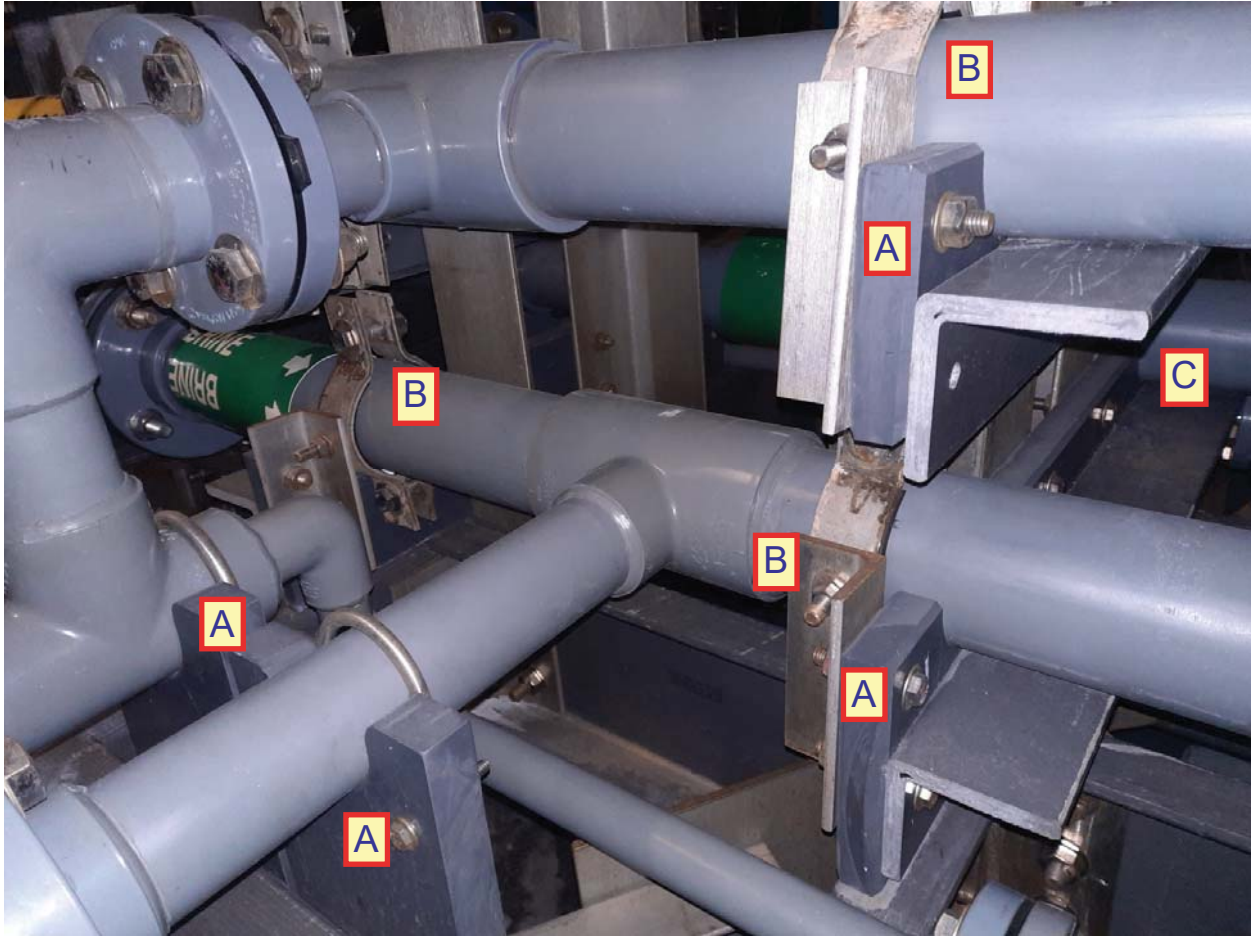
The new caustic header will have the vertical tee (A) connected directly to the electrolyzer nozzle (B); reposition the flex tube (C) in the horizontal position to the left of the vertical 90 deg bend (D). Remove the support angle (E) and reinstall after rotating 180 deg so that the new tee/pipe will bear in the support plate/saddle (F). Grind out the support plate as needed to eliminate any binding in the plate.





The new caustic header will have the vertical tee (A) connected directly to the electrolyzer nozzle (B); reposition the flex tube (C) in the horizontal position to the left of the vertical 90 deg bend (D). Remove the support angle (E) and reinstall after rotating 180 deg so that the new tee/pipe will bear in the support plate/saddle (F). Grind out the support plate as needed to eliminate any binding in the plate. In this instance, due to damage to FRP resin, the contractor shall remove support angle (E) and replace it with a new piece of material.





Grind out the support plates (A) as needed to prevent pipe and hose from binding in the plate. Stainless steel pipe clamps (B) will be converted to 'pipe slide/guides' with intent of allowing thermal stress relief while keeping the pipes/hoses in place during large seismic events. On each header, one of these will be converted to an anchor; others are to have a spacer installed at the top of the clamp to limit restraining capacity. Additional FRP angles (C) may be required to preclude the 3 inch hose header (not shown, chlorine gas and chlorinated brine, above) from sagging between supports. Coordinate in the field.

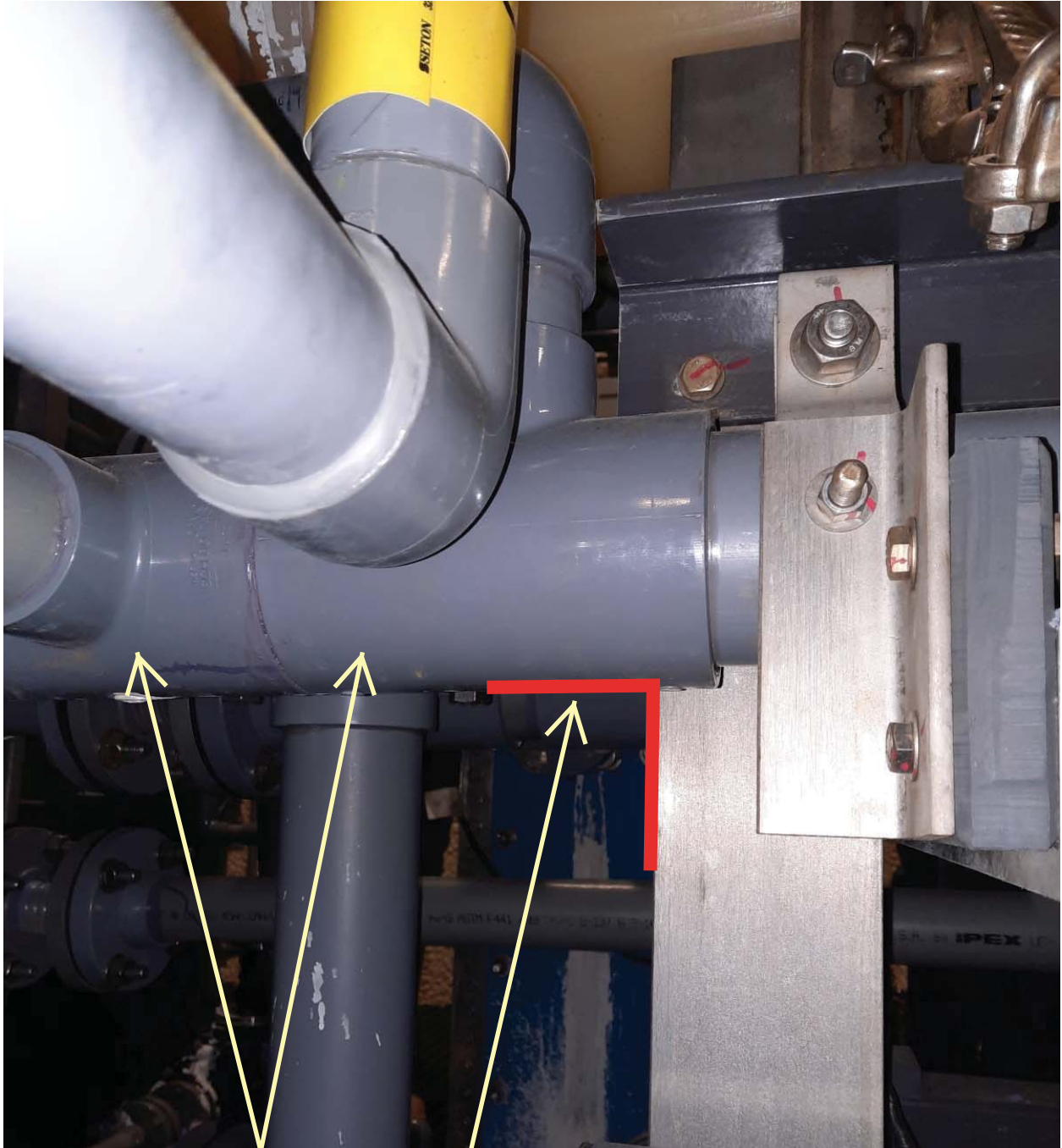






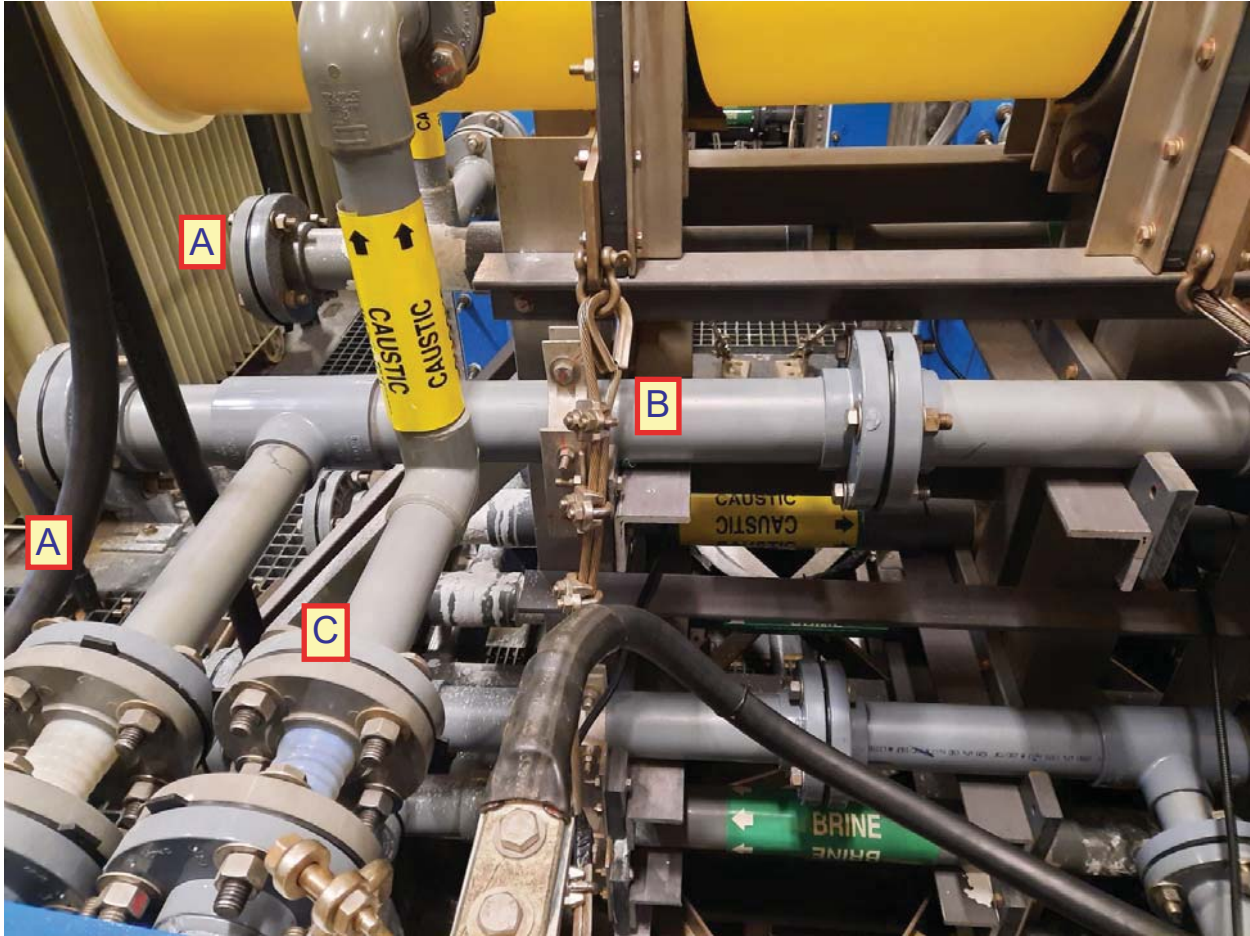
Grind out the support plates (A) as needed to prevent pipe from binding in the plate. ~~Replace existing diaphragm valves (B) with new butterfly valves, stem mounted horizontally. Levers to be on side that will the operator the best access.~~ New CPVC pipe is highlighted in yellow; new PP-RCT is highlighted in green.





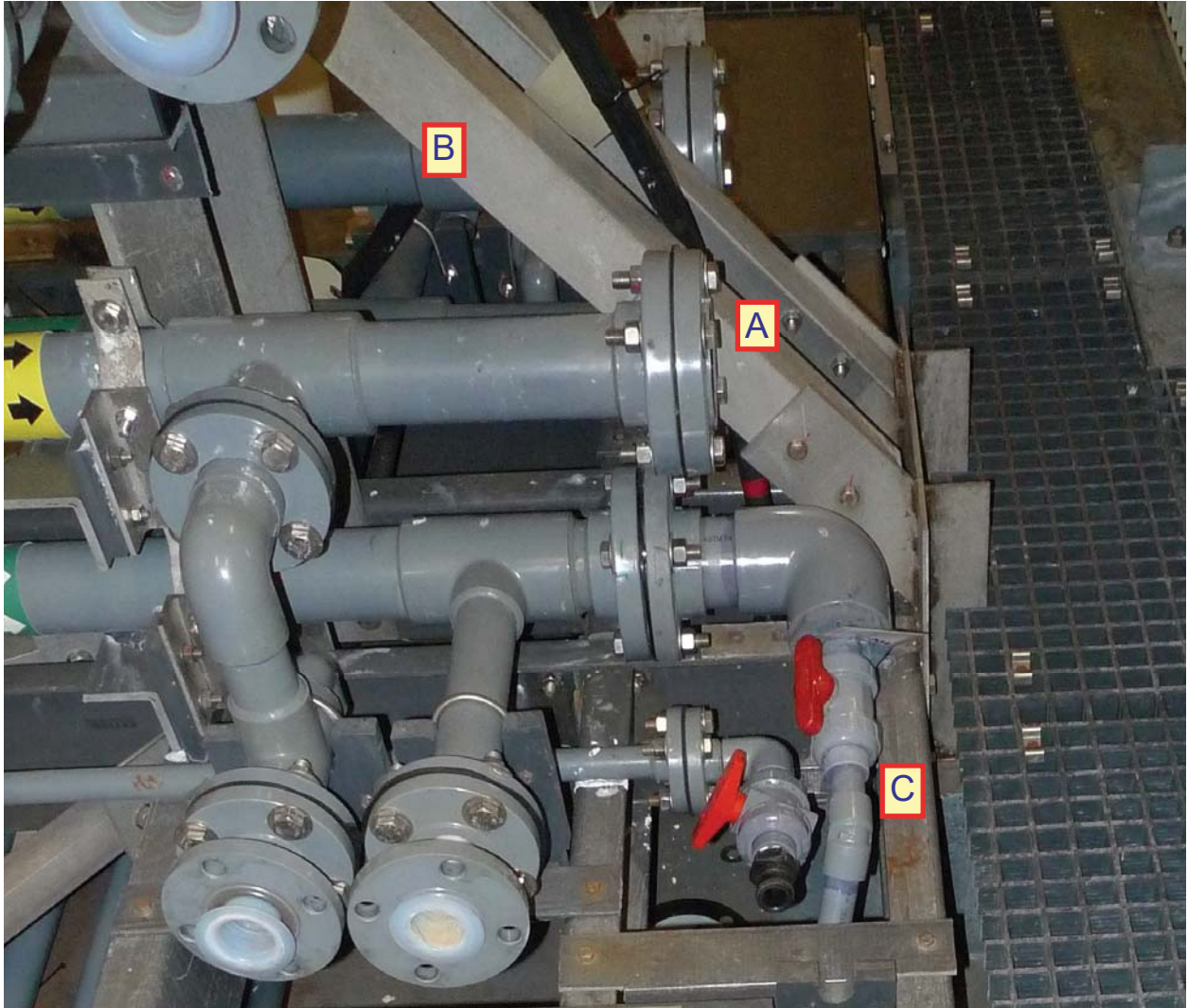
On the east end of each chlorinated brine header (the top of the three) there is a double tee assembly to collect gas from easternmost electrolyzer and to pull chlorine gas of the top of the header for delivery elsewhere in the process. Physical constraints suggest these tees be assembled in most compact way; an additional support angle spanning (N/S) across the skid will be necessary to support the pipe and fittings.





Extend CPVC pipe and flanges (A) to approximately the same location that the existing blind flanges are. These will be accessed by operations staff for inspection and flushing. Because the first existing pipe cradle (B) to the east will be carrying hose, Contractor is to devise a support for these pipes and submit to engineer for approval. Note existing bracing angles at end of skid (C); refer also to next photo.





Extend pipe and flanges (A) to approximately the same location that the existing blind flanges are. These will be accessed by operations staff for inspection and flushing. For the chlorinated brine collection header (not shown here), Contractor is to devise a support for these pipes and submit to engineer for approval. Note existing bracing angles at end of skid (B) may be employed in this effort.

In reference to the marked up vendor drawings elsewhere in this specification, note the drain lines and valves here, which vary from those drawings.







# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

#### **SECTION XVII**

#### **HAZARDOUS MATERIALS SURVEY REPORT**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

#### **SECTION XVIII**

#### **MAXIMO ASSET REPORTS**

**(NOT USED)**





# **Municipality of Anchorage**

## **Anchorage Water and Wastewater Utility**



### **2024 SEWER IMPROVEMENTS**

### **AWWTF CAUSTIC/BRINE HEADER REPLACEMENT**

**SECTION XIX**

**DRAWINGS**

**(NOT USED)**

