



City of Tacoma, WA

TACOMA WATER

REQUEST FOR BIDS

**GREEN RIVER FILTRATION FACILITY-
CHEMICAL FEED LINES REPLACEMENT**

SPECIFICATION NO. TW24-0031F

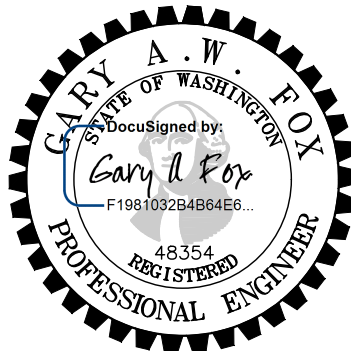
CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
TACOMA WATER

SPECIFICATION NO. TW24-0031F
GRFF CHEMICAL FEED LINES REPLACEMENT

FEBRUARY 2025

JACKIE FLOWERS
DIRECTOR OF UTILITIES

HEATHER PENNINGTON
TACOMA WATER SUPERINTENDENT



02/11/2025

PREPARED BY
GARY FOX,
P.E.

TACOMA PUBLIC UTILITIES
TACOMA, WASHINGTON 98409



**City of Tacoma
Department of Public Utilities/Tacoma Water**

**REQUEST FOR BIDS TW24-0031F
GRFF Chemical Feed Lines Replacement**

Submittal Deadline: 11:00 a.m., Pacific Time, Tuesday, March 11, 2025

Submittals must be received by the City’s Procurement and Payables Division by 11:00 a.m. Pacific Time.

For electronic submittals, the City of Tacoma will designate the time of receipt recorded by our email server, as the official time of receipt. This clock will be used as the official time of receipt of all parts of electronic bid submittals. Include the specification number in the subject line of your email. Your submittal must be sent as an attachment, links to your electronic submittal will not be accepted.

For in person submittals, the City of Tacoma will designate the time of receipt recorded by the timestamp located at the lobby security desk, as the official time of receipt. Include the specification number on the outside of the sealed envelope. Late submittals will be returned unopened and rejected as non-responsive.

Submittal Delivery: Sealed submittals will be received as follows:

<p>By Email: sendbid@cityoftacoma.org Maximum email size including attachments: 35 MB. Multiple emails may be sent for each submittal.</p> <p>Note: Email may pass through multiple servers before arriving at its destination. Please allow sufficient time for email delivery of submittals. Timely electronic delivery is at the risk of the supplier.</p>	<p>In Person: Tacoma Public Utilities Administration Building North, Main Floor, Lobby Security Desk 3628 South 35th Street Tacoma, WA 98409 Monday – Friday 8:00 am to 4:30 pm</p>
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Bid Opening: Submittals must be received by the City’s Procurement and Payables Division prior to 11:00 a.m. Pacific Time. Sealed submittals in response to a RFB will be opened Tuesday’s at 11:15 a.m. by a purchasing representative and read aloud during a public bid opening held at the Tacoma Public Utilities Administrative Building North, 3628 S. 35th Street, Tacoma, WA 98409, conference room M-1, located on the main floor. They will also be held virtually Tuesday’s at 11:15 a.m. Attend a Zoom meeting [via this link](#) or call 1 (253) 215 8782, using meeting ID # 884 0268 0573, passcode # 070737.

Submittals in response to an RFP, RFQ or RFI will be recorded as received, but not read at bid opening. As soon as possible, after 1:00 PM, on the day of submittal deadline, preliminary results will be posted to www.TacomaPurchasing.org.

If you believe your submittal was sent timely and was not read at bid opening, please contact sendbid@cityoftacoma.org immediately.

Solicitation Documents: An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at www.TacomaPurchasing.org.

- [Register for the Bid Holders List](#) to receive notices of addenda, questions and answers and related updates.
- Click here to see a [list of vendors registered for this solicitation](#).

Pre-Proposal Meeting: A pre-proposal meeting will be held from 10:00 AM to 12:00 PM, February 25, 2025, in the Chinook Conference Room at the Green River Filtration Facility (GRFF), 36525 SE Green River Headworks Road, Ravensdale WA, 98051. All attendees will need to present themselves to the guardhouse at the gates to the GRFF. Valid ID and vehicle proof of insurance will be required for entry.

Project Scope: Replace existing reinforced PVC chemical feed lines with HDPE.

Estimate: \$600,000

Paid Sick Leave: The City of Tacoma requires all employers to provide paid sick leave in accordance with State of Washington law.

Americans with Disabilities Act (ADA Information): The City of Tacoma, in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Specification materials can be made available in an alternate format by emailing the contact listed below in the *Additional Information* section.

Title VI Information:

“The City of Tacoma” in accordance with provisions of Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 U.S.C. sections 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration of award.

Additional Information: Requests for information regarding the specifications may be obtained by contacting Brandon Snow by email to BSnow@cityoftacoma.org

Protest Policy: City of Tacoma protest policy, located at www.tacomapurchasing.org, specifies procedures for protests submitted prior to and after submittal deadline.




Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.

TABLE OF CONTENTS

REQUEST FOR BIDS.....	2
TABLE OF CONTENTS.....	3
SUBMITTAL CHECK LIST.....	4
SPECIAL NOTICE TO BIDDERS.....	5
1. MINIMUM REQUIREMENTS.....	9
2. GENERAL PROVISIONS.....	9
3. INSURANCE REQUIREMENTS.....	9
4. DESCRIPTION OF WORK.....	9
5. ANTICIPATED CONTRACT TERM.....	10
6. CALENDAR OF EVENTS.....	10
7. INQUIRIES.....	10
8. PRE-BID MEETING.....	11
9. RESPONSIVENESS.....	11
10. AWARD.....	11
11. PREVAILING WAGE INFORMATION.....	12
12. BID BONDS.....	13
13. PAYMENT AND PERFORMANCE BOND.....	14
14. DELIVERY.....	14
15. WARRANTY.....	15
16. INSPECTION.....	15
17. APPROVED ITEM EQUIVALENT.....	15
18. COMPLIANCE WITH SPECIFICATIONS.....	16
19. MATERIALS AND WORKMANSHIP.....	16
20. ENVIRONMENTALLY PREFERABLE PROCUREMENT.....	16
21. LEAP REQUIREMENTS.....	16
22. EQUITY IN CONTRACTING.....	17
APPENDIX A.....	18
APPENDIX B.....	19
APPENDIX C.....	20
APPENDIX D.....	21

SUBMITTAL CHECK LIST

This checklist identifies items to be included with your submittal. Any submittal received without these required items may be deemed non-responsive and not be considered for award. Submittals must be received by the City of Tacoma Purchasing Division by the date and time specified in the Request for Bids page.

<p>The following items make up your complete electronic submittal package (include all the items below):</p>	
<p>Signature Page (Appendix B) To be filled in and executed by a duly authorized officer or representative of the bidding entity. If the bidder is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.</p>	
<p>Price Proposal Form (Appendix B) The unit prices bid must be shown in the space provided. Check your computations for omissions and errors.</p>	
<p>Bid Bond (Appendix B)</p>	
<p>Certification of Compliance with Wage Payment Statutes Bidder shall complete this form in its entirety to ensure compliance with state legislation (SHB 2017).</p>	
<p>State Responsibility and Reciprocal Bid Preference Information Bidder shall complete this form in its entirety to ensure compliance with state legislation (SHB 2010).</p>	
<p>Statement of Qualifications</p>	
<p>After award, the following documents will be executed:</p>	
<p>City of Tacoma Contract (See sample in Appendix C) Must be executed by the successful bidder.</p>	
<p>Certificate of Insurance and related endorsements (Appendix D) Shall be submitted with all required endorsements</p>	
<p>Payment and Performance Bonds (See samples in Appendix C) Payment Bond and Performance Bond: Must be executed by the successful bidder and his/her surety company</p>	
<p>General Release (See sample in Appendix C)</p>	

SPECIAL NOTICE TO BIDDERS

Public works and improvement projects for the City of Tacoma are subject to Washington state law and Tacoma Municipal Code, including, but not limited to the following:

I. STATE OF WASHINGTON

A. RESPONSIBILITY CRITERIA – STATE OF WASHINGTON

In order to be considered a responsible bidder the bidder must meet the following mandatory state responsibility criteria contained in RCW 39.04.350:

1. Have a current certificate of registration as a contractor in compliance with chapters 18.27 RCW, 18.106 RCW, 70.87 RCW, 19.28 RCW, which must have been in effect at the time of bid submittal;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable:
 - a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - b. Have a Washington Employment Security Department number, as required in Title 50 RCW;
 - c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW and;
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).
5. Have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW and must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection.

B. RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS:

Effective March 30, 2012, RCW 39.04.380 imposes a reciprocal preference for resident contractors. Any bid received from a non-resident contractor from a state that provides an in-state percentage bidding preference is subject application of a comparable percentage disadvantage.

A non-resident contractor from a state that provides an in-state percentage bidding preference means a contractor that:

1. Is from a state that provides a percentage bid preference to its resident contractors bidding on public works projects, and

2. Does not have a physical office located in Washington at the time of bidding on the City of Tacoma public works project.

The state of residence for a non-resident contractor is the state in which the contractor was incorporated, or if not a corporation, the state in which the contractor's business entity was formed.

The City of Tacoma will evaluate all non-resident contractors for an out of state bidder preference. If the state of the non-resident contractor provides an in state contractor preference, a comparable percentage disadvantage will be applied to the non-resident contractor's bid prior to contract award. The responsive and lowest and best responsible bidder after application of any non-resident disadvantage will be awarded the contract.

The reciprocal preference evaluation does not apply to public works procured pursuant to RCW 39.04.155, RCW 39.04.280, federally funded competitive solicitations where such agencies prohibit the application of bid preferences, or any other procurement exempt from competitive bidding.

Bidders must provide the City of Tacoma with their state of incorporation or the state in which the business entity was formed and include whether the bidder has a physical office located in Washington.

The bidder shall submit documentation demonstrating compliance with above criteria on the enclosed State Responsibility and Reciprocal Bidder Information form.

C. SUBCONTRACTOR RESPONSIBILITY

1. The Contractor shall include the language of this subcontractor responsibility section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. The requirements of this section apply to all subcontractors regardless of tier.
2. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:
 - a. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
 - b. Have a current Washington Unified Business Identifier (UBI) number;
 - c. If applicable, have:
 - i. Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - ii. A Washington Employment Security Department number, as required in Title 50 RCW;
 - iii. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - iv. An electrical contractor license, if required by Chapter 19.28 RCW;

- v. An elevator contractor license, if required by Chapter 70.87 RCW and;
3. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).

II. CITY OF TACOMA

A. SUPPLEMENTAL RESPONSIBILITY CRITERIA – CITY OF TACOMA:

In order to be considered a responsible bidder, the prospective bidder shall have all of the following qualifications set forth in Tacoma Municipal Code 1.06.262:

1. Adequate financial resources or the ability to secure such resources;
2. The necessary experience, stability, organization and technical qualifications to perform the proposed contract;
3. The ability to comply with the required performance schedule, taking into consideration all existing business commitments;
4. A satisfactory record of performance, integrity, judgment and skills; and
5. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.
 - a. Bidder Responsibility. Bidders shall not be in violation of 39.04.350 RCW Bidder Responsibility Criteria - Supplemental Criteria.

In addition to the mandatory bidder responsibility criteria listed immediately above, the City may, in addition to price, consider any or all of the following criteria contained in Tacoma Municipal Code Chapter 1.06.262 in determining bidder responsibility:

1. The ability, capacity, experience, stability, technical qualifications and skill of the respondent to perform the contract;
2. Whether the respondent can perform the contract within the time specified, without delay or interference;
3. Integrity, reputation, character, judgment, experience, and efficiency of the respondents, including past compliance with the City's Ethics Code;
4. Quality of performance of previous contracts;
5. Previous and existing compliance with laws and ordinances relating to contracts or services;
6. Sufficiency of the respondent's financial resources;
7. Quality, availability, and adaptability of the supplies, purchased services or public works to the particular use required;
8. Ability of the respondent to provide future maintenance and service on a timely basis;
9. Payment terms and prompt pay discounts;
10. The number and scope of conditions attached to the submittal;
11. Compliance with all applicable City requirements, including but not limited to the City's Ethics Code and its Small Business Enterprise and Local Employment and Apprenticeship programs;

12. Other qualification criteria set forth in the specification or advertisement that the appropriate department or division head determines to be in the best interests of the City.

The City may require bidders to furnish information, sworn or certified to be true, to demonstrate compliance with the City responsibility criteria set forth above. If the city manager or director of utilities is not satisfied with the sufficiency of the information provided, or if the prospective respondent does not substantially meet all responsibility requirements, any submittal from such respondent must be disregarded.

B. ADDITIONAL SUPPLEMENTAL CRITERIA

Statement of Qualifications (See Appendix B)

C. MODIFICATIONS TO SUPPLEMENTAL CRITERIA

Potential bidders may request modifications to the City's supplemental criteria by submitting a written request to the Purchasing Division via email to bids@cityoftacoma.org no later than 5:00

p.m. Pacific Time, three days prior to the submittal deadline. Please include the Specification No. and Title when submitting such requests. Requests must include justification for why certain criteria should be modified. Requests received after this date and time will not be considered.

The City will respond to a timely submitted request prior to the bid opening date. Changes to the supplemental criteria, if warranted, will be issued by addendum to the solicitation documents and posted to the City's website for the attention of all prospective bidders.

D. DETERMINATION OF BIDDER RESPONSIBILITY

If the City determines the bidder does not meet the criteria above and is therefore not a responsible bidder, the City shall notify the bidder in writing with the reasons for its determination. If the bidder disagrees, the bidder may appeal the determination in a manner consistent with the City's Protest Policy. Appeals are coordinated by the Purchasing Division heard by the Procurement and Payables Division manager for contracts less than or equal to \$500,000 and by Contracts and Awards Board for contracts greater than \$500,000.

1. MINIMUM REQUIREMENTS

List any minimum requirements for respondents. See Supplemental Requirements in Notice to Bidders above.

2. GENERAL PROVISIONS

City of Tacoma General Provisions apply. (See Appendix D)

3. INSURANCE REQUIREMENTS

Successful proposer will provide proof of and maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements contained in this solicitation. (See Appendix D)

4. DESCRIPTION OF WORK

The City of Tacoma (City) / Tacoma Public Utilities (TPU) is soliciting bids to establish a contract with a qualified vendor to fulfill the City's needs for replacing the existing reinforced PVC chemical feed lines with fusion welded HDPE pipe. These chemical feed lines continuously transport chemicals to various injection points throughout the plant at the Green River Filtration Facility (GRFF). This chemical feed system is crucial to the success of the GRFF being able to treat water from the Green River to meet or exceed Washington Department of Health standards.

The chemicals that are used in the process of treating the Green River to produce potable water for our customers are as follows:

- 12- 15% Sodium Hypochlorite (SHC)
- 50% Membrane-grade Sodium Hydroxide (Caustic Soda (CS)) *diluted with carrier water to injection points
- 47-49% Aluminum Sulfate (Liquid Alum (LA))
- Aluminum Chlorohydrate (ACH)
- 23-26% Hydrofluorosilicic Acid (HFA)
- Clarifloc® C-359 - Cationic Polymer (Epichlorohydrin amine) (PEC) *diluted with carrier water to injection points
- Clarifloc® N-6310 -Non Ionic Polymer (Polyacrylamide) (PEG) *diluted with carrier water to injection points

In order to keep the plant online and operations uninterrupted during construction, the plans detail routes for 1" temporary high lines to be installed, flushed, and filled with chemical that they will be transporting and brought online before the primary chemical feed lines can be replaced. Once successful sequencing between the temporary high lines and primary chemical feed lines are complete, the contractor shall work with Tacoma Water staff to flush the temporary chemical feed lines and salvage the temporary lines as outlined in **Section 01 22 00** of the specifications. Successful completion of this project is dependent on coordination with the GRFF operations and maintenance staff to ensure that no interruption to Request for Bids

Specification No. TW24-0031F Template Revised: 07/23/2023

the plant occurs during construction and startup of the installation of the chemical feed lines. Contract(s) will be awarded to the lowest responsive and responsible bidder(s) based on price, product quality and availability.

5. ANTICIPATED CONTRACT TERM

The construction of the new chemical feed lines shall be complete no later than September 30, 2025.

6. CALENDAR OF EVENTS

This is a tentative schedule only and may be altered at the sole discretion of the City.

Contract may be issued after Public Utility Board and/or City Council approval.

The anticipated schedule of events concerning this RFB is as follows:

Pre-Bid Meeting:	2/25/2025
Approved Equivalent Deadline:	2/28/2025
Question Deadline:	2/28/2025
City response to Questions:	3/4/2025
Submittal Due Date:	3/11/2025
Anticipated Award Date, on or about:	3/25/2025
Public Utility Board/City Council Approval, on or about:	4/23/2025

7. INQUIRIES

7.1 Questions can be submitted to *Brandon Snow*, Senior Buyer, via email to bsnow@cityoftacoma.org

Subject line to read:

Spec #TW24-0031F – GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINES REPLACEMENT– *VENDOR NAME*

7.2 Questions are due by 3 pm on the date included in the Calendar of Events section.

7.3 Questions marked confidential will not be answered or included.

7.4 The City reserves the discretion to group similar questions to provide a single answer or not to respond when the requested information is confidential.

7.5 The answers are not typically considered an addendum.

7.6 The City will not be responsible for unsuccessful submittal of questions.

7.7 Written answers to questions will be posted alongside these specifications at www.tacomapurchasing.org.

8. PRE-BID MEETING

A pre-bid meeting will be held at the date and time specified in the calendar of events in the Chinook Conference Room at the Green River Filtration Facility:

10:00 AM to 12:00 PM

36525 SE Green River Headworks Road, Ravensdale WA, 98051.

All attendees will need to present themselves to the guardhouse at the gates to the GRFF. Valid ID and vehicle proof of insurance will be required for entry.

DISCLAIMER

The City is not liable for any costs incurred by the Respondent for the preparation of materials or a proposal submitted in response to this RFB, for conducting any presentations to the City, or any other activities related to responding to this RFB, or to any subsequent requirements of the contract negotiation process.

9. RESPONSIVENESS

Bid submittals must provide ninety (90) days for acceptance by City from the due date for receipt of submittals. All submittals will be reviewed by the City to determine compliance with the requirements and instructions specified in this RFB. The Respondent is specifically notified that failure to comply with any part of this RFB may result in rejection of the submittal as non-responsive. The City reserves the right, in its sole discretion, to waive irregularities deemed immaterial. The City also reserves the right to not award a contract or to issue subsequent RFB's

10. AWARD

Awardee shall be required to comply with 2 CFR part 25, and obtain a unique entity identifier and/or be registered in the federal System for Award Management as appropriate.

Award will be made to the lowest responsive, responsible bidder. All bidders shall provide unit or lump sum pricing for each line item. Each line item will be added up for a subtotal price. The subtotal price will be compared amongst each bidder, including any payment discount terms offered twenty (20) days or more. The City may also take into consideration all other criteria for determining award, including evaluation factors set forth in Municipal Code Section 1.06.262.

All other elements or factors, whether or not specifically provided for in this specification, which would affect the final cost to and the benefits to be derived by the City will be considered in determining the award of the contract. The final award decision will be based on the best interests of the City.

The City reserves the right to let the contract to the lowest responsible bidder whose bid will be the most advantageous to the City, price and any other factors considered. In evaluating the proposals, the City may also consider any or all of the following:

1. Compliance with specification.
2. Proposal prices, listed separately if requested, as well as a lump sum total
3. Time of completion/delivery.
4. Warranty terms.
5. Bidder's responsibility based on, but not limited to:
 - a) Ability, capacity, organization, technical qualifications and skill to perform the contract or provide the services required.
 - b) References, judgment, experience, efficiency and stability.
 - c) Whether the contract can be performed within the time specified.
 - d) Quality of performance of previous contracts or services

11. PREVAILING WAGE INFORMATION

If this project requires prevailing wages under chapter 39.12 RCW, any worker, laborer, or mechanic employed in the performance of any part of the work shall be paid not less than the applicable prevailing rate of wage.

The project site is located in King County.

The effective date for prevailing wages on this project will be the submittal deadline with these exceptions:

1. If the project is not awarded within six months of the submittal deadline, the award date is the effective date.
2. If the project is not awarded pursuant to a competitive solicitation, the date the contract is executed is the effective date.
3. Janitorial contracts follow WAC 296-127-023.

Except for janitorial contracts, these rates shall apply for the duration of the contract unless otherwise noted in the solicitation.

Look up prevailing rates of pay, benefits, and overtime codes from this link:

<https://secure.lni.wa.gov/wagelookup/>

REQUIRED FILINGS

The contractor and all subcontractors covered under [39.12 RCW](#) shall submit to the Department of Labor and Industries (L&I) for work provided under this contract:

1. A Statement of Intent to Pay Prevailing Wages must be filed with and approved by L&I upon award of contract.
2. An Affidavit of Wages Paid must be filed with and approved by L&I upon job completion.

3. For on-call contracts, retainage can be release annually. Please see the Intent-Affidavit Info for On-Call Contracts in Appendix D

Payments cannot be released by the City until verification of these filings are received by the engineer. Additional information regarding these filings can be obtained by calling the Department of Labor & Industries, Prevailing Wage at 360-902-5335, <https://secure.lni.wa.gov/> or by visiting their MY L&I account.

12. BID BONDS

The attached Bid Bond (Appendix B) must be executed by the person legally authorized to sign the bid and must be properly signed by representatives of the surety company unless the bid is accompanied by a certified check or cashier's check.

- 12.1** If a Bid Bond is used, the form furnished by the City must be followed; no variation from the language thereof will be accepted. The amount of the Bid Bond must be not less than five percent (5%) of the total amount bid; and, if shown in dollars and cents, the amount of said Bid Bond must be not less than the required five percent; or in lieu of dollars and cents, the bond may be completed by inserting therein, "five percent of the amount of the accompanying proposal". Bid Bonds will not be returned. Bid Bond should be submitted electronically with bid submittal. Hard copies should be postmarked no later than the submittal date.
- 12.2** If a certified or cashier's check is provided by the successful Respondent(s), the amount of their check will be refunded after award of the Contract, City's receipt of the signed Contract, and acceptance of the Performance Bond, if applicable. Unsuccessful Respondents providing certified checks will be refunded the amount of their check upon award of the Contract.
- 12.3** Failure to furnish a Bid deposit of a minimum of 5 percent shall make the bid nonresponsive and shall cause the bid to be rejected by the City.

A deposit of at least 5 percent of the total Bid shall accompany each Bid. This deposit may be cash, certified check, cashier's check, or a proposal bond (Surety bond). Any proposal bond shall be on the Contracting Agency's form and shall be signed by the Bidder and the Surety. A proposal bond shall not be conditioned in any way to modify the minimum 5 percent required. The Surety shall: (1) be registered with the Washington State Insurance Commissioner, and (2) appear on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner.

The failure to furnish a Bid deposit of a minimum of 5 percent shall make the Bid nonresponsive and shall cause the Bid to be rejected by the Contracting Agency.

If submitting your bid electronically, A scanned version of the original bid bond or cashier's check shall accompany your electronic bid submittal. The original bid bond or cashier's check shall be sent to the Contracting Agency and received by the Contracting Agency within 7 calendar days of the bid opening or the bidder may be deemed non-responsive.

Original bid bonds or cashier's check will be delivered to:

City of Tacoma Procurement & Payables Division

Tacoma Public Utilities

3628 South 35th Street

Tacoma, WA 98409

If so stated in the Contract Provisions, cash will not be accepted for a bid deposit.

13. PAYMENT AND PERFORMANCE BOND

If a payment and performance bond is stated herein, the required bond including power of attorney, will be 100 percent of the Contract total and is subject to the following requirements.

- 13.1** The City's payment and performance bond forms must be used.
- 13.2** The payment and performance bonds must be executed by a surety company licensed to do business in the state of Washington.
- 13.3** The cost of a payment and performance bonds must be included in submittal prices. Bonds will not be paid as a separate line item.
- 13.4** For a supply-type contract, a certified cashier's check or cash may be substituted for the bonds; however, this cash or check must remain with the City through the guarantee period and any interest on said amount shall accrue to the City.

14. DELIVERY

- 14.1** Delivery shall be to the City of Tacoma: 36525 SE Green River Headworks Road, Ravensdale, WA 98051.

Each vendor will be required to submit a delivery timeline they can commit to. Purchase order delivery dates will reflect this timeline. In the event a purchase order deliver date is not met, the City reserves the right to purchase these products elsewhere if they are in a time constraint. If constant late deliveries occur, the City may terminate the contract.

14.2 Hours of operation shall be Monday through Friday, 7:00 a.m. to 5:00 p.m., excluding legal holidays, as referred to in the Standard Terms and Conditions or as otherwise approved by the City.

15. WARRANTY

Labor: Minimum one (1) year warranty.

Parts: Manufacturer's warranty or minimum one-year warranty whichever is greater.

Contractor shall arrive on-site at the Green River Filtration Facility (36525 SE Green River Headworks Road, Ravensdale WA 98051) within 48 hours of notification for all warranty repairs during normal work hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. Repairs shall include free pick-up and delivery. Repairs must be completed and vehicle returned within 48 hours of pick-up.

Contractor agrees to allow City to make minor warranty repairs where that is most cost effective and, if requested, contractor will credit City for cost of parts, but not labor.

Vendor will warrant goods according to the manufacturer's warranty guidelines. The start of the warranty commences once the goods are delivered and accepted by the City.

16. INSPECTION

All goods are subject to final inspection and acceptance by the City. If any inspection fails, the vendor shall be required to make arrangements to exchange the goods at their own expense and replace it in a timely manner acceptable to the City.

Material failing to meet the requirements of this contract will be held at Vendor's risk and may be returned to Vendor. If so returned, the cost of transportation, unpacking, inspection, repackaging, reshipping, or other like expenses are the responsibility of the Vendor.

17. APPROVED ITEM EQUIVALENT

A specific manufacturer for almost all line items has been listed in the Technical Specifications because this is the current manufacturer accepted. For those line items, which do not list a specific manufacturer, bidders shall provide the technical specifications for the manufacturer they are offering. The City may request, after the bid due date, a sample of that product for review and approval by the City. The City reserves all rights to be the sole judge as to whether any other manufacturer can meet or exceed the current specifications they use. Unless an item is indicated "No Substitute", approved equivalents shall be submitted by the date listed in the Calendar of Events section. Equivalents will be approved by Addendum to the solicitation.

18. COMPLIANCE WITH SPECIFICATIONS

All products shall be new and unused. Any product that does not comply with any part of these technical specifications shall be rejected and the vendor shall, at its own expense, including shipping, replace the item.

19. MATERIALS AND WORKMANSHIP

The successful bidder shall be required to furnish all materials necessary to perform contractual requirements. Materials and workmanship for this contract shall conform to all codes, regulations and requirements for such specifications contained herein and the normal uses for which intended. Material shall be manufactured in accordance with the best commercial practices and standards for this type of goods. All literature and products must be packaged and labeled to sell in the United States.

20. ENVIRONMENTALLY PREFERABLE PROCUREMENT

In accordance with the [City's Sustainable Procurement Policy](#) and [Climate Action Plan](#), it is the policy of the City of Tacoma to encourage the use of products or services that help to minimize the environmental and human health impacts of City Operations. Respondents are encouraged to incorporate environmentally preferable products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, products, manufacturing, packaging, distribution reuse, operation, maintenance or disposal of the product or service.

The City of Tacoma encourages the use of sustainability practices and desires any awarded contractor(s) to assist in efforts to address such factors when feasible for:

- Durability, reusability, or refillable
- Pollutant releases, especially persistent bioaccumulative toxins (PBTs), low volatile organic compounds (VOCs), and air quality and stormwater impacts
- Toxicity of products used
- Greenhouse gas emissions, including transportation of products and services, and embodied carbon
- Recycled content
- Energy and water resource efficiency

21. LEAP REQUIREMENTS

This project has no LEAP requirements, however, the City of Tacoma is committed to equality in employment for WA-State approved Apprentices, City of Tacoma residents, residents of local economically distressed areas, youth, veterans, minorities, and women. Please contact the [LEAP Office](#) for assistance in locating qualified employees. Visit the [LEAP website](#) for more information.

22. EQUITY IN CONTRACTING

This project has no EIC requirements, however, the City of Tacoma is committed to encouraging firms certified through the [Washington State Office of Minority and Women's Business Enterprise](#) to participate in City contracting opportunities. See **TMC 1.07 Equity in Contracting Policy** at the City's [Equity in Contracting Program website](#).

APPENDIX A

Technical Specifications

Construction Plans

Pull Box and Injection Vault Site Photos

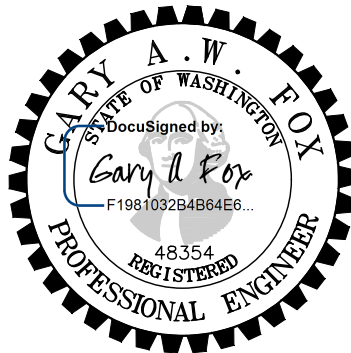
CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
TACOMA WATER

SPECIFICATION NO. TW24-0031F
GRFF CHEMICAL FEED LINES REPLACEMENT

FEBRUARY 2025

JACKIE FLOWERS
DIRECTOR OF UTILITIES

HEATHER PENNINGTON
TACOMA WATER SUPERINTENDENT



02/11/2025

PREPARED BY
GARY FOX,
P.E.

TACOMA PUBLIC UTILITIES
TACOMA, WASHINGTON 98409

SECTION 01 14 00
CONSTRUCTION CONSTRAINTS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Work shall be scheduled, sequenced, and performed in a manner which minimizes disruption to the operation and maintenance of existing facilities.
- B. The CONTRACTOR shall incorporate the construction and schedule constraints of this Section in preparing the construction schedules required under Section 01 32 16 – Construction Progress Schedule.

1.2 SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 – Contractor Submittals.
- B. Furnish:
 - 1. Outage plans for each outage or bypass of existing treatment processes or facilities, as described in Section 1.5.
 - 2. Connection detail schematics for how temporary high lines will be connected to existing fittings and any requests for deviations from the temporary piping plan.

1.3 EXISTING PLANT

- A. The Work shall be executed while the existing water treatment plant is in operation. Operation of the existing plant shall not be jeopardized, nor shall the efficiency of water treatment be reduced as a result of the execution of the Work.
- B. OWNER personnel shall continue to have access to all areas of the water treatment plant to maintain operations. CONTRACTOR will not block access of chemical delivery trucks to the water treatment plant.
- C. Unless indicated otherwise, temporary pumping, piping, power, lighting, controls, instrumentation, alarms, security devices, and safety devices shall be provided by the CONTRACTOR whenever its activity or interruption due to its activity affects the existing facility.
- D. The construction constraints in this Section do not include every item affecting the completion of the Work but are intended to describe the sequence of critical events necessary to minimize disruption to the ongoing treatment plant processes and to ensure compliance with State and Federal treatment requirements. It shall be understood and agreed by the CONTRACTOR that the critical events described are not inclusive and that additional items of Work not included may be required to minimize disruption and ensure compliance. Deviation from or modification of these suggested sequences is permitted if techniques and methods known to the CONTRACTOR will result in reducing disruption to the facility operation and maintaining treatment efficiency, and if deviation is approved in advance by the OWNER.

1.4 OPERATION OF PLANT EQUIPMENT

- A. Any operational changes or modifications to existing water treatment plant equipment that have the potential to impact the water treatment plant operations will be performed by the OWNER'S personnel only. This includes but is not limited to: All valve movement, pump sequencing and isolation, flushing of chemical feed piping in order to facilitate construction activities.
- B. The plant operation and maintenance personnel will cooperate where practical in order to facilitate the CONTRACTOR'S replacement of the chemical feed lines.
- C. The hydrofluorosilicic acid system is the only system that will be authorized to be completely shut down during construction. A maximum shutdown duration of 14 calendar days is estimated to be sufficient for this system to replace the chemical feed lines. If the contractor estimates that they will need more than 14 days for this system to be shutdown, they must coordinate with the OWNER so that ample time is given to negotiate the outage duration with the Washington Department of Health. If it becomes necessary for the proper operation or maintenance of portions of the existing facility, the OWNER may require the CONTRACTOR to reschedule an approved shutdown. The CONTRACTOR shall then reschedule its construction activities so there shall be no conflict with necessary operations or maintenance of the plant. The CONTRACTOR shall, within 2 days, furnish the OWNER a revised outage request and a plan for rescheduling the shutdown in accordance with the requirements of the construction schedule.
- D. The CONTRACTOR shall take necessary precautions to ensure that no damage occurs to the existing plant facilities, including piping, tanks, pumps, utilities, roads, and structures. All infrastructure are to remain in operation and are not to be modified or replaced. As part of the Work, any temporary facilities, materials, equipment, and labor required for the plant to continue operation during construction shall be provided as part of the Cost of the Work by the CONTRACTOR. Likewise, at the completion of work, such temporary facilities, materials, and equipment shall be removed from the Site as part of the WORK.

1.5 OUTAGE REQUESTS

- A. Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage or bypass of existing treatment processes or facilities. In such cases, the CONTRACTOR shall coordinate Work with the OWNER as described herein. At no time will the CONTRACTOR be allowed to make connections to existing facilities without authorization from the OWNER.
- B. The CONTRACTOR shall submit a detailed outage plan and time schedule for construction activities. This will be a critical step in order to successfully remove the existing reinforced PVC chemical feed lines or other facilities from service, without interrupting operations or maintenance of the water treatment plant.
- C. The outage plan shall be submitted to the OWNER for acceptance a minimum of 30 days in advance of the time that such outages are required. The outage plans shall be coordinated with the construction schedule and shall meet the restrictions and conditions of this Section. The outage plan shall describe the requested dates for the outage, the CONTRACTOR'S method for preventing bypassing of other treatment units; the length of time required to complete the operation, and the manpower and equipment which the CONTRACTOR shall provide in order to ensure proper operation of associated

treatment units. Costs for preparing and implementing the outage plan shall be the responsibility of the CONTRACTOR as part of the WORK.

- D. The CONTRACTOR shall not begin an alteration affecting existing facilities until specific written approval has been granted by the OWNER in each case.
- E. The OWNER will coordinate the CONTRACTOR'S planned procedure with the treatment facility personnel. The OWNER has the authority to modify any proposed shutdown procedures if such procedures would adversely impact the plant operations.
- F. The OWNER shall be notified in writing at least 2 weeks in advance of the required outage if the schedule for performing the Work has changed or if revisions to the outage plan are required. The CONTRACTOR shall provide written confirmation of the shutdown date and time 1 week prior to the actual shutdown.
- G. **Unscheduled Outage**
 - 1. An unscheduled outage is any outage that is not in accordance with an approved outage request.
 - 2. The CONTRACTOR shall inform the OWNER immediately upon the occurrence of any unscheduled outage resulting from the CONTRACTOR'S work. If OWNER's typical representative(s) cannot be reached immediately, the on-duty water treatment plant operator shall be notified.
 - 3. For each hour of any unscheduled Outage, until all facilities are restored to full service, the CONTRACTOR shall reimburse the OWNER for its actual costs incurred as a result of the outage, such as inspection, observation and operating costs, and the actual amount of other damages sustained by the OWNER.

1.6 TEMPORARY CONNECTIONS

- A. Making connections to existing facilities or other operations that interfere with the operation of the existing equipment or other plant operations shall be thoroughly planned in advance, and required equipment, materials, and labor shall be on hand at the time of undertaking the connections. The CONTRACTOR shall receive approval from the OWNER to make temporary connections to existing facilities and to make permanent connections to existing facilities once segments of construction are complete. Work shall be completed as quickly as possible and with as little delay as possible and shall proceed continuously (24 hours a day and seven days a week if necessary) to complete modifications and/or connections in the minimum time.
- B. Pipe tees and isolation valves, if proposed, shall be coordinated with the OWNER and installed as needed in order to properly sequence between temporary and permanent chemical feed lines installation.
- C. The cost of any temporary facilities, night, weekend, or holiday activity and overtime payments required during process interruptions shall be included in the cost of the Work.
- D. Temporary facilities and piping shall be located to minimize interference with CONTRACTOR'S construction facilities and the OWNER'S operation and maintenance of the existing facilities.
- E. Piping materials shall be chemically resistant to the fluid being conveyed and must be NSF 61 certified as required in the Contract Documents.

- F. Unless otherwise indicated, each temporary pipe shall be of the same material (solid wall HDPE pipe with a minimum pipe dimension ratio DR 9). The size of the temporary piping shall be 1" IPS. Details for connections to existing piping shall be submitted to the OWNER for approval.
- G. Reinforced PVC tubing will be allowed as an additional pipe material to make connections from the temporary HDPE pipe flanges to existing injection points ONLY (see section 43 10 64). The PVC tubing shall be removed before permanent HDPE connections are made to injection points.
- H. All temporary chemical feed lines running on the ground must have secondary containment. Clear, Heavy Duty Poly Tubing Roll (minimum of 6 mil thickness) will be acceptable to act as secondary containment when surface mounted from the Chemical Facility to their respective injection end points as shown on the construction drawings.
- I. A plan showing the size and location of the temporary piping is included in the construction drawings, as well as a road barricading plan. Ecology blocks, or equal, shall be provided by the contractor and used to prevent facility traffic from obstructing the high lined temporary chemical feed lines. Any deviation to the plans shall be submitted to the OWNER at the same time as the outage plan required under this Section. Costs for design, provision, operation, and removal of temporary facilities and piping shall be part of the WORK.

1.7 CONSTRUCTION SEQUENCING

- A. The CONTRACTOR shall be responsible for developing the construction sequencing plan.
- B. At no time will chemical feed systems be allowed to be completely shut down aside from Hydrofluorosilicic Acid for a short duration. The shutdown of this system shall be executed by the plant staff once the contractor notifies the OWNER when they are ready to execute the work. Chemicals that are online must be fed at all times. Isolation of chemical feed systems will require coordination between the CONTRACTOR and OWNER. Execution of isolating chemical systems shall only be done by the OWNER. No exceptions will be considered.
- C. Construction activities shall be scheduled and sequenced to ensure continuous operation of the existing treatment facilities. The CONTRACTOR'S scheduling shall develop a construction sequencing plan so that the Work will not adversely impact treatment.
- D. In implementing the construction sequencing plan, the CONTRACTOR shall maintain the temporary feed piping until the new, permanent chemical feed lines are constructed and operational to supplement the existing capacity.

When the permanent feed lines have been approved after testing and are operational, the temporary feed piping shall be taken out of service with the coordination of the plant staff. The following general guidelines shall be used by the CONTRACTOR in planning the sequence of construction.

- 1. Safe working conditions for personnel shall be maintained at all times. The contractor will be working with chemicals and the proper personal protective equipment (PPE) must be used when exposed to these chemicals, or other safety

precautions as listed on the safety data sheet (SDS) provided by the OWNER. The foregoing includes the provision of temporary equipment guards, supports, stairs, warning signs, walkways, covers over openings, handrailing, and protection of electrical equipment and power supply, and all relevant Occupational Safety and Health Administration (OSHA) regulations.

2. Temporary facilities shall be constructed in accordance with applicable codes and regulations to operate safely and properly.
3. All temporary chemical feed lines must be routed outside of the primary route of large tanker trucks that deliver chemicals to the site as shown on the construction drawings.
4. Roads shall be barricaded as shown on the construction drawings to prevent motorized vehicles from driving over the protected, temporary feed lines.
5. Valves to be temporarily shut off during the Work shall be tagged as such. At no time will the CONTRACTOR be allowed to operate any valves and shall work with the OWNER to request isolation when necessary.

1.8 PERMITS

- A. The CONTRACTOR shall obtain any required permits before starting the WORK. The CONTRACTOR shall abide by the conditions of any permits and shall obtain proof of satisfaction of conditions from issuers of permits prior to acceptance of the WORK by OWNER.

1.9 SCHEDULE CONSTRAINTS

- A. General: It is the CONTRACTOR'S responsibility to coordinate and plan the construction activities to integrate each schedule constraint into performance of the overall Work.
- B. The listing of schedule constraints below does not mean that every constraint or special condition has been identified. The list does not substitute for the CONTRACTOR'S coordination and planning for completion of the Work within the Contract Times.
- C. The following constraints affect the construction schedule:
 1. It is desired by the OWNER that the WORK start no earlier than May 1st and must be completed no later than the 30th of September. Normal working hours shall be Monday to Friday between the hours of 7AM to 5PM.
 2. Hydrofluorosilicic Acid may be shut down for a short duration that must be negotiated by the plant staff and the Department of Health. Coordination with the OWNER is critical for timing to complete this part of the WORK.
 3. All other chemical feed systems must remain online at all times throughout the WORK.
 4. The CONTRACTOR shall work with the OWNER to coordinate switching between feed points and injection points to install high lines and final connections. At no time will connections be allowed to be made without approval from the OWNER.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 22 00
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 GENERAL

- A. It is the intention of these specifications that performance of work under bid items shall result in complete construction, in proper operating condition, of improvements identified in these written specifications and accompanying plans. Work and material not specifically listed in the proposal but required according to the plans and specifications and general practice, shall be included in CONTRACTOR'S bid price.

1.2 BID ITEMS

- A. Bid Item 1 – Mobilization, Demobilization, Site Preparation, and Clean-up

1. Lump sum price covers complete cost of furnishing, installing and testing, complete and in-place, all work and materials necessary to move and organize equipment and personnel onto the job site (to the dedicated "CONTRACTOR Storage and Staging Area" as show on the construction drawings); comprehensive site safety plan, including chemical exposure safety; security of the job site; and provisions for maintaining necessary support facilities for temporary and permanent feed lines, including ecology blocks for vehicle traffic routing as shown on the construction drawings, ramps/stairs for foot traffic over temporary feed lines at each door outside the Chemical Building, caution/danger tape, and candlestick markers.
2. Obtain all necessary permits and licenses, prepare site for construction operations, maintain site and surrounding areas during construction, move all personnel and equipment off site after contract completion, clean up site (which includes disposal of old reinforced PVC tubing) prior to final acceptance, and accomplish all other items of work not specifically listed in other divisions. Payment shall be lump sum.
3. No more than 80 percent of bid amount for this item will be paid before final payment request, and this bid amount may not be more than 10 percent of value of total contract.

- B. Bid Item 2 – HDPE Pipe – All 1" temporary piping (~14,500 LF), appurtenances and other approved materials for temporary connection to injection points.

1. Lump sum price shown shall cover the complete cost of providing and installing all temporary piping as shown on the plans and specified herein (estimated linear ft. of 1" HDPE pipe = 14,500 ft.).
2. Approximately 4400 LF of the total 1" temporary piping shall be 1" SDR11 Chem Proline® Advanced Polyethylene (PE) by Asahi America for sodium hypochlorite (SHC). The CONTRACTOR shall salvage the temporary lines for sodium hypochlorite after testing and commissioning of permanent piping and leave with OWNER at the end of the project.
3. The CONTRACTOR may propose to utilize reinforced PVC tubing per section 43 10 64 inside the injection vaults/points once the main temporary HDPE lines are installed to the vaults/points as indicated on the construction drawings. Proposed piping materials

and appurtenances shall be submitted and approved by the OWNER. Payment shall be lump sum.

4. Work includes but is not limited to valves, flanges, gaskets, bolts, pipe supports, pipe labels and all work shown on the plans but not specially called out above are included here. This item also includes the 6 mil heavy duty poly piping containment for all temporary piping and cable ties.

C. Bid Item 3 – HDPE Pipe- All permanent piping and appurtenances

1. The \$/LF price shown shall cover the complete cost of providing and installing all permanent piping as shown on the plans and specified herein. Work includes but is not limited to: Valves, flanges, unions, gaskets, bolts, pipe supports, pipe labels, and all work shown on the plans but not specifically called out above are included here for each diameter of permanent piping. Payment shall be \$/LF installed.
2. Approximately 8600 LF of the total 1" HDPE shall be **SDR11 Chem Proline® Advanced Polyethylene (PE) by Asahi America** for sodium hypochlorite (SHC).

The approximate linear feet for each size of piping, to be used in the bid, is as follows:

Pipe Size	Approximate Linear Ft.
1" HDPE	12,200
1.5" HDPE	1,100
2" HDPE	10,000

D. Bid Item 4 – SCH 80 CPVC- All permanent piping and appurtenances

Lump sum price shown shall cover the complete cost of providing and installing all SCH 80 CPVC piping as shown on the plans. The Work includes but is not limited to: Valves, check valves, unions, flanges, gaskets, bolts, pipe supports, pipe labels and all work shown on the plans but not specially called out above are included here. Payment shall be lump sum.

E. Bid Item 5 – Site Work

Lump sum price shown shall cover the complete cost of providing all site work related to construction improvements as shown on the plans and specified herein. Work includes, but is not limited to: Fencing (where applicable), candlestick markers, caution tape, protection/cover over open injection vaults for temporary feed line connections, temporary doors at chemical building for temporary piping exiting the building, control of construction water for pipe pressure testing and flushing, dewatering, repair of any damaged roadways during construction activities, disposal of reinforced PVC tubing and temporary 1" HDPE piping and containment, and all other work not incidental to other bid items. Payment shall be lump sum.

F. Bid Item 6 – Minor Change

The unit price Bid for Minor Changes shall be per Calculation (CALC) in accordance with Section 1 04.4(1) of the WSDOT 2025 Standard Specifications and has been included for any additional work associated with minor changes. An estimated dollar

amount for Minor Changes Item has been entered in the Bid Proposal by the OWNER, to provide a common proposal for all Bidders. Bidder's total base bid shall include Bid Item 6.

Payments or credits for changes amounting to \$25,000 or less may be made under the bid item "Minor Changes", at the discretion of the OWNER, and in accordance with Section 1-04.4(1) of the Standard Specifications. The actual amount paid under this item may vary from no payment to the full amount of the bid item. At the time of authorization, OWNER and CONTRACTOR will agree to the basis of compensation for that work, by one of the following methods:

- a. By an accepted lump sum proposal from the CONTRACTOR;
- b. By Bid prices already established in the Bid Proposal;
- c. By Bid prices mutually agreed upon by the CONTRACTOR and the OWNER; or
- d. By force account, as set forth in Section 1-09.6 of the WSDOT 2025 Standard Specifications.

The OWNER will provide the CONTRACTOR a copy of the request for a minor change and will require the CONTRACTOR to provide a cost estimate for OWNER's review and approval prior to the work being performed. Approved minor change work performed under this bid item will be performed only after a work directive is issued by the OWNER. Any additional work performed prior to the work directive issued by the OWNER will not be compensated under this bid item.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 29 73
SCHEDULE OF VALUES

PART 1 -- GENERAL

1.1 GENERAL

- A. This Section defines the process whereby the Schedule of Values shall be developed and incorporated into the Construction Progress Schedule in accordance with the requirements of Section 01 32 16 –Construction Progress Schedule.
- B. Monthly progress payment amounts will be determined from the monthly progress updates of the Construction Progress Schedule activities.
- C. Develop the Schedule of Values independent of but simultaneous with the development of the Construction Progress Schedule activities and logic.
- D. The Schedule of Values information is an integral part of the scheduling and reporting under Section 01 32 16 – Construction Progress Schedule and the progress payment information. As such, it is critical information to evaluating progress and the proper planning of the OWNER'S Work-related effort as well as their financial obligations associated with the Project. Accordingly, if a submittal required by this Section is found to be incomplete or is submitted later than required, the OWNER shall be entitled to withhold progress payments until submittals meeting the requirements of this Section have been submitted.

1.2 BASELINE SCHEDULE OF VALUES

- A. During the Preconstruction Phase, the CONTRACTOR shall develop a Preliminary Schedule of Values in accordance with this Section and the final revision shall become the Baseline Schedule of Values.
- B. At a minimum, submit proposed values for the major work components, broken down according to the Contract Documents, and the Construction Specifications Institute (CSI) 6-digit MF-2024 specification division format.
- C. Review and Revisions
 - 1. The CONTRACTOR and OWNER shall meet and jointly review the preliminary Schedule of Values and make any adjustments in value allocations if, in the opinion of the OWNER, these are necessary to establish fair and reasonable allocation of values for the major Work components.
 - 2. The CONTRACTOR shall revise the Schedule of Values as agreed upon with the OWNER.
 - 3. Front-end loading will not be accepted.
 - 4. The OWNER may require reallocation of major Work components if in the opinion of the OWNER such reallocation is necessary.
 - 5. This review and any necessary revisions shall be completed within 15 Days from the date of execution by the CONTRACTOR.

1.3 REVISIONS TO BASELINE SCHEDULE OF VALUES

- A. Prepare and submit a detailed revision to the Baseline Schedule of Values to Tacoma Water within 15 Days from execution.
- B. The OWNER will be the sole judge of acceptable numbers, details and description of values established.
- C. If, in the opinion of the OWNER, a greater number of Schedule of Values items than proposed are necessary, add the additional items so identified by the OWNER.
- D. Submit additional details of the major Work components broken down according to the Construction Specifications Institute (CSI) 6-digit MF-2024 specification division format. In addition, the CONTRACTOR shall conform to the following guidelines.
 - 1. Mobilization: no breakdown required;
 - 2. Chemical feed piping work:
 - a. Temporary feed piping, including all appurtenances (flanges, gaskets, bolts, 6 mil poly tubing containment, pipe labels, etc.) shall be lump sum for payment.
 - b. Each linear foot of permanent chemical feed piping including all appurtenances (flanges, gaskets, bolts, pipe labels, etc.) shall be measured by the LF for payment unless otherwise allowed by the OWNER.
 - 3. Break down hazardous material abatement as determined to be necessary for the establishment of pay and schedule activities.
 - 4. Break down pre-commissioning and commissioning based on completion milestones for each.
 - 5. Break down project closeout and punchlist Work based on completion milestones for each. Value of closeout and punchlist activities shall comply with the Contract Documents.
 - 6. Break down other Work not specifically included in the above items, as necessary for the establishment of pay and schedule activity items.
- E. Adjustments and Acceptance
 - 1. The CONTRACTOR and Tacoma Water shall meet and jointly review the revised Schedule of Values within 15 Days from execution, at which time the value allocations and extent of detail shall be reviewed in order to determine if necessary adjustments to the values are required.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 – GENERAL

1.1 GENERAL

- A. The CONTRACTOR shall schedule the Work in accordance with this Section.
- B. Development of the schedule, payment requisitions and project status reporting requirements of the Contract shall employ computerized Critical Path Method (CPM) scheduling.
- C. The CONTRACTOR shall have a plan and schedule of their work. The OWNER must approve this plan and schedule. The OWNER and CONTRACTOR shall determine the date of commencement of onsite work.

The plan shall cover but shall not be limited to the following points:

- 1. Sufficient work detail to show the major tasks being performed for each week of the work.
- 2. Planned beginning and ending dates for each pay line item.
- 3. Planned beginning and ending dates for any Work that will require OWNER support or affect OWNER operations, including outages and connections.
- 4. The total number of personnel expected on the site during each week of construction activity.
- 5. Planned beginning and ending dates of the responsible party who will work on-site.
- 6. The schedule shall contain activities for the entire work included in the contract.

If extreme weather conditions or other unforeseen circumstances are deemed by the OWNER to be unsuitable for proper installation of improvements in accordance with these provisions, then the work shall not start or shall be interrupted until conditions have improved sufficiently as to allow the work to progress without delay until completed. The CONTRACTOR shall not be responsible for those days, nor have any claim against the OWNER for an extension in project time due to poor weather unless such delays total more than 20 days. If delays total more than 20 days, the contract shall be paid for each day in addition to 20 days of delay due to weather the direct overhead costs or \$1000 per day (whichever is less) for each additional day of weather delays beyond 20 days. The CONTRACTOR shall submit an updated schedule to OWNER each time the schedule is modified.

D. Acceptance

- 1. Acceptance of the CONTRACTOR'S schedule by the OWNER will be based solely upon compliance with the requirements. By way of the CONTRACTOR assigning activity durations and proposing the sequence of the Work, the CONTRACTOR agrees to utilize sufficient and necessary management and other resources to perform Work in accordance with the schedule. Upon submittal of a schedule update, the updated schedule shall be considered the "current" project schedule.

2. Submission of the CONTRACTOR'S progress schedule to OWNER shall not relieve the CONTRACTOR of total responsibility for scheduling, sequencing, and pursuing the Work to comply with the requirements of the Contract Documents, including adverse effects such as delays resulting from ill-timed Work.

E. Monthly Schedule Updates

1. Following acceptance of the CONTRACTOR'S original schedule, the CONTRACTOR shall monitor the progress of the Work and adjust the schedule each month to reflect actual progress and any changes in planned future activities. Each schedule update submittal shall be complete including information requested in the original schedule submittal and be in the schedule report format indicated below. Each update shall continue to show Work activities including those already completed. Completed activities shall accurately depict "as built" information by indicating when the Work was actually started and completed.
2. Neither the submission nor the updating of the CONTRACTOR'S original schedule submittal nor the submission, updating, change, or revision of any other report, curve, schedule, or narrative submitted by the CONTRACTOR, nor OWNER's review or acceptance of any such report, curve, schedule, or narrative shall have the effect of amending or modifying in any way the Contract Times or milestone dates or of modifying or limiting in any way the CONTRACTOR's obligations under the Contract. Only a signed, fully executed Change Order can modify contractual obligations.
3. The monthly schedule update will be reviewed with the CONTRACTOR during the last weekly meeting each calendar month to determine the amount of Work completed during the prior month but will not be formally submitted to OWNER for review.

- F. **Schedule Revisions:** The CONTRACTOR shall highlight or otherwise identify changes to the schedule logic or activity durations made from the previous schedule. The CONTRACTOR shall modify any portions of the schedule which become infeasible because activities are behind schedule or for any other valid reason.

1.2 CHANGE ORDERS

- A. Upon approval of a Change Order or upon receipt by the CONTRACTOR of authorization to proceed with additional Work, the change shall be reflected in the next submittal of the Schedule. Whenever the CONTRACTOR believes that a Change Order will extend the Contract Times, the sub-network analysis herein shall be submitted with the price proposal for the change. If the CONTRACTOR does not submit the sub-network demonstrating that the change affects the Contract Times, then no subsequent claim for additional time due to the change will be accepted.

1.3 PROJECT STATUS REPORTING

- A. The CONTRACTOR shall furnish monthly project status reports (overview bar chart and a written narrative report) in conjunction with the revised schedules as indicated above. Status reporting shall be in the form below.
- B. The CONTRACTOR shall prepare and submit monthly an overview bar chart schedule of the major project components. The overview bar chart schedule shall be a summary of the current schedule (original and as updated and adjusted throughout the entire

construction period). The major project components shall be represented as time bars which shall be subdivided into various types of Work including temporary feed line construction and hydrostatic testing progress, permanent feed line construction and hydrostatic testing progress, tie ins to existing chemical feed points and disposal of reinforced PVC and temporary piping. . Major components shall include each new permanent feed line construction by pull box and injection point, modifications to existing structures, tie-ins to existing facilities, and startups.

- C. Each major component and subdivision shall be accurately plotted consistent with the project overview bar chart above. It shall represent the same status indicated by early start and finish activity information contained in the latest update of the schedule. In addition, a percent completion shall be indicated for each major component and subdivision. The initial submittal of the overview bar chart schedule shall be made at the time that the revised original schedule is submitted to OWNER. The CONTRACTOR shall amend the overview schedule to include any additional detail required by OWNER. The CONTRACTOR shall include any additional information requested by OWNER at any time during the construction of the Work.
- D. The CONTRACTOR shall prepare monthly written narrative reports of the status of the project for submission to OWNER. Status reports shall include:
1. The status of major project components (percent complete, amount of time ahead or behind schedule) and an explanation of how the project will be brought back on schedule if delays have occurred.
 2. The progress made on critical activities indicated on the schedule.
 3. Explanations for any lack of Work on critical path activities planned for the last month.
 4. Explanations for any schedule changes, including changes to the logic and to activity durations.
 5. A list of the critical activities scheduled to be performed in the next 2 weeks.
 6. The status of major material and equipment procurement, including a list of long-lead-time items and items procured for the OWNER.
 7. The value of materials and equipment properly stored at the Site but not yet incorporated into the Work.
 8. Any delays encountered during the reporting period.
 9. An assessment of inclement weather delays and impacts to the progress of the WORK.
- E. The CONTRACTOR may include any other information pertinent to the status of the Work. The CONTRACTOR shall include additional status information requested by OWNER.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 33 00
CONTRACTOR SUBMITTALS

PART 1 -- GENERAL

1.1 GENERAL

- A. Wherever submittals are required by the Contract Documents, submit them to the OWNER.
 - 1. A minimum of 10 business days from receipt of submittal is required for the OWNER to review submittals.
 - 2. Allow time for resubmittals.

1.2 PRECONSTRUCTION SUBMITTALS

- A. At the preconstruction meeting submit the following items to the OWNER for review:
 - 1. A revised schedule of Shop Drawings, Samples, and proposed Substitution ("or-equal") submittals;
 - 2. Details on how the temporary high lines will be connected to the existing injection points as called out in the construction drawings.
 - 3. A list of permits and licenses that need to be obtained, indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit;
 - 4. A preliminary schedule of values in accordance with Section 01 29 73 – Schedule of Values.
 - 5. A chemical exposure safety plan for all chemicals that the CONTRACTOR will be working with (see construction drawings for list of chemicals).
 - 6. Original schedule in accordance with Section 01 32 16.

1.3 SHOP DRAWINGS

- A. Management and administration of Shop Drawings shall be provided.
- B. Wherever called for in the Contract Documents or where required by the OWNER, furnish one electronic copy (in PDF format) of each Shop Drawing submittal.
- C. Shop Drawings may include detail design calculations, Shop-prepared Drawings, fabrication and installation drawings, lists, graphs, catalog sheets, data sheets, and similar items.
- D. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of a licensed engineer registered in the appropriate branch and in the state wherein the Project is located, unless otherwise indicated.
- E. Transmittal Form

1. Shop Drawing submittals shall be accompanied by OWNER's standard submittal transmittal form, a reproducible copy of which is available from Tacoma Water.
2. A submittal without the form, or where applicable items on the form have not been completed, will be returned for resubmittal.

F. Organization

1. Use a single submittal transmittal form for each technical specification Section or item or class of material or equipment for which a submittal is required.
2. A single submittal covering multiple Sections will not be accepted, unless the primary specification references other Sections for components: For example, if a pump Section references other Sections for the motor, shop-applied protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be accepted, whereas a single submittal covering vertical turbine pumps and horizontal split-case pumps would not be accepted.
3. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components.
4. Relate the submittal components to specification paragraph and subparagraph, Drawing number, detail number, schedule title, room number, or building name, as applicable.
5. Unless otherwise indicated, match terminology and equipment names and numbers used in the submittals with those used in the Contract Documents.

G. Format

1. Minimum sheet size shall be 8-1/2 inches by 11 inches, and maximum sheet size shall be 24 inches by 36 inches.
2. Number every page in a submittal in sequence.
3. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with complete pertinent data capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports.
4. Present a sufficient level of detail for assessment of compliance with the Contract Documents.
5. When documents are submitted electronically, they shall be in PDF format, readable by Acrobat Reader.
6. Numbering
 - a. Assign to each submittal a unique number.
 - b. Number the submittals sequentially, with the submittal numbers clearly noted on the transmittal.
 - c. Assign original submittals a numeric submittal number followed by a letter of the alphabet in order to distinguish between the original submittal and each resubmittal: For example, if submittal "25-A" requires a resubmittal, the first

resubmittal will bear the designation "25-B" and the second resubmittal will bear the designation "25-C," and so on.

- d. Other numbering systems may be used with approval of the OWNER.
- H. Disorganized submittals that do not meet the requirements of the Contract Documents will be returned without review.
- I. OWNER'S Review
 - 1. Except as otherwise indicated, the OWNER will return prints of each submittal to the CONTRACTOR with comments noted thereon, within 10 business days following receipt by the OWNER.
 - 2. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the OWNER by the first resubmittal on an item.
 - 3. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the OWNER's review beyond the first resubmittal.
 - 4. The OWNER's maximum review period for each submittal or resubmittal will be 10 business days; thus, for a submittal that requires 2 resubmittals before it is complete, the maximum review period could be 20 business days.
- J. If a submittal is returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission will not be required.
- K. If a submittal is returned marked "MAKE CORRECTIONS NOTED," the CONTRACTOR shall make the corrections on the submittal, but formal revision and resubmission will not be required.
- L. Resubmittals
 - 1. If a submittal is returned marked "AMEND-RESUBMIT," the CONTRACTOR shall revise the submittal and resubmit the required number of copies.
 - 2. Resubmittal of portions of multi-page or multi-drawing submittals will not be accepted: For example, if a Shop Drawing submittal consisting of 10 drawings contains one drawing noted as "AMEND-RESUBMIT," the submittal as a whole is deemed "AMEND-RESUBMIT," and 10 drawings are required to be resubmitted.
 - 3. Every change from a submittal to a resubmittal or from a resubmittal to a subsequent resubmittal shall be identified and flagged on the resubmittal.
- M. Rejected Submittals
 - 1. If a submittal is returned marked "REJECTED-RESUBMIT," it shall mean either that the proposed material or product does not satisfy the specification, the submittal is so incomplete that it cannot be reviewed, or is a substitution request not submitted in accordance with Section 01 60 10 –Substitutions.
 - 2. In the first 2 cases, the CONTRACTOR shall prepare a new submittal and shall submit the required number of copies.
 - 3. In the latter case, the CONTRACTOR shall submit the substitution request according

to the requirements of Section 01 60 10 –Substitutions.

4. The resubmittal of rejected portions of a previous submittal will not be accepted.
- N. The fabrication of an item may commence only after Tacoma Water has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."
- O. Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as changes to the contract requirements.
- P. Review by CONTRACTOR
1. Submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission to the OWNER.
 2. Each submittal shall be dated and signed by the CONTRACTOR as being correct and in strict conformance with the Contract Documents.
 3. In the case of Shop Drawings, each sheet shall be so dated and signed.
 4. Any deviations from the Contract Documents shall be noted on the transmittal sheet.
 5. The OWNER will only review submittals that have been so verified by the CONTRACTOR.
 6. Non-verified submittals will be returned to the CONTRACTOR without action taken by The OWNER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.
- Q. Conformance
1. Corrections or comments made on the CONTRACTOR's Shop Drawings during review shall not relieve the CONTRACTOR from compliance with Contract Drawings and Specifications.
 2. Review is for conformance to the design concept and general compliance with the Contract Documents only.
 3. The CONTRACTOR shall be responsible for confirming and correlating quantities and dimensions, fabrication processes and techniques, coordinating Work with the trades, and satisfactory and safe performance of the Work.
- 1.4 SPARE PARTS LIST
- A. General
1. Furnish to the OWNER a set of spare parts information for mechanical/piping equipment where applicable.
 2. The spare parts list shall include those spare parts that each manufacturer recommends to be maintained by the OWNER in inventory.

B. Sources and Pricing

1. The spare parts list shall include a current list price of each spare part.
2. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts, to assist the OWNER in ordering.

C. Format

1. The spare parts lists shall be in electronic format.

1.5 AS-BUILT DRAWINGS

A. On-Site Drawings Set

1. Maintain one set of Drawings at the Site for the preparation of as-built drawings.
2. On this set, mark every project condition, location, configuration, and any other change or deviation which may differ from the Contract Drawings, including buried or concealed construction and utility features that are revealed during the course of construction.
3. Give special attention to recording the horizontal and vertical location of buried utilities that differ from the locations indicated, or that were not indicated on the Contract Drawings.
4. Supplement the as-built drawings by any detailed sketches as necessary or as directed, in order to fully indicate the Work as actually constructed.
5. The as-built drawings are the CONTRACTOR's representation of as-built conditions, shall include revisions made by addenda and change orders, and shall be maintained up-to-date during the progress of the Work.
6. Use red ink for alterations and notes.
7. Notes shall identify relevant Change Orders by number and date.

B. Submittal

1. Submit paper copies of the as-built drawings at completion of the Work.

C. Unacceptable Drawings

1. Disorganized or incomplete as-built drawings will not be accepted.
2. The CONTRACTOR shall revise them and resubmit within 10 Days.

D. As-built drawings shall be accessible to the OWNER during the construction period.

E. Final Payment

1. Final payment will not be acted upon until the as-built drawings have been completed and delivered to the OWNER.
2. Up-to-date as-built drawings shall be in the form of a set of prints with carefully

plotted information overlaid.

- F. Information submitted by the CONTRACTOR will be assumed to be correct, and the CONTRACTOR shall be responsible for the accuracy of such information.

1.6 QUALITY CONTROL (QC) SUBMITTALS

- A. Quality control submittals are defined as those required by the Specifications to present documentary evidence to the OWNER that the CONTRACTOR has satisfied certain requirements of the Contract Documents.

- B. Unless otherwise indicated, QC submittals shall be submitted:

- 1. Before delivery and unloading, for the following types of submittals:

- a. Manufacturers' installation instructions
- b. Manufacturers' and Installers' experience qualifications
- c. Design calculations
- d. Affidavits and manufacturers' certification of compliance with indicated product requirements
- e. Laboratory analysis results
- f. Factory test reports

- 2. Within 30 Days of the event documented for the following types of submittals:

- a. Manufacturers' field representative certification of proper installation
- b. Field measurement
- c. Field test reports
- d. Receipt of permit

- C. OWNER will record the date that a QC submittal was received and review it for compliance with submittal requirements, but the review procedures above for Shop Drawings and samples will not apply.

1.7 CONSTRUCTION PHOTOGRAPHS

- A. General

- 1. Furnish construction photographs showing the progress of the Work.
- 2. Photographs shall be captured digitally.
- 3. Photograph submittals shall include a table listing the filename of each photograph, the date of photographing, a short description of what is in the photograph, and the direction the camera is facing.

B. Progress Photos

1. Starting when the Work begins and continuing for as long as the Work is in progress, take photos consisting of different subjects or angles or view at different locations of progress of the Work.
2. The prints and electronic files shall become sole property of Tacoma Water upon submittal by the CONTRACTOR.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 45 00
QUALITY CONTROL

PART 1 -- GENERAL

1.1 DEFINITION

- A. Specific quality control requirements for the Work are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the Work beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 SAMPLING AND TESTING

- A. Unless otherwise indicated, all sampling and testing will be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing that will assure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.
- B. Any waiver by Tacoma Water of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the testing or other quality assurance requirements originally indicated, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any requirements of the Contract Documents.
- C. Notwithstanding the existence of such waiver, the OWNER reserves the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the Contract Documents, shall be reasonable cause for the OWNER to require the removal or correction and reconstruction of any such Work in accordance with the General Conditions.

1.3 INSPECTION AND TESTING SERVICE

- A. Inspection and testing laboratory service shall comply with the following:
 - 1. Unless indicated otherwise by the Technical Specifications, the OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.
 - 2. The CONTRACTOR shall make timely arrangements for all operations requiring inspections, tests and approvals with the appointed independent firm and/or Tacoma Water.
 - 3. The OWNER or independent firm will perform inspections, testing, and other services as required under Paragraph 1.2C above.
 - 4. Reports of testing, regardless of whether the testing was Tacoma Water's or the CONTRACTOR'S responsibility, will be submitted to the OWNER, indicating observations and results of tests, and indicating compliance or non-compliance with Contract Documents.
 - 5. The CONTRACTOR shall cooperate with the OWNER or independent firm and

furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested.

6. The CONTRACTOR shall notify the OWNER 48 hours prior to the expected time for operations requiring inspection and laboratory testing services.
7. Retesting required because of non-conformance to requirements shall be performed by the same independent firm on instructions by the OWNER. The CONTRACTOR shall bear all costs from such retesting.
8. For samples and tests required for CONTRACTOR'S use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR'S use shall be included in the Cost of the Work.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. **Inspection:** The CONTRACTOR shall inspect materials or equipment upon the arrival on the job site and immediately prior to installation and reject damaged and defective items.
- B. **Measurements:** The CONTRACTOR shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.
- C. **Manufacturer's Instructions:** Where installations include manufactured products, the CONTRACTOR shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

- END OF SECTION -

SECTION 01 50 00

MOBILIZATION

PART 1 -- GENERAL

1.1 GENERAL

- A. CONTRACTOR shall mobilize as required for the proper performance and completion of the WORK and in accordance with the Contract Documents.
- B. Mobilization shall include the following:
 - 1. CONTRACTOR shall not be allowed to utilize OWNER facilities for a job site. Arranging for and erection of CONTRACTOR'S work trailer and storage yard in the area outlined by Tacoma Water in the bid documents shall be coordinated with the OWNER (power connection, etc.), if desired by the contractor to be used for this project.
 - 2. Having OSHA required notices and establishing safety programs.
 - 3. At a minimum, having the CONTRACTOR'S project superintendent and/or project manager at the site full time.
 - 4. Submitting initial submittals.
 - 5. Providing on-Site sanitary facilities and potable water facilities.
 - 6. Installing temporary construction power, wiring, and lighting facilities.
 - 7. Constructing and implementing security features and requirements, as required by the Contract Documents.
 - 8. Establishing a fire protection system (e.g. fire extinguishers or water source).
 - 9. Providing on-Site communication (radios, cellular boosters, WiFi, etc.).
 - 10. Obtaining required permits.

1.2 PAYMENT FOR MOBILIZATION

- A. The CONTRACTOR'S attention is directed to the condition that no payment for mobilization, or any part thereof, will be recommended for payment under the Contract until mobilization items listed above have been completed.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 60 10
SUBSTITUTIONS

PART 1 -- GENERAL

1.1 DEFINITIONS

- A. The word "Products," as used in the Contract Documents, is defined to include purchased items for incorporation into the WORK, regardless of whether specifically purchased for the project or taken from CONTRACTOR'S stock of previously purchased products. The word "Materials" is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form Work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying, and erection of the Work.

1.2 QUALITY ASSURANCE

- A. Source Limitations: To the greatest extent possible for each unit of Work, the CONTRACTOR shall provide products, materials, and equipment of a singular generic kind from a single source.
- B. Compatibility of Options: Where more than one choice is available as options for CONTRACTOR'S selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material and equipment selections.

1.3 PROPOSED SUBSTITUTIONS OR "OR-EQUAL" ITEM

- A. Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular manufacturer, the naming of the item is intended to establish the type, function, and quality required. If the name is followed by the words "or equal" indicating that a substitution is permitted, materials or equipment of other manufacturers may be accepted if sufficient information is submitted by the CONTRACTOR to allow the OWNER to determine that the material or equipment proposed is equivalent or equal to that named, subject to the following requirements:
 - 1. The burden of proof as to the type, function, and quality of any such substitution product, material or equipment shall be upon the CONTRACTOR.
 - 2. The OWNER will be the sole judge as to the type, function, and quality of any such substitution and the OWNER's decision shall be final.
 - 3. The OWNER may require the CONTRACTOR to furnish additional data about the proposed substitution.
 - 4. The OWNER may require the CONTRACTOR to furnish a special performance guarantee or other surety with respect to any substitution.

5. Acceptance by the OWNER of a substitution item proposed by the CONTRACTOR shall not relieve the CONTRACTOR of the responsibility for full compliance with the Contract Documents and for adequacy of the substitution.
 6. The CONTRACTOR shall pay all costs of implementing accepted substitutions, including redesign and changes to Work necessary to accommodate the substitution.
- B. The procedure for review by the OWNER will include the following:
1. If the CONTRACTOR wishes to provide a substitution item, the CONTRACTOR shall make written application to the OWNER on the "Substitution Request Form."
 2. Unless otherwise provided by law or authorized in writing by the OWNER, the "Substitution Request Form(s)" shall be submitted within the 35-day period after award.
 3. Wherever a proposed substitution item has not been submitted within said 35-day period, or wherever the submission of a proposed substitution material or equipment has been judged to be unacceptable by the OWNER, the CONTRACTOR shall provide the material or equipment indicated in the Contract Documents.
 4. The CONTRACTOR shall certify by signing the form that the list of paragraphs on the form are correct for the proposed substitution.
 5. The OWNER will evaluate each proposed substitution within a reasonable period of time.
 6. As applicable, no shop drawing submittals shall be made for a substitution item nor shall any substitution item be ordered, installed, or utilized without the OWNER's prior written acceptance of the CONTRACTOR's "Substitution Request Form."
- C. The CONTRACTOR'S application shall address the following factors which will be considered by the OWNER in evaluating the proposed substitution:
1. Whether the evaluation and acceptance of the proposed substitution will prejudice the CONTRACTOR'S achievement of Substantial Completion on time.
 2. Whether acceptance of the substitution for use in the Work will require a change in any of the Contract Documents to adapt the design to the proposed substitution.
 3. Whether incorporation or use of the substitution in connection with the Work is subject to payment of any license fee or royalty.
 4. Whether all variations of the proposed substitution from the items originally specified are identified.
 5. Whether an itemized estimate is included of all costs that will result directly or indirectly from acceptance of such substitution, including cost of redesign and claims of other contractors affected by the resulting change.
 6. Whether the proposed substitute item meets or exceeds the experience and/or equivalency requirements listed in the appropriate technical specifications.

- D. Without any increase in cost to the OWNER, the CONTRACTOR shall be responsible for and pay all costs in connection with proposed substitutions and of inspections and testing of equipment or materials submitted for review prior to the CONTRACTOR's purchase thereof for incorporation in the Work, whether or not the OWNER accepts the proposed substitution or proposed equipment or material. The CONTRACTOR shall reimburse the OWNER for their costs and charges for evaluating each proposed substitution.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT
AND CONTROL

PART 1 – GENERAL

1.1 GENERAL

- A. The activities in this section shall include all work that will require handling, storage, sampling, disturbance, removal, transportation, designation, and/or disposal of hazardous materials and hazardous wastes which may include construction materials, soil and hazardous substances.
- B. This section is to establish minimum practices to be used for the generation (including soil excavation), handling, storage, and disposal of potentially hazardous materials that may be encountered, and/or generated by the contractor.
 - 1. All non-hazardous solid wastes generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-350.
 - 2. All hazardous materials and wastes generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-303.
- C. The contractor shall assume the following:
 - 1. Additional sampling and analysis of materials and/or waste by the CONTRACTOR may be necessary for the determination of proper handling and disposal requirements in accordance with the standards in WAC 173-303.
 - 2. The cost of removal, handling, storage, sampling, analysis, transportation, and disposal of contaminated and/or hazardous materials and hazardous wastes as part of the execution of this contract shall be incidental to the specific proposal item.

1.2 MANAGEMENT AND ANALYSIS OF WASTES

A. HAZARDOUS MATERIALS/WASTES

- 1. The CONTRACTOR shall be responsible for appropriately handling, transporting and disposing of all hazardous wastes generated and/or encountered under this contract.
- 2. The CONTRACTOR shall be responsible for the sampling and analysis of all waste materials (waste streams) generated.
- 3. Hazardous wastes must be sampled, analyzed, and profiled in accordance with Washington Department of Ecology waste designation requirements as codified in WAC 173-303.
- 4. Testing shall be performed by a Washington State Department of Ecology accredited laboratory using EPA approved Methodologies for all testing required for waste determination.

5. The CONTRACTOR shall acquire approval for all proposed waste characterizations from the OWNER prior to any waste transportation and/or disposal efforts are performed. The CONTRACTOR may deviate from this approach only after providing a written work plan describing in detail the evaluation process and methods, If an alternative is proposed, the OWNER must review and approve the plan prior to any work starting.
6. The CONTRACTOR shall obtain approval for all proposed hazardous waste disposal locations with the OWNER prior to any waste transportation and/or disposal efforts are performed. The CONTRACTOR may deviate from this approach only after providing a written work plan describing in detail the handling, storage, and disposal location(s) and process(es) that will be used. If an alternative handling, storage, or disposal method is proposed, the OWNER must review and approve the plan prior to any work starting.
7. Testing and waste characterizations may not be required if the waste materials are managed under a Department of Ecology approved recycling exemption (e.g. recycling of scrap steel without removal of coating, recycling of used concrete).

1.3 CODES, LAWS AND REGULATIONS

- A. The following laws, codes, and regulations shall be followed for the removal of soils, hazardous materials, and stormwater management:
 - a. Washington State Department of Labor and Industries Chapters 296-155 WAC, 296-24 WAC, 296-62 WAC
 - b. Washington State Department of Ecology Chapters 173-303 WAC, 173-304 WAC, 173-350 WAC
 - c. Code of Federal Regulations Chapters 29 and 40.

PART 2 -- PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 HAZARDOUS MATERIALS/WASTES

- A. The CONTRACTOR shall perform a baseline study for each work area where hazardous materials will be disturbed.
 - a. The CONTRACTOR shall include all aspects of the environment local to the job site.
 - b. The CONTRACTOR shall submit a plan showing test locations and results to OWNER prior to commencement of work involving the disturbance of hazardous materials at the job site.
 - c. Upon completion of work, including demobilization, the CONTRACTOR shall perform a post-baseline study and shall submit the study to OWNER.
 - d. OWNER will not make final payment for work until OWNER has received and reviewed the post-baseline study.

1. All hazardous waste removal work shall be performed by workers that have completed all required training activities and are knowledgeable in the removal of hazardous waste materials.
2. The CONTRACTOR shall follow all requirements of the above codes and regulations to protect all people who may enter the work area during hazardous waste removal.
3. All requirements of the county health department(s) shall be followed at all times.
4. The CONTRACTOR shall furnish and require use of respiratory equipment and special protective clothing for all employees exposed to airborne contaminants or other hazardous materials.
5. The CONTRACTOR shall be responsible for the removal, encapsulation and disposal of all hazardous waste materials disturbed, managed, and/or generated under this contract.

- END OF SECTION -

SECTION 01 74 30
PRESSURE PIPE TESTING

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall conduct hydrostatic pressure testing of all installed pipe (temporary and permanent piping) in accordance with ASTM F2164.

1.2 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 – CONTRACTOR Submittals.
- B. Furnish:
 - 1. A testing plan and schedule, including method for water conveyance, control, and disposal shall be submitted in writing for approval.

PART 2 -- PRODUCTS

2.1 MATERIAL REQUIREMENTS

- A. All test equipment, temporary valves, bulkheads, and other water control equipment shall be as determined by the CONTRACTOR. No materials shall be used which would be injurious to the WORK for future conveyance of potable water, must be resistant to the chemicals being conveyed by the piping and must be NSF 61 certified.

PART 3 -- EXECUTION

3.2 GENERAL

- A. Water for hydrostatic testing chemical feed lines will be furnished by the OWNER; however, the CONTRACTOR shall convey the water from the OWNER-designated source to the points of use.
- B. Disposal of flushing water shall be by methods acceptable to the OWNER and as described in the CONTRACTOR'S work plan.
- C. Testing activities shall be performed in the presence of the OWNER. CONTRACTOR shall provide a minimum two working day's notice prior to testing.

3.3 HYDROSTATIC TESTING OF CHEMICAL FEED LINES

- A. Prior to hydrostatic testing, chemical feed lines shall be flushed or blown out clean from all debris. The CONTRACTOR shall test chemical feed lines in sections. Sections to be tested shall be defined by the CONTRACTOR and submitted to the OWNER for approval. Where such valves are not present, the CONTRACTOR shall install temporary bulkheads or plugs for the purpose of testing. Sections that have a zero leakage allowance may be tested as a unit. The CONTRACTOR shall provide sufficient temporary tappings in branches off the chemical feed lines to allow for trapped air to exit. After completion of the tests, such taps and branches shall be removed.
- B. The chemical feed lines shall be filled at a rate which will not cause any surges or exceed

the rate at which the air can be released through the release valves at a reasonable velocity.

- C. The air within the chemical feed lines shall be allowed to escape completely.
- D. The hydrostatic test shall consist of holding the indicated test pressure on the chemical feed lines segment in accordance with ASTM F2164. Visible leaks that appear during testing shall be repaired in a manner acceptable to the OWNER. Add water to restore the test pressure if the pressure decreases beyond the maximum allowable limit per ASTM F2164 during the test period.
- E. Pipe with fusion welded joints shall have no leakage. Exposed piping shall show no visible leaks and no pressure loss during the test. In the case of chemical feed lines that fail to pass the leakage test, the CONTRACTOR shall determine the cause of the leakage, shall take corrective measures necessary to repair the leaks, and shall again test the chemical feed lines, repeating as necessary until the chemical feed lines pass.

- END OF SECTION -

SECTION 01 77 00
PROJECT CLOSEOUT

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Coordination and administration of project closeout activities shall be included in the CONTRACTOR'S cost.

1.2 FINAL CLEANUP

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, construction equipment, and temporary structures, materials and facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup of the Site.

1.3 CLOSEOUT TIMETABLE

- A. The CONTRACTOR shall establish dates for equipment testing and acceptance periods. Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER and their authorized representatives sufficient time to schedule attendance at such activities.

1.4 FINAL SUBMITTALS

- A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the OWNER:
 - 1. Written guarantees, where required.
 - 2. Maintenance stock items; spare parts; special tools.
 - 3. Completed record drawings.
 - 4. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
 - 5. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

1.5 MAINTENANCE AND GUARANTEE

- A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in the Contract Documents.
- B. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the Work and the CONTRACTOR and its surety shall be liable to the OWNER for the cost thereof.

1.6 SUBSTANTIAL COMPLETION

- A. When the CONTRACTOR believes that Substantial Completion has been achieved, a request shall be submitted to the OWNER for a certificate of Substantial Completion. Prior to making the request, the CONTRACTOR must have:
1. Completed all work necessary for safe, proper, and complete use or operation of the chemical feed lines as intended.
 2. Prepared a CONTRACTOR generated punch list for submission with the request.
 3. Submitted and received acceptance of accurate record drawings for all work completed to-date.
 4. Submitted and received acceptance of all warranties, bonds and guarantees.
 5. Completed all required testing, pre-commissioning, commissioning, and startup.
 6. Delivered all required spare parts, maintenance stock items, and special tools.
- B. The OWNER will review the request. If this review fails to support Substantial Completion, the CONTRACTOR will be notified in writing with reasons for rejection. If this review finds that Substantial Completion is potentially justified, OWNER will do the following:
1. Review the punch list to assess status of each item.
 2. Schedule and conduct a site visit with the CONTRACTOR to review the Work and readiness for intended use.
 3. Establish a date for Substantial Completion if the site visit verifies that the Work is ready for use by plant personnel and for issuing the Certificate of Substantial Completion. If the site visit does not verify readiness for Substantial Completion, review findings with the CONTRACTOR and repeat punch list and site visit tasks.

1.7 FINAL COMPLETION

- A. Final Completion will be certified with all Work is completed including:
1. All final punch list items are corrected and demonstrated to the OWNER during a site visit.
 2. All updates to record drawings are complete and received by the OWNER.
 3. Demobilization and site clean-up are complete.
 4. All facilities have been properly demonstrated to be functioning as required.
 5. Tacoma Water has received all releases from all parties who are entitled to claims against the property or project pursuant to legal requirements.
 6. All final submittals are made, including written guarantees certificates of inspections from local and state agencies having jurisdiction; release of liens and/or claims forms submitted by all subcontractors and suppliers.

7. Replacement of earth or backfill where settlement has occurred below the required final finished elevations.
8. All repair work is satisfactorily completed.
9. Completion of any post-construction surveying and topographic information.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

- END OF SECTION -

SECTION 05 50 00
MISCELLANEOUS METALWORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Provide miscellaneous metalwork and appurtenances, complete and in place, as indicated in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Federal Specifications

MIL-G-18015 A (3) (Ships) Aluminum Planks. (6063-T6)

MIL-PRF-907F Antiseize Thread Compound, High Temperature

B. Codes

OSHA 1927.10 Fixed Ladders

C. Commercial Standards

AA-M32C22A41 Aluminum Assn.

AASHTO HS-20 Truck Loading

AISC Manual of Steel Construction

AISI Design of Light Gauge, Cold-Formed Steel Structural Members

ASTM A 36 Carbon Structural Steel

ASTM A 48 Gray Iron Castings

ASTM A 53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A 123 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A 153 Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 193 Alloy Steel and Stainless Steel Bolting Materials for High Temperature Service

ASTM A 194 Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service

ASTM A 307 Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength

ASTM A 325 Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

ASTM A 500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

ASTM A 992 Steel for Structural Shapes for Use in Building Framing

ANSI/AWS D1.1 Structural Welding Code - Steel

ANSI/AWS D1.2 Structural Welding Code - Aluminum

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with the requirements of Section 01 33 00 – CONTRACTOR Submittals.
- B. Shop Drawings
 - 1. Shop Drawings shall conform to AISC recommendations and specifications, and shall show holes, and the like, as may be required for other parts of the WORK.
 - 2. Shop Drawings shall include complete details of members and connections, anchor bolt layouts, schedules for fabrication procedures, and diagrams for the sequence of erection.
 - 3. Anchors
 - a. Submit an IAMPO/ICC ES report listing the ultimate load capacity in tension and shear for each size and type of concrete anchor.
 - b. Submit manufacturer's recommended installation instructions and procedures for adhesive anchors.
 - c. Upon review by OWNER, these instructions shall be followed specifically.
 - d. No substitution for the indicated adhesive anchors will be considered unless accompanied with IAMPO/ICC ES report verifying strength and material equivalency, including temperature at which load capacity is reduced to 90 percent of that determined at 75 degrees F.

1.4 QUALITY ASSURANCE

- A. Weld procedures and welder qualifications shall be available in the CONTRACTOR's field office for review.
- B. Welding shall be inspected by a CONTRACTOR-furnished inspector qualified in accordance with AWS requirements and approved by the OWNER.

PART 2 -- PRODUCTS

2.1 BOLTS AND ANCHORS

- A. Standard Service (Non-Corrosive Application)
 - 1. Unless otherwise indicated, bolts, anchor bolts, washers, and nuts shall be fabricated from steel as indicated.
 - 2. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing.
 - 3. Except as otherwise indicated, steel for bolt material, anchor bolts, and cap screws shall be in accordance with the following requirements:

- a. Structural Connections: ASTM A 307, Grade A or B, hot-dip galvanized
 - b. Anchor Bolts: ASTM A 307, Grade A or B, or ASTM A 36, hot-dip galvanized
 - c. High-Strength Bolts, where indicated: ASTM A 325
 - d. Pipe and Equipment Flange Bolts: ASTM A 193, Grade B-7
- B. Corrosive Service
1. Bolts, nuts, and washers in the locations listed below shall be fabricated from stainless steel as indicated.
 - a. buried locations
 - b. submerged locations
 - c. locations subject to seasonal or occasional flooding
 - d. inside hydraulic structures below the top of the structure
 - e. inside buried vaults, manholes, and structures that do not drain through a gravity sewer or to a sump with a pump
 - f. chemical handling areas
 - g. inside trenches, containment walls, and curbed areas
 - h. locations indicated or designated by the ENGINEER to be provided with stainless steel bolts
- C. Unless otherwise indicated, stainless steel bolts, anchor bolts, nuts, and washers shall be fabricated from Type 316 stainless steel, Class 2, conforming to ASTM A 193 for bolts and to ASTM A 194 for nuts.
- D. Buried pipe flange bolts and nuts on pipe of Class 275 and greater shall be in accordance with ASTM A193/A194, Grade B7.
- E. Coating
1. Threads on stainless steel bolts shall be protected with an antiseize lubricant suitable for submerged stainless steel bolts, meeting government specification MIL-A-907E.
 2. Buried bolts in poorly drained soil shall be coated the same as the buried pipe.
 3. Antiseize lubricant shall be classified as acceptable for potable water use by the NSF 61.
 4. Antiseize lubricant shall be "PURE WHITE" by Anti-Seize Technology, Franklin Park, IL, 60131, AS-470 by Dixon Ticonderoga Company, Lakehurst, NJ, 08733, or equal.
- F. Bolt Requirements
1. The bolt and nut material shall be free-cutting steel.

2. The nuts shall be capable of developing the full strength of the bolts.
3. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads.
4. Bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.
5. Bolts and nuts shall be installed with washers fabricated from material matching the base material of bolts, except that hardened washers for high-strength bolts shall conform to the requirements of the AISC Specification.
6. Lock washers fabricated from material matching the bolts shall be installed where indicated.
7. The length of each bolt shall be such that the bolt extends at least 1/8 inch beyond the outside face of the nut before tightening, except for anchor bolts which shall be flush with the face of the nut before tightening.

G. Adhesive Anchors

1. General

- a. Unless otherwise indicated, drilled concrete or masonry anchors shall be adhesive anchors.
- b. No substitutions will be considered unless accompanied with an IAMPO/ICC ES report verifying strength and material equivalency.

2. Epoxy Anchors

- a. Epoxy adhesive anchors are required for drilled anchors for outdoor installations, in submerged, wet, splash, overhead, and corrosive conditions, and for anchoring handrails and reinforcing bars.
 - b. Threaded rod shall be galvanized for general purpose applications and fabricated from Type 316 stainless steel for use in corrosive applications.
 - c. Epoxy anchors shall not be permitted in areas where the concrete temperature is in excess of 100 degrees F or higher than the limiting temperature recommended by the manufacturer, whichever is lower.
 - d. Epoxy anchors shall not be used where anchors are subject to vibration or fire.
 - e. Embedment depth shall be as the manufacturer recommends for the load to be supported.
3. Unless otherwise indicated, glass capsule, polyester resin adhesive anchors will be permitted in locations not included above, and shall be Hilti HVA, Cobra Anchors, or equal.
 4. Threaded rod shall be fabricated from galvanized steel.

H. Expanding-Type Anchors

3. Expanding-type anchors, if indicated or permitted, shall be fabricated from galvanized steel, shall be of the expansion type, and shall be **Simpson Strong-Bolt** anchors, **Hilti Kwik-Bolt TZ**, or equal.
4. Lead caulking anchors will not be permitted.
5. Size shall be as indicated.
6. Embedment depth shall be as the manufacturer recommends for the load to be supported.
7. Expansion-type anchors that are to be embedded in grout may be fabricated from steel.
8. Non-embedded buried or submerged anchors shall be fabricated from stainless steel.

I. Non-Shrink Grouted Anchors

3. Anchors, if indicated or permitted, shall be grouted with a non-shrink cementitious grout in accordance with the manufacturer's recommendations.
4. Embedment depth shall be as the manufacturer recommends for the load to be supported.
5. Non-shrink grout material shall be Class B or C
6. Exposed parts of the bolt and nut shall be covered with PVC or vinyl caps as manufactured by **MOCAP**.

2.2 POWDER-DRIVEN PINS

- A. Powder-driven pins for installation in concrete or steel shall be fabricated from heat-treated steel alloy.
- B. If the pins are not inherently sufficiently corrosion-resistant for the conditions to which they will be exposed, they shall be protected in an acceptable manner.
- C. Pins shall have capped or threaded heads capable of transmitting the loads the shanks are required to support.
- D. Pins that are connected to steel shall be provided with longitudinal serrations around the circumference of the shank.

2.3 IMPACT ANCHOR

- A. Impact anchors shall be an expansion-type anchor in which a nail-type pin is driven to produce the expansive force.
- B. The pin shall be provided with a zinc sleeve with a mushroom-style head and stainless steel nail pin.
- C. Anchors shall be **Metal Hit Anchors**, manufactured by **Hilti, Inc.**, **Rawl Zamac Nailin**, manufactured by the **Rawlplug Company**, or equal.

PART 3 -- EXECUTION

3.1 FABRICATION AND INSTALLATION REQUIREMENTS

A. Powder-Driven Pins

- 1. Powder-driven pins shall be installed by a craftsperson certified by the manufacturer as being qualified to install the manufacturer's pins.
- 2. Pins shall be driven in one initial movement by an instantaneous force that has been carefully selected to attain the required penetration.
- 3. Driven pins shall conform to the following requirements where "D" is equal to the pin shank diameter:

Material Penetrated by Pin	Material Minimum Thickness	Pin Shank Penetration in Supporting Material	Minimum Space From Pin's CL to Edge of Penetrated Material	Minimum Pin Spacing
Concrete	16D	6D minimum	14D	20D
Steel	1/4-inch	Steel thickness	4D	7D

3.2 DRILLED ANCHORS

- A. Drilled anchors and reinforcing bars shall be installed in strict accordance with IAMPO/ICC ES report and the manufacturer's instructions.
- B. Holes shall be roughened with a brush on a power drill, and then cleaned and dried.
- C. Drilled anchors shall not be installed until the concrete has reached the required 28-day compressive strength.
- D. Adhesive anchors shall not be loaded until the adhesive has reached its indicated strength in accordance with the manufacturer's instructions.

- END OF SECTION -

SECTION 43 10 50
PIPING, GENERAL

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Provide the piping systems indicated, complete and operable, in accordance with the Contract Documents.
- B. The Construction Drawings define the general layout, configuration, routing, pipe size, and pipe type.
- C. The Construction Drawings are not pipe construction or fabrication drawings.
- D. Where pipe supports and spacing are indicated on the Drawings and are referenced to a Standard Detail, the CONTRACTOR shall use that Detail.
- E. Where pipe supports are not indicated on the Drawings, it is the CONTRACTOR'S responsibility to develop the details necessary to design and construct mechanical piping systems to accommodate the specific equipment provided, and to provide spacers, adapters, and connectors for a complete and functional system in accordance with section 43 10 52.

1.2 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 – Contractor Submittals.
- B. Shop Drawings: Shop Drawings shall contain the following information:
 - 1. Drawings: Layout drawings including necessary dimensions, details, pipe joints, fittings, specials, bolts and nuts, gaskets, valves, appurtenances, anchors, guides, and material lists for all temporary and permanent piping connections in the injection vaults, pull boxes and chemical facility. Mechanical couplings will not be accepted. Fabrication drawings shall indicate spacers, adapters, connectors, fittings, and pipe supports to accommodate the equipment and valves in a complete and functional system.
- C. Samples
 - 1. Performing and paying for sampling and testing as necessary for certifications are the CONTRACTOR'S responsibility.
- D. Certifications
 - 1. Necessary certificates, test reports, and affidavits of compliance shall be obtained by the CONTRACTOR.
 - 2. A certification from the pipe fabricator that each pipe will be manufactured subject to the fabricator's or a recognized Quality Control Program. An outline of the program shall be submitted to the OWNER for review prior to the manufacture of any pipe.

1.3 MATERIAL DELIVERY, STORAGE, AND PROTECTION

- A. Piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground for protection against oxidation caused by ground contact. Piping shall be stored in such a way to protect against contamination.
- B. Defective or damaged materials shall be replaced with new materials.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Extent of Work

- 1. Pipes, fittings, and appurtenances shall be provided in accordance with the requirements as indicated.
- 2. Materials in contact with water treatment chemicals shall be made of materials resistant to the chemical conveyed for all piping and appurtenances and listed as compliant with NSF Standard 61.
- 3. All piping shall be stored upon delivery and protected from foreign contaminants (bugs, rodents, dirt, mud, stormwater, etc.).

B. Pipe Supports

- 1. Pipes shall be adequately supported, restrained, and anchored in accordance with Section 43 10 52 – Pipe Supports, and as indicated.

C. Pressure Rating

- 1. Piping systems shall be designed for the maximum expected pressure as defined in Section 43 10 66 – Small Polyethylene Pressure Pipe and Fittings.

D. Inspection

- 1. Pipe shall be subject to inspection at the place of manufacture.
- 2. During the manufacture, the OWNER shall be given access to areas where manufacturing is in progress and shall be permitted to make inspections necessary to confirm compliance with requirements.

E. Tests

- 1. Except where otherwise indicated, materials used in the manufacture of the pipe shall be tested in accordance with Section 01 74 30 – Pressure Pipe Testing and all other applicable specifications and standards.
- 2. Welds shall be tested as indicated.
- 3. The CONTRACTOR shall be responsible for performing material tests.

2.2 PIPE FLANGES

- A. Flanges shall be provided with flat faces and shall be attached with bolt holes straddling the vertical axis of the pipe unless otherwise indicated.

- B. Attachment of the flanges to the pipe shall conform to the applicable requirements of AWWA C207.
- C. Flange faces shall be perpendicular to the axis of the adjoining pipe.
- D. Flanges for miscellaneous small diameter pipes shall be in accordance with the standards indicated for these pipes.
- E. Pressure Ratings
 - 1. 150 psig or less: Flanges shall conform to either AWWA C207 - Steel Pipe Flanges for Waterworks Service--Sizes 4 In. Through 144 In., Class D, or ASME B16.5 - Pipe Flanges and Flanged Fittings, 150 lb class.
 - 2. 150 psig to 275 psig: Flanges shall conform to either AWWA C207 Class E or Class F, or ASME B16.5 150 lb class.
 - 3. 275 psig to 700 psig: Flanges shall conform to ASME B16.5, 300 lb class.
 - 4. Selection Based on Test Pressure
 - a. Do not expose AWWA flanges to test pressures greater than 125 percent of rated capacity.
 - b. For higher test pressures, the next higher rated AWWA flange or an ANSI-rated flange shall be selected.
- F. Blind Flanges
 - 1. Provide blind flanges in accordance with AWWA C207, or as indicated for miscellaneous small pipes.
- G. Flange Bolts
 - 1. Bolts and nuts shall conform to the requirements of Section 05 50 00 – Miscellaneous Metalwork.
 - 2. Use all-thread studs on valve flange connections where space restrictions preclude the use of regular bolts.
- H. Flange Gaskets
 - 1. Gaskets for flanged joints used in general water and wastewater service shall be full-faced type, with material and thickness in accordance with AWWA C207, suitable for temperatures up to 700 degrees F, a pH of 1 to 11, and pressures up to 1000 psig.
 - 2. Blind flanges shall be provided with gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange.
 - 3. Ring gaskets will not be accepted unless otherwise indicated.
 - 4. Flange gaskets shall be: **John Crane, Style 2160; Garlock, Style 3000**; or equal.
 - 5. Gaskets for flanges for PVC and CPVC piping used in general water and wastewater service shall be full-faced, 1/8-inch thick, and made of ethylene propylene rubber

(EPR) having a Type A durometer hardness of 50 to 70 when tested in accordance with ASTM D 2240.

6. When the mating flange has a raised face, provide a flat ring gasket filler between the PVC flange and gasket and the adjacent flange.
 7. Gaskets for flanged joints used in chemicals, air, solvents, hydrocarbons, steam, chlorine and other fluids shall be made of materials compatible with the service, pressure, and temperature.
- I. Piping Connections to Existing Infrastructure
1. Where piping connects to mechanical equipment such as pumps, compressors, and blowers, bring the piping to the equipment connection aligned and perpendicular to the axis of the flange or fitting for which the piping is to be connected.
 2. The piping shall not impose excessive stress to the equipment connection to cause misalignment of the equipment.
 3. The CONTRACTOR shall assign the responsibility to the equipment manufacturer to review the piping connection to the equipment and submit any modifications to the OWNER for review.
 4. The CONTRACTOR shall not connect any piping to existing piping or injectors without approval by the OWNER in order to eliminate interruptions to plant operations.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Install piping, fittings, and appurtenances in accordance with the requirements of applicable sections in the contract documents.
- B. Proprietary manufactured couplings shall be installed in accordance with the coupling manufacturer's recommendation.
- C. Care shall be taken to ensure that piping flanges, sleeve-type couplings, flexible connectors, and expansion joints are properly installed as follows:
 1. Gasket surfaces shall be carefully cleaned and inspected prior to making up the connection.
 2. Each gasket shall be centered properly on the contact surfaces.
 3. Connections shall be installed to prevent inducing stress to the piping system or the equipment to which the piping is connected.
 4. Contact surfaces for flanges, couplings, and piping ends shall be aligned parallel, concentric, and square to each axis at the piping connections.
 5. Flange Bolts
 - a. Flange bolts shall be initially hand-tightened with the piping connections properly aligned.

- b. Bolts shall be tightened with a torque wrench in a staggered sequence to the AISC-recommended torque for the bolt material.
 - 6. Harness, Thrust Restraint, and Tie Rod Bolts
 - a. Harness, thrust restraint, and tie rod bolts used for sleeve couplings, flange coupling adapters, or flexible joints shall be tightened gradually and equally at diametrically opposite sides until snug, in order to prevent misalignment and to insure that all studs carry equal loads.
 - b. In order to prevent induced stress or misalignment, do not over-torque connections to adjoining pump or equipment.
 - 7. Groove ends shall be clean and free from indentations, projections, and roll marks in the area from the pipe end to the groove.
 - 8. After installation, joints shall meet the indicated leakage rate.
 - 9. Flanges shall not be deformed nor cracked.
- D. Cleanup
- 1. After completion of the WORK, cuttings, joining and wrapping materials, and other scattered debris shall be removed from the Site.
 - 2. The entire piping system shall be handed over in a clean and functional condition.
- 3.2 TRACER WIRE INSTALLATION
- A. Install tracer wire between all chemical pull boxes. Tracer wire shall be centered over the pipe and shall run continuously along the pipe in the secondary containment pipe.

- END OF SECTION -

SECTION 43 10 51
PIPING IDENTIFICATION

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide identification for exposed piping and valves, complete and in place, in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Commercial Standards

ANSI A13.1 Scheme for the Identification of Piping Systems

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Contractor Submittals.
- B. Shop Drawings: A list of suggested wording for each valve tag, prior to fabrication.
- C. Samples
 - 1. One sample of each type of identification device.

PART 2 -- PRODUCTS

2.1 IDENTIFICATION OF PIPING

- A. Except as indicated below for very short pipe lengths, identify the pipe contents and direction of flow for both the temporary high lines and the permanent piping.
 - 1. Marker Type
 - a. Snap Around: Vinyl or polyester sheet with UV- resistant ink, preshaped and sized to tightly curl around the pipe and remain in position.
 - b. Adhesive: Vinyl or polyester sheet with UV- resistant ink, shaped similar to pipe curvature and coated with pressure sensitive adhesive.
 - 2. Marker Area: Sized per pipe size according to ANSI A13.1; color from the table below.
 - 3. Lettering: Sized per pipe size according to ANSI A13.1; color from the table below.
 - 4. Arrows: at least 2 arrows at each marker area, showing direction of flow.
- B. Description on labels shall identify what chemical is conveyed in each pipe, where each chemical feed line came from and where it is being routed to (e.g. CS-CPB 14 to CPB 17, CS-CPB 1 to CIV 1)
- C. Pipe identification shall be as manufactured by Brady, Seton, or equal.

2.2 EXISTING IDENTIFICATION SYSTEMS

- A. In installations where existing piping identification systems have been established, the CONTRACTOR shall follow the existing system. Where existing identification systems are incomplete, utilize the existing system as far as practical and supplement with the indicated system.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Markers and identification tags shall be installed in accordance with the manufacturer's printed instructions and shall be neat and uniform in appearance. Tags and markers shall be readily visible from all normal working locations including when the vaults for the pull boxes are opened.

3.2 MARKER LOCATIONS

- A. Each pipe shall be marked at:
1. At least once in every room.
 2. Within 2-feet of turns, elbows, and valves.
 3. On the upstream and downstream side of tees, branches, and other distribution points following section 2.1B above.
 4. On both sides of walls and floors through which the piping passes.

3.3 IDENTIFICATION COLORS

- A. Conform to the following color codes.

<u>Pipe Contents</u>		<u>Pipe Color</u>	<u>Marker Color</u>	<u>Letter Color</u>
<u>Abbreviation</u>	<u>Identification</u>			
CS	Caustic Soda	Black	Yellow	Black
HFA	Hydrofluosilicic Acid	Black	Yellow	Black
LA	Liquid Alum	Black	Yellow	Black
PACL	Polyaluminum Chloride	Black	Yellow	Black
PEC	Polymer-cationic	Black	Green	White
PEG	Polymer-generic	Black	Green	White
SHC	Sodium Hypochlorite	Black	Yellow with black bands	Black

- B. Colors shall be confirmed with the OWNER during shop drawing submittal period.

- END OF SECTION -

SECTION 43 10 52

PIPE SUPPORTS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Provide pipe supports, hangers, guides, and anchors, complete and in place, as indicated in accordance with the Contract Documents.
- B. Where pipe support systems are not detailed in the Drawings, the CONTRACTOR shall design and provide the supports in accordance with this Section.

1.2 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with the requirements of Section 01 33 00 – Contractor Submittals.
- B. Shop Drawings
 - 1. Submit Shop Drawings which shall include the following information:
 - a. Drawings of pipe supports, hangers, anchors, and guides
 - b. Calculations for special supports and anchors, stamped and signed by a registered professional engineer.

PART 2 -- PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Code Compliance
 - 1. Piping systems and pipe connections to existing piping connections shall be properly anchored and supported in order to prevent undue deflection, vibration, and dislocation due to seismic events, line pressures, pipe weight, fluid weight, liquid movement, thermal changes, vibration, probable forces applied during construction, and stresses on piping, equipment, and structures.
 - 2. Supports and parts thereof shall conform to the requirements of ASME B31.1 - Power Piping, except as supplemented or modified in this Section.
- B. Structural Members
 - 1. Wherever possible, pipes shall be supported from structural members.
 - 2. Where it is necessary to frame structural members between existing members, such supplementary members shall be provided by the CONTRACTOR.
 - 3. Supplementary members shall be in accordance with the requirements of the Building Code and the American Institute of Steel Construction, and shall be as acceptable to the OWNER.

C. Pipe Hangers

1. Pipe hangers shall be capable of supporting the pipe in operation, allowing free expansion and contraction of the piping and preventing excessive stress on equipment.
2. Hangers shall have a means of vertical adjustment after erection.
3. Hangers shall be designed to prevent becoming disengaged by any movement of the supported pipe.
4. Hangers subject to shock, seismic disturbances, or thrust imposed by the actuation of safety valves shall include hydraulic shock suppressors.
5. Hanger rods shall be subjected to vertical loading only.

D. Hangers Subject to Horizontal Movements

1. At hanger locations where lateral or axial movement is anticipated, suitable linkage shall be provided to permit such movement.
2. Where horizontal pipe movement is greater than 1/2 inch, or where the hanger rod deflection from the vertical is greater than 4 degrees from the cold-to-hot position of the pipe, the hanger rod and structural attachment shall be offset in such a manner that the rod is vertical in the hot position.
3. Wherever expansion and contraction of piping is expected, a sufficient number of expansion loops or expansion joints shall be provided, together with the necessary rolling or sliding supports, anchors, guides, pivots, and restraints permitting the piping to expand and contract freely away from the anchored points.
4. Components shall be structurally suitable to withstand the imposed loads.

E. Heat Transmission

1. Supports, hangers, anchors, and guides shall be designed and insulated such that excessive heat will not be transmitted to the structure or to other equipment.

F. Riser Supports

1. Where practical, risers shall be supported on each floor with riser clamps and lugs, independent of the connected horizontal piping.

G. Freestanding Piping

1. Freestanding pipe connections to equipment such as chemical feeders and pumps shall be firmly attached to steel frames fabricated from angles, channels, or I-beams anchored to the structure.
2. Exterior, freestanding overhead piping shall be supported on fabricated pipe stands consisting of pipe columns anchored to concrete footings, or with horizontal, welded steel angles, and U-bolts or clamps securing the pipes.

H. Materials of Construction

3. Pipe support assemblies, including framing, hardware, and anchors, shall be of steel construction, galvanized after fabrication, unless otherwise indicated.
4. Submerged supports, as well as piping, conduits, and equipment in hydraulic structures within 24 inches of the water level, shall be supported with support assemblies, including framing, hardware, and anchors constructed of Type 316 stainless steel, unless otherwise indicated.
5. Piping in chemical and corrosive areas shall be supported with support assemblies, including framing, hardware, and anchors constructed of Type 316 stainless steel or FRP, unless otherwise indicated.

I. Point Loads

1. Meters, valves, heavy equipment, and other point loads on PVC, FRP, or other plastic pipes, shall be supported on both sides, according to manufacturer's recommendations, in order to avoid undue pipe stresses and failures.
2. In order to avoid point loads, the supports on PVC, FRP, or other plastic piping shall be equipped with extra wide pipe saddles or galvanized steel shields.

J. Concrete Anchors

1. Unless otherwise indicated, concrete anchors for pipe supports shall be according to the following table; consult the OWNER for any anchor applications not appearing on the table.
2. Anchor embedment shall be in accordance with the requirements of Section 05 50 00 – Miscellaneous Metalwork.

Pipe Support Application	Type of Concrete Anchor
New Concrete	Use embedded concrete insert anchors on a grid pattern. Use Grinnell (Anvil International), Tolco , or equal.
Existing Concrete	Use non-shrink grouted anchors, metallic type expansion anchors, or epoxy anchors. Exceptions: Metallic type expansion anchors and epoxy anchors are not permitted for pipe supports subject to vibrating loads. Epoxy anchors are not permitted where the concrete temperature is in excess of 100 deg F or higher than the limiting temperature recommended by the manufacturer. Epoxy anchors are not accepted where anchors are subject to vibration or fire.
Vibratory Loads and High-Temperature Conditions	Use non-shrink grouted anchors

2.2 SUPPORT SPACING

- A. Supports for piping with the longitudinal axis in approximately a horizontal position shall be spaced to prevent excessive sag, bending, and shear stresses in the piping, with special consideration given where components such as flanges and valves impose concentrated loads.
- B. Pipe support spacing shall not exceed the maximum indicated spans.
- C. For temperatures other than ambient temperatures or those listed, and for other piping materials or wall thicknesses, the pipe support spacings shall be modified in accordance with the pipe manufacturer's recommendations.
- D. Vertical supports shall be provided to prevent the pipe from being overstressed from the combination of loading effects.
- E. Schedule 80 PVC Pipe
 - 1. Install supports for Schedule 80 PVC pipe as indicated in the following schedule:

Support Spacing for Schedule 80 PVC Pipe ¹					
Nominal Pipe Size, inches	Maximum Support Spacing, feet, at Various Temperatures				
	60 deg F	80 deg F	100 deg F	120 deg F	140 deg F
1	6	5.5	5	3.5	3
1-1/2	6.5	6	5.5	3.5	3.5
2	7	6.5	6	4	3.5
3	8	7.5	7	4.5	4
4	9	8.5	7.5	5	4.5
6	10	9.5	9	6	5
8	11	10.5	9.5	6.5	5.5
10	12	11	10	7	6
12	13	12	10.5	7.5	6.5
14	13.5	13	11	8	7

¹ Reference: USACE based on Harvel Plastics Product Bulletin 112/401 (rev, 10/1/95), p. 63; spacing values based on test data developed by the manufacturer for the specific product and continuous spans; the piping is insulated and full of liquid with a specific gravity of 1.0

F. Schedule 80 CPVC Pipe

- 1. Install supports for Schedule 80 CPVC pipe as indicated in the following schedule:

Support Spacing for Schedule 80 CPVC Pipe ¹						
Nominal Pipe Size, inches	Maximum Support Spacing, feet, at Various Temperatures					
	73 deg F	100 deg F	120 deg F	140 deg F	160 deg F	180 deg F
1	6	6	5.5	5	3.5	3
1-1/2	7	6.5	6	5.5	3.5	3
2	7	7	6.5	6	4	3.5
3	8	8	7.5	7	4.5	4
4	8.5	8.5	8.5	7.5	5	4.5
6	10	9.5	9	8	5.5	5
8	11	10.5	10	9	6	5.5
10	11.5	11	10.5	9.5	6.5	6
12	12.5	12	11.5	10.5	7.5	6.5

¹ Reference: USACE based on Harvel Plastics Product Bulletin 112/401 (rev, 10/1/95), p.6 63; spacing values based on test data developed by the manufacturer for the specific product and continuous spans; the piping is insulated and full of liquid with a specific gravity of 1.0

G. Other Pipe Materials

1. Support spacing for pipe constructed of other materials shall be based on design temperature and in accordance with the pipe manufacturer's recommendations.

2.3 MANUFACTURED SUPPORTS

A. Stock Parts

1. Where not specifically indicated, designs that are generally accepted as exemplifying good engineering practice and using stock or production parts shall be utilized wherever possible.
2. Such parts shall be locally available, new, of best commercial quality, and designed and rated for the intended purpose.

B. Manufacturers, or Equal

1. **Basic Engineers Inc.**
2. **Bergen-Paterson Pipe support Corp.**
3. **Grinnell Corp. (Anvil International)**
4. **NPS Products, Inc.**
5. **Power Piping Company**
6. **Tolco Incorporated**

PART 3 -- EXECUTION

3.1 INSTALLATION

A. General

1. Pipe supports, hangers, brackets, anchors, guides, and inserts shall be fabricated and installed in accordance with the manufacturer's printed instructions and ASME B31.1 - Power Piping.
2. Concrete inserts for pipe hangers and supports shall be coordinated with the formwork.

B. Appearance

1. Pipe supports and hangers shall be positioned in order to produce an orderly, neat piping system.
2. Hanger rods shall be vertical, without offsets.
3. Hangers shall be adjusted to line up groups of pipes at the proper grade for drainage and venting, as close to ceilings or roofs as possible, and without interference with other WORK.

3.2 FABRICATION

A. Quality Control

1. Pipe hangers and supports shall be fabricated and installed by experienced welders and fitters, using the best welding procedures available.
2. Fabricated supports shall be neat in appearance without sharp corners, burrs, or edges.

- END OF SECTION -

SECTION 43 10 62
CPVC PRESSURE PIPE (ASTM F 441, MODIFIED)

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide Chlorinated Polyvinyl Chloride (CPVC) pressure pipe, complete and in place, in accordance with the Contract Documents.
- B. The requirements of Section 43 10 50 - Piping, General, apply to the WORK of this Section.

1.2 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Contractor Submittals.
- B. Shop Drawings: Submit product sheets for the piping, solvent cement and fittings for this project that meet all requirements of this specification section.

PART 2 – PRODUCTS

2.1 PIPE MATERIAL

- A. CPVC pipe shall be in accordance with ASTM F 441 - Chlorinated Poly (Vinyl Chloride) (CPVC), Plastic Pipe, Schedules 40, and 80, from all new compounds, meeting the requirements of Class 23447 per ASTM D 1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Compounds. CPVC pipes shall be Schedule 80 pipe unless otherwise indicated. CPVC material shall be listed as compliant with NSF Standard 61.

2.2 PIPE JOINTS

- A. Pipe joints shall be solvent-welded with solvent cement in accordance with ASTM F 493 - Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings, and with primer in accordance with ASTM F 656 - Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings. Screwed joints which are necessary to match up to threaded valves or fittings shall be made up with appropriate thread sealant, either paste or tape. Flanged joints shall be made with solvent-welded CPVC flanges, drilled to ASME B 16.5 - Pipe Flanges and Flanged Fittings, Class 150, unless otherwise indicated.

2.3 FITTINGS

- A. **Solvent-Welded Fittings:** Solvent-welded fittings shall be Schedule 80 CPVC fittings in accordance with ASTM F 439 - Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80.
- B. **Threaded Fittings:** Threaded fittings shall be Schedule 80 CPVC fittings in accordance with ASTM F 437 - Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80.
- C. **Flanged Fittings:** Flanged fittings shall be fabricated Schedule 80 CPVC fittings with

150 lb. flanges to ASME B 16.5. Gaskets shall be ANSI 150 lb. full face, 1/8-inch thick Neoprene for water service. Gasket material for chemicals shall be suitable for the chemical service.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. **General:** CPVC pipes shall be installed in a neat and workmanlike manner, properly aligned, and cut from measurements taken at the Site to avoid interferences with structural members, architectural features, openings, and equipment. Exposed pipes shall afford maximum headroom and access to equipment, and where necessary piping shall be installed with sufficient slopes for venting or drainage of liquids and condensate to low points. The entire installation shall be free of defects. It is recommended that the CONTRACTOR obtain the assistance of the pipe manufacturer's field representative to instruct the pipe fitters in the correct installation and support of CPVC piping.
- B. **Supports and Anchors:** Piping shall be firmly supported with fabricated or commercial hangers or supports in accordance with Section 43 10 52 - Pipe Supports. Where necessary to avoid stress on equipment or structural members, the pipes shall be anchored or harnessed. Expansion joints and guides shall compensate for pipe expansion due to temperature differences.
- C. **Valves and Unions:** Unless otherwise indicated, connections to fixtures, groups of fixtures, and equipment shall be provided with a shutoff valve and union, unless the valve has flanged ends. Unions shall be provided at threaded valves, equipment, and other devices requiring occasional removal or disconnection. Valves and flanges attached to CPVC pipe shall be provided with adequate supports.

3.2 PIPE PREPARATION

- A. Prior to installation, each pipe length shall be carefully inspected, flushed clean of any debris or dust, and straightened, if not true. Ends of threaded pipes shall be reamed and filed smooth. Pipe fittings shall be equally cleaned before assembly.

3.3 PIPE JOINTS

- A. **Threaded Joints:** Pipe threads shall conform to ASTM F 1498 - Taper Pipe Threads 60° for Thermoplastic Pipe and Fittings, and shall be full and cleanly cut with sharp dies or molded. Joints shall be made with Teflon tape or thread sealant.
- B. **Solvent-Welded Joints:** Solvent-welded joints shall be made with fresh primer and solvent cement on clean, dry pipe ends. The primer and cement cans shall be kept closed, and the joints shall be made up at the recommended ambient temperatures, to the pipe or cement manufacturer's written recommendations. Pipe ends shall be inserted to the full depth of the socket.
- C. **Flanged Fittings:** Flanged joints shall be made with gaskets and Type 316 stainless steel bolts and nuts. Care shall be taken not to over-torque the bolts, in accordance with the manufacturer's written recommendations.

3.4 INSPECTION AND FIELD TESTING

- A. **Inspection:** Finished installations shall be carefully inspected for proper joints and sufficient supports, anchoring, interferences, and damage to pipe, fittings, and coating.

Defects shall be repaired.

- B. **Field Testing:** The CONTRACTOR shall allow adequate time for the solvent cement joints to cure. Curing time shall be per the solvent cement manufacturer's recommendation. Prior to enclosure or burying, piping systems shall be pressure tested as required in the Piping Schedule for a period of not less than one hour, without exceeding the tolerances listed in the Piping Schedule. Caution - Do not use air or gas for testing CPVC pipe. Where no pressures are indicated, the pipes shall be subject to 1-1/2 times the maximum working pressure. The CONTRACTOR shall furnish test equipment, labor, materials, and devices as part of the WORK.
- C. Leakage shall be determined by loss of pressure. Fixtures, devices, or other accessories which are to be connected to the lines and which would be damaged if subjected to the test pressure shall be disconnected and ends of the branch lines plugged or capped as required during the testing procedures.
- D. Leaks shall be repaired, and the piping shall be re-tested until no leaks are found.

- END OF SECTION -

SECTION 43 10 64
REINFORCED PVC TUBING

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide polyvinyl chloride (PVC) tubing, complete and in place, in accordance with the Contract Documents.
- B. The requirements of Section 43 10 50 - Piping, General, apply to the WORK of this Section.
- C. This Section includes flexible PVC tubing for chemical lines.

1.2 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Contractor Submittals.
- B. Shop Drawings: Submit product sheets for the tubing, couplings and clamps for this project that meet all requirements of this specification section.

PART 2 – PRODUCTS

2.1 TUBING MATERIAL

- A. PVC tubing shall be a clear, flexible tubing, constructed of NSF 61 certified PVC with polyester textile yarn reinforcement.
- B. Tubing ID shall be of the dimensions indicated on the drawings and tubing shall be suitable for a minimum working pressure of 75 psi at 70°F.

2.2 CONNECTIONS

- A. Where connections are indicated on the drawings, all fittings, connections, and solvents shall be compatible with all chemicals being conveyed in containment pipes.
- B. Barbed couplings and stainless steel clamps shall be used for tubing connections.

2.3 MANUFACTURERS, OR EQUAL

- A. Finger Lakes Extrusion
- B. Kentak
- C. New Age Industries

PART 3 – EXECUTION

3.1 INSTALLATION

- A. General: PVC tubing shall be installed in a neat and workmanlike manner.
- END OF SECTION -

SECTION 43 10 66
SMALL POLYETHYLENE PRESSURE PIPE AND FITTINGS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide solid wall high density polyethylene pipe (HDPE) and fittings which conform to AWWA, ASTM and other referenced documents listed in this specification with flanged and thermal butt fusion joints complete in place.

1.2 QUALIFICATIONS

- A. Manufacturer shall have a minimum of 5 years recent experience producing HDPE pressure pipe and fittings for at least the specified sizes and lengths, and shall be able to submit documentation of at least 5 installations in satisfactory operation for at least 5 years.
- B. CONTRACTOR shall have a minimum of 2 projects of similar size and scope fusion welding and installing HDPE pressure pipe and fittings for at least the specified pipe, fittings, sizes and lengths and shall submit documentation of at least two installations in the past 5 years in satisfactory operation for at least 1 year.
- C. CONTRACTOR shall ensure that all representatives that will be performing fusion welds be certified (or obtain certification prior to construction) as an operator of fusion welding by McElroy University, or equal. Cost of the certification program shall be included in the cost of the WORK. Documentation shall be submitted to the OWNER prior to starting the Work.
- D. All pipe and fittings of each material type shall be furnished by the same manufacturer.
- E. The HDPE pipe and fittings manufacturer shall review and approve or prepare all Shop Drawings and other submittals for all components furnished under this Section.
- F. Pipe and fittings that will convey chemicals to be used to treat water that will become potable, shall be certified by an accredited organization in accordance with NSF 61 as being suitable for contact with potable water, and shall be compatible for continuous exposure to the chemicals being conveyed and shall comply with requirements of authorities having jurisdiction at site.

1.3 REFERENCED STANDARDS

- A. American Water Works Association (AWWA) latest edition:
 - 1. AWWA C901 - Polyethylene Pressure Pipe and Tubing, ½ Inch Through 3 Inch for Water Service
- B. American Society for Testing and Materials (ASTM) latest edition:
 - 1. ASTM D638 – Tensile Method for Tensile Properties of Plastics
 - 2. ASTM D790 – Test Materials for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - 3. ASTM D2122 – Standard Method of Determining Dimensions of Thermoplastics Pipe and Fittings

4. ASTM D2239 – Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
 5. ASTM D2683 – Standard Specification for Socket Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
 6. ASTM D2837 – Standard Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
 7. ASTM D3035 – Polyethylene (PE) Plastic Pipe (DR-PE) Based on Controlled Outside Diameter
 8. ASTM D3261 – Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
 9. ASTM D3350 – Polyethylene Plastic Pipe and Fittings Material
 10. ASTM F412 – Standard Terminology Relating to Plastic Piping Systems
 11. ASTM F714 – Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
 12. ASTM F1055 – Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
 13. ASTM F1056 – Standard Specification for Socket Fusion Tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings
 14. ASTM F1290 – Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
 15. ASTM F2164 – Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
 16. ASTM F2206 – Fabricated Fittings for Butt-Fused Polyethylene Plastic Pipe
 17. ASTM F2620 – Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
 18. ASTM F2786 – Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Gaseous Testing Media Under Pressure (Pneumatic Leak Testing)
 19. ASTM F3124 – Standard Practice for Data Recording the Procedure used to Produce Heat Butt Fusion Joints
 20. ASTM F3190 – Standard Practice for Heat Fusion Equipment (HFE) Operator Qualifications on Polyethylene (PE) and Polyamide (PA) Pipe and Fittings
- C. Plastics Pipe Institute (PPI) latest edition:
1. The Plastics Pipe Institute Handbook of Polyethylene Pipe
 2. PPI – TN-36 – General Guidelines for Connecting HDPE Potable Water Pressure Pipes to DI and PVC Piping Systems
 3. PPI – TN-38 – Bolt Torque for Polyethylene Flanged Joints
 4. PPI – TN-44 – Long Term Resistance of AWWA C906 Polyethylene (PE) Pipe to Potable Water Disinfectants
 5. PPI – TN-46 – Guidance for Field Hydrostatic Testing of High Density Polyethylene Pressure Pipelines: Owner’s Considerations, Planning, Procedures, and Checklists
 6. PPI – TN-49 – Recommendations for AWWA C901 Service Tubes in Potable Water Applications
 7. PPI – TN-54 – General Guidelines for Squeezing Off Polyethylene Pipe in Water, Oil and Gas Applications
- D. Plastics Pipe Institute Municipal Advisory Board (MAB)
1. MAB Generic Electrofusion Procedure for Field Joining of 12 Inch and Smaller Polyethylene Pipe
 2. MAB Model Specifications for PE 4710 Buried Potable Water Service, Distribution and Transmission Pipes and Fittings

1.4 SYSTEM DESIGN PARAMETERS

- A. The HDPE system working pressure rating accommodates the normal operating pressure and the repetitive surges. The pressure rating applies at 80° F or less. Piping installed that may experience operating temperatures up to 95° F shall be de-rated in accordance with manufacturer's recommendation.
- B. Per AWWA 901 the repetitive surge pressure allowance is one half the pressure class of the pipe, and the occasional surge over pressure allowance is equal to the pressure class of the pipe. Allowable Total Pressure during Recurring Surge conditions equals 1.5 times the pipe's pressure class. Allowable Total Pressure during Occasional Surge conditions equals 2.0 times the pipe's pressure class.
- C. All temporary and permanent piping for the Sodium Hypochlorite (SHC) system shall be **1" SDR11 Chem Proline® Advanced Polyethylene (PE) by Asahi America**.
- D. All other temporary and permanent piping for all other chemical systems shall be **PE4710 SDR 11** or lower.

1.5 SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 – Contractor Submittals
- B. CONTRACTOR shall submit information detailing the manufacturer's experience and CONTRACTOR's certification to satisfy the requirements of this specification.
- C. Submit pipe catalog information confirming that pipe, fittings, joints, and other materials conform to the requirements of the specifications.
- D. Affirmation that product shipped meets or exceeds the standards set forth in this specification. This shall be in the form of a written document from the manufacturer attesting to the manufacturing process meeting the standards.
- E. Submit manufacturers recommended fusion procedures for the products.
- F. Submit manufacturers recommended means for accounting for thermal expansion and contraction as required.
- G. Submit chemical resistance certification from the pipe manufacturer for continuous exposure to each chemical application.
- H. A digital report or printout for all fusion joints that complies with, but is not limited to, ASTM F3124 must be delivered to the OWNER upon request and at the completion of the project. Additional requirements are identified in Part 2.

PART 2 -- PRODUCTS

2.1 POLYETHYLENE PIPE, FITTINGS AND ACCESSORIES

- A. Polyethylene pipe 0.5 to 3 inch diameter shall be PE4710 conforming to the latest edition of ANSI/AWWA C901 and ANSI/NSF Standard 61. For potable water applications, PE4710 compound shall conform to ASTM D3350 minimum cell classification PE445574C-CC3. A minimum reel length of 400 ft is desired to eliminate fusion welds between pull boxes.
- B. HDPE pipes should be extruded by a PPI member with listings in PPI TR-4 and shall meet

the requirements of AWWA C901. Dimensions and tolerances for pipe and fittings shall meet the requirements of AWWA C901.

- C. Per AWWA C901, PE4710 pipe shall have a pressure class of 250 psi. The outside diameter of the pipe shall be based upon the IPS sizing system.
- D. At the beginning of the project, CONTRACTOR shall procure a new fusion welding machine linked to a compatible datalogger for tracking each weld's quality. The CONTRACTOR shall use the fusion welding machine exclusively for the project and shall turn the fusion welding machine and datalogger, undamaged and in working order, over to the OWNER after completion of the project.
 - 1. The data from the datalogger shall be shared with the OWNER's inspector to validate each fusion weld and approve before hydrostatic testing can begin. Complete data files from the datalogger shall be submitted to the OWNER after successful completion of the project.
 - 2. Fusion welding machine and data logger shall be from **McElroy**; or equal
- E. No fusion welds will be allowed between pull boxes. All welds must be inside the pull boxes.
- F. Butt fusion fittings shall be made of HDPE material with a minimum material designation code of PE4710 and all applicable ASTM standards. Molded and fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified on the project documents. All fittings shall meet the requirements of AWWA C901 and all applicable ASTM standards. Markings for molded fittings shall comply with the requirements of ASTM D3261. Fabricated fittings shall be marked in accordance with ASTM F2206. Socket fittings shall meet ASTM D2683. Fabricated fittings shall be manufactured using a McElroy DataLogger to record fusion time, pressure and temperature, and shall be marked with a unique joint identifier that corresponds to the joint report. A graphic representation of the time and pressure data for all fusion joints made producing fittings shall be maintained for a minimum of five years as part of quality control and will be available upon request of OWNER.
- G. Electrofusion fittings may be allowed in special cases, with approval from the OWNER, and shall be made of HDPE material with a minimum material designation code of PE4710 and meet ASTM F1055. Electrofusion fittings shall have a pressure rating equal to the pipe unless otherwise specified on the project documents. All electrofusion fittings shall be suitable for use as pressure conduits and have nominal burst values of four times the working pressure rating of the fitting. Marking of electrofusion fittings shall comply with the requirements of ASTM F1055. All electrofusion fittings shall be properly stored in compliance with the manufacturer's recommendations.
- H. If socket fusion is used to fuse tees and other HDPE fittings onto the wall of the main pipe, it shall be done in accordance with ASTM D2683 or the fitting manufacturer's recommendations. Socket fusion joints shall be made by qualified fusion technicians. Qualification of the fusion technician shall be demonstrated by evidence of fusion training within the past two years on the equipment to be utilized on this project in accordance with ASTM F3190. All equipment used for socket fusion should comply with ASTM F1056 and manufacturer's recommendations.
- I. Flanges and Mechanical Joint Adapters (MJ) shall have a minimum material designation code of PE4710 and meet all applicable AWWA and ASTM standards. Flanged and MJ adapters can be made to ASTM D3261 or machined in compliance with ASTM F2206.

Flanges and MJ adapters shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded or machined flange adapters or MJ adapters shall be per ASTM D3261. Fabricated (including machined) flange adapters shall be marked per ASTM F2206. Installation of all Flanged adapters shall follow the guidelines of the Plastics Pipe Institute TN-38.

- J. Glands, bolts, and gaskets shall be manufactured in accordance with AWWA C153. Bolts and nuts shall be grade 2 or higher.

2.2 PIPING IDENTIFICATION

- A. Provide identification for pipes in accordance with Section 43 10 51 – Piping Identification.
- B. All polyethylene pipe shall be marked in accordance with the standards to which it is manufactured.
- C. All polyethylene pipe shall be black.
- D. A tracer wire shall be installed between each of the pull boxes once all of the chemical feed lines have been installed for ease of future locating.

2.3 DATA LOGGER

- A. A data logger shall be used to record and document all butt fusion welds. The data logger must be compatible and outfitted with an electronic data recording device. A digital report or printout for all fusion joints made that complies with, but is not limited to, ASTM F3124 must be delivered to the OWNER upon request and at the completion of the project. All hydraulic fusion must be recorded and able to produce a graphic representation of the time and pressure data. All manual fusion must be recorded with, but not limited to, Joint ID, Operator Name and ID, Pipe information, and Heater Plate Temperature. The recording unit shall be a **DataLogger 6** as manufactured by McElroy Manufacturing, Inc, or newer model or approved equivalent.

PART 3 -- EXECUTION

3.1 PIPE JOINING

- A. High density polyethylene pipe shall be heat fused and pressure tested as per manufacturer's guidelines before installation. During assembly and prior to installation, pipe must be laid out in such a way as to minimize interference to pedestrian and vehicular traffic and to protect against contamination.
- B. Cuts or gouges that reduce the wall thickness by more than 10% are not acceptable and must be cut out, discarded and the pipe rejoined.
- C. Each butt fusion shall be recorded and logged by a datalogger affixed to the fusion machine. Joint data shall be submitted as part of the as-built documentation.
- D. Mechanical joining – Polyethylene pipe and fittings may be joined together or to other materials by means of flanged bolted connections designed for joining polyethylene pipe to another pipe material (e.g. CPVC and Stainless Steel).

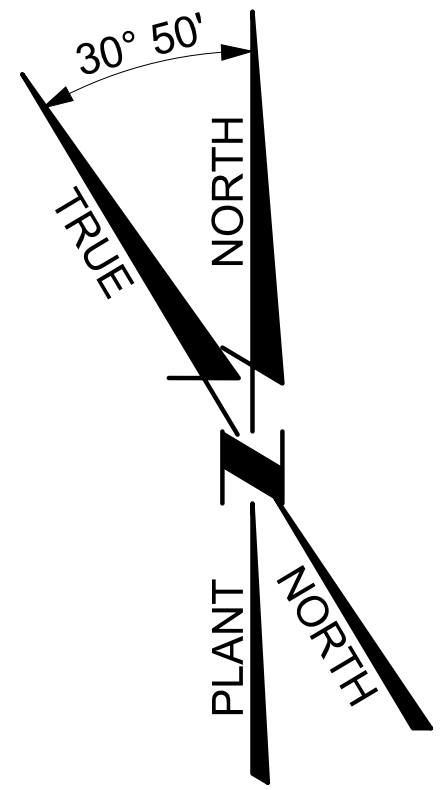
3.2 TESTING

- A. Pressure and Leakage Tests

1. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164, as described in Section 01 74 30.
2. If any defects or leaks are revealed, they should be corrected and the pipeline retested after a minimum 24 hour recuperation period between tests. Total testing conducted on a section of pipeline shall not exceed eight hours within a 24 hour period.

- END OF SECTION -

GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINE REPLACEMENT

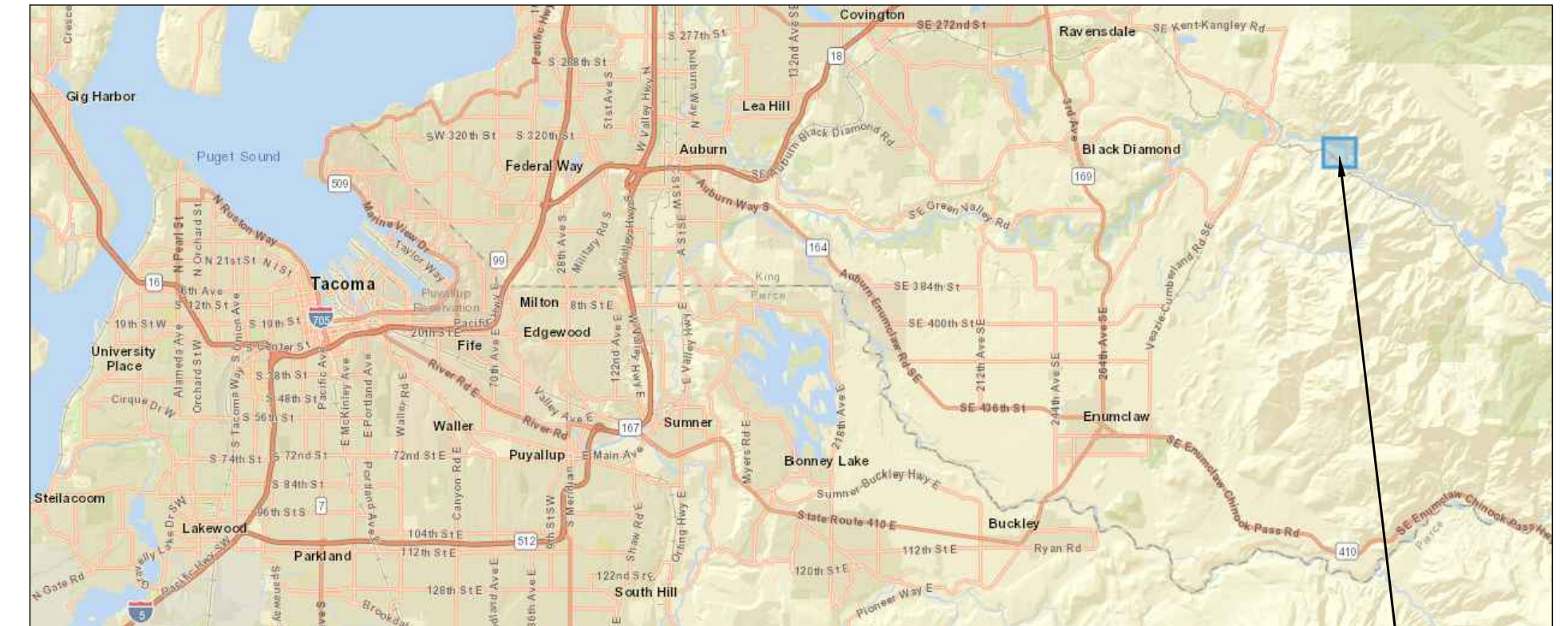


SYMBOLS

- TEMPORARY HIGH LINE (ACIDIC)
- TEMPORARY HIGH LINE (BASIC)
- EXISTING U/G CHEMICAL CONTAINMENT PIPE (ACIDIC)
- EXISTING U/G CHEMICAL CONTAINMENT PIPE (BASIC)
- EXISTING U/G CHEMICAL PULL BOX (CPB) (ACIDIC)
- EXISTING U/G CHEMICAL PULL BOX (CPB) (BASIC)
- EXISTING U/G CHEMICAL INJECTION VAULT (CIV) (ACIDIC)
- EXISTING U/G CHEMICAL INJECTION VAULT (CIV) (BASIC)
- EXISTING U/G CHEMICAL INJECTION VAULT (CIV) (ACIDIC/BASIC)

SYMBOLS INSIDE PULL BOXES/VAULTS

- BALL VALVE
- CHECK VALVE
- BLIND FLANGE
- FLANGE
- UNION
- PIPE MATERIAL CHANGE



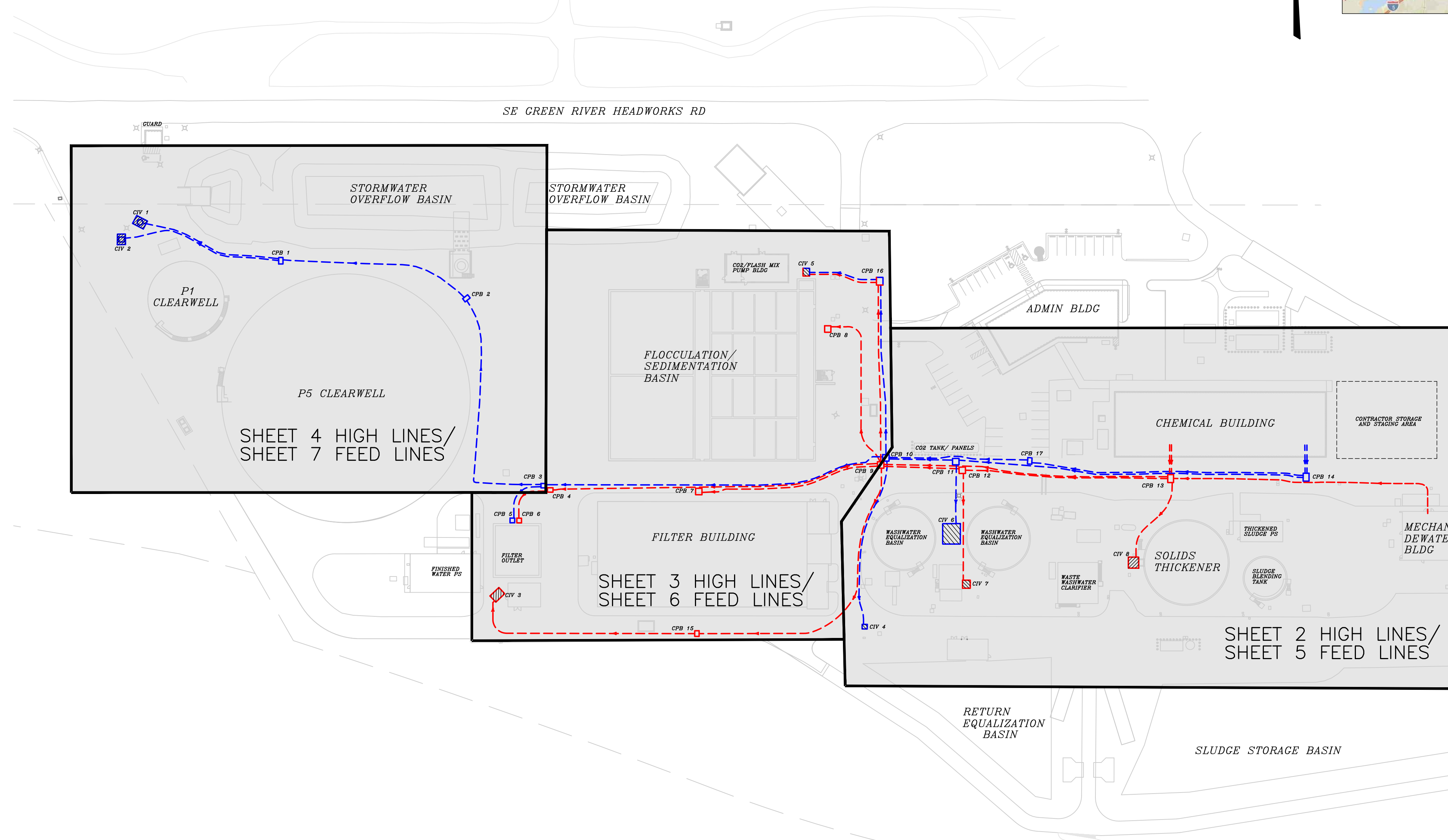
PROJECT LOCATION

CHEMICAL ABBREVIATIONS

- CHEM CHEMICAL
- CIV CHEMICAL INJECTION VAULT
- CPB CHEMICAL PULL BOX
- CS CAUSTIC SODA
- HFA HYDROFLUOSILICIC ACID
- LA LIQUID ALUM
- PACL POLYALUMINUM CHLORIDE
- PEC CATIONIC POLYMER
- PEG GENERAL POLYMER
- SHC SODIUM HYPOCHLORITE

ABBREVIATIONS

- APP'D APPROVED
- APPROX APPROXIMATELY
- CONN CONNECTION
- CONSTR CONSTRUCTION
- COT CITY OF TACOMA
- DI DUCTILE IRON
- DIA DIAMETER
- DWG DRAWING
- EA EACH
- ELEV ELEVATION
- EX EXISTING
- FG FINISHED GRADE
- FT FOOT
- HDPE HIGH DENSITY POLYETHYLENE
- IE INVERT ELEVATION
- IN INCH
- L LENGTH
- LF LINEAR FEET
- N/A NOT APPLICABLE
- NO NUMBER
- NTS NOT TO SCALE
- PS PUMP STATION
- PVC POLYVINYL CHLORIDE
- SHT SHEET
- TYP TYPICAL
- U/G UNDERGROUND
- UNK UNKNOWN
- W/ WITH
- WO WORK ORDER
- YR YEAR



- SHEET 1 COVER SHEET
- SHEET 2 TEMPORARY CHEMICAL HIGH LINES
- SHEET 3 TEMPORARY CHEMICAL HIGH LINES
- SHEET 4 TEMPORARY CHEMICAL HIGH LINES
- SHEET 5 CHEMICAL FEED LINES
- SHEET 6 CHEMICAL FEED LINES
- SHEET 7 CHEMICAL FEED LINES
- SHEET 8 CHEMICAL PULL BOX DETAILS - 1 & 2
- SHEET 9 CHEMICAL PULL BOX DETAILS - 3 & 4
- SHEET 10 CHEMICAL PULL BOX DETAILS - 5 & 6
- SHEET 11 CHEMICAL PULL BOX DETAILS - 7 & 8
- SHEET 12 CHEMICAL PULL BOX DETAILS - 9 & 10
- SHEET 13 CHEMICAL PULL BOX DETAILS - 11 & 12
- SHEET 14 CHEMICAL PULL BOX DETAILS - 13 & 14
- SHEET 15 CHEMICAL PULL BOX DETAILS - 15,16,& 17
- SHEET 16 CHEMICAL INJECTION VAULT DETAILS - 1,2,& 4
- SHEET 17 CHEMICAL INJECTION VAULT DETAILS - 5 & 6
- SHEET 18 CHEMICAL INJECTION VAULT DETAILS - 7, 8, & MECHANICAL DEWATERING BLD HFA ROOM
- SHEET 19 STANDARD DETAILS

STANDARD NOTES

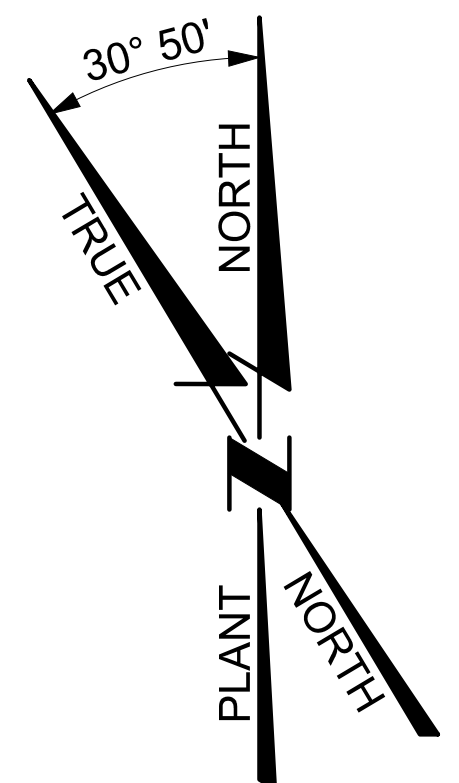
- THERE SHALL BE NO SUBSTITUTION OF MATERIALS WITHOUT PRIOR APPROVAL OF TACOMA WATER.
- ALL FUSION WELDS WILL BE REVIEWED AND APPROVED BY TACOMA WATER CERTIFIED CONSTRUCTION INSPECTOR BEFORE HYDROSTATIC TESTING.
- NO BUTT FUSION OR SOCKET WELDS ALLOWED BETWEEN PULL BOXES. ALL FUSION WILL BE DONE INSIDE THE PULL BOXES.
- USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.
- REINFORCED PVC LINES INSIDE CARRIER PIPES ARE THE ONLY PIPES TO BE REPLACED WITH HDPE PIPE. EXISTING UNDERGROUND CARRIER PIPES SHOWN ON DRAWINGS FOR ROUTING PURPOSES ONLY. CONTRACTOR SHALL PROTECT IN PLACE ALL CARRIER PIPING.
- IF CONTRACTOR CHOOSES TO REMOVE ANY VAULT LID WITHIN ASPHALT, RESTORATION WILL BE CONSIDERED INCIDENTAL. SAW CUT 2' ALL FOUR SIDES OF VAULT AND 1/2" HMA (MATCH EXISTING PLUS 1").
- CONTRACTOR WILL NOT BE PERMITTED TO TURN ANY VALVES. ALL SEQUENCING OF ANY CHEMICALS SHALL BE DONE BY TACOMA WATER PLANT STAFF ONLY.
- THE CONTRACTOR WILL MAINTAIN ACCESS TO THE JOB SITE AT ALL TIMES. THE ACCESS MUST ALLOW ALL TACOMA WATER SUPPORT STAFF TO SAFELY ACCESS THE SITE. IF THE ACCESS IS DEEMED INACCESSIBLE TO SUPPORT STAFF, ALL CONTRACTOR WORK WILL CEASE UNTIL THE ACCESS IS DEEMED ACCESSIBLE BY TACOMA WATER.
- CONTRACTOR WILL MAINTAIN ACCESS TO THE CHEMICAL BUILDING AT ALL TIMES FOR CHEMICAL DELIVERIES BY TANKER TRUCK.
- ALL PERMANENT PIPING SHALL BE LABELED AS OUTLINED IN THE SPECIFICATION SECTION 43 10 51.
- CONTRACTOR SHALL DISPOSE OF ALL REPLACED CHEMICAL TUBING IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS AND APPLICABLE REGULATIONS.



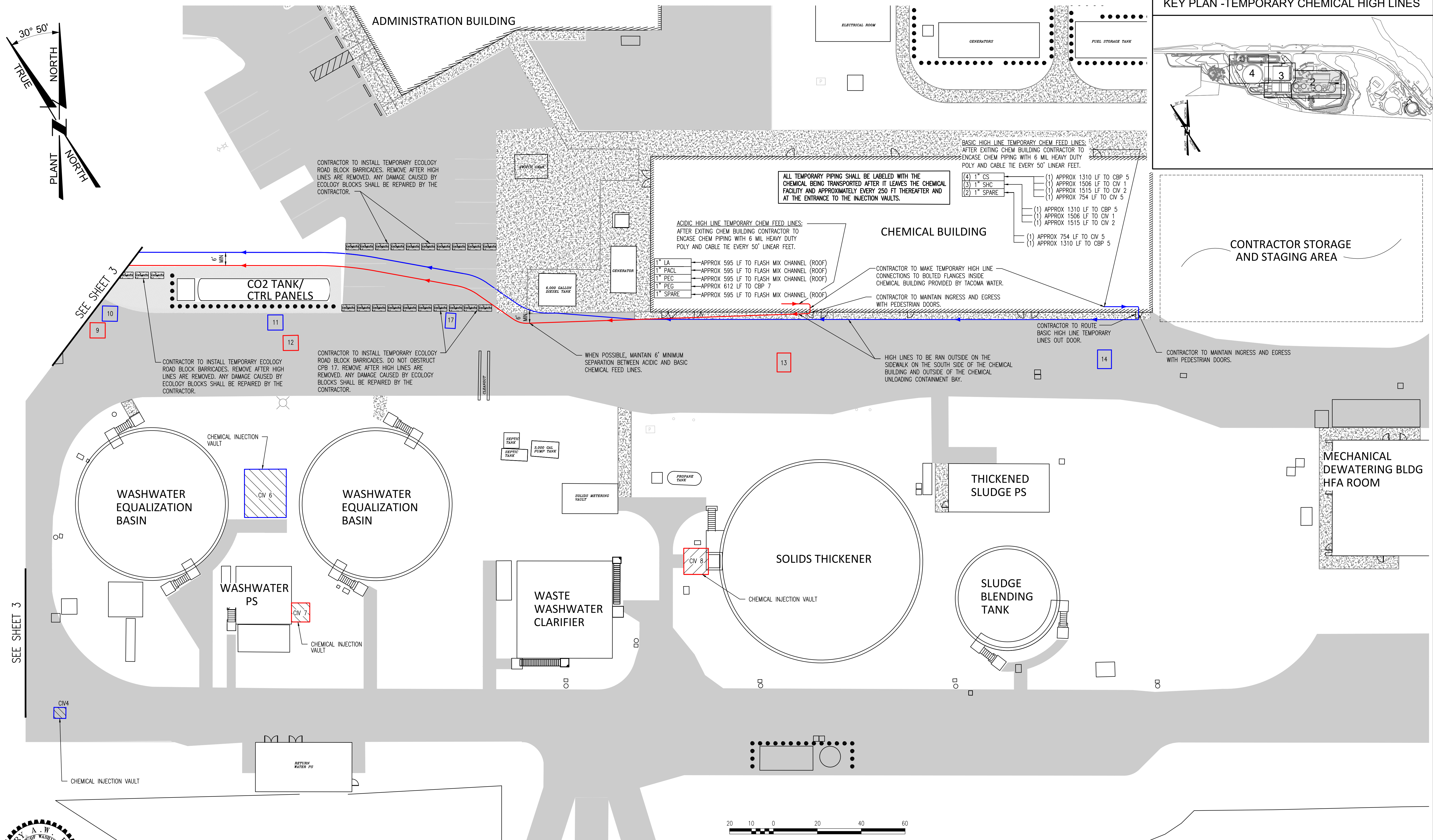
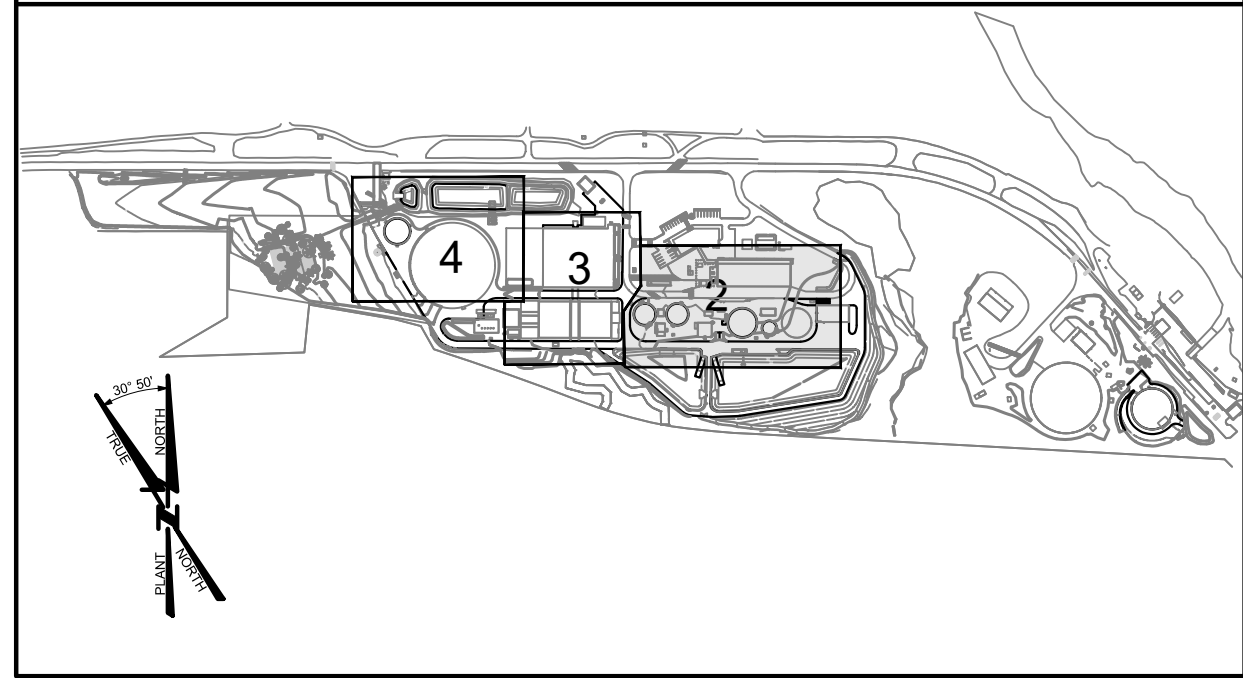
01/03/2025

NO.		REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE	DATE	DESIGN	DRAWN	DIGITIZED	CHECKED	ACCOUNTING	CADNET PROJECT NAME	VAULT FILE NAME	FIELD BOOK	DATA FILE	APPROVED	SCALE	HORIZ: NTS	VERT: NA	DRAWING NO.	TW24-0031	SHEET 1 OF 19
							C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3	03/31/2023	GF	SDP			KD	20000119358	GRFF CHEM LINES				Kimberly M. DeEdo, P.E. Principal	COVER SHEET & LEGEND FOR GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINE REPLACEMENT				





KEY PLAN - TEMPORARY CHEMICAL HIGH LINES



CONTRACTOR TO INSTALL TEMPORARY ECOLOGY ROAD BLOCK BARRICADES. REMOVE AFTER HIGH LINES ARE REMOVED. ANY DAMAGE CAUSED BY ECOLOGY BLOCKS SHALL BE REPAIRED BY THE CONTRACTOR.

CONTRACTOR TO INSTALL TEMPORARY ECOLOGY ROAD BLOCK BARRICADES. DO NOT OBSTRUCT CPB 17. REMOVE AFTER HIGH LINES ARE REMOVED. ANY DAMAGE CAUSED BY ECOLOGY BLOCKS SHALL BE REPAIRED BY THE CONTRACTOR.

WHEN POSSIBLE, MAINTAIN 6' MINIMUM SEPARATION BETWEEN ACIDIC AND BASIC CHEMICAL FEED LINES.

ALL TEMPORARY PIPING SHALL BE LABELED WITH THE CHEMICAL BEING TRANSPORTED AFTER IT LEAVES THE CHEMICAL FACILITY AND APPROXIMATELY EVERY 250 FT THEREAFTER AND AT THE ENTRANCE TO THE INJECTION VAULTS.

ACIDIC HIGH LINE TEMPORARY CHEM FEED LINES:
AFTER EXITING CHEM BUILDING CONTRACTOR TO ENCASE CHEM PIPING WITH 6 MIL HEAVY DUTY POLY AND CABLE TIE EVERY 50' LINEAR FEET.

- 1" LA - APPROX 595 LF TO FLASH MIX CHANNEL (ROOF)
- 1" PACL - APPROX 595 LF TO FLASH MIX CHANNEL (ROOF)
- 1" PEC - APPROX 595 LF TO FLASH MIX CHANNEL (ROOF)
- 1" PEG - APPROX 612 LF TO CBP 7
- 1" SPARE - APPROX 595 LF TO FLASH MIX CHANNEL (ROOF)

BASIC HIGH LINE TEMPORARY CHEM FEED LINES:
AFTER EXITING CHEM BUILDING CONTRACTOR TO ENCASE CHEM PIPING WITH 6 MIL HEAVY DUTY POLY AND CABLE TIE EVERY 50' LINEAR FEET.

- (4) 1" CS
- (3) 1" SHC
- (2) 1" SPARE
- (1) APPROX 1310 LF TO CBP 5
- (1) APPROX 1506 LF TO CIV 1
- (1) APPROX 1515 LF TO CIV 2
- (1) APPROX 754 LF TO CIV 5
- (1) APPROX 1310 LF TO CBP 5
- (1) APPROX 1506 LF TO CIV 1
- (1) APPROX 1515 LF TO CIV 2
- (1) APPROX 754 LF TO CIV 5
- (1) APPROX 1310 LF TO CBP 5

CONTRACTOR TO MAKE TEMPORARY HIGH LINE CONNECTIONS TO BOLTED FLANGES INSIDE CHEMICAL BUILDING PROVIDED BY TACOMA WATER.

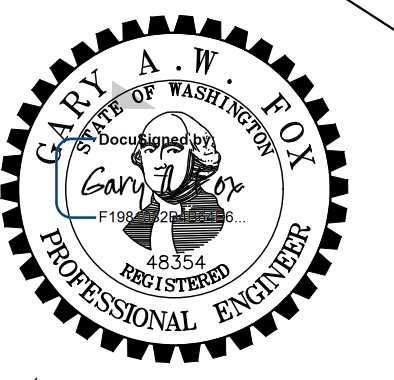
CONTRACTOR TO MAINTAIN INGRESS AND EGRESS WITH PEDESTRIAN DOORS.

CONTRACTOR TO ROUTE BASIC HIGH LINE TEMPORARY LINES OUT DOOR.

CONTRACTOR TO MAINTAIN INGRESS AND EGRESS WITH PEDESTRIAN DOORS.

SEE SHEET 3

SEE SHEET 3



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13
HCC-OM-10 THRU HCC-OM-18
OM-4 THRU OM-5
9M-3 THRU 9M-6
2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

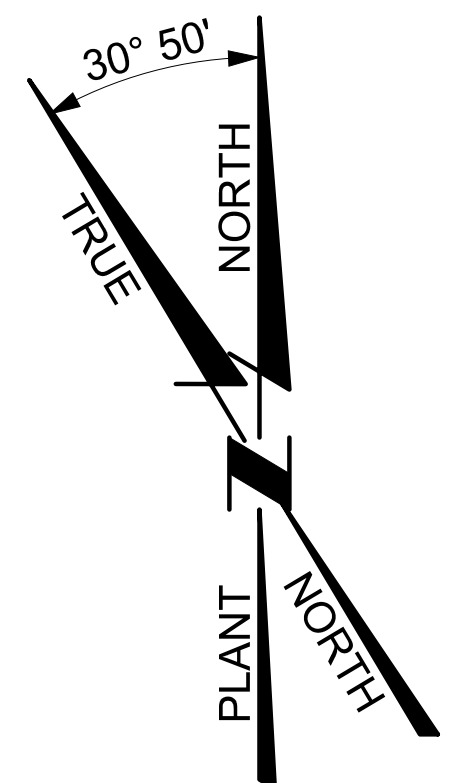
ACCOUNTING	20000119358
CADNET PROJECT NAME	GRFF CHEM LINES
VAULT FILE NAME	
FIELD BOOK	
DATA FILE	

APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
OPERATIONS MANAGER

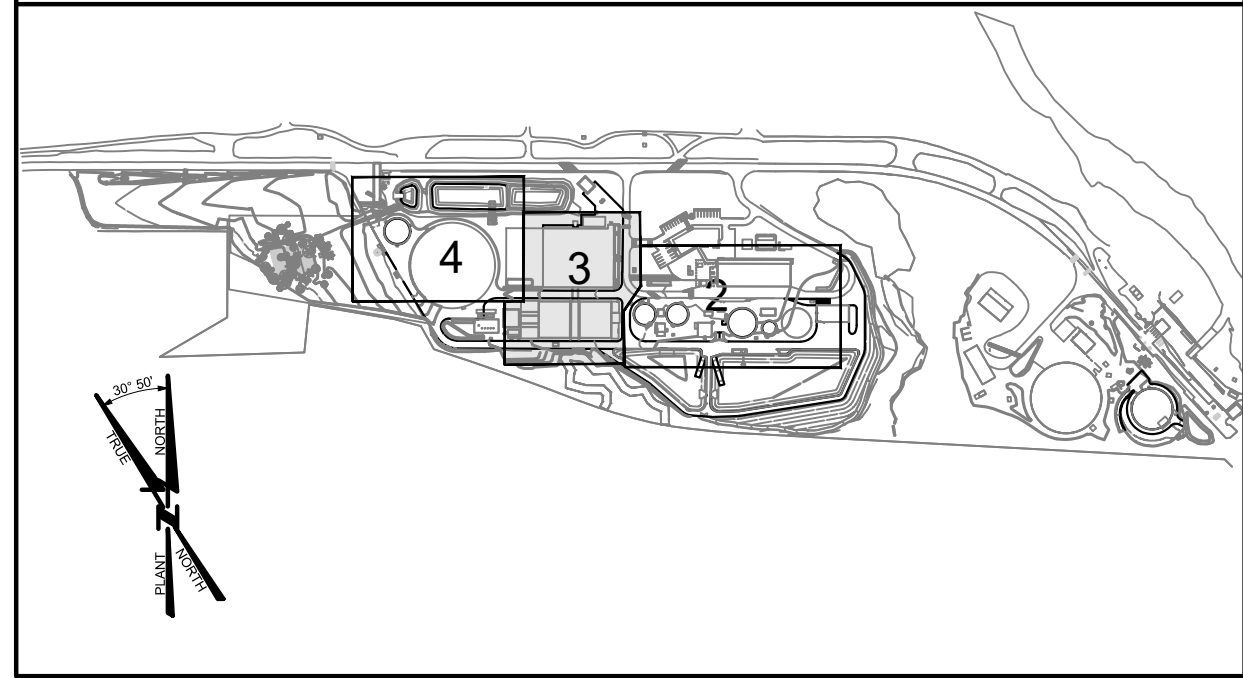


TEMPORARY CHEMICAL HIGH LINES FOR
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE	HORIZ: 1"=20'
	VERT: NA
DRAWING NO.	TW24-0031
SHEET	2 OF 19



KEY PLAN - TEMPORARY CHEMICAL HIGH LINES



SEE SHEET 4

SEE SHEET 4

SEE SHEET 2

SEE SHEET 2

BASIC HIGH LINE TEMPORARY CHEM LINES:
 (3) 1" CS
 (3) 1" SHC
 1" SPARE

BASIC HIGH LINE TEMPORARY CHEM LINES:
 (2) 1" CS
 (2) 1" SHC

BASIC HIGH LINE TEMP CHEM LINES:
 1" CS
 1" SPARE

BASIC HIGH LINE TEMPORARY CHEM LINES:
 1" SHC
 1" CS
 1" SPARE

ACIDIC HIGH LINE TEMPORARY CHEM LINES:
 1" LA
 1" PACL
 1" PEC
 1" SPARE

BASIC HIGH LINE TEMPORARY CHEM LINES:
 (4) 1" CS
 (3) 1" SHC
 (2) 1" SPARE

ACIDIC HIGH LINE TEMPORARY CHEM LINES:
 1" LA
 1" PACL
 1" PEC
 1" PEG
 1" SPARE

ACID HIGH LINE TEMPORARY CHEM LINE:
 1" PEG

CONTRACTOR TO SUBMIT DETAIL OF HOW TEMPORARY HIGH LINES WILL BE CONNECTED TO EXISTING INJECTION POINTS. SEE SHEET 10 FOR INJECTION VAULT DETAILS AND ALSO APPENDICES FOR PHOTO OF VAULT PIPING. PERMANENT CHEMICAL FEED LINES SHALL BE BOLT FLANGED.

CONTRACTOR TO SUBMIT DETAIL OF HOW TEMPORARY HIGH LINES WILL BE CONNECTED TO 2" FEMALE CAMLOCK FITTING. SEE SHEET 11 FOR PULL BOX DETAILS AND ALSO APPENDICES FOR PHOTO OF VAULT PIPING. PERMANENT CHEMICAL FEED LINES SHALL BE BOLT FLANGED.

CONTRACTOR TO SUBMIT DETAIL OF HOW TEMPORARY HIGH LINES WILL BE CONNECTED TO EXISTING INJECTION POINTS. SEE SHEET 17 FOR INJECTION VAULT DETAILS AND ALSO APPENDICES FOR PHOTO OF VAULT PIPING. PERMANENT CHEMICAL FEED LINES SHALL BE BOLT FLANGED.

CONTRACTOR TO RUN TEMPORARY HDPE PIPING FOR LA, PACL, PEC, & SPARE UP THE WALL AT FLASH MIX CHANNEL (24" HEIGHT) LINES MUST BE ANCHORED TO CONCRETE DECK. CONTRACTOR TO SUBMIT DETAIL OF HOW TEMPORARY HIGH LINES WILL BE CONNECTED TO EXISTING 1-1/2" FEMALE CAMLOCK FITTING FOR INJECTION PORTS. SEE SPEC APPENDIX FOR PHOTOS OF UPPER DECK.

CONTRACTOR TO INSTALL TEMPORARY ECOLOGY ROAD BLOCK BARRICADES AND REMOVE AFTER HIGH LINES ARE REMOVED. ANY DAMAGE CAUSED BY ECOLOGY BLOCKS SHALL BE REPAIRED BY THE CONTRACTOR.

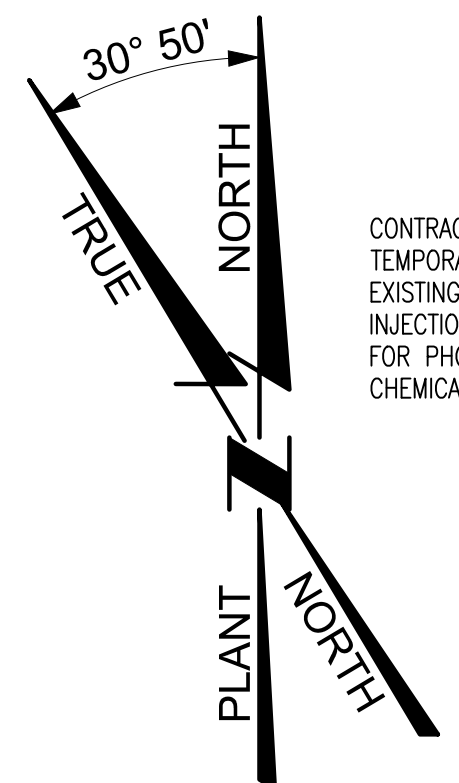
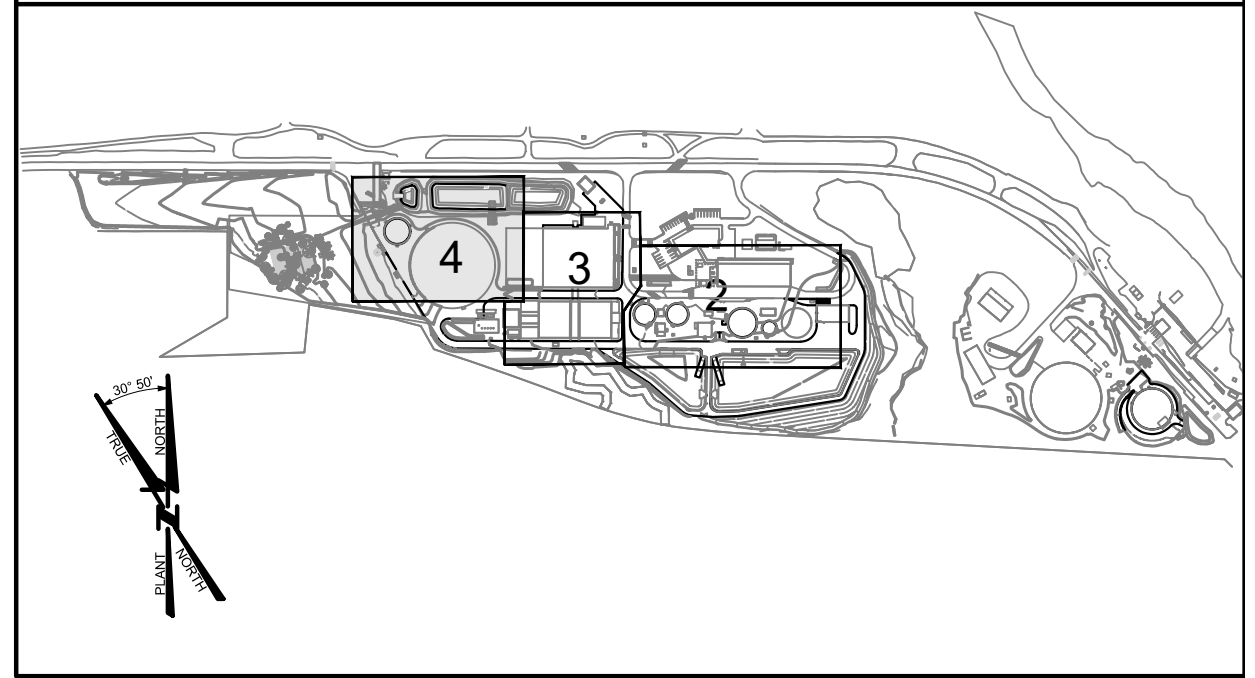
COVER ALL OPEN VAULTS TO KEEP PEOPLE AND WILDLIFE OUT WHILE TEMPORARY HIGH LINES ARE CONNECTED (SHEETS 3 & 4) (CPB 5, 7, & CIV 1, 2 & 5).



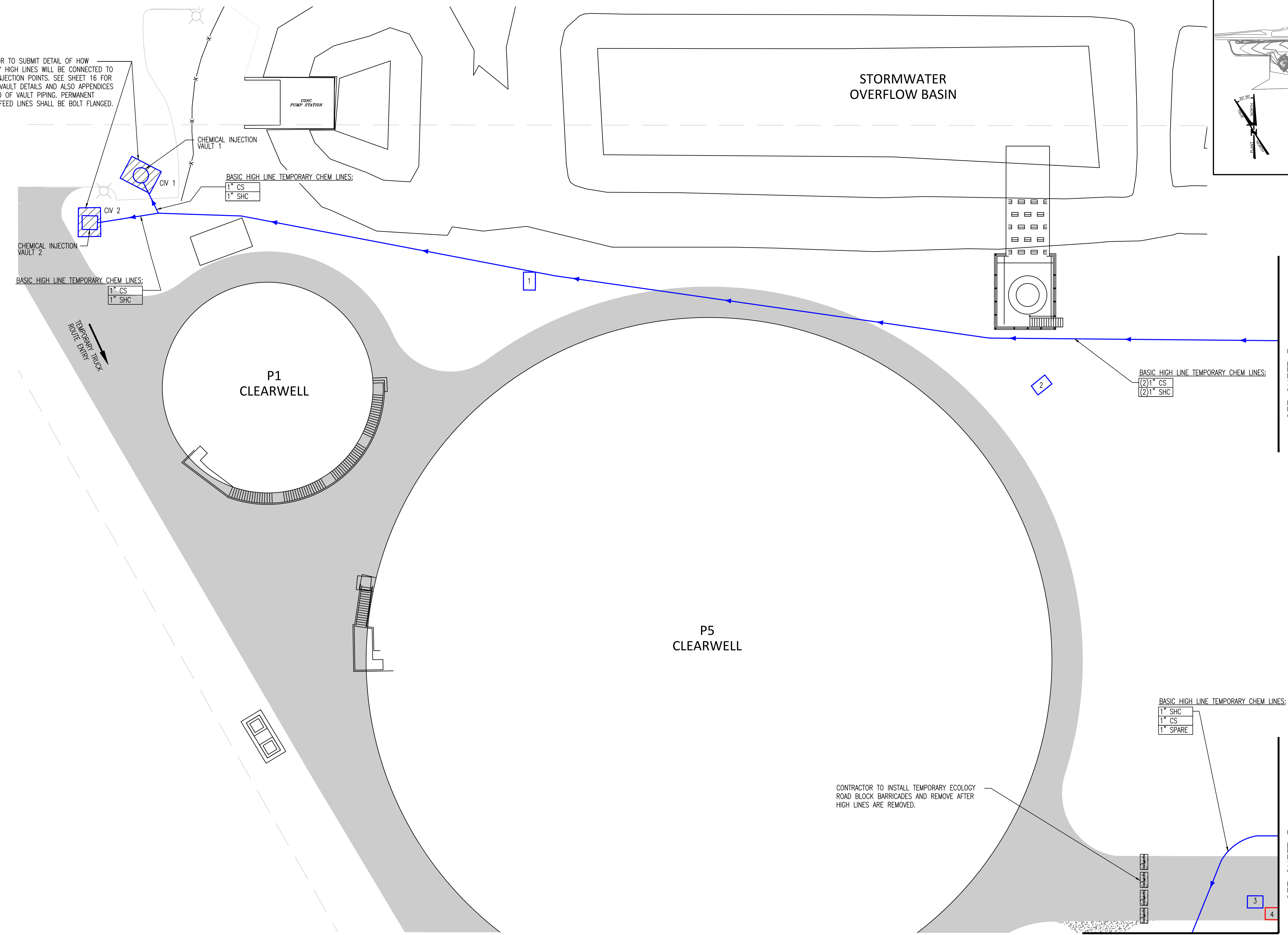
01/03/2025

NO.		REVISION	DATE	BY	APP'D.	REV. COMPL.
REFERENCE C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3						
DATE		03/31/2023		ACCOUNTING 20000119358		
DESIGN		GF		CADNET PROJECT NAME: GRFF CHEM LINES		
DRAWN		SDP		VAULT FILE NAME:		
DIGITIZED		KD		FIELD BOOK		
CHECKED		KD		DATA FILE		
APPROVED				 Kimberly M. DeEdo, P.E. Principal PROJECT MANAGER		
TACOMA WATER TACOMA PUBLIC UTILITIES						
TEMPORARY CHEMICAL HIGH LINES FOR GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINE REPLACEMENT						
SCALE						HORIZ: 1"=20' VERT: NA DRAWING NO. TW24-0031 SHEET 3 OF 19

KEY PLAN - TEMPORARY CHEMICAL HIGH LINES



CONTRACTOR TO SUBMIT DETAIL OF HOW TEMPORARY HIGH LINES WILL BE CONNECTED TO EXISTING INJECTION POINTS. SEE SHEET 16 FOR INJECTION VAULT DETAILS AND ALSO APPENDICES FOR PHOTO OF VAULT PIPING. PERMANENT CHEMICAL FEED LINES SHALL BE BOLT FLANGED.



BASIC HIGH LINE TEMPORARY CHEM LINES:
1" CS
1" SHC

BASIC HIGH LINE TEMPORARY CHEM LINES:
1" CS
1" SHC

BASIC HIGH LINE TEMPORARY CHEM LINES:
(2)1" CS
(2)1" SHC

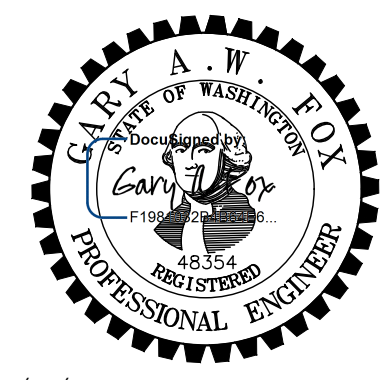
BASIC HIGH LINE TEMPORARY CHEM LINES:
1" SHC
1" CS
1" SPARE

CONTRACTOR TO INSTALL TEMPORARY ECOLOGY ROAD BLOCK BARRICADES AND REMOVE AFTER HIGH LINES ARE REMOVED.

SEE SHEET 3

SEE SHEET 3

SEE SHEET 3



01/03/2025

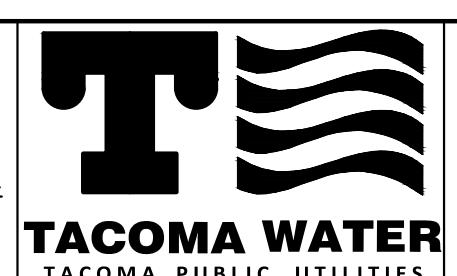
NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

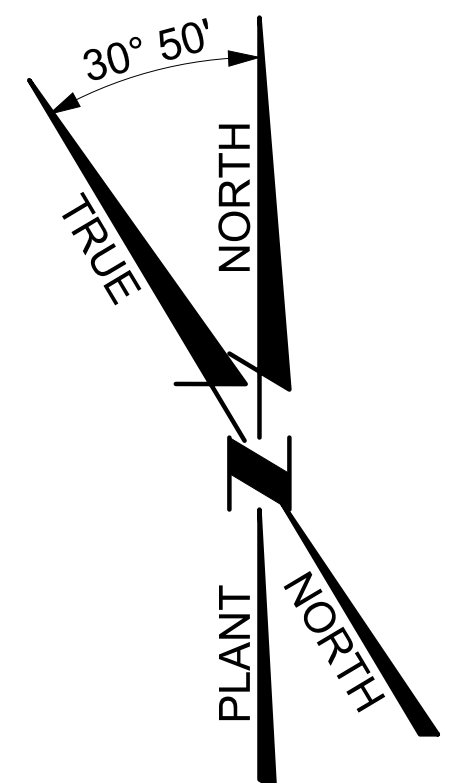
ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

APPROVED
Signed by:
Kimberly M. DeEdes, P.E. Principal
OPERATIONS MANAGER

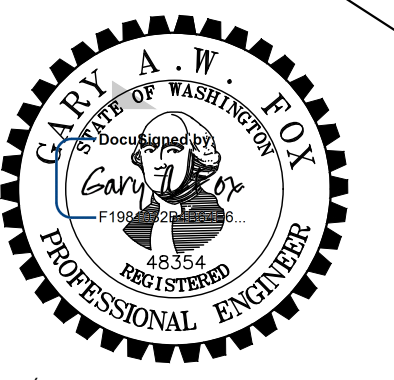
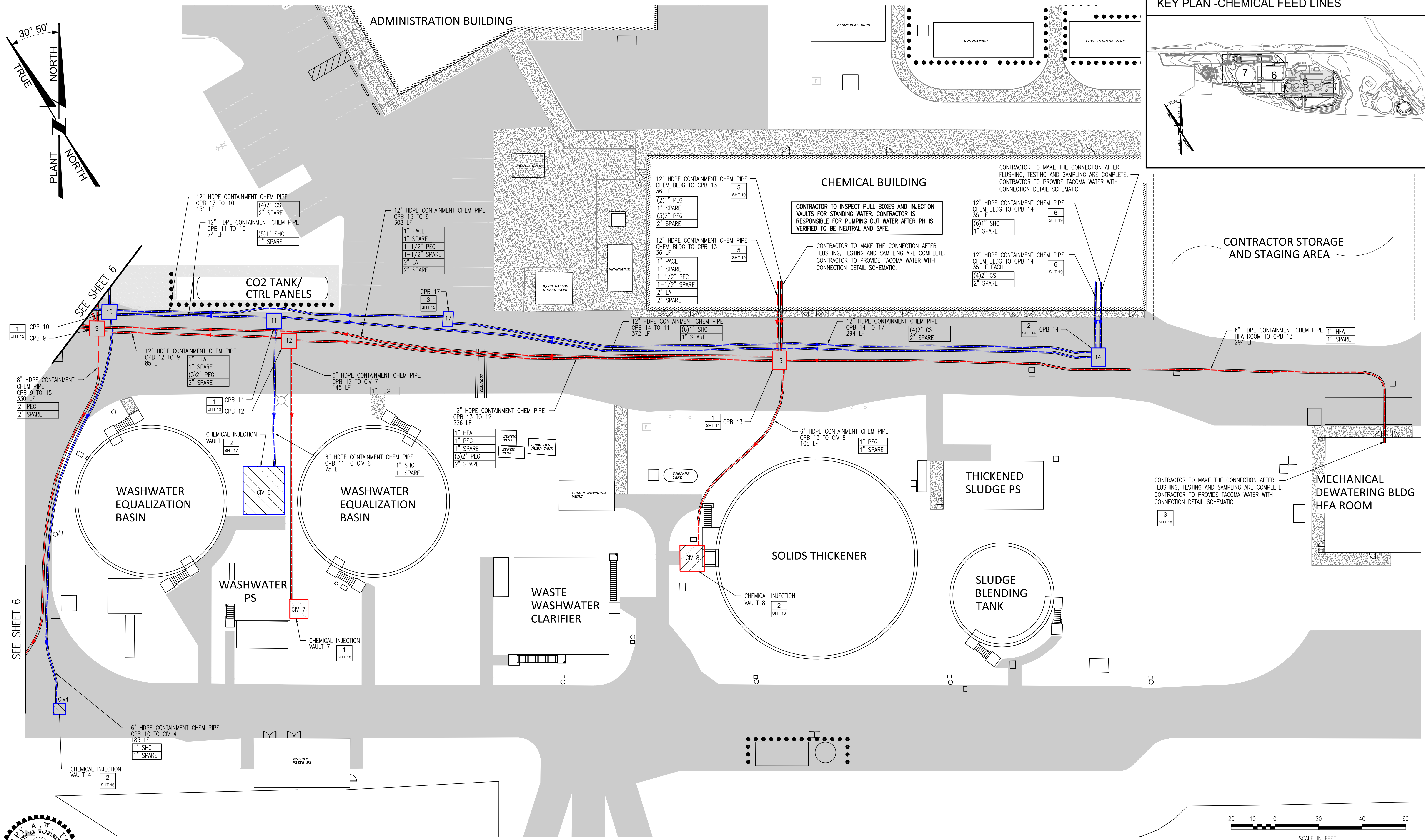
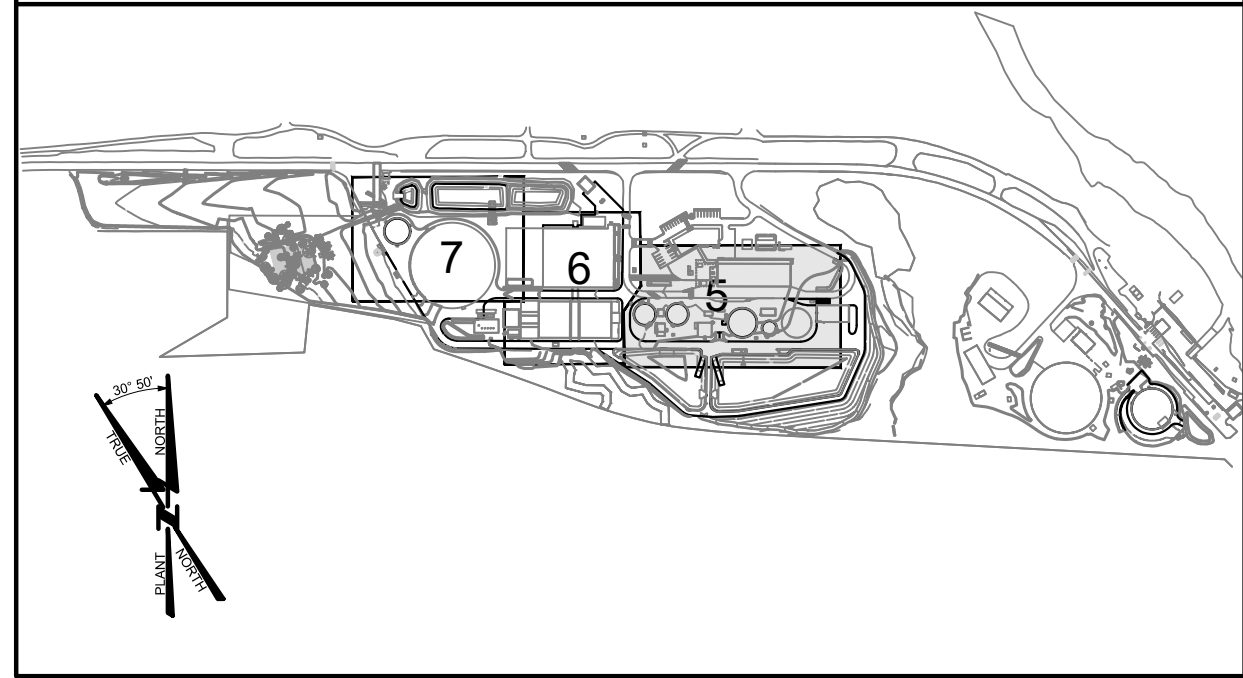


TEMPORARY CHEMICAL HIGH LINES FOR GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINE REPLACEMENT

SCALE	HORIZ: 1"=20'
	VERT: NA
DRAWING NO.	TW24-0031
SHEET 4	OF 19



KEY PLAN - CHEMICAL FEED LINES



01/03/2025

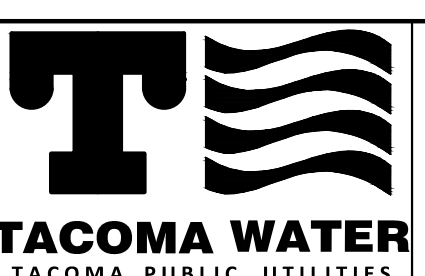
NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13
HCC-OM-10 THRU HCC-OM-18
OM-4 THRU OM-5
9M-3 THRU 9M-6
2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

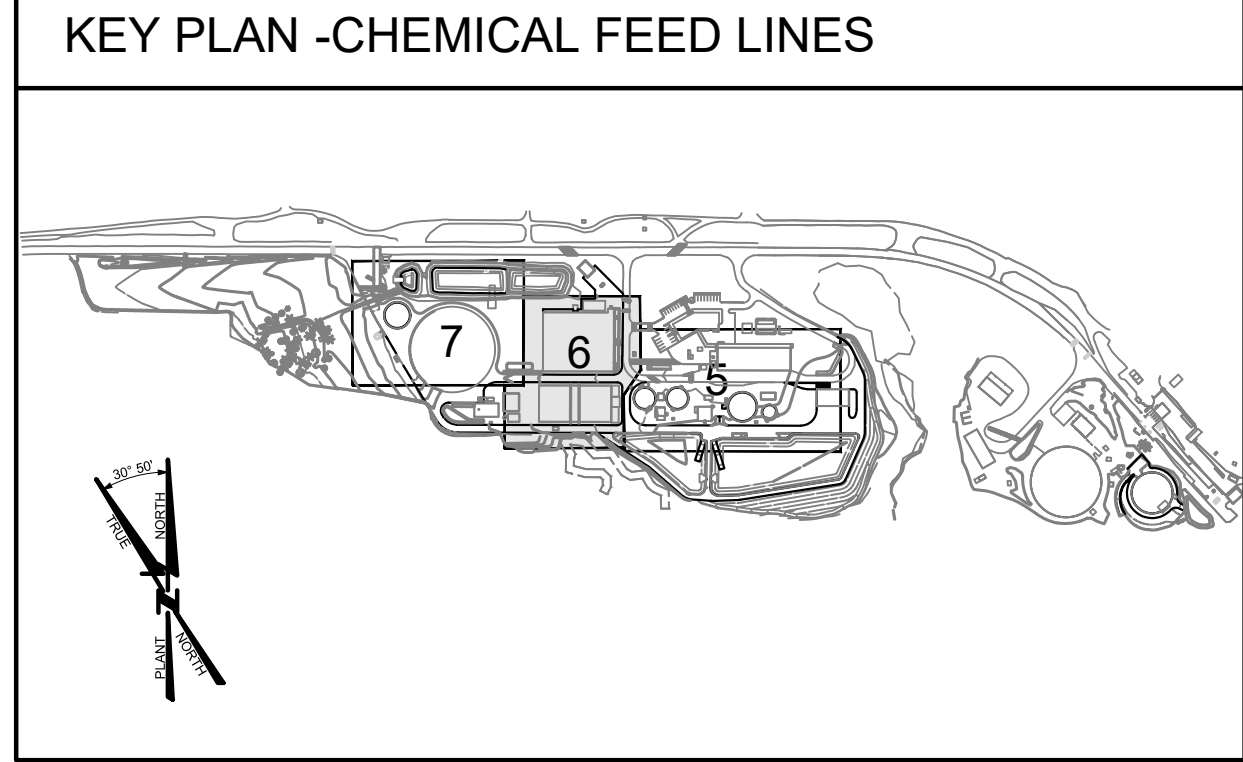
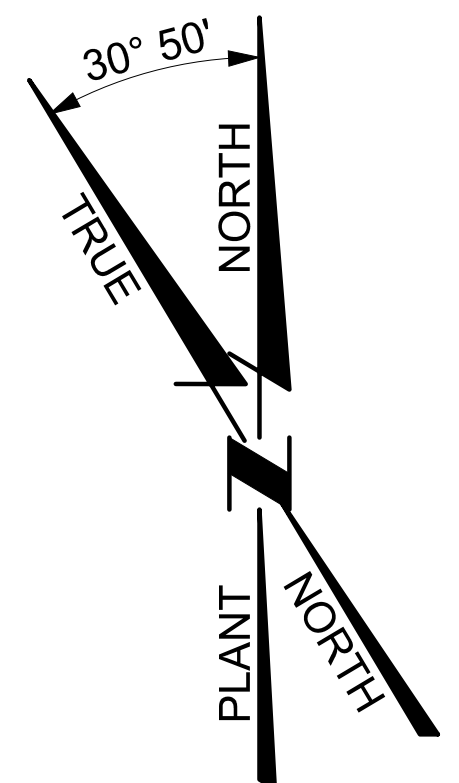
ACCOUNTING	20000119358
CADNET PROJECT NAME	GRFF CHEM LINES
VAULT FILE NAME	
FIELD BOOK	
DATA FILE	

APPROVED
Kimberly M. DeEdo, P.E. Principal
 OPERATIONS MANAGER

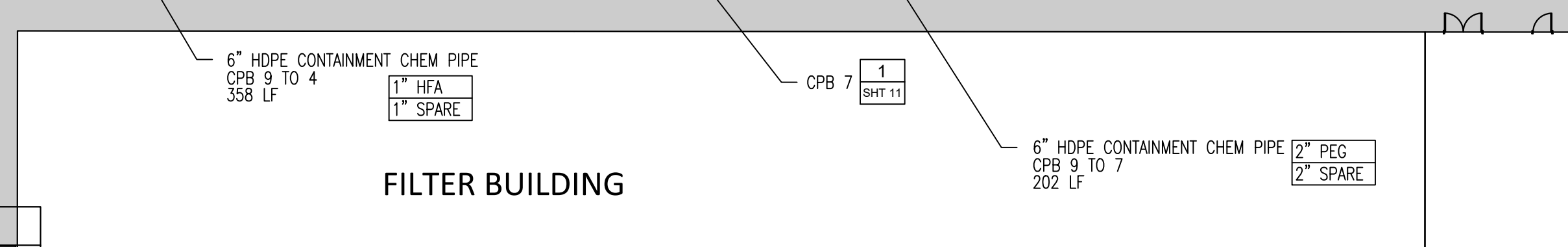
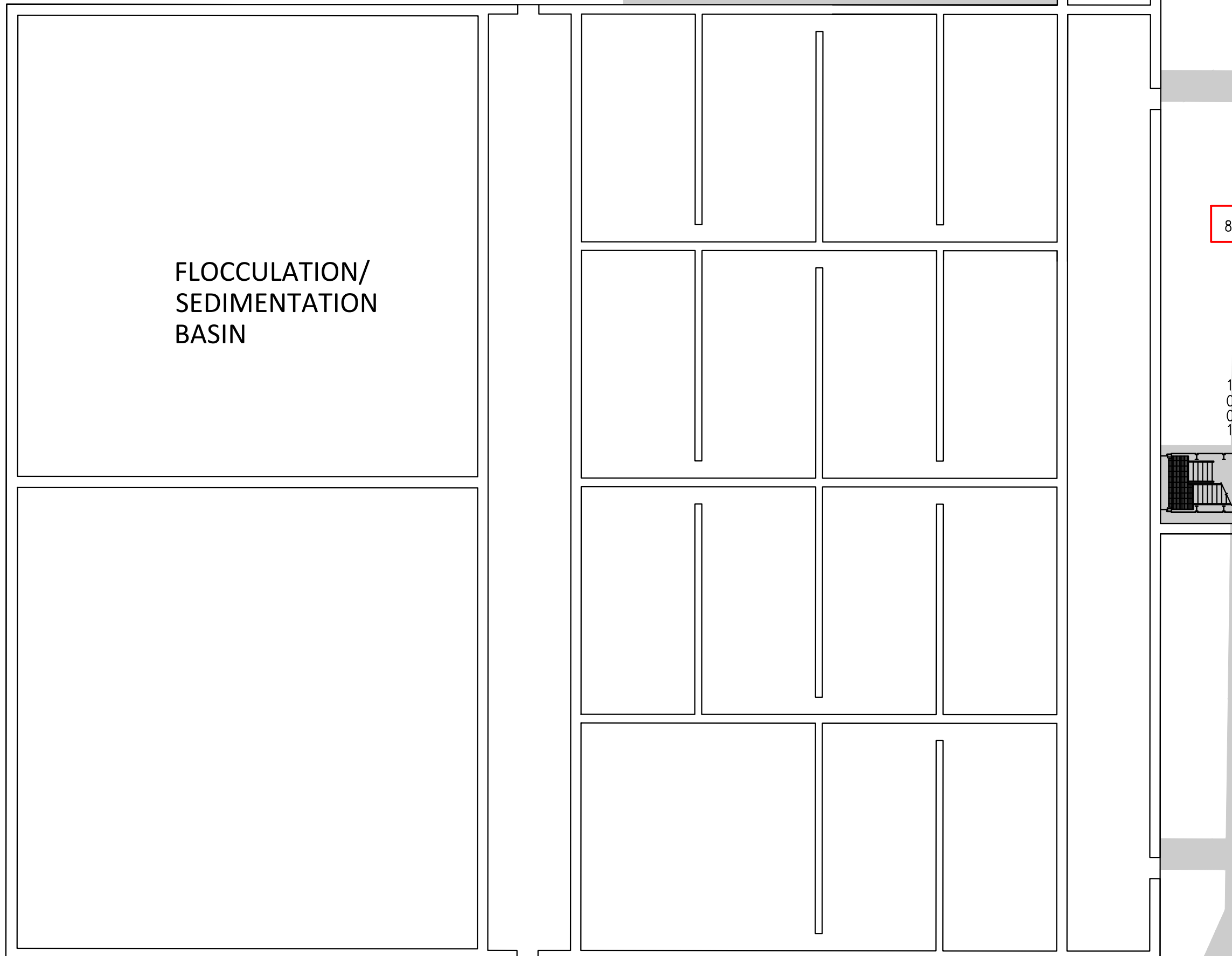


CHEMICAL FEED LINES FOR
 GREEN RIVER FILTRATION FACILITY
 CHEMICAL FEED LINE REPLACEMENT

SCALE	HORIZ: 1"=20'
	VERT: NA
DRAWING NO.	TW24-0031
SHEET	5 OF 19



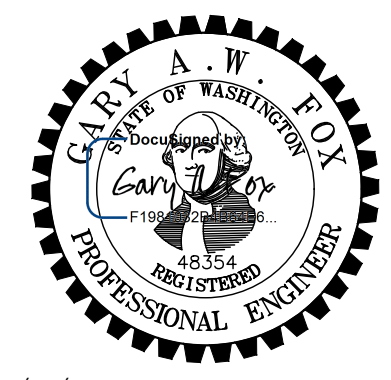
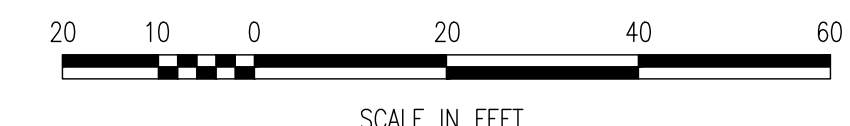
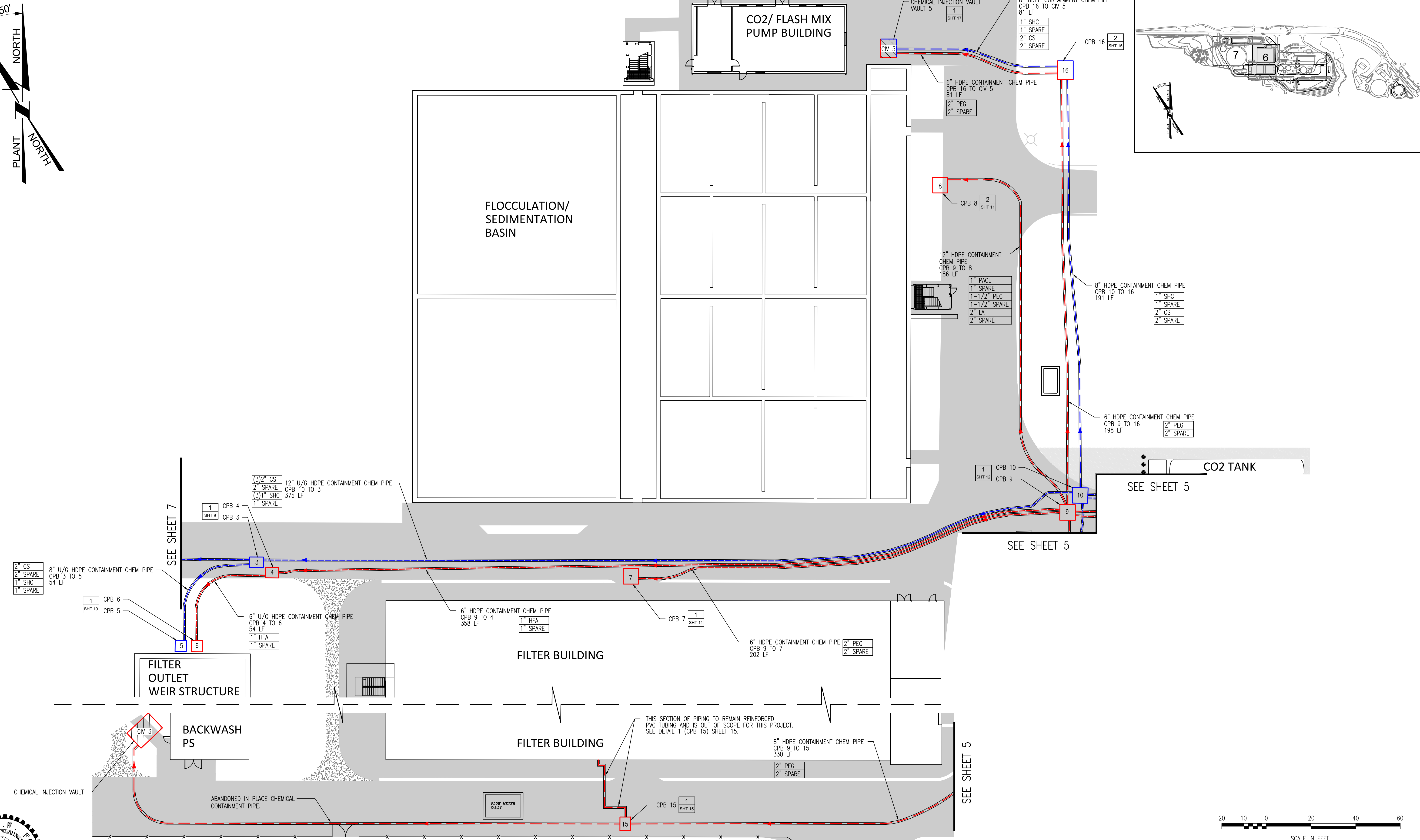
CO2 / FLASH MIX PUMP BUILDING



FILTER OUTLET WEIR STRUCTURE

BACKWASH PS

CO2 TANK



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13
HCC-OM-10 THRU HCC-OM-18
OM-4 THRU OM-5
9M-3 THRU 9M-6
2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

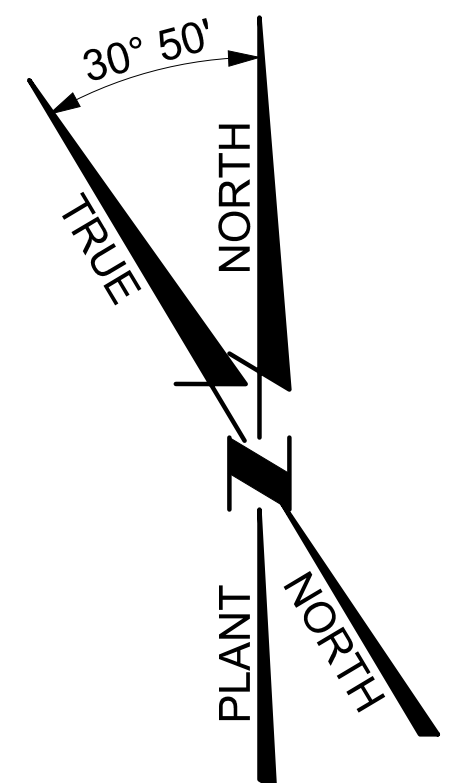
ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

APPROVED: *Kimberly M. DeEdo, P.E. Principal*

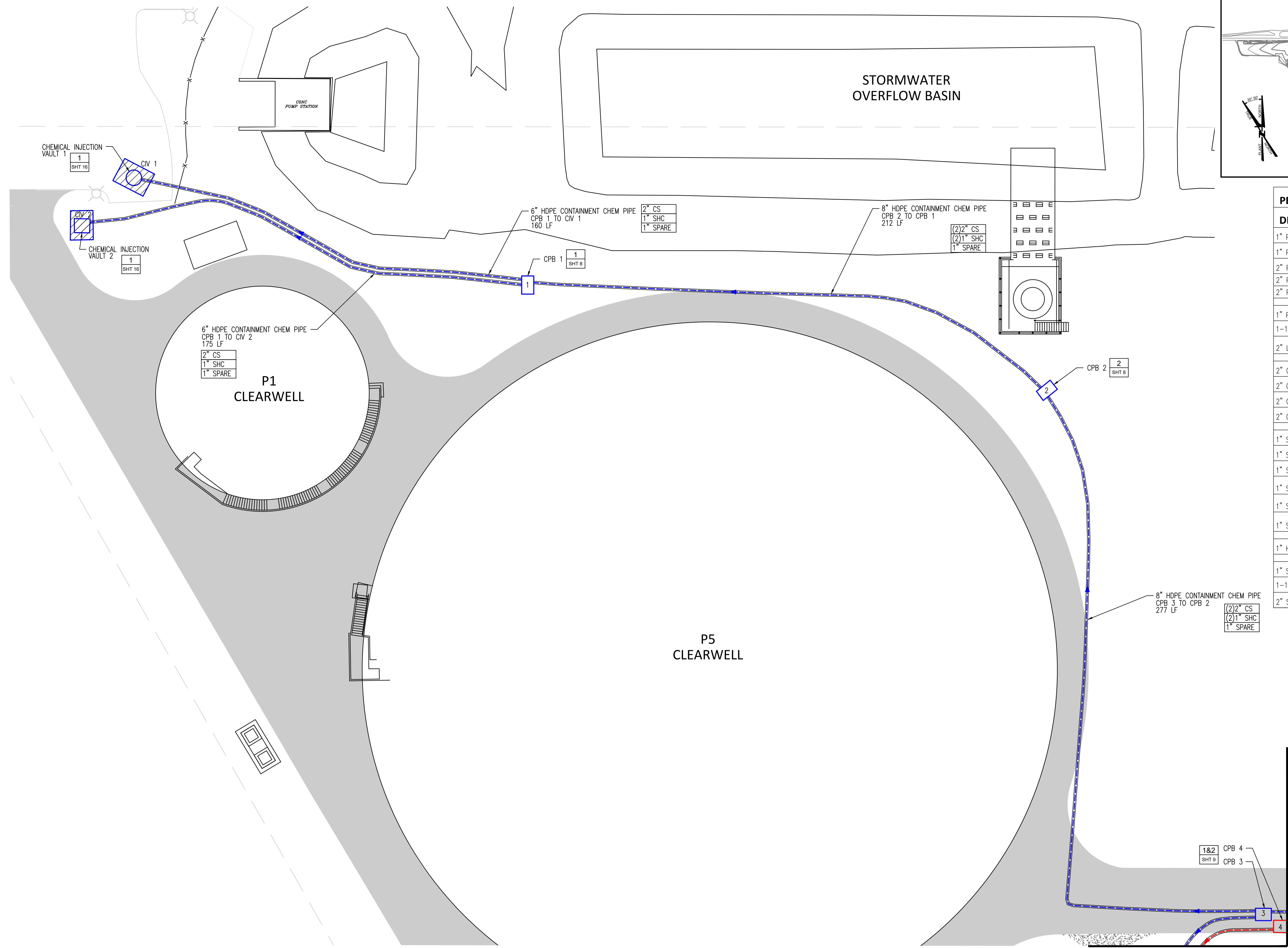
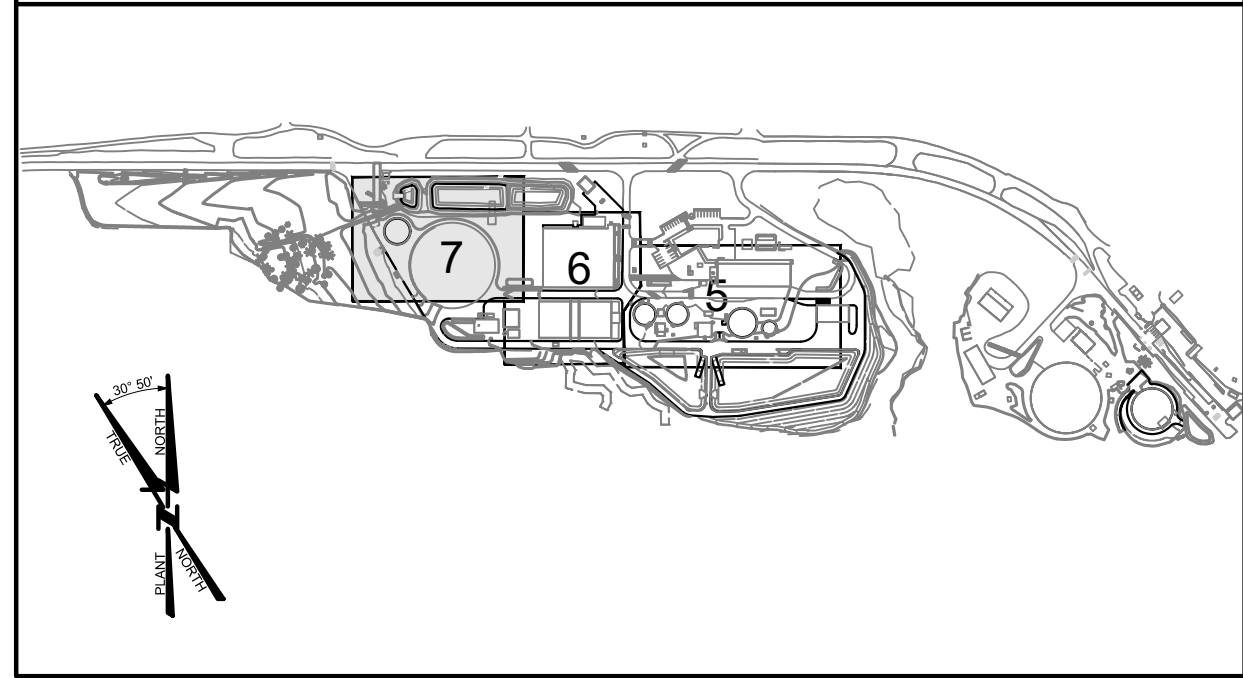


CHEMICAL FEED LINES FOR GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE	HORIZ: 1"=20'
	VERT: NA
DRAWING NO.	TW24-0031
SHEET	6 OF 19



KEY PLAN -CHEMICAL FEED LINES



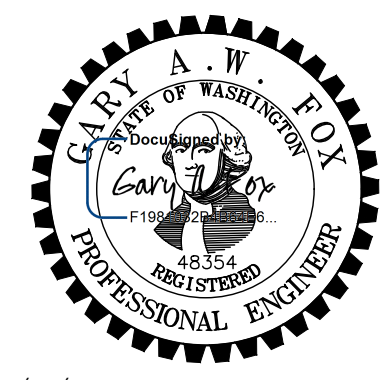
PERMANENT CHEMICAL PIPING ESTIMATED TOTALS

DESCRIPTION	CHEM PIPE RUN	L/F PIPE
1" PEG	CHEM BLD to CIV 7	407
1" PEG	CHEM BLD to CIV 8	141
2" PEG	CHEM BLD to CPB 15	677
2" PEG	CHEM BLD to CPB 7	549
2" PEG	CHEM BLD to CIV 5	626
1" PACL	CHEM BLD to CPB 8	530
1-1/2" PEC	CHEM BLD to CPB 8	530
2" LA	CHEM BLD to CPB 8	530
2" CS	CHEM BLD to CIV 5	752
2" CS	CHEM BLD to CPB5	909
2" CS	CHEM BLD to CIV 1	1504
2" CS	CHEM BLD to CIV 2	1519
1" SHC	CHEM BLD to CIV 6	482
1" SHC	CHEM BLD to CIV 5	753
1" SHC	CHEM BLD to CIV 4	664
1" SHC	CHEM BLD to CIV 1	1505
1" SHC	CHEM BLD to CIV 2	1520
1" SHC	CHEM BLD to CPB 5	910
1" HFA	MECH BLD to CPB 6	1017
1" SPARE	VARIOUS LOCATIONS	3957
1-1/2" SPARE	CHEM BLD to CPB 8	530
2" SPARE	VARIOUS LOCATIONS	2868

THESE PIPING LENGTHS ARE ESTIMATES ONLY. CONTRACTOR SHALL VERIFY FOR CONSTRUCTION PURPOSES.

SEE SHEET 6

SEE SHEET 6



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE
						C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING: 20000119358
 CADNET PROJECT NAME: GRFF CHEM LINES
 VAULT FILE NAME:
 FIELD BOOK:
 DATA FILE:

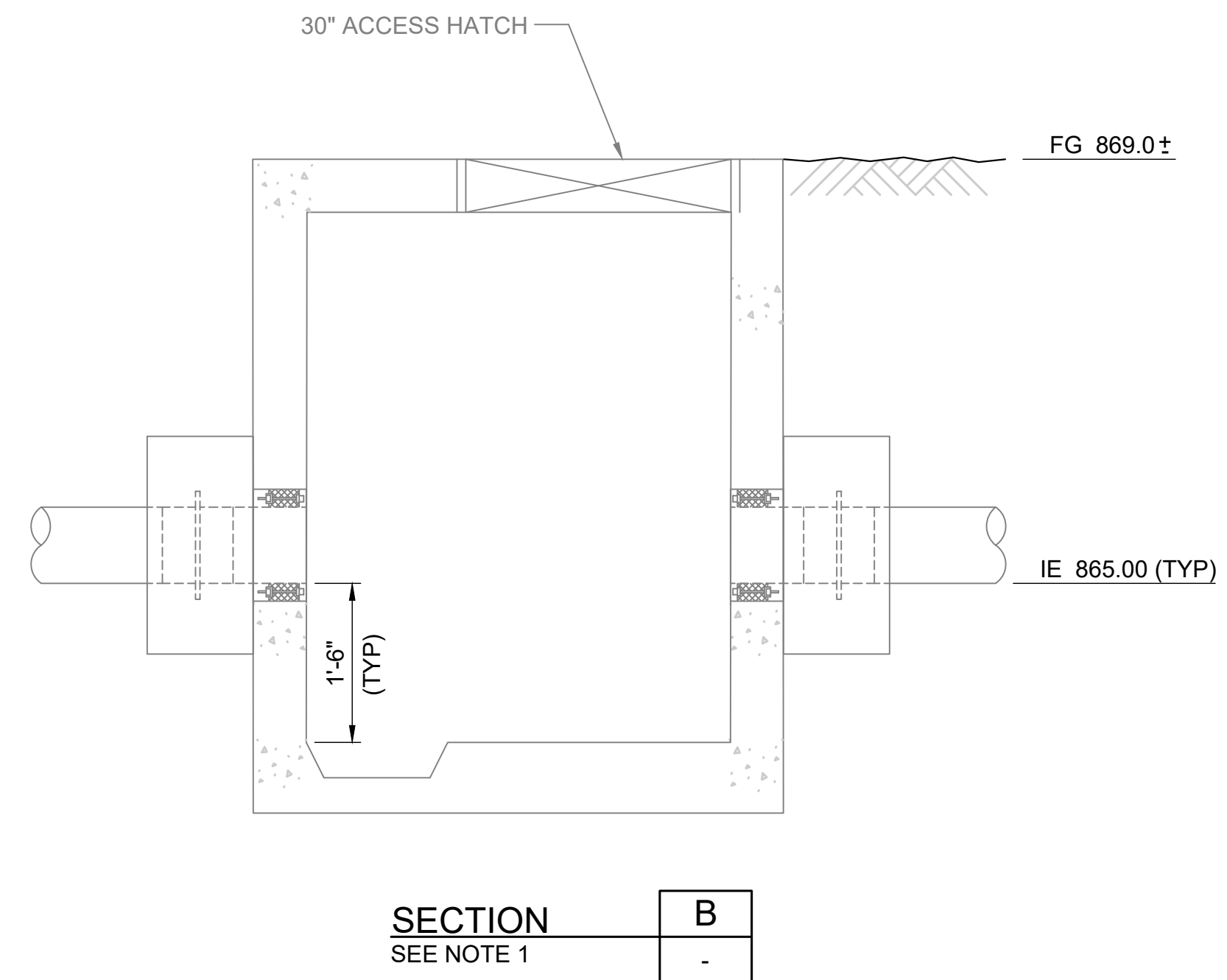
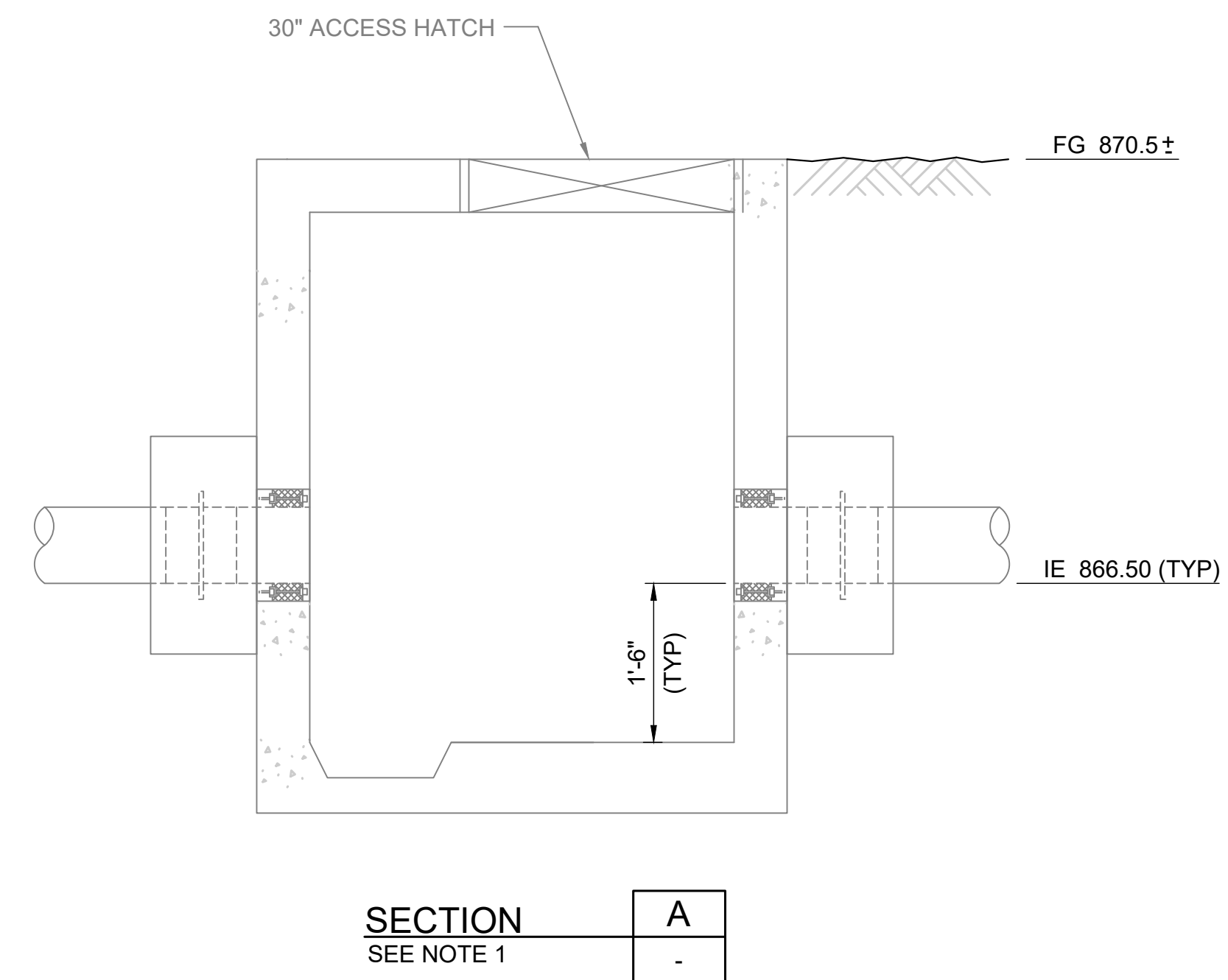
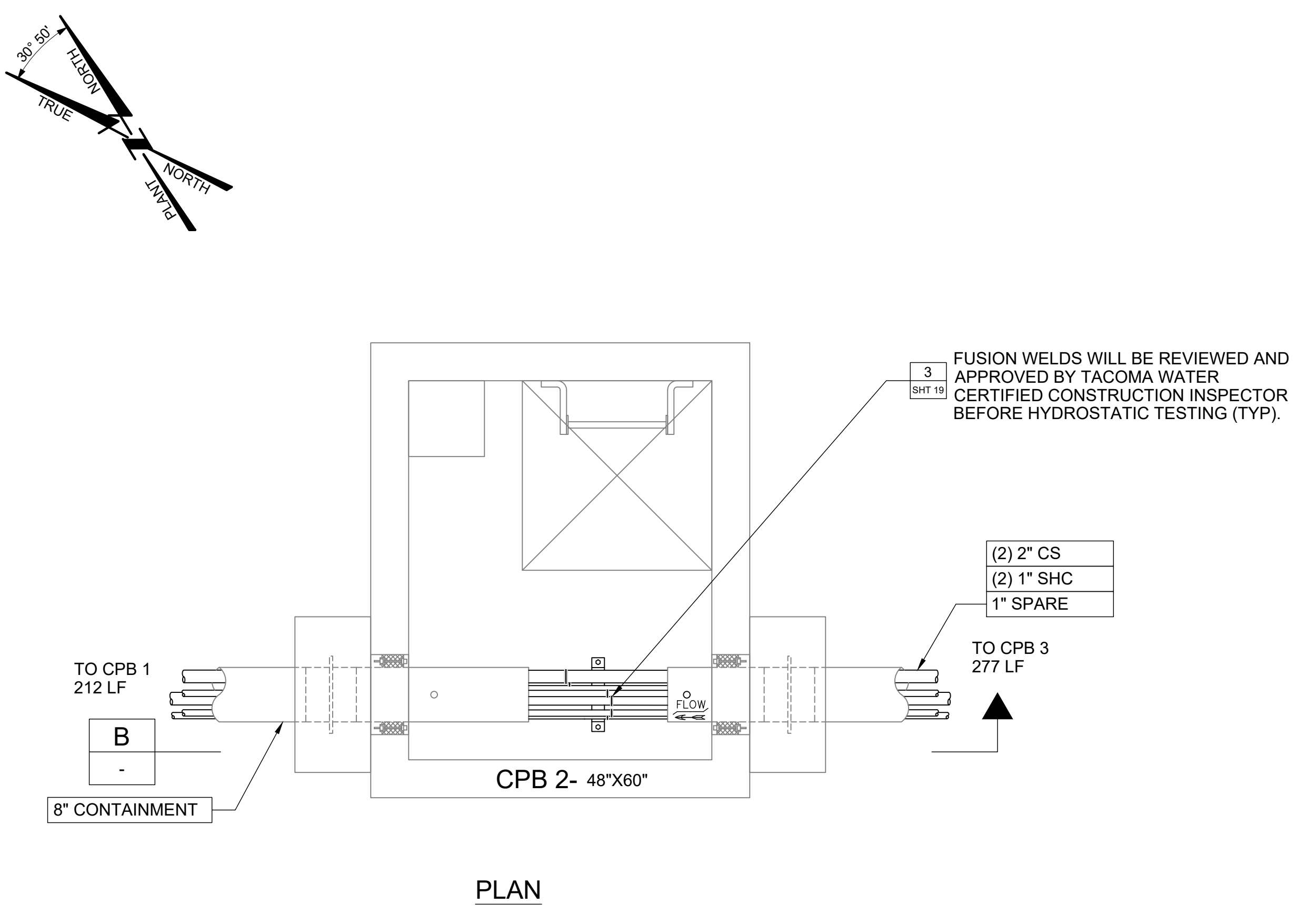
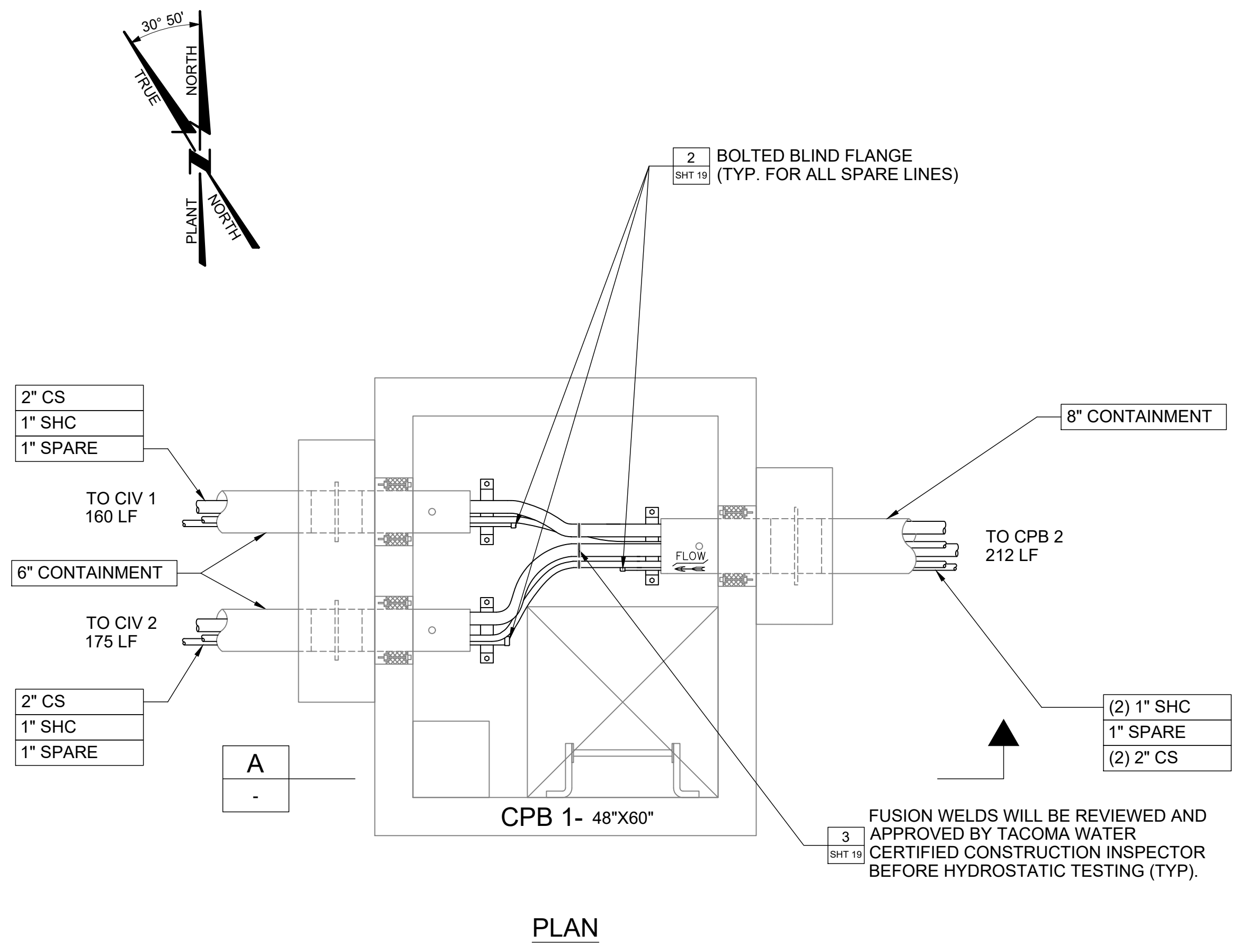
APPROVED: *Kimberly M. DeEdes, P.E. Principal*
 MANAGER



CHEMICAL FEED LINES FOR GREEN RIVER FILTRATION FACILITY
 CHEMICAL FEED LINE REPLACEMENT

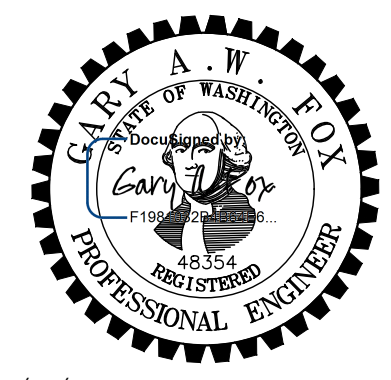
SCALE: HORIZ: 1"=20' VERT: NA
 DRAWING NO. TW24-0031
 SHEET 7 OF 19

- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



CHEMICAL PULL BOX 1 1
SHT 7

CHEMICAL PULL BOX 2 2
SHT 7



01/03/2025

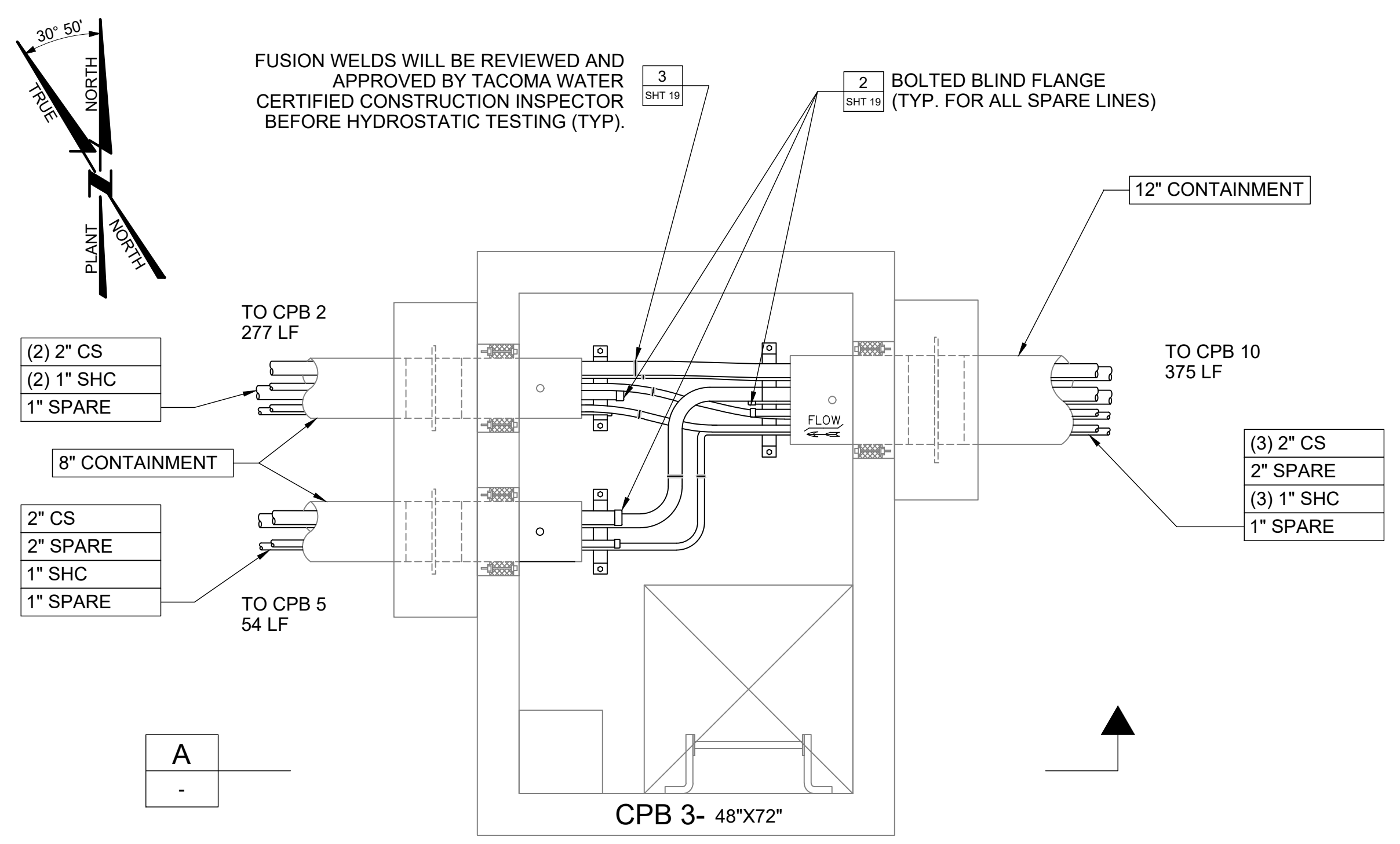
NO.		REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE	DATE	DESIGN	DRAWN	DIGITIZED	CHECKED	ACCOUNTING	CADNET PROJECT NAME:	VAULT FIELD NAME:	FIELD BOOK	DATA FILE	APPROVED	SCALE	HORIZ:	VERT:	DRAWING NO.	SHEET	OF	
							C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3	03/31/2023	GF	SDP		KD		20000119358	GRFF_CHEM_LINES				<i>Kimberly M. DeEdo, P.E. Principal</i>		NA	NA	TW24-0031	8	19



**CHEMICAL PULL BOX 1 AND 2
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT**

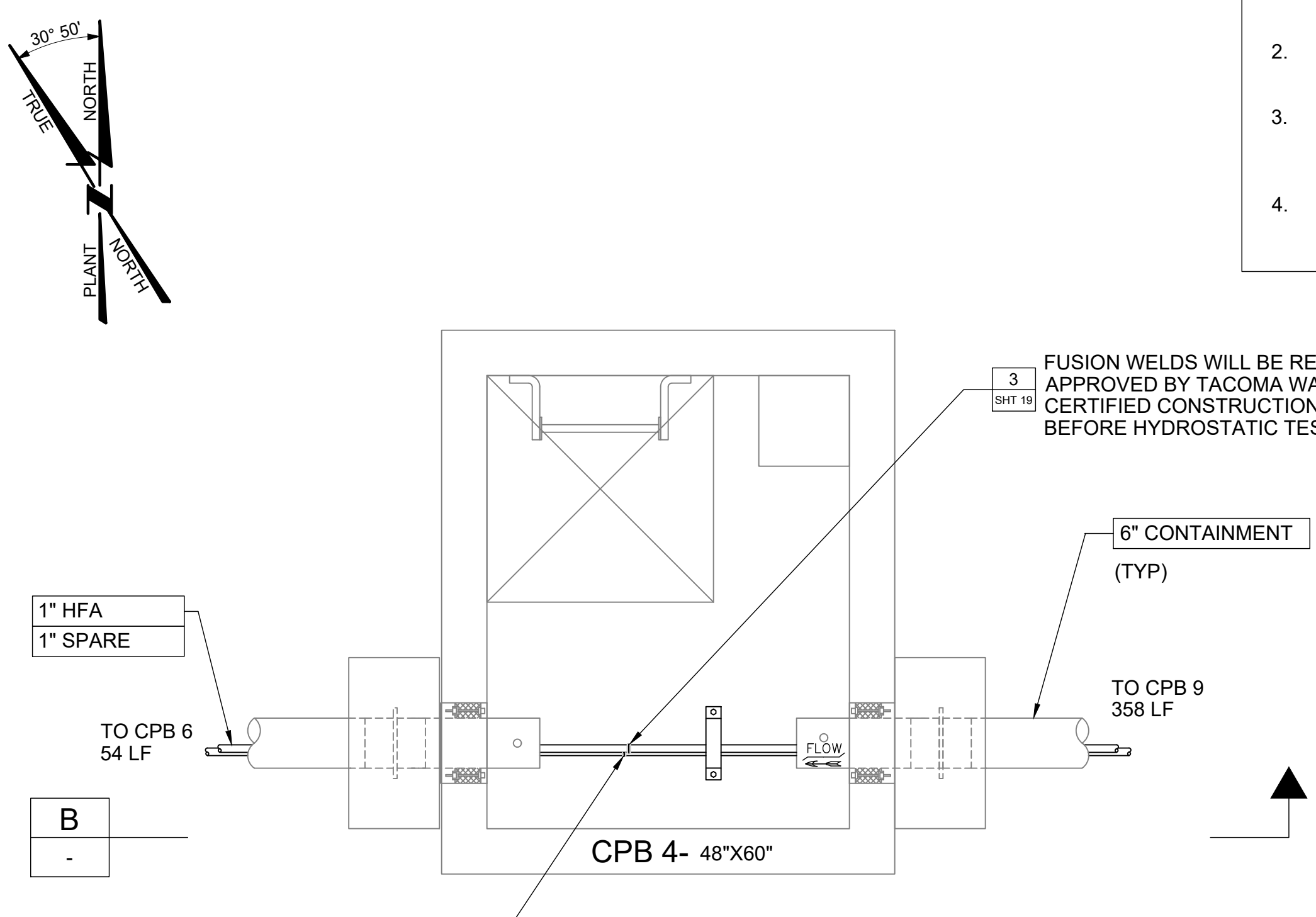
GENERAL SHEET NOTES

1. CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
2. IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
3. CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
4. USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



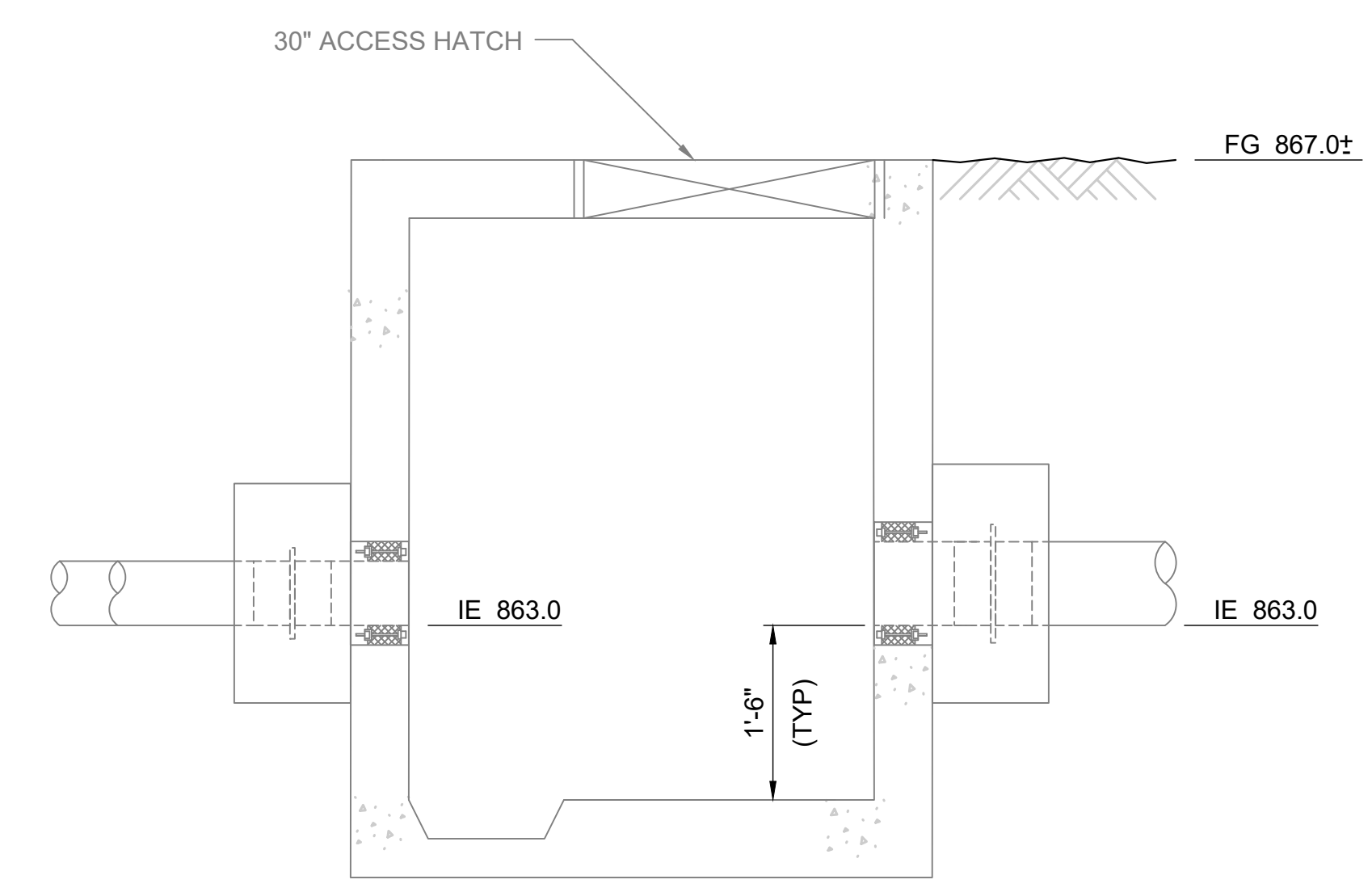
PLAN

A
-

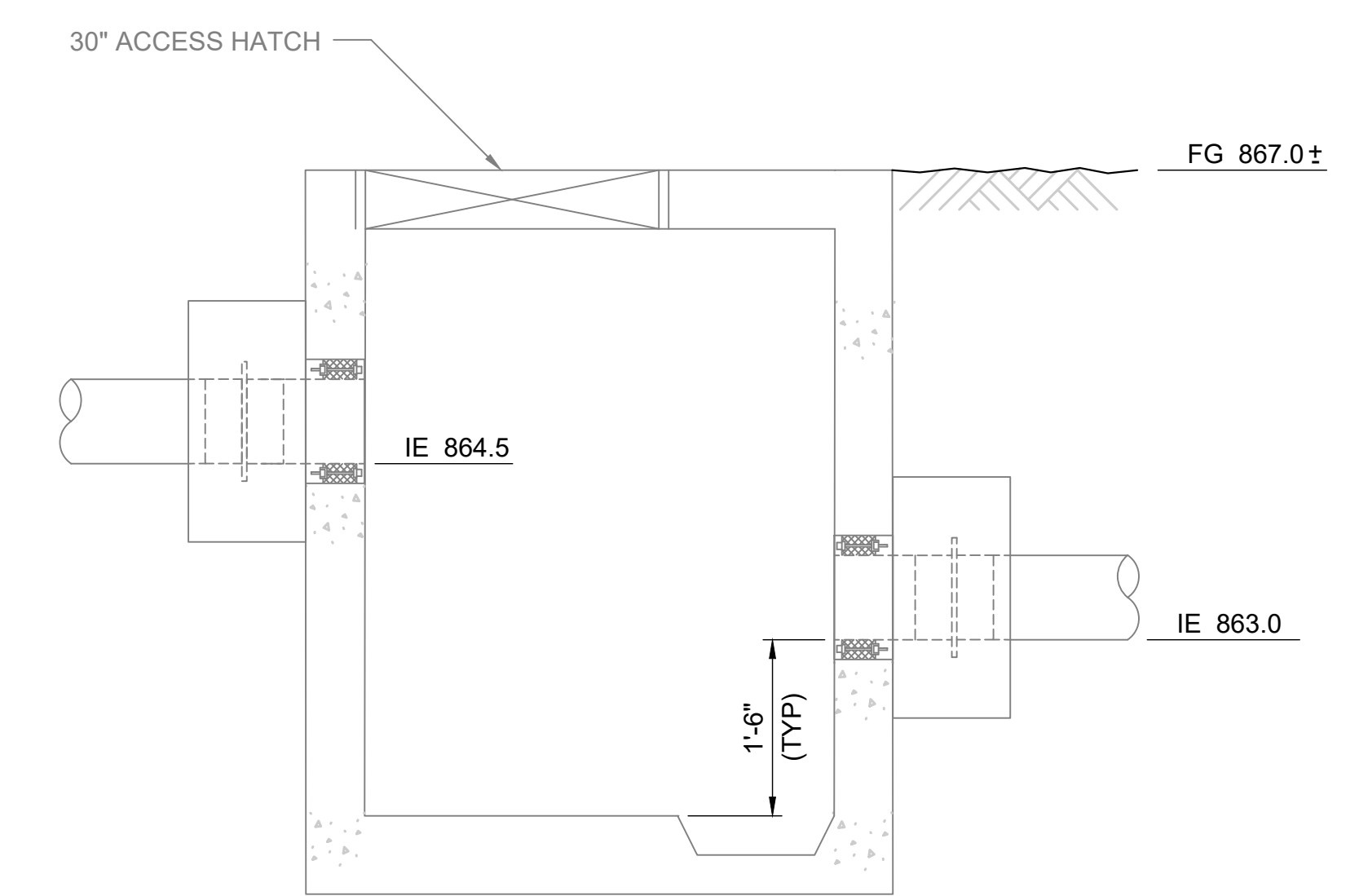


PLAN

B
-



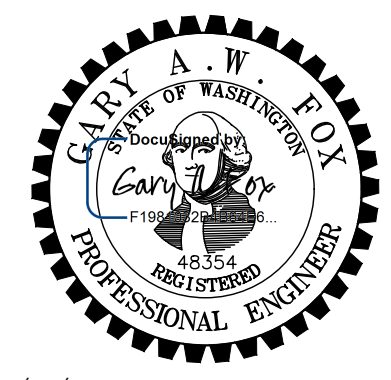
SECTION A
SEE NOTE 1



SECTION B
SEE NOTE 1

CHEMICAL PULL BOX 3
1
SHT 6

CHEMICAL PULL BOX 4
2
SHT 6



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE
						C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

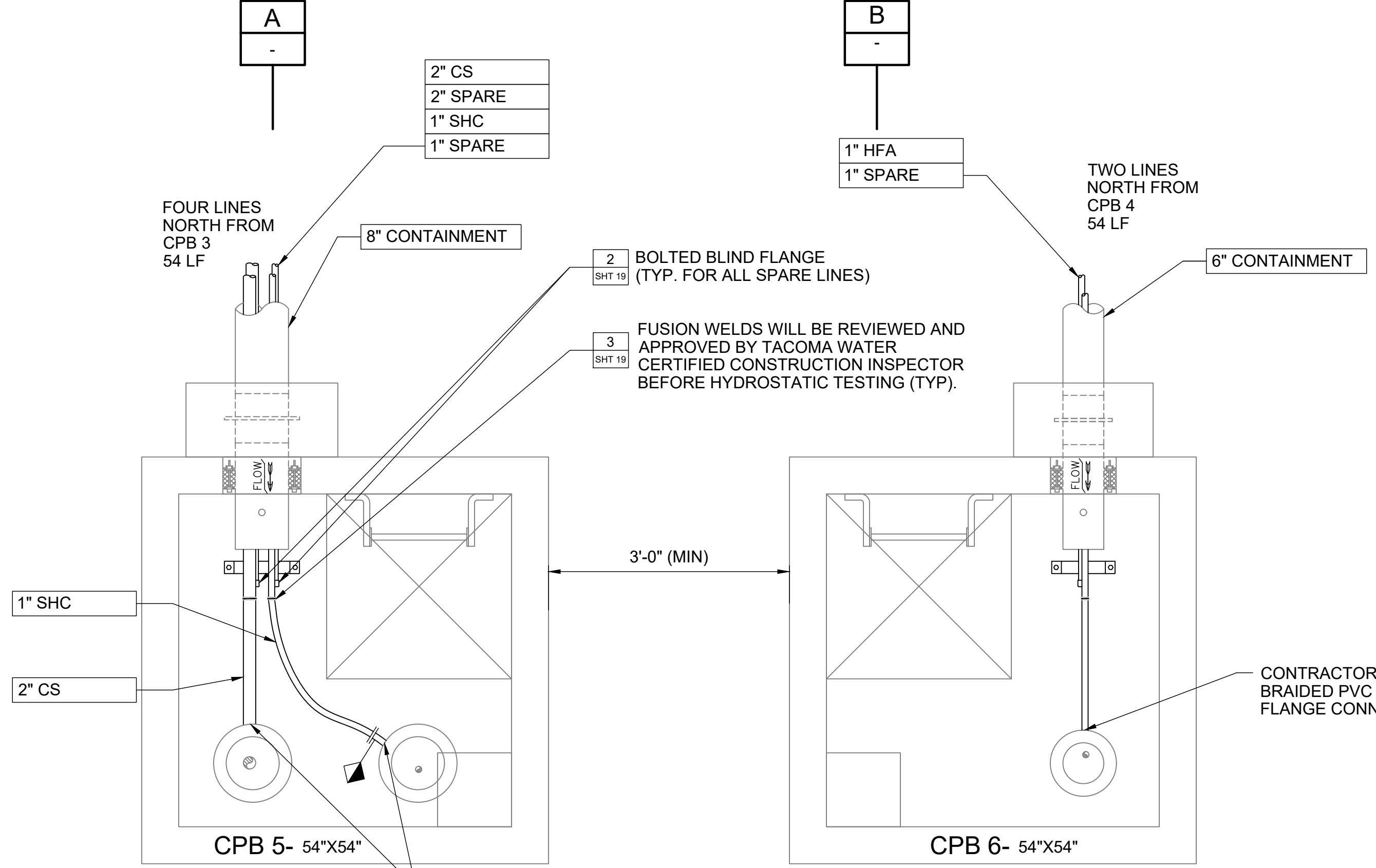
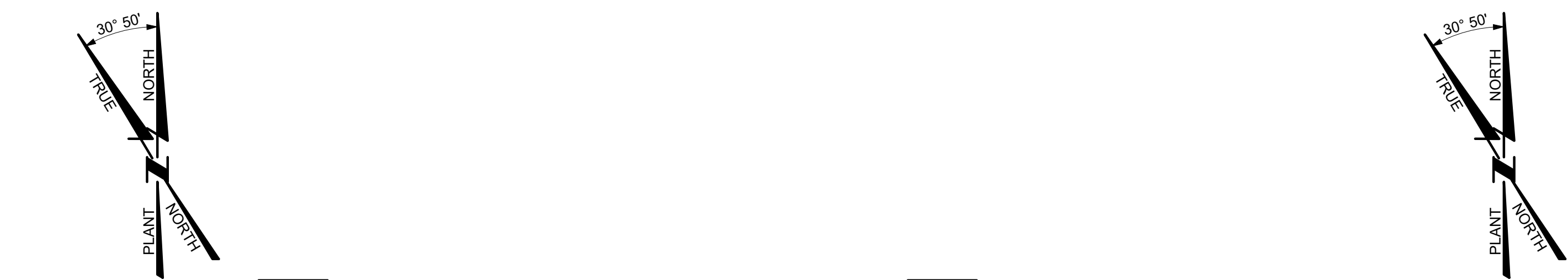
ACCOUNTING: 20000119358
 CADNET PROJECT NAME: GRFF CHEM LINES
 VAULT FILE NAME:
 FIELD BOOK:
 DATA FILE:



CHEMICAL PULL BOX 3 AND 4
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE:
 HORIZ: NA
 VERT: NA
 DRAWING NO.: TW24-0031
 SHEET 9 OF 19

- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.

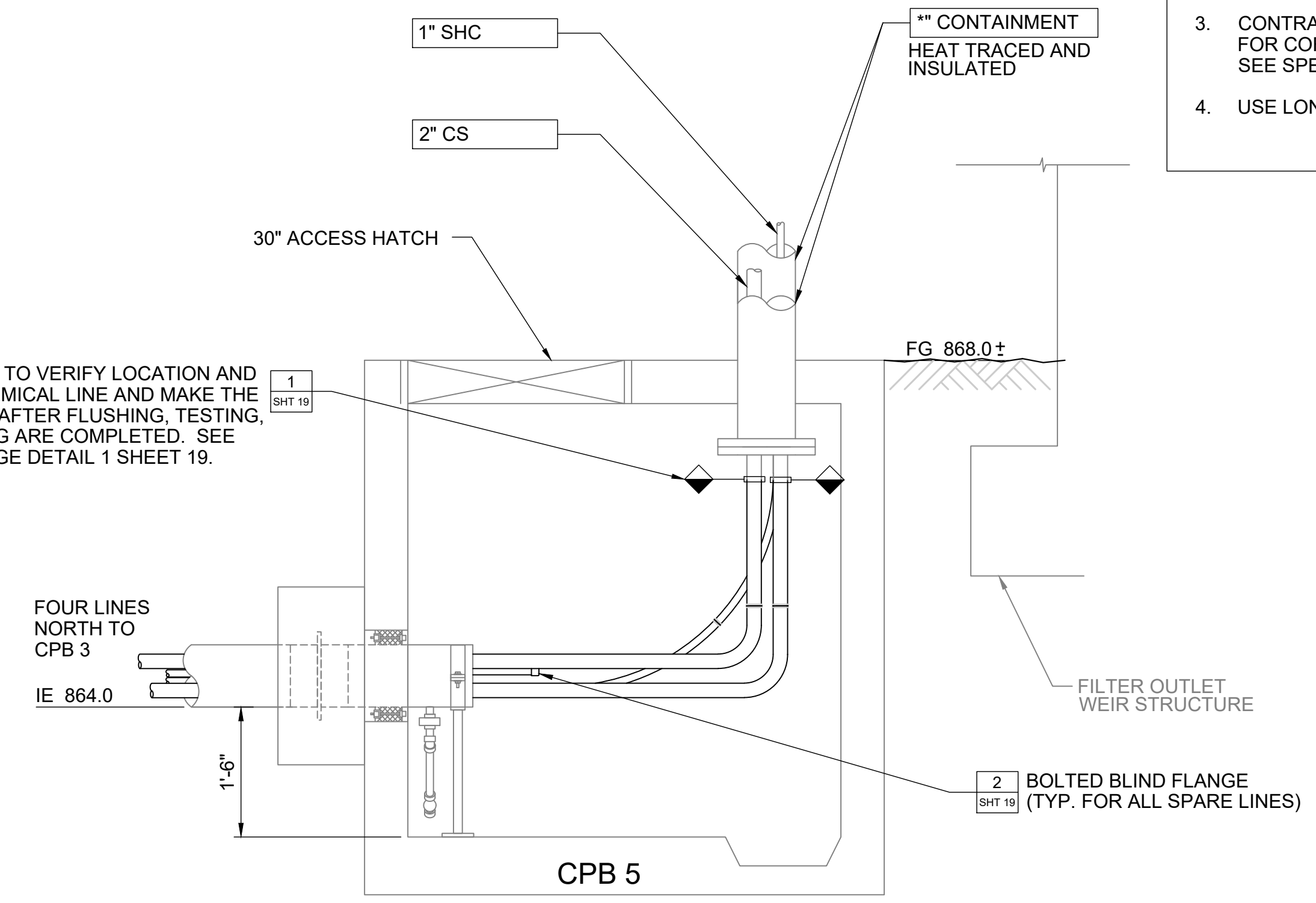


CONTRACTOR TO VERIFY LOCATION AND OD OF EX CHEMICAL LINE AND MAKE THE CONNECTION AFTER FLUSHING, TESTING, AND SAMPLING ARE COMPLETED. SEE BOLTED FLANGE DETAIL 1 SHEET 19.

CONTRACTOR TO MODIFY EXISTING BRAIDED PVC CONNECTION TO BOLTED FLANGE CONNECTION.

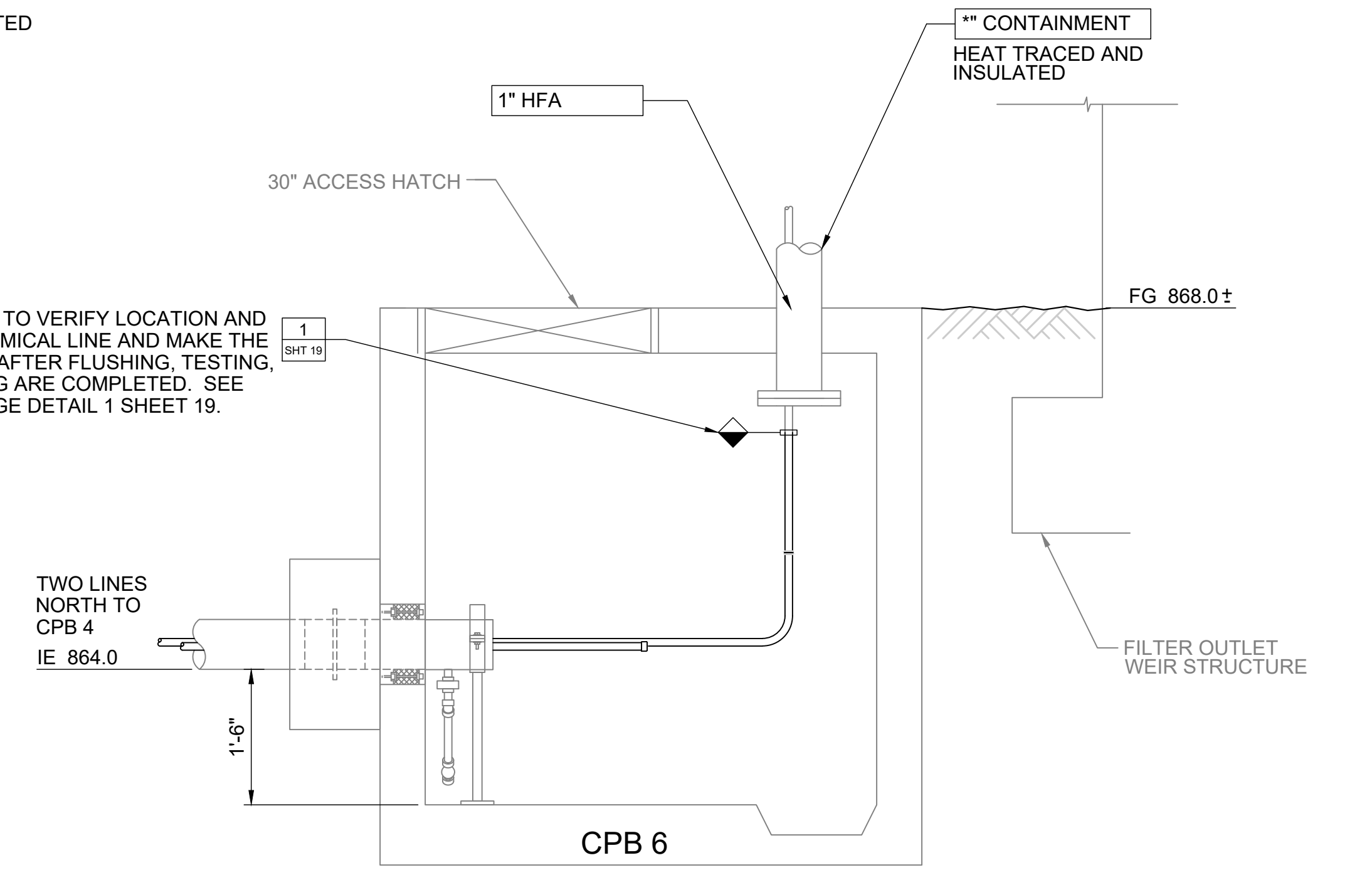
CONTRACTOR TO MODIFY EXISTING CONNECTION TO THE GUARDIAN DOUBLE CONTAINMENT PIPING TO BOLTED FLANGE CONNECTION.

PLAN



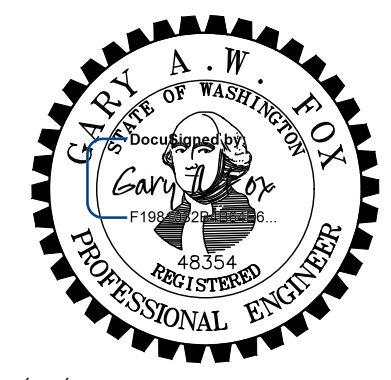
SECTION A

CONTRACTOR TO VERIFY LOCATION AND OD OF EX CHEMICAL LINE AND MAKE THE CONNECTION AFTER FLUSHING, TESTING, AND SAMPLING ARE COMPLETED. SEE BOLTED FLANGE DETAIL 1 SHEET 19.



SECTION B

CHEMICAL PULL BOXES 5 & 6
1
SHT 6



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

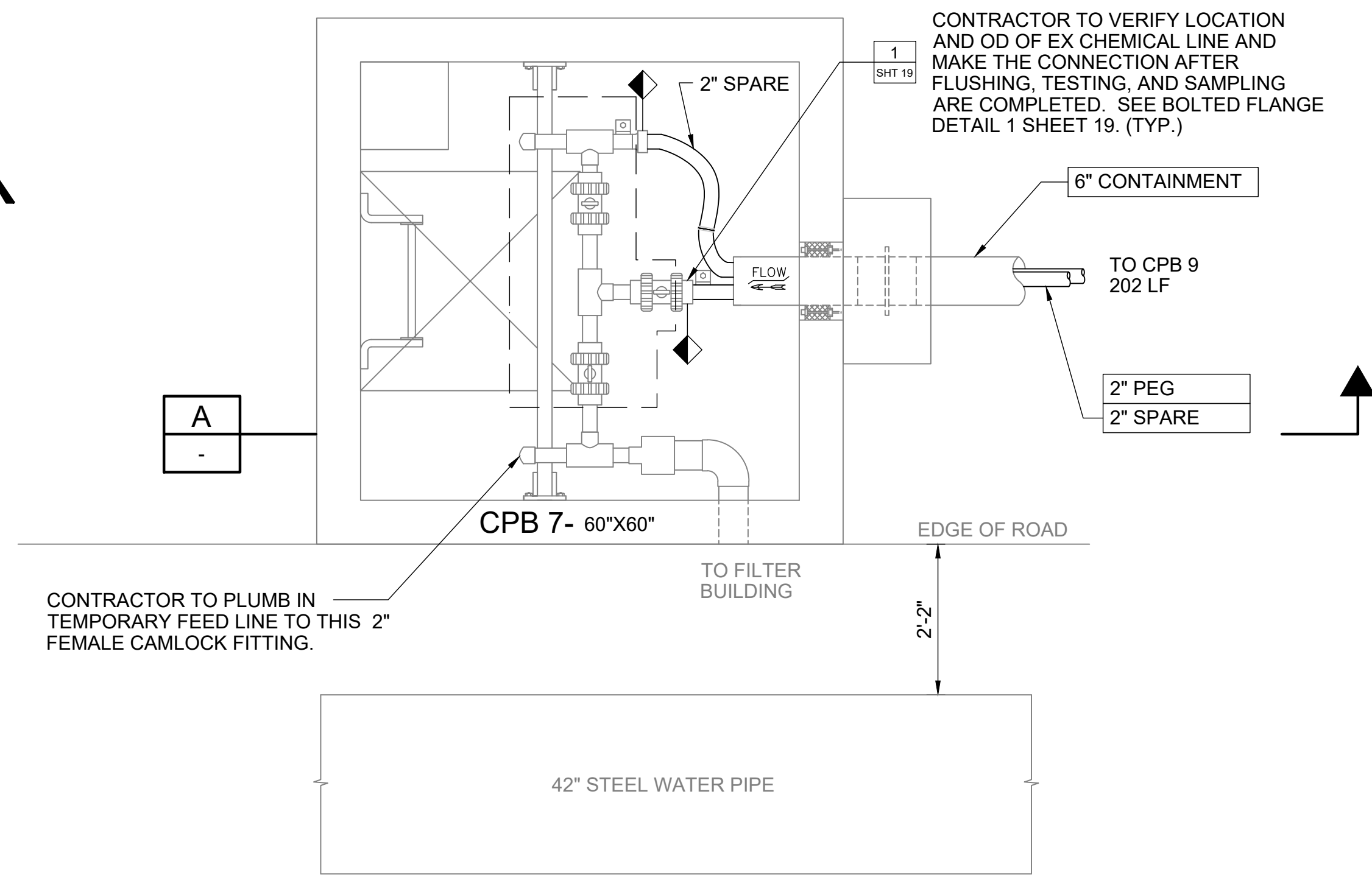
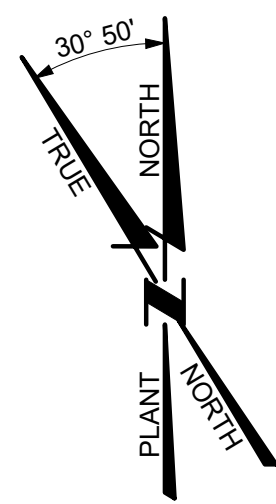
ACCOUNTING	20000119358
CADNET PROJECT NAME	GRFF CHEM LINES
VAULT FILE NAME	
FIELD BOOK	
DATA FILE	

APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
MANAGER

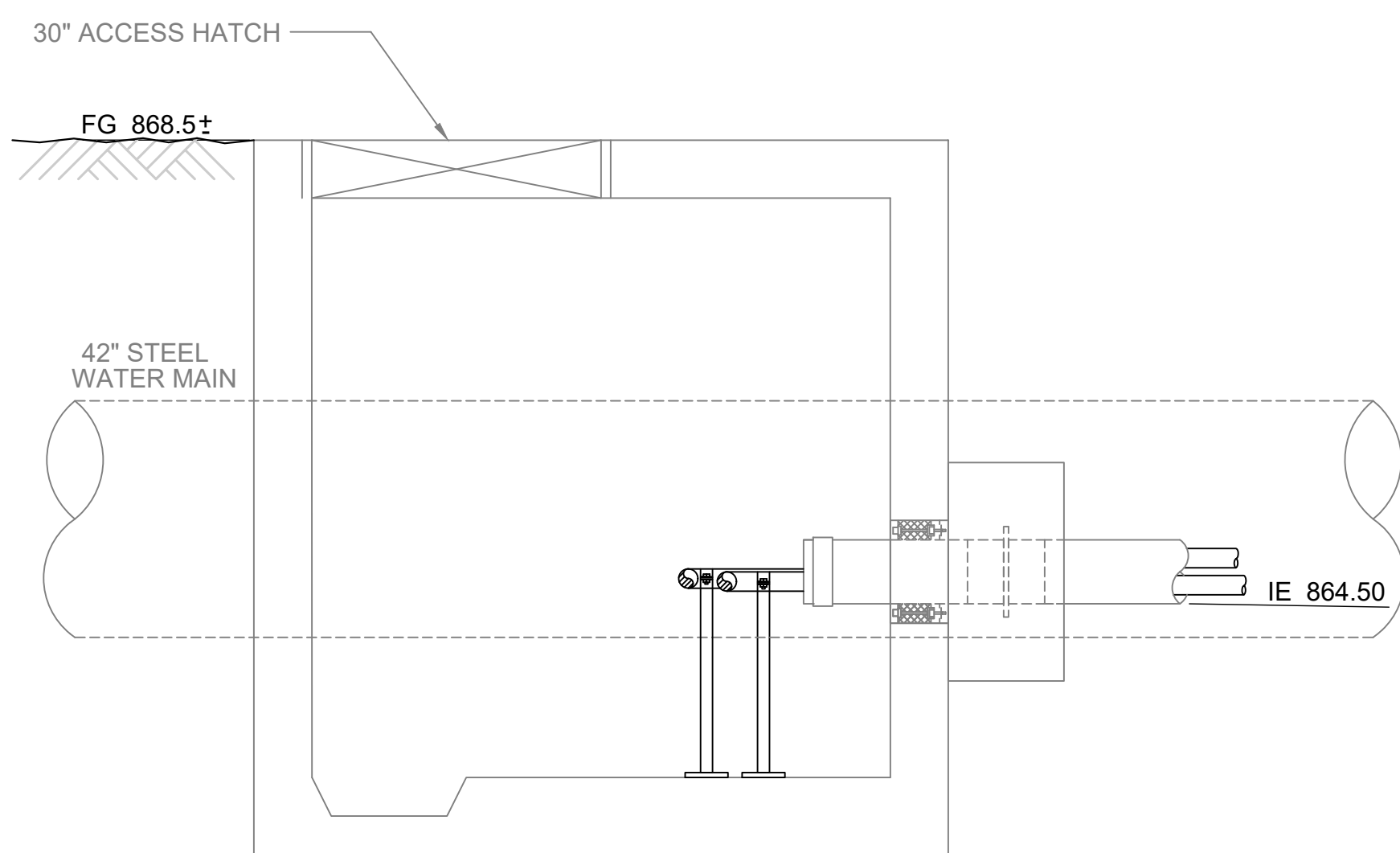


CHEMICAL PULL BOX 5 AND 6
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE	
HORIZ:	NA
VERT:	NA
DRAWING NO.	TW24-0031
SHEET	10 OF 19



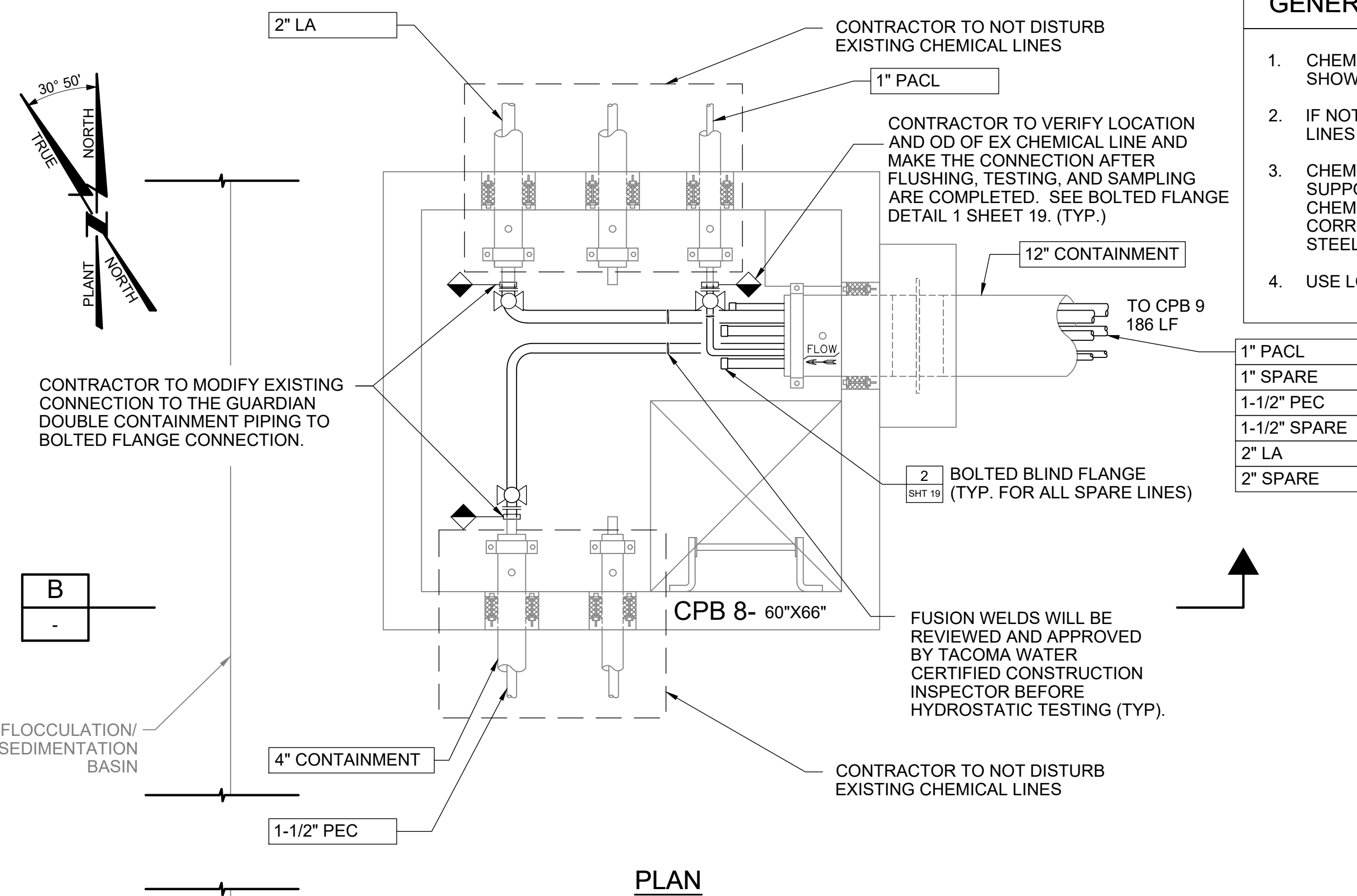
PLAN



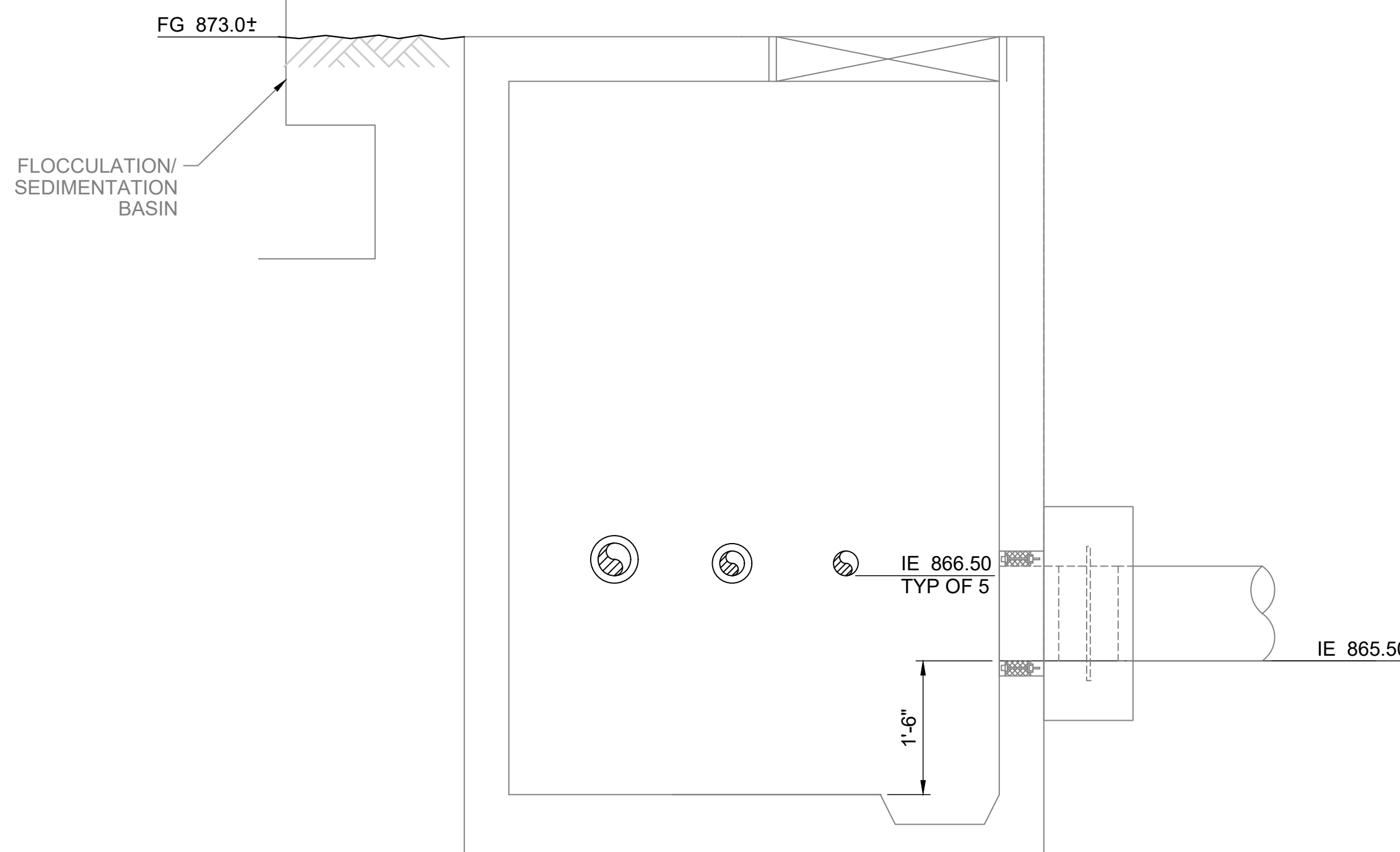
SECTION A

CHEMICAL PULL BOX 7

1
SHT 6



PLAN



SECTION B

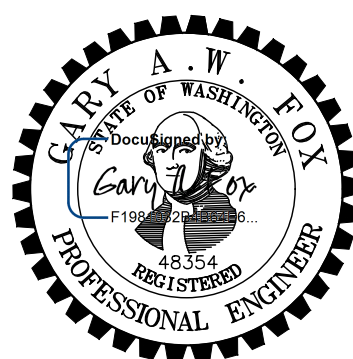
CHEMICAL PULL BOX 8

2
SHT 6

GENERAL SHEET NOTES

- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
- IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
- CHEMICAL PULL BOXES ARE CORROSIVE AREAS. ALL PIPE SUPPORTS IN THE CHEMICAL BOXES AND WITHIN THE CHEMICAL PIPE TRENCH SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS, TYPE 316 STAINLESS STEEL OR FRP.
- USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.

1" PACL
1" SPARE
1-1/2" PEC
1-1/2" SPARE
2" LA
2" SPARE



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

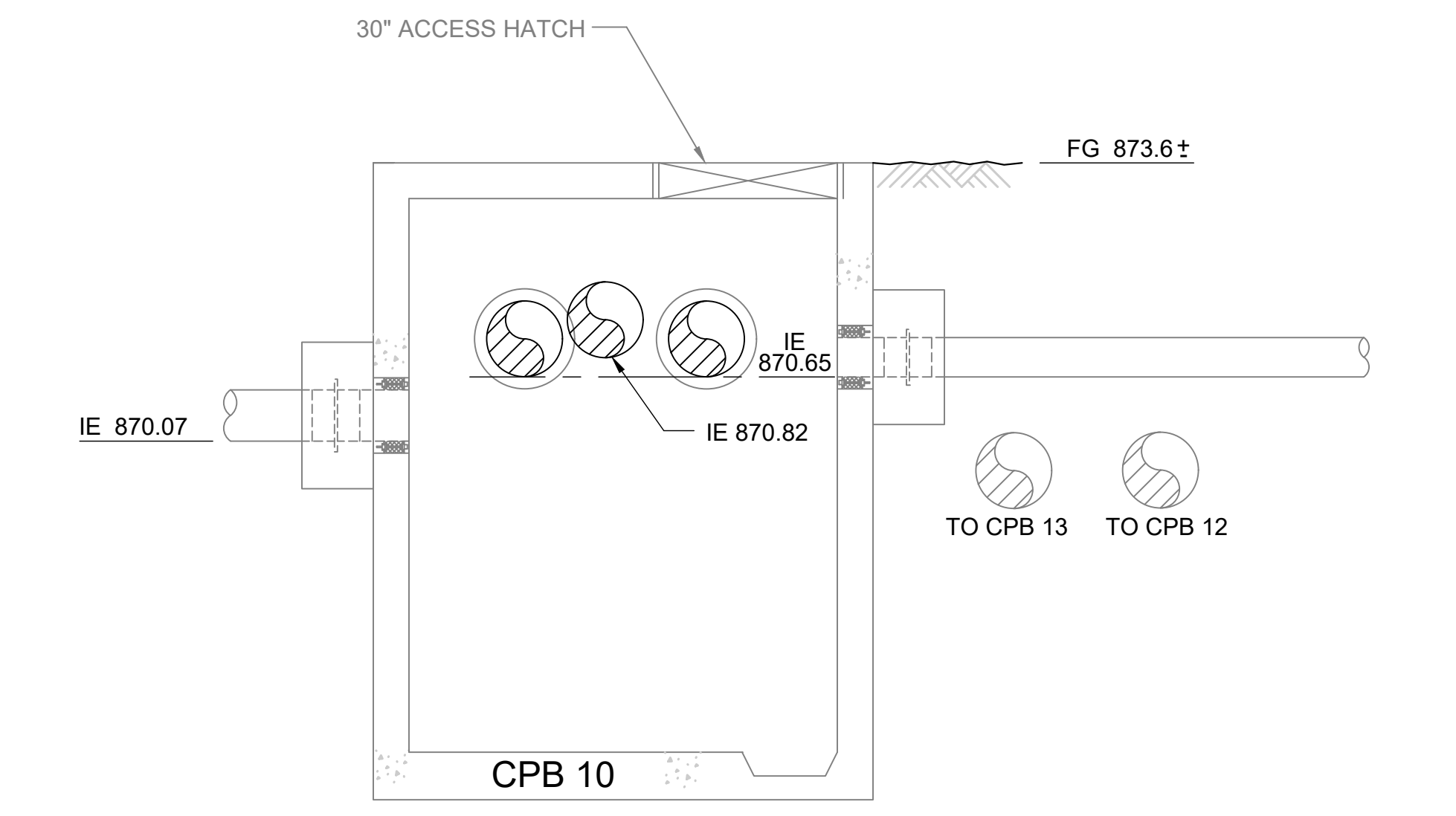
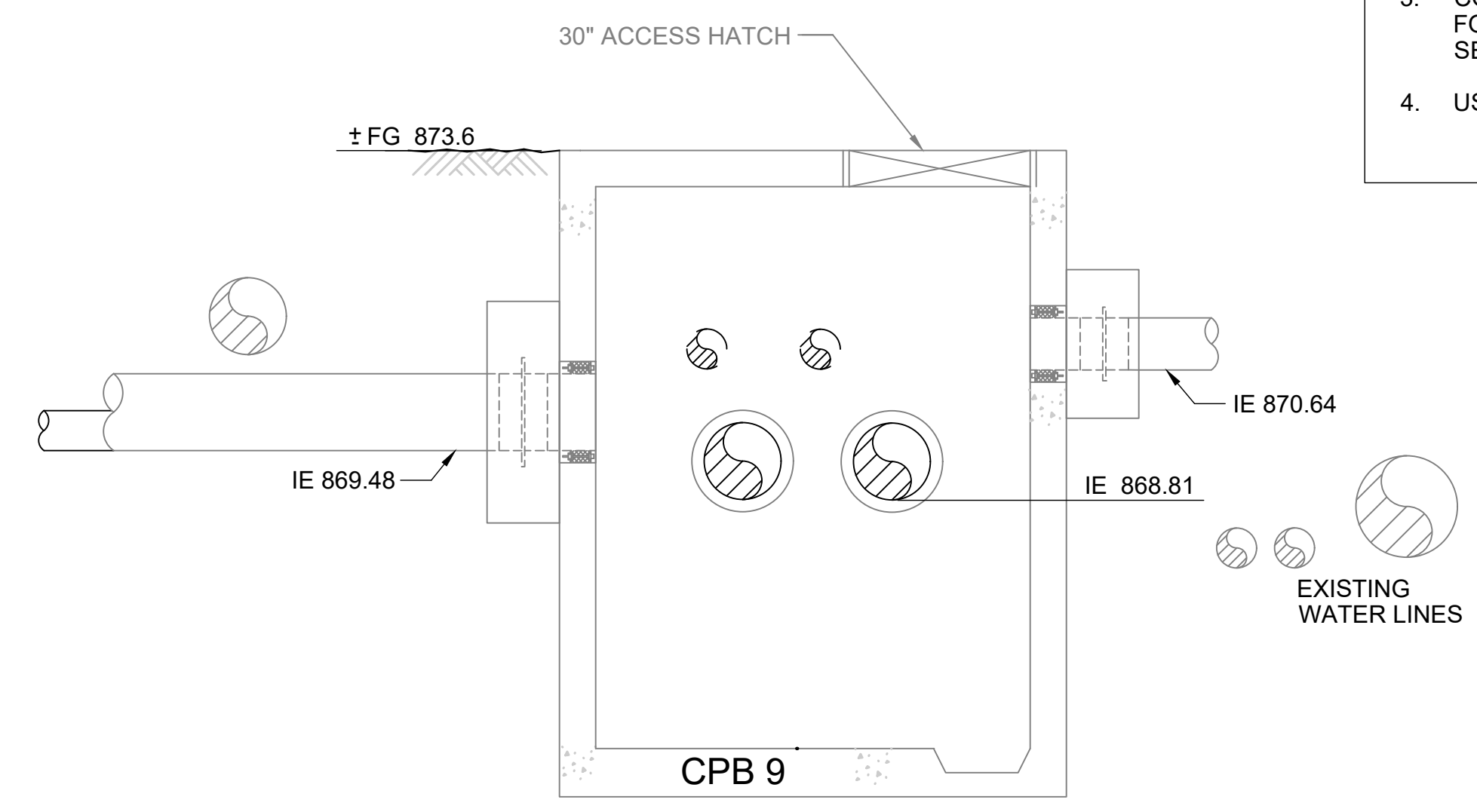
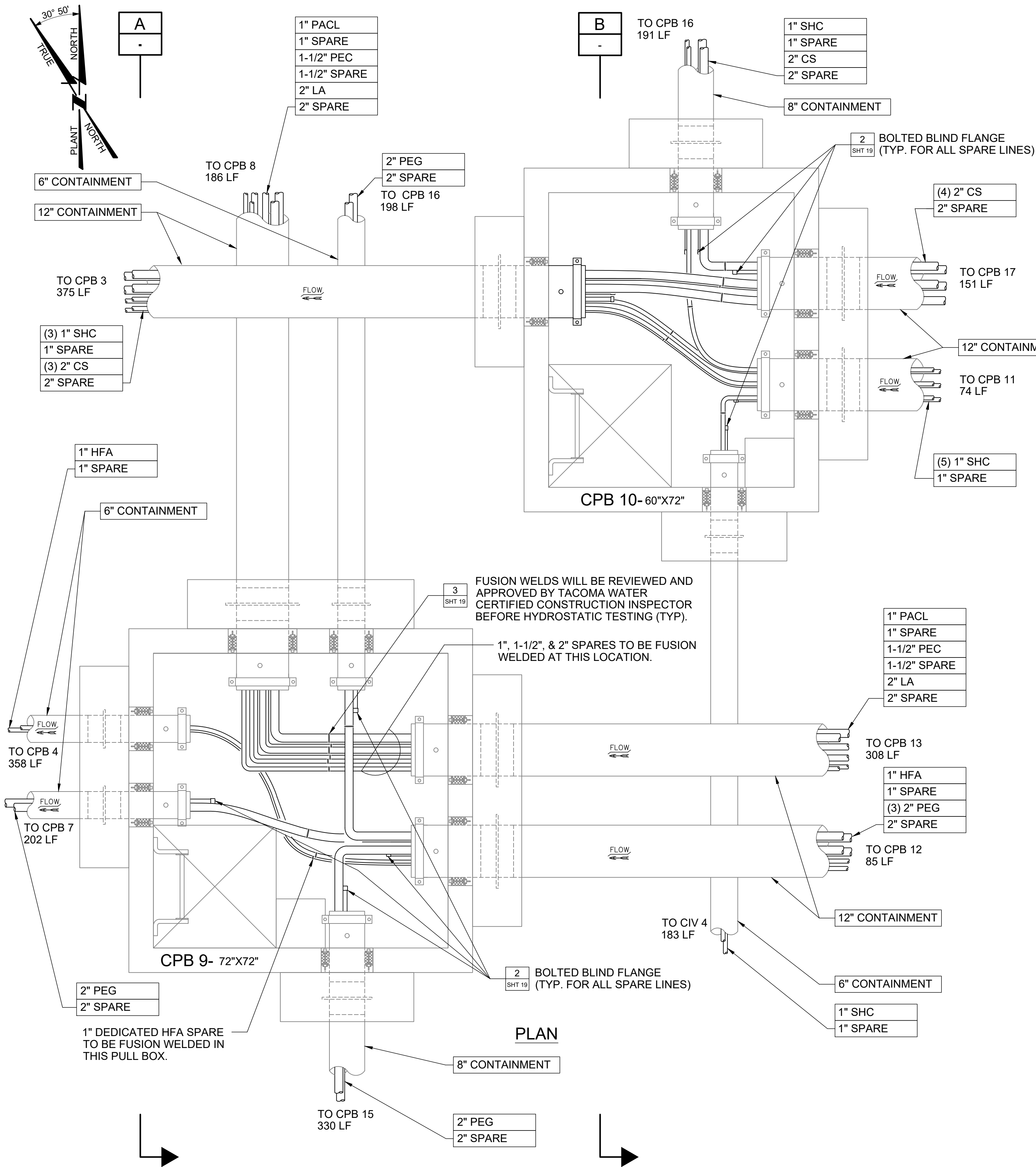
APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
OPERATIONS MANAGER



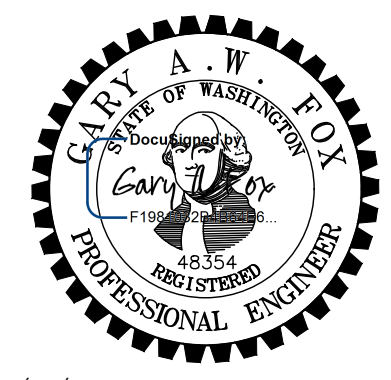
CHEMICAL PULL BOX 7 AND 8
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE	
HORIZ:	NA
VERT:	NA
DRAWING NO.	TW24-0031
SHEET	11 OF 19

- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



CHEMICAL PULL BOX 9 & 10 1
SHT 5



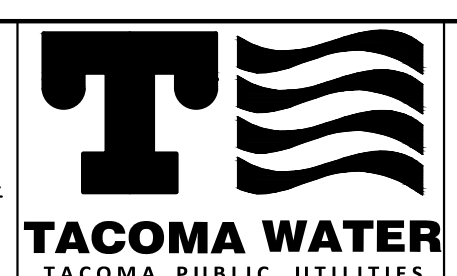
01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING: 20000119358
 CADNET PROJECT NAME: GRFF CHEM LINES
 VAULT FILE NAME:
 FIELD BOOK:
 DATA FILE:

APPROVED: *Kimberly M. DeEdo, P.E. Principal*
 OPERATIONS MANAGER

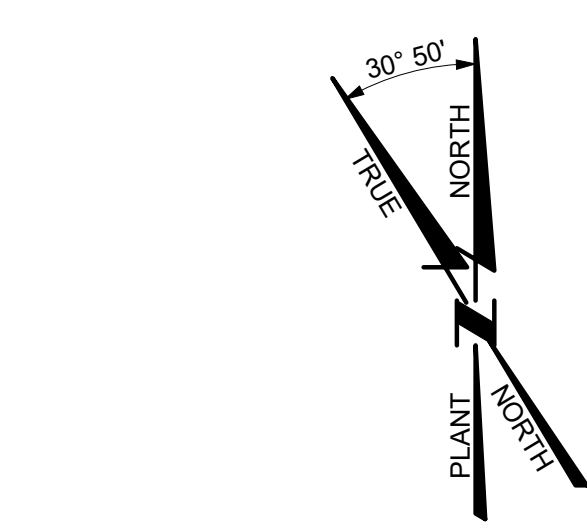
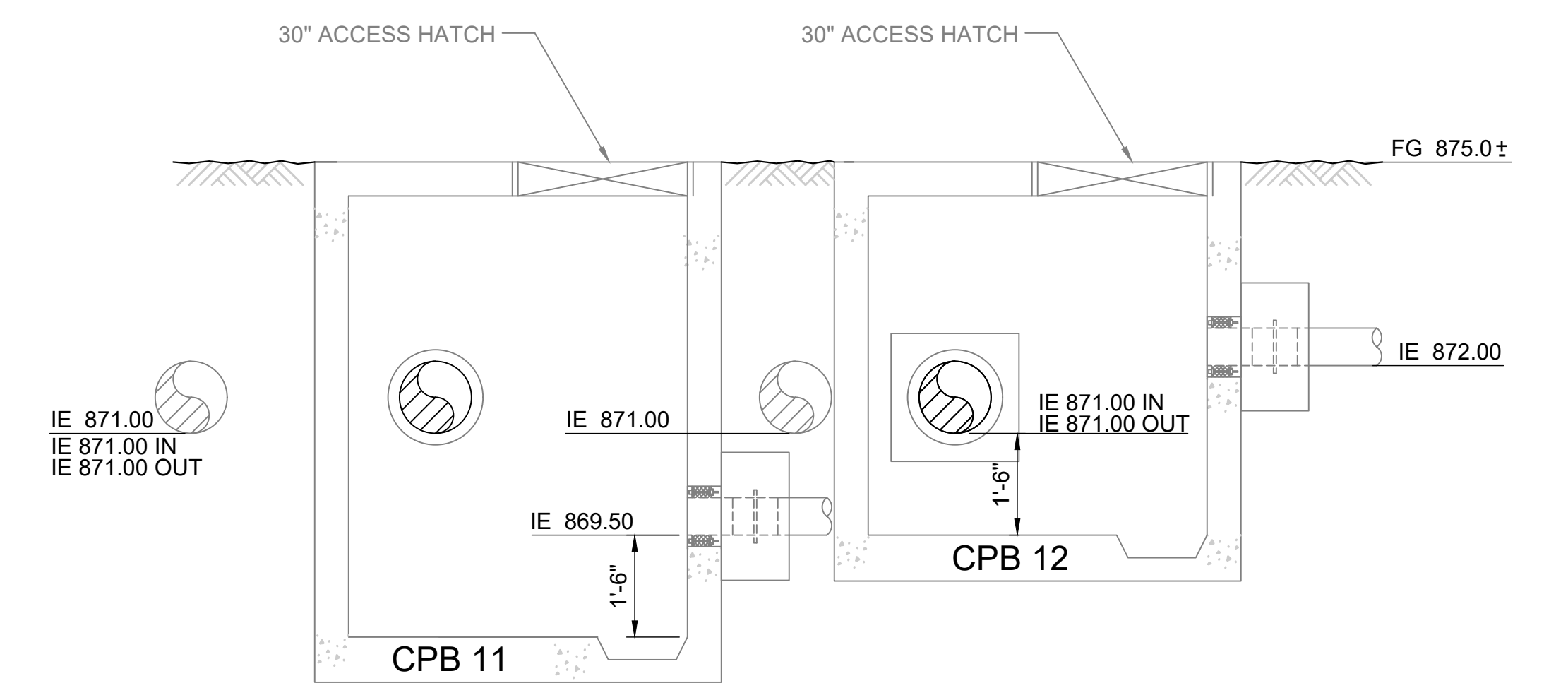
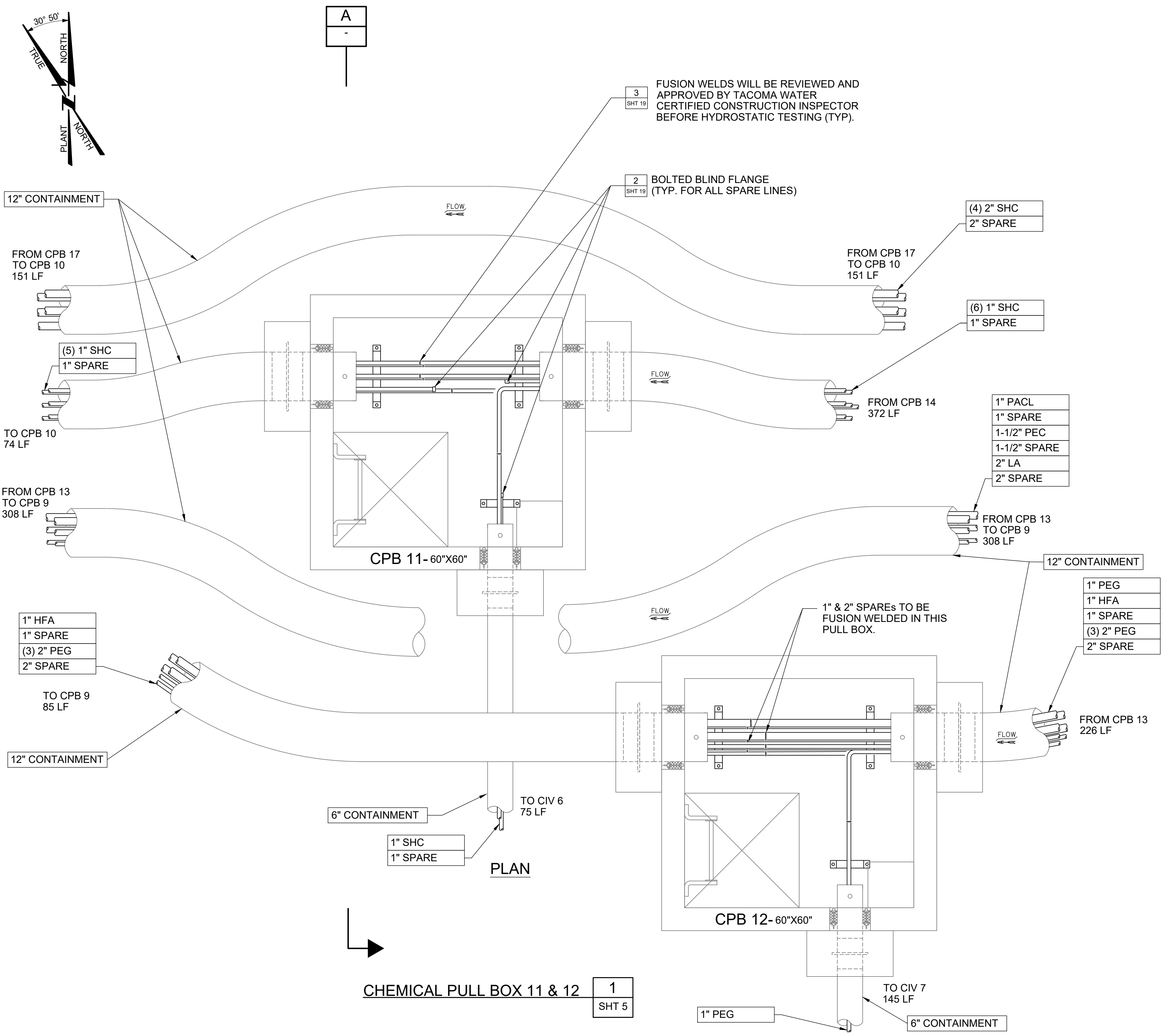


CHEMICAL PULL BOX 9 AND 10
 GREEN RIVER FILTRATION FACILITY
 CHEMICAL FEED LINE REPLACEMENT

SCALE: NA
 HORIZ: NA
 VERT: NA
 DRAWING NO.: TW24-0031
 SHEET 12 OF 19

GENERAL SHEET NOTES

- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
- IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
- CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
- USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.

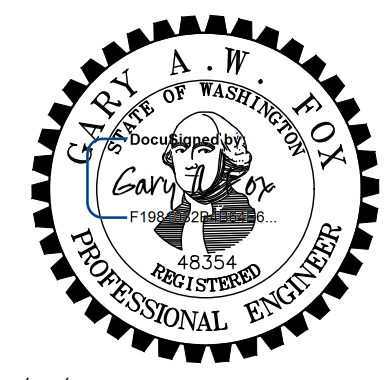


A
-

6" CONTAINMENT
1" SHC
1" SPARE
PLAN

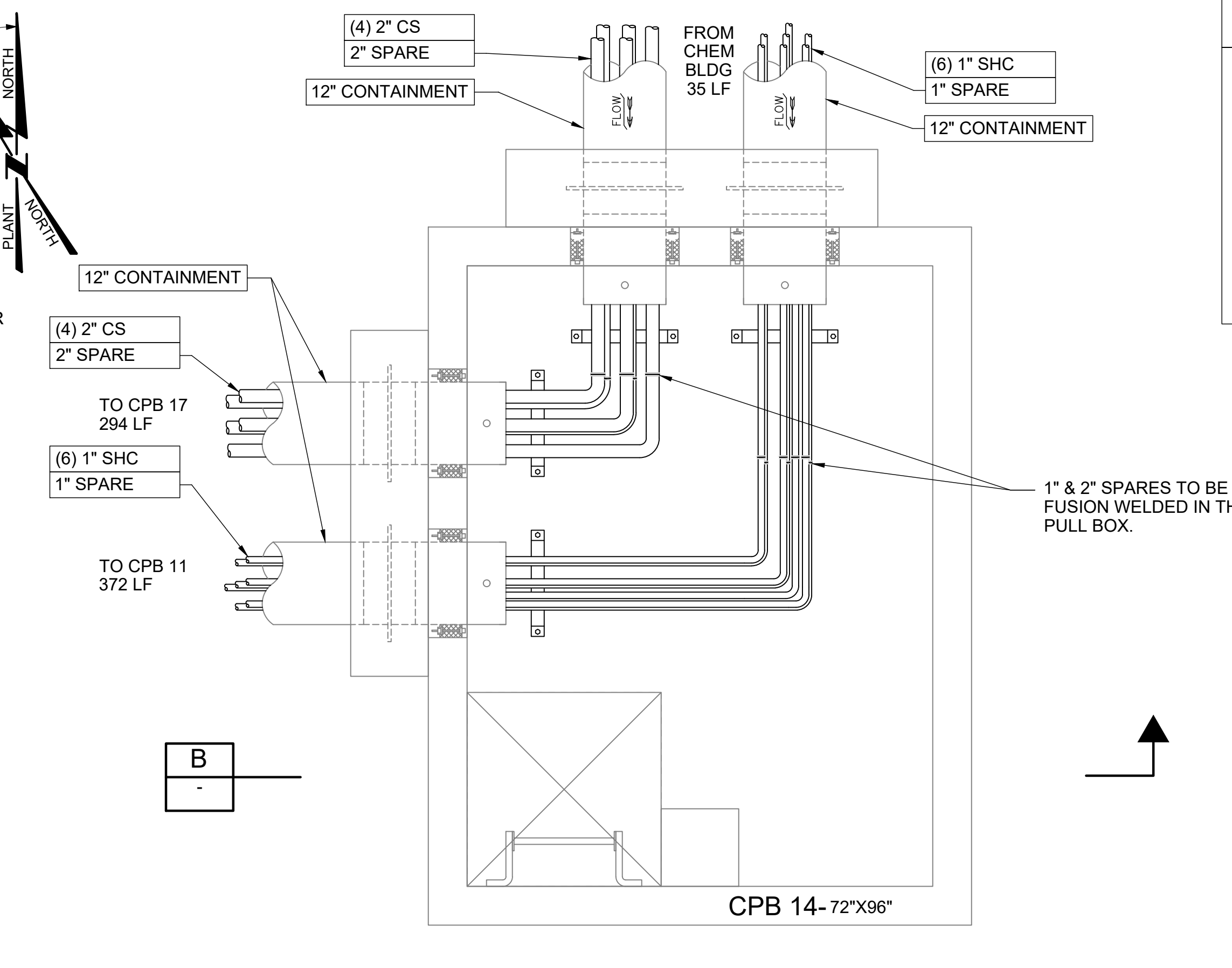
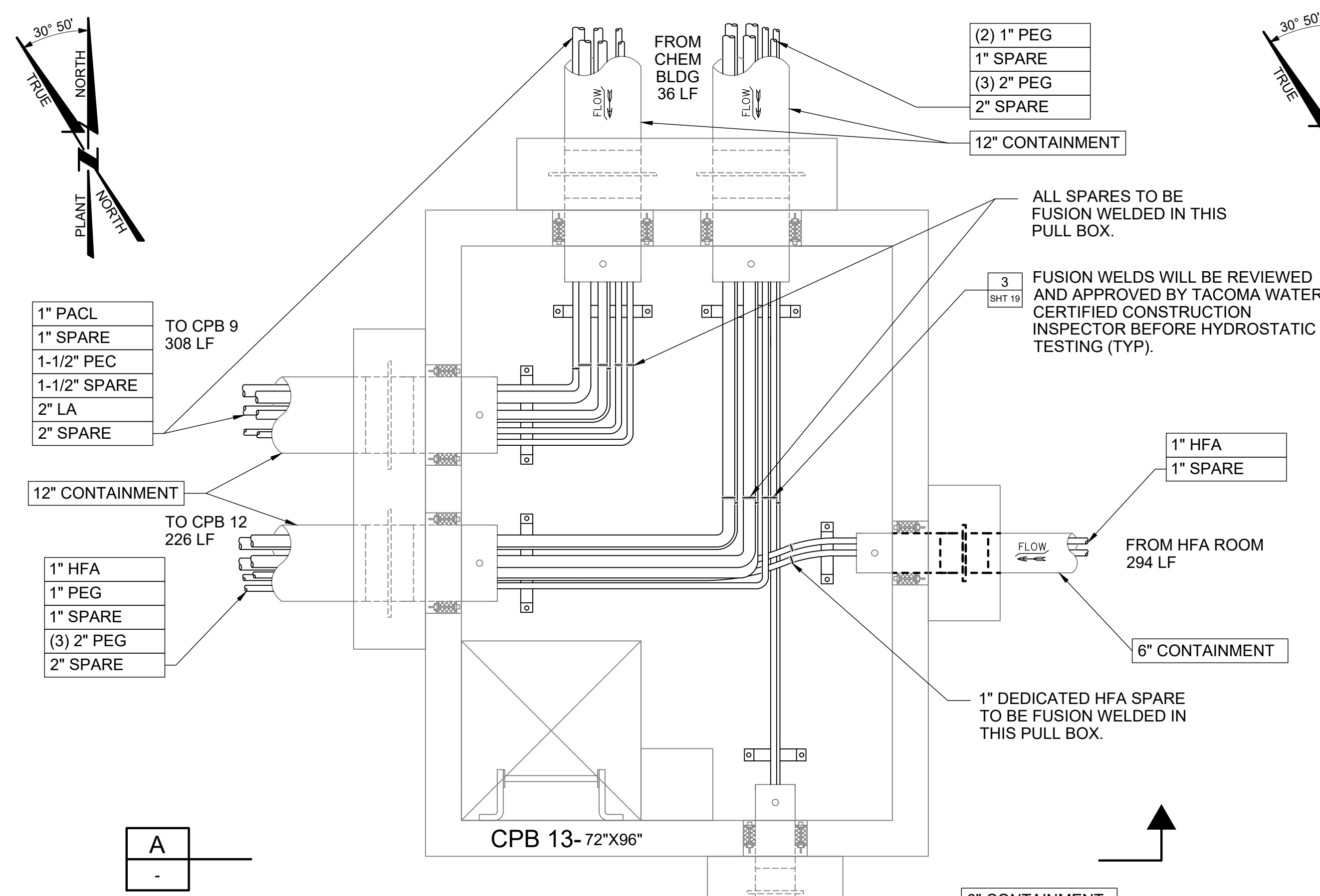
CHEMICAL PULL BOX 11 & 12
1
SHT 5

SECTION A
SEE NOTE 1

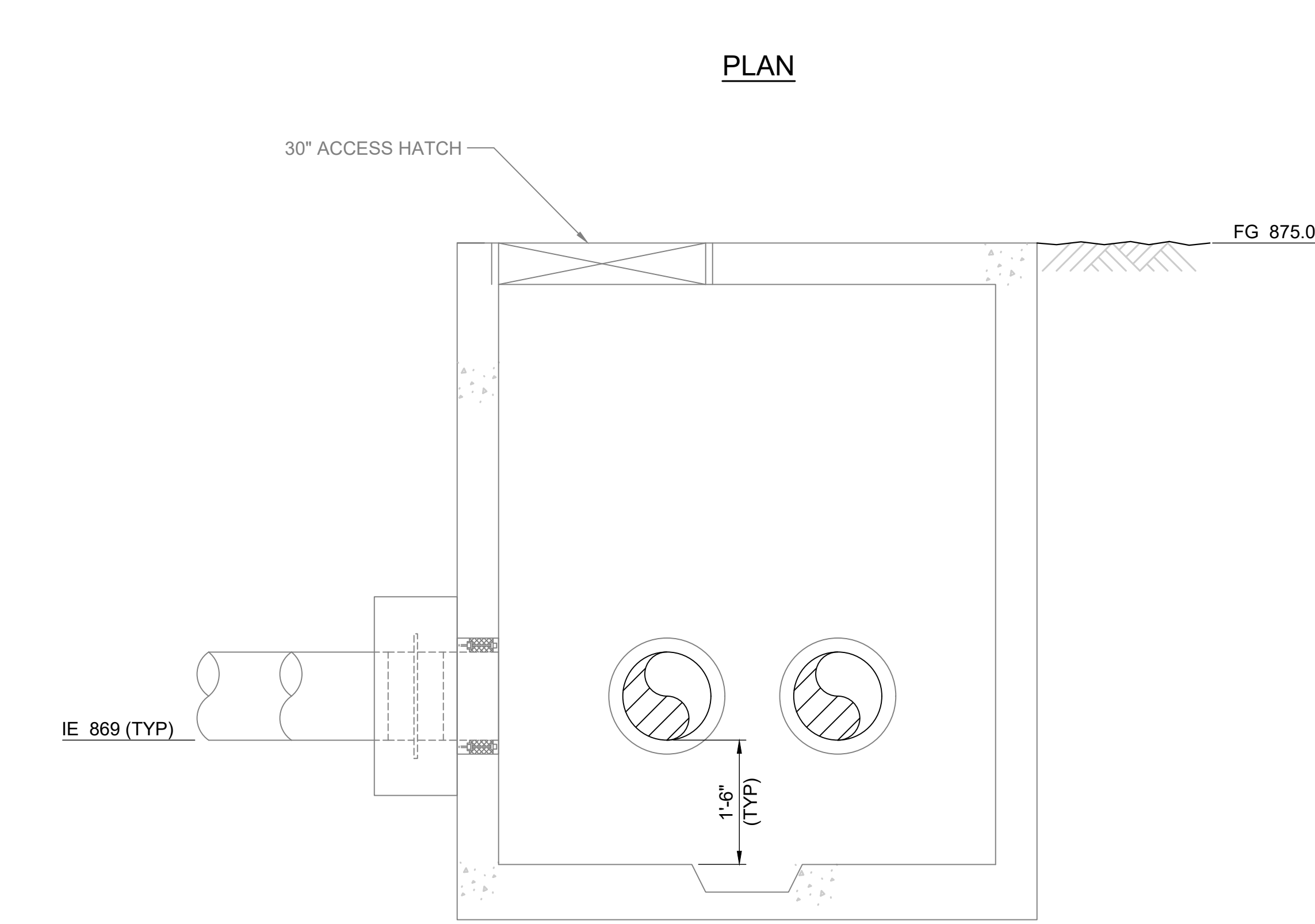
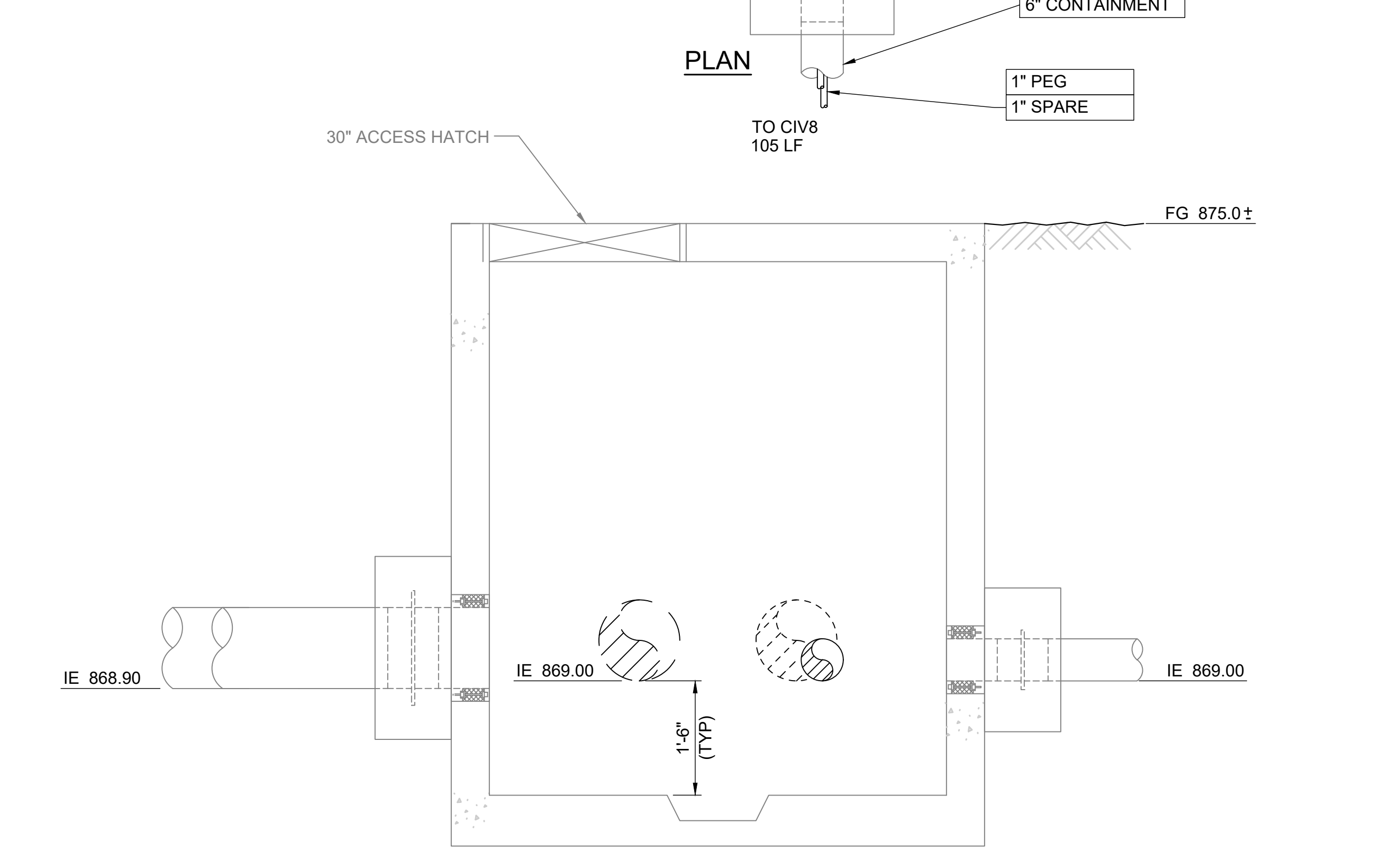


01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE	DATE	ACCOUNTING	APPROVED	<p>TACOMA WATER TACOMA PUBLIC UTILITIES</p>	<p>CHEMICAL PULL BOX 11 AND 12 GREEN RIVER FILTRATION FACILITY CHEMICAL FEED LINE REPLACEMENT</p>	<p>SCALE HORIZ: NA VERT: NA DRAWING NO. TW24-0031 SHEET 13 OF 19</p>
						<p>C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3</p>	<p>03/31/2023</p>	<p>20000119358</p>	<p>Kimberly M. DeEdo, P.E. Principal Principal/Manager</p>			

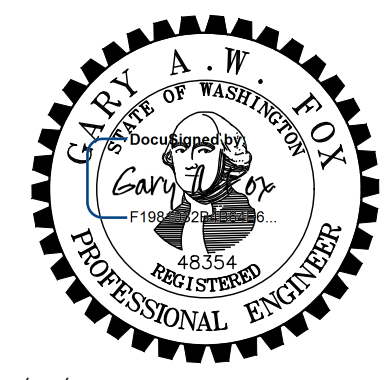


- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



CHEMICAL PULL BOX 13 1
SHT 5

CHEMICAL PULL BOX 14 2
SHT 5



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

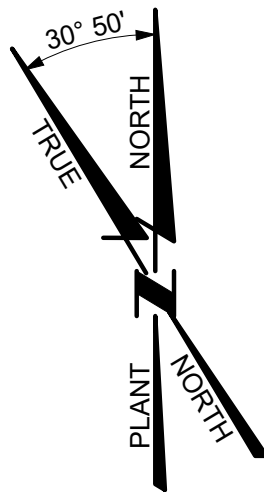
ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
OPERATIONS MANAGER



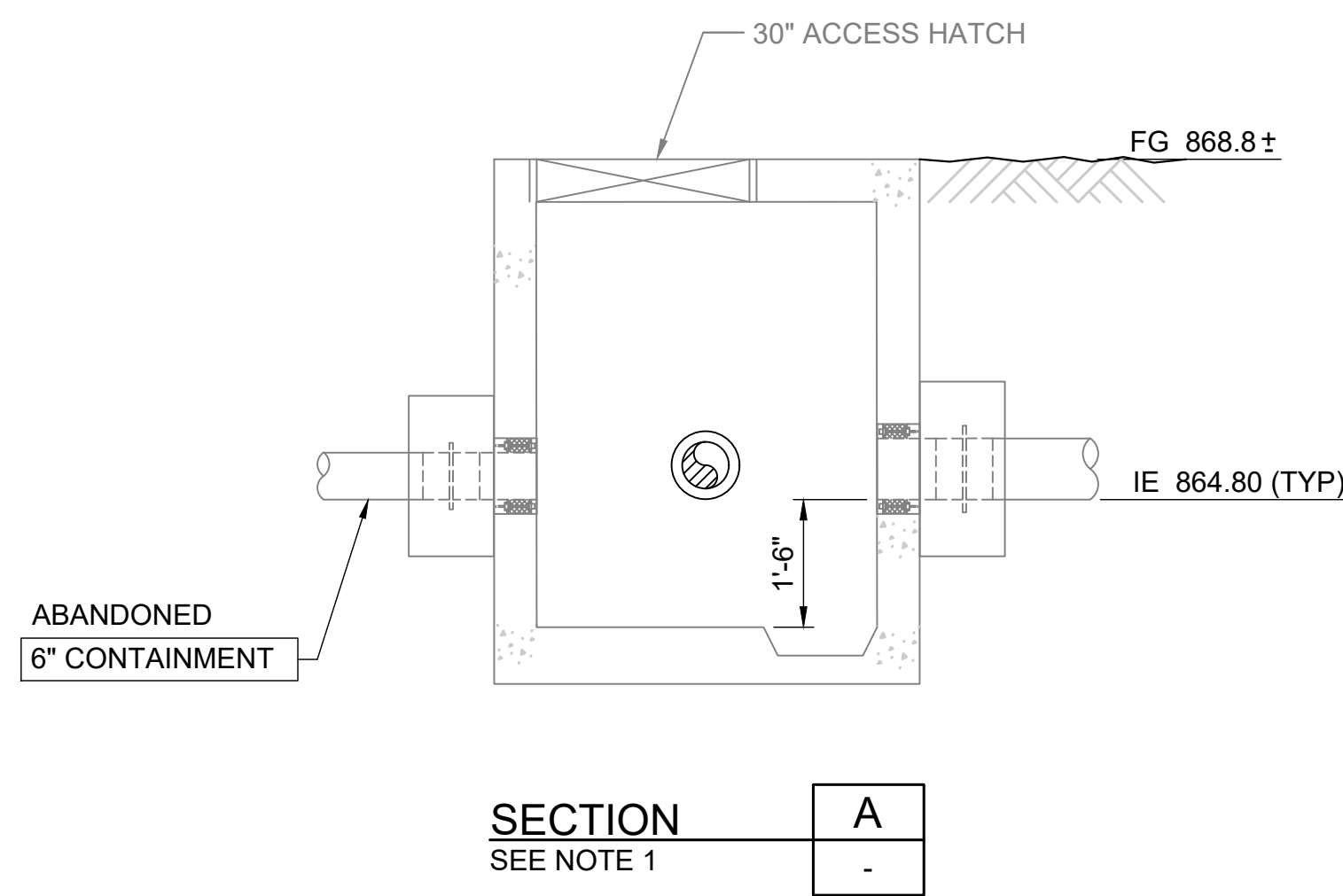
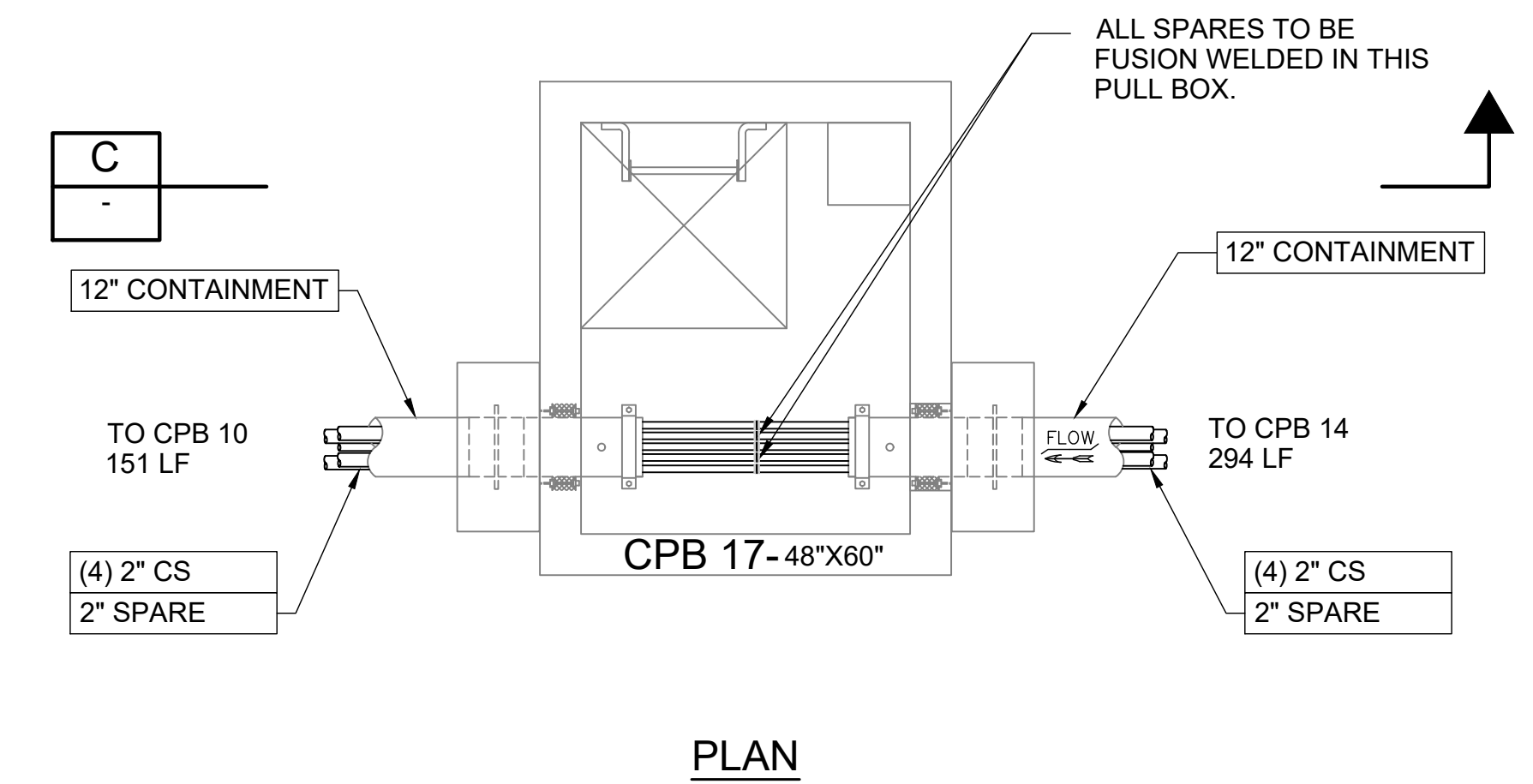
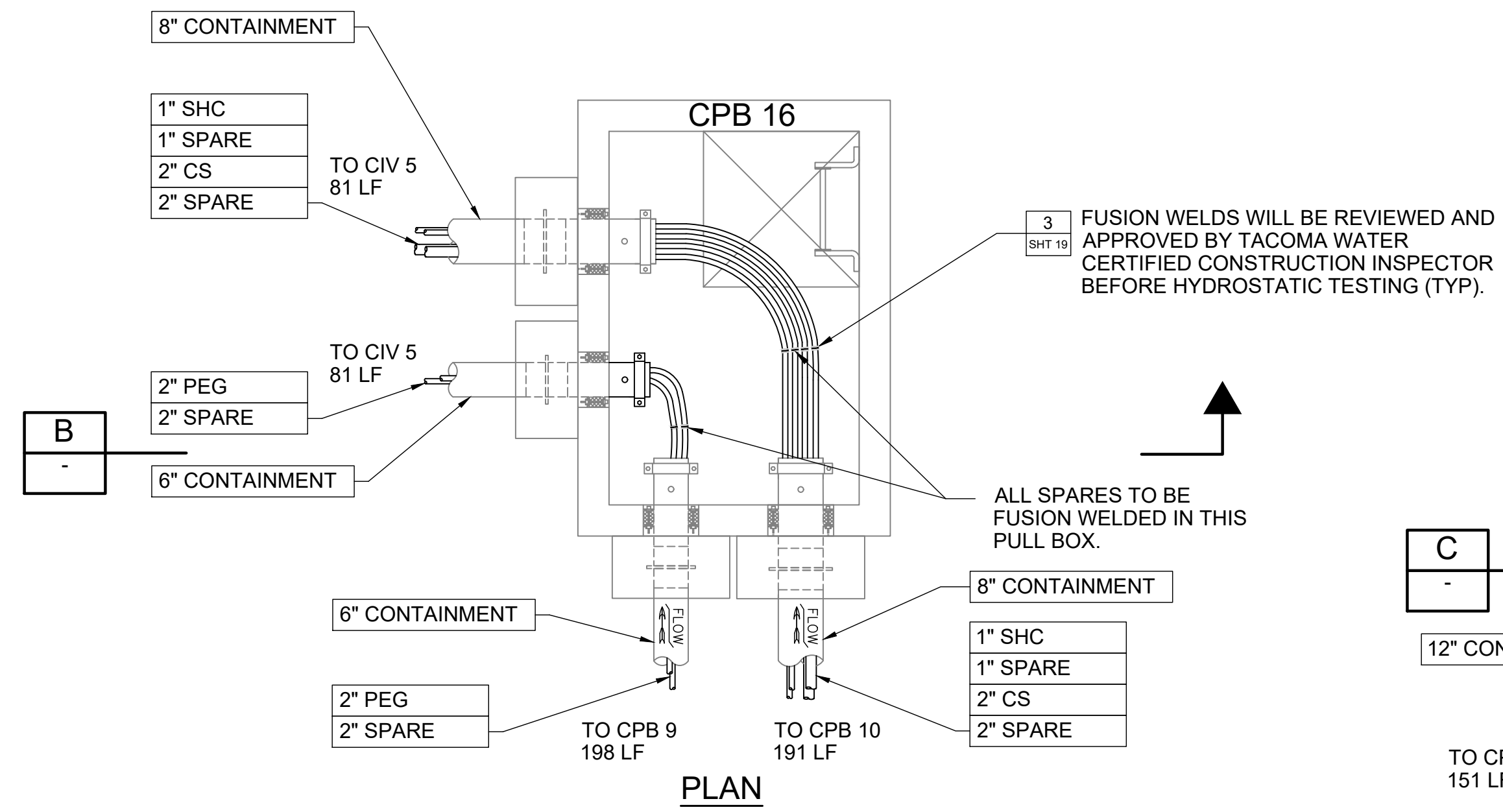
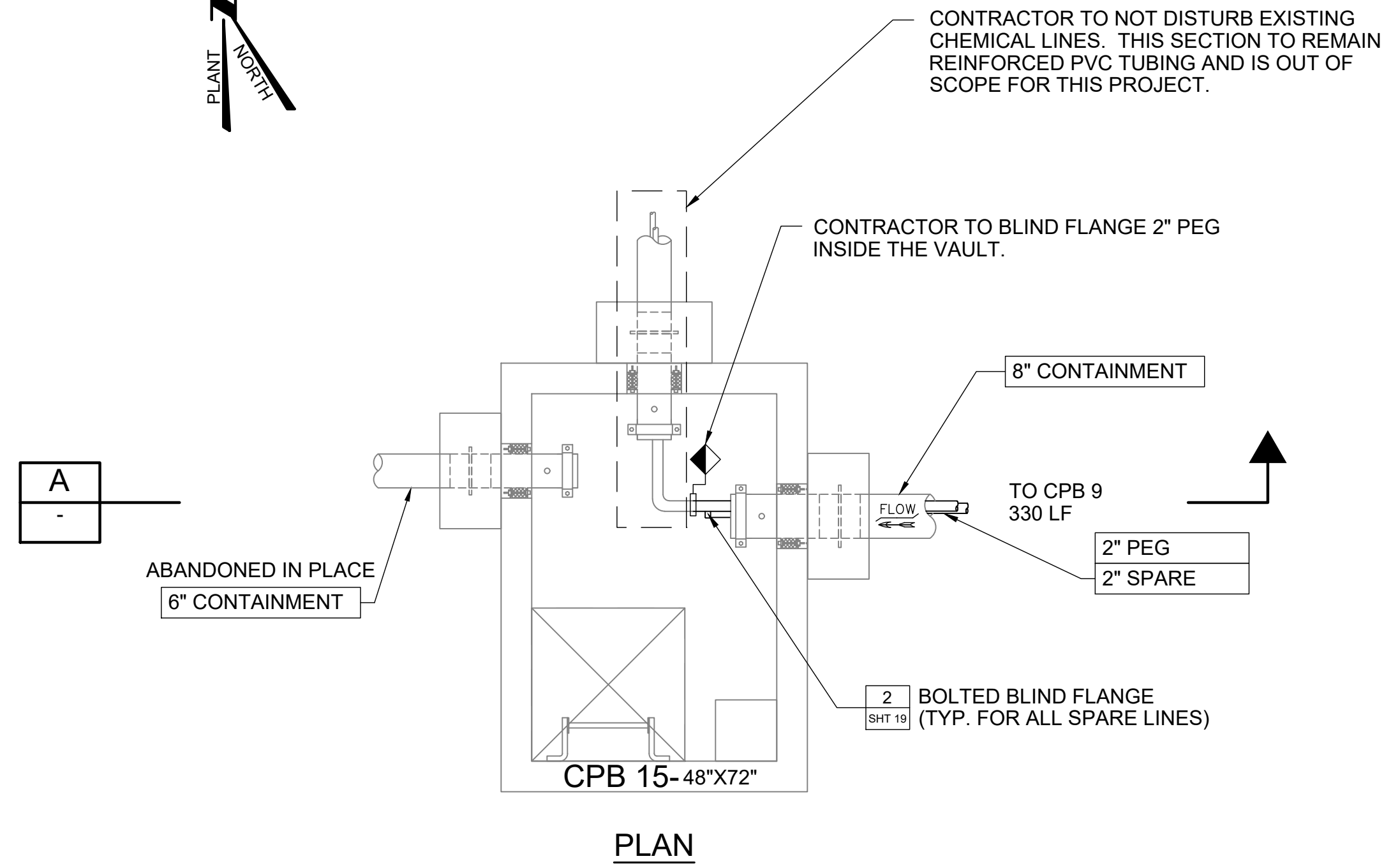
**CHEMICAL PULL BOX 13 AND 14
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT**

SCALE
HORIZ: NA
VERT: NA
DRAWING NO.
TW24-0031
SHEET 14 OF 19

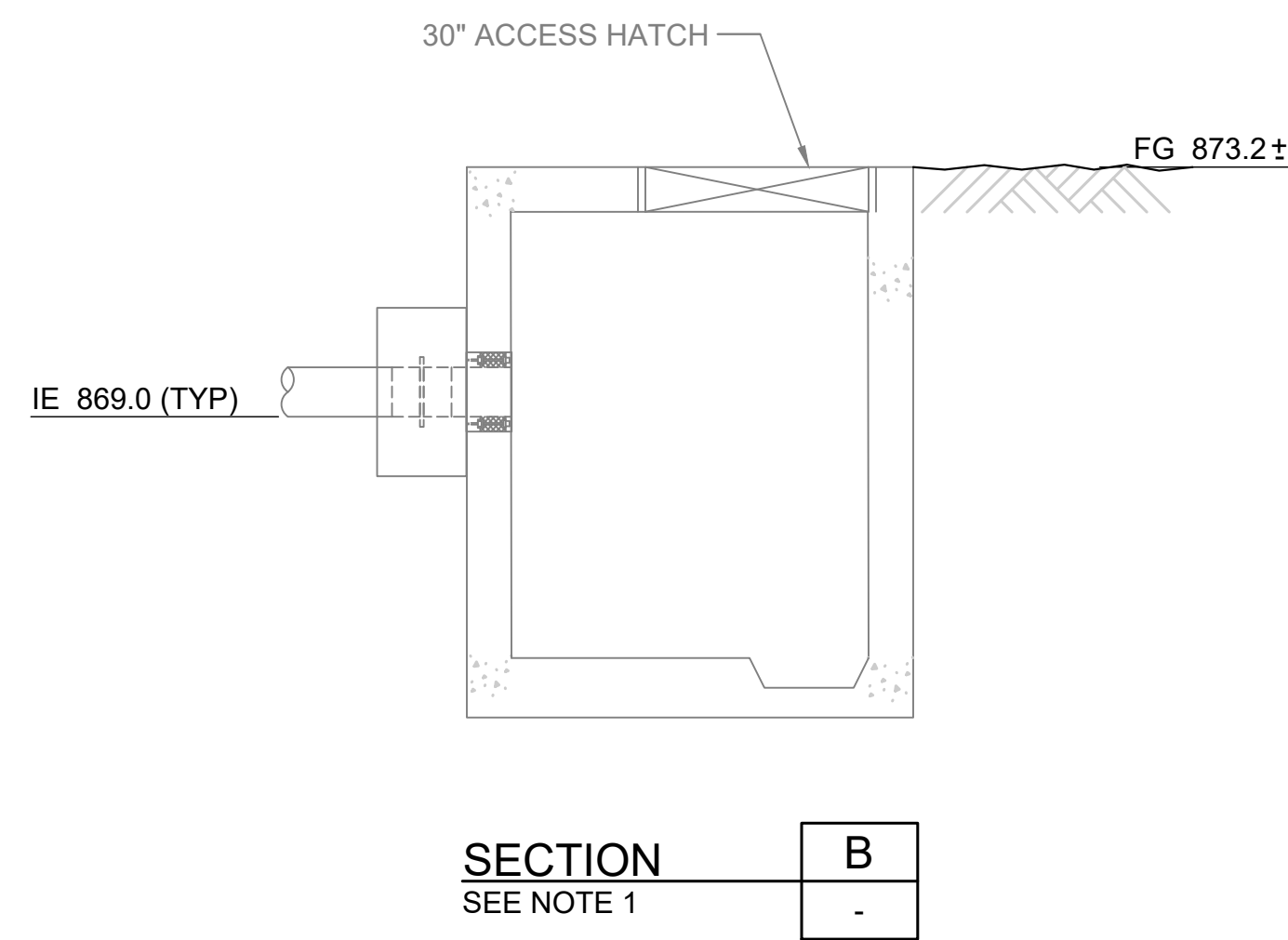


GENERAL SHEET NOTES

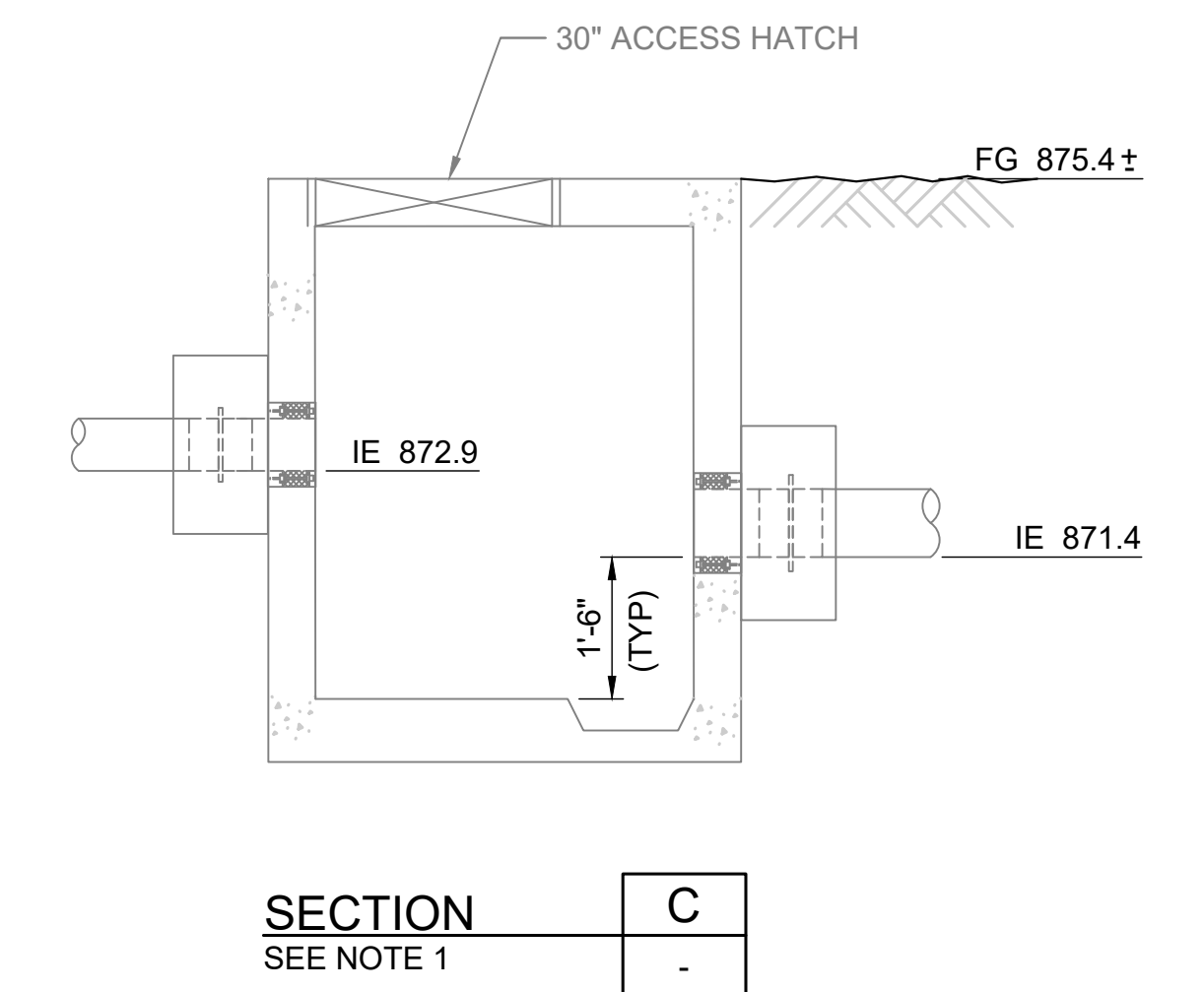
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
- IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
- CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
- USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



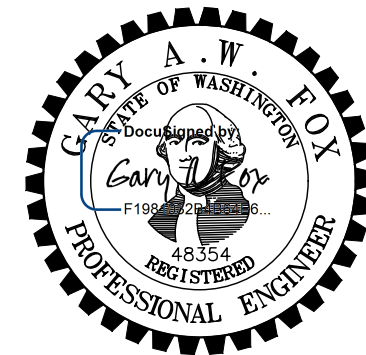
CHEMICAL PULL BOX 15 1
SHT 6



CHEMICAL PULL BOX 16 2
SHT 6



CHEMICAL PULL BOX 17 3
SHT 5



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

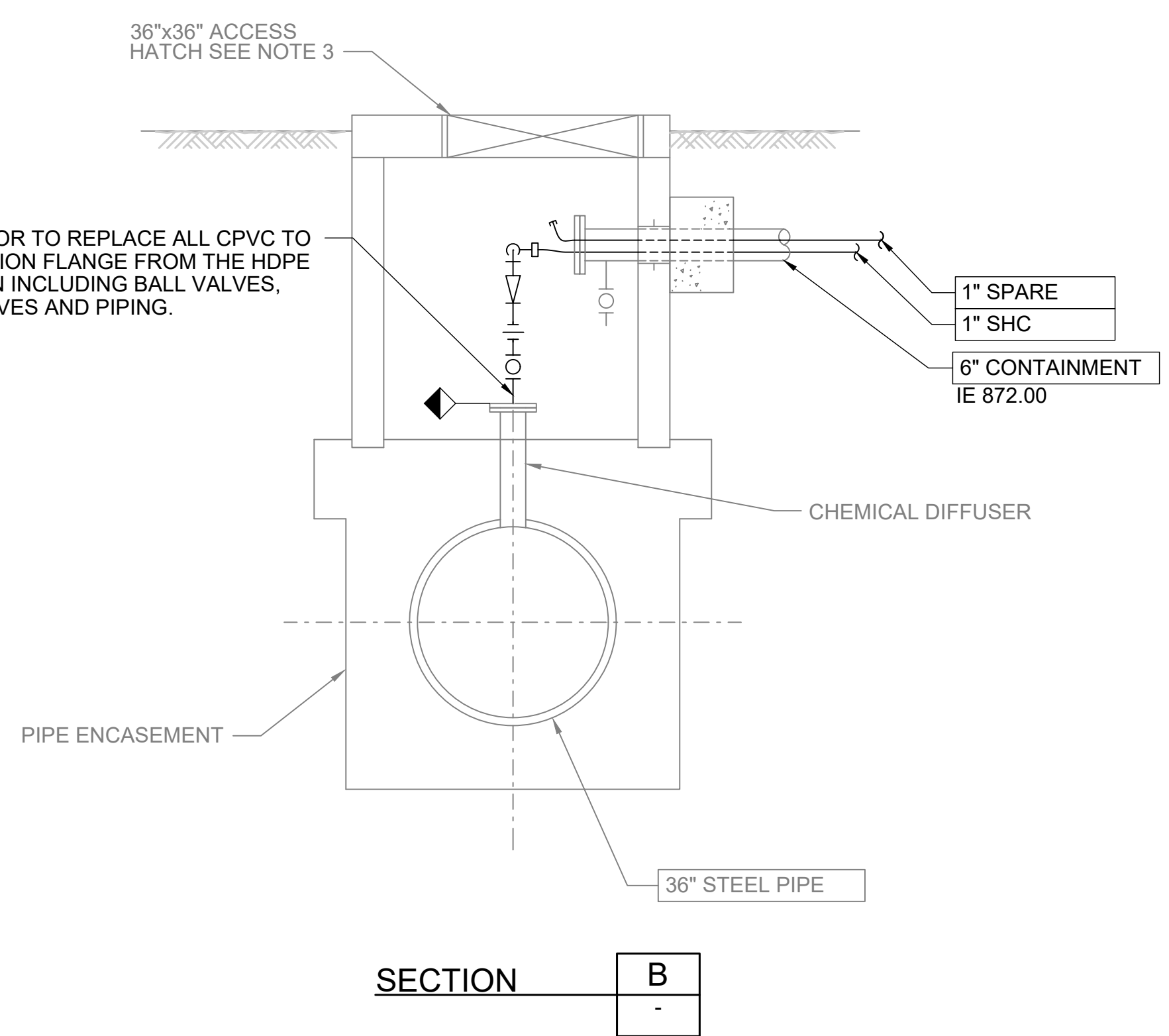
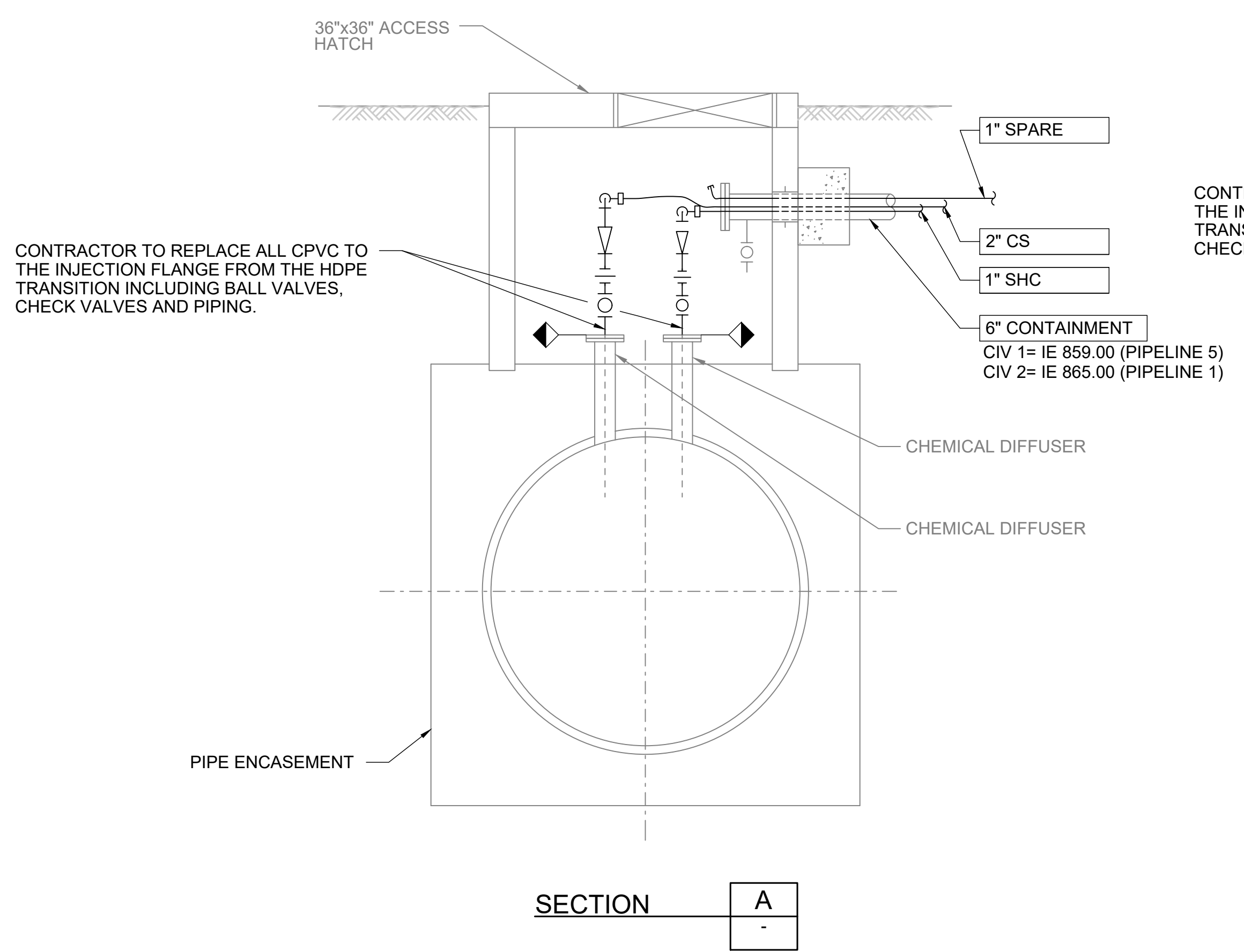
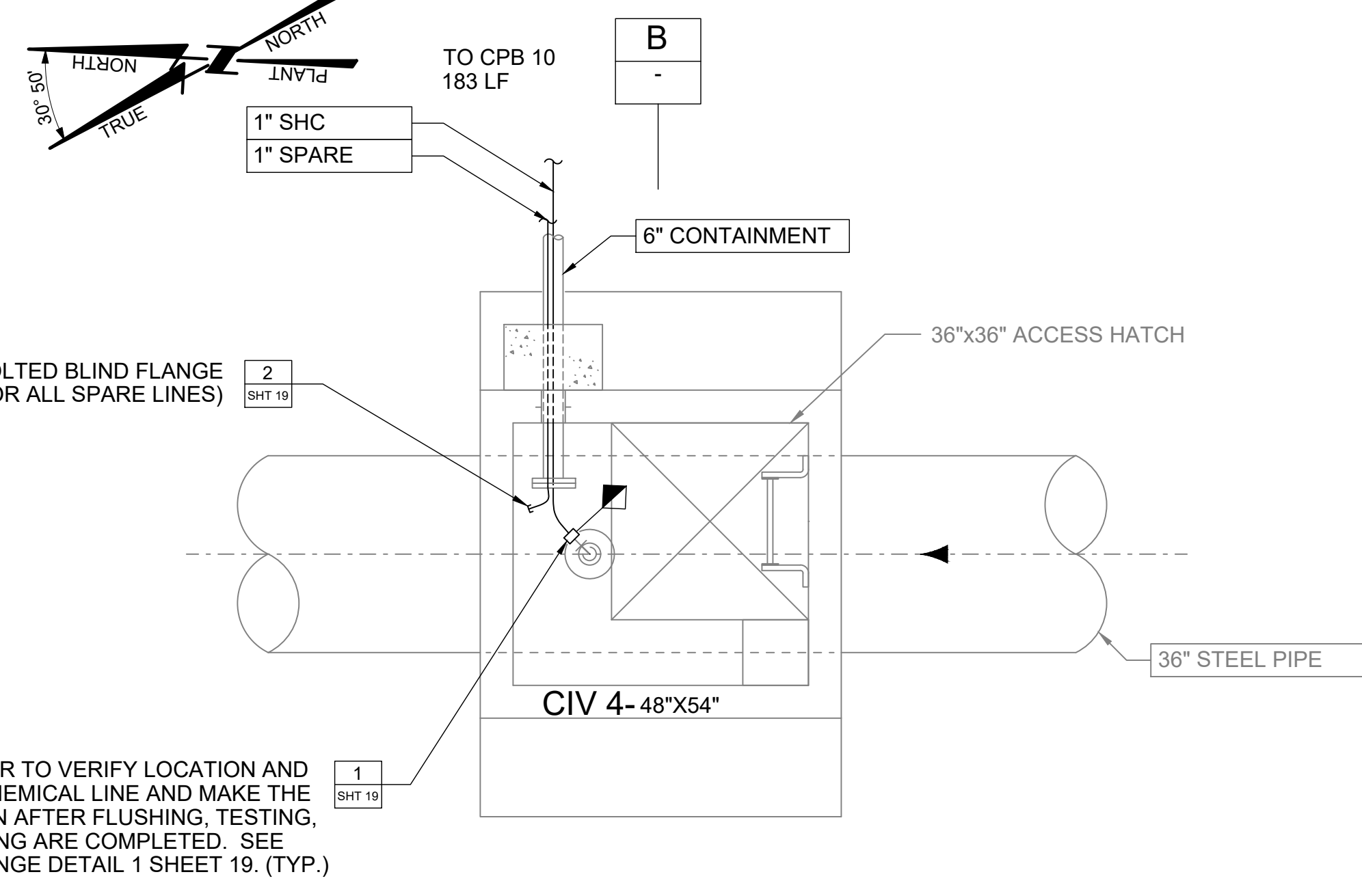
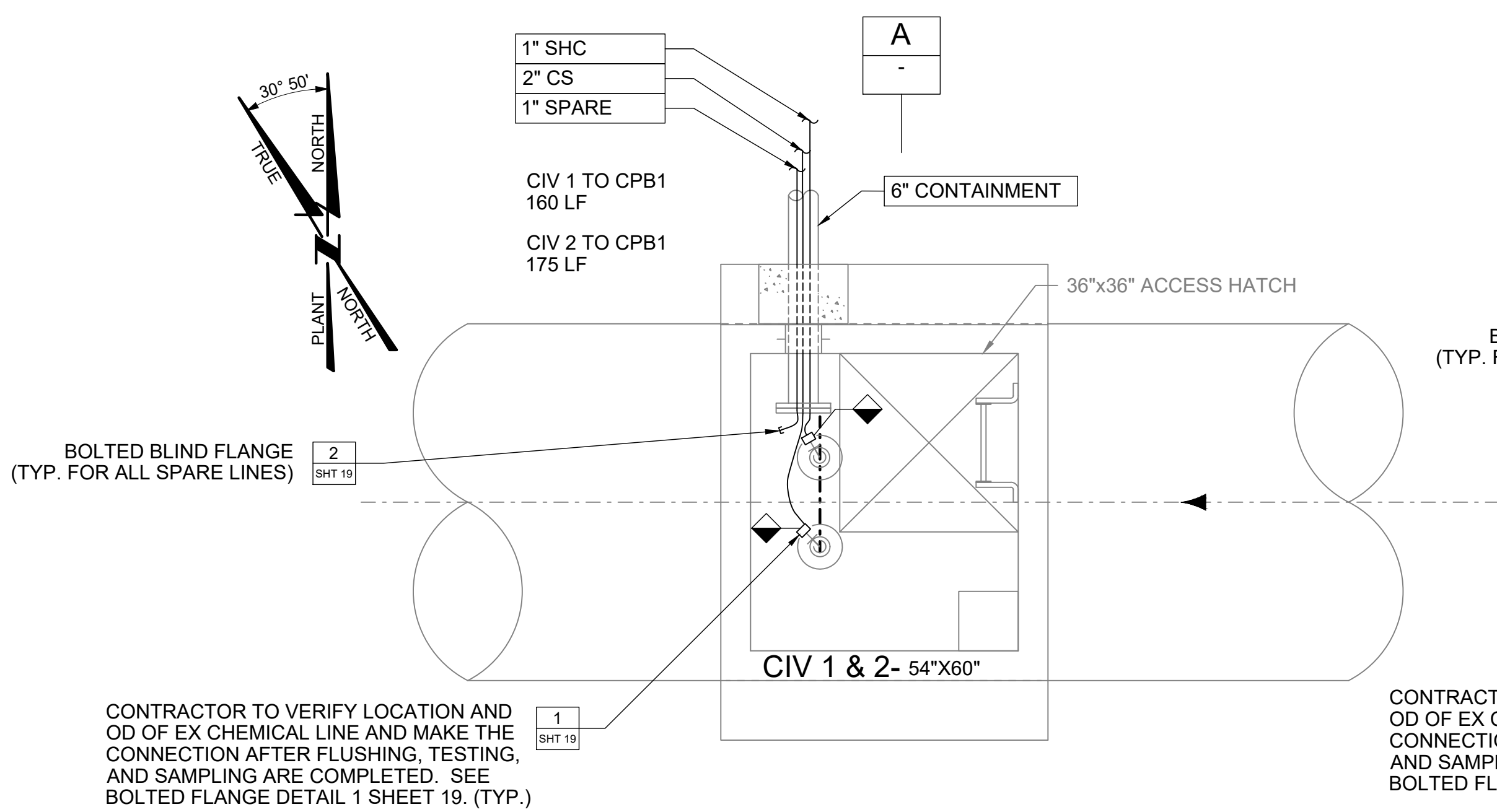
APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
OPERATIONS MANAGER



**CHEMICAL PULL BOX 15,16, & 17
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT**

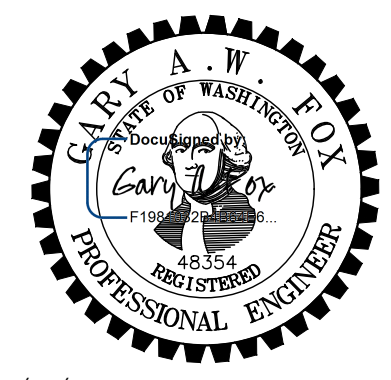
SCALE
HORIZ: NA
VERT: NA
DRAWING NO.
TW24-0031
SHEET 15 OF 19

- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



CHEMICAL INJECTION VAULT 1 & 2 1
SHT 7

CHEMICAL INJECTION VAULT 4 2
SHT 5

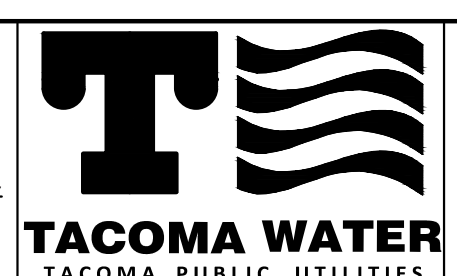


NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE
						C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING: 20000119358
 CADNET PROJECT NAME: GRFF CHEM LINES
 VAULT FILE NAME:
 FIELD BOOK
 DATA FILE

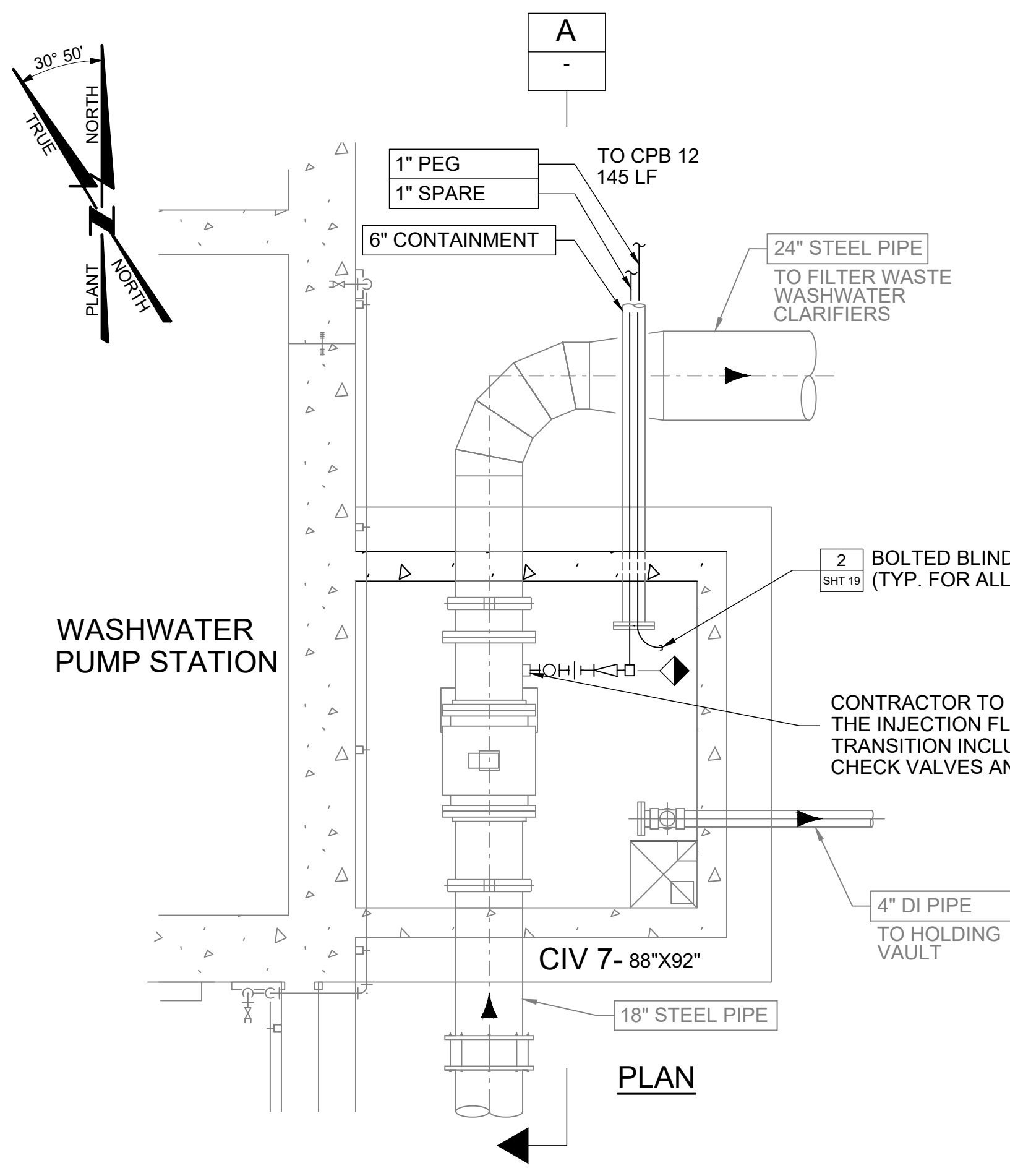
APPROVED: *Kimberly M. DeEdo, P.E. Principal*
 OPERATIONS MANAGER



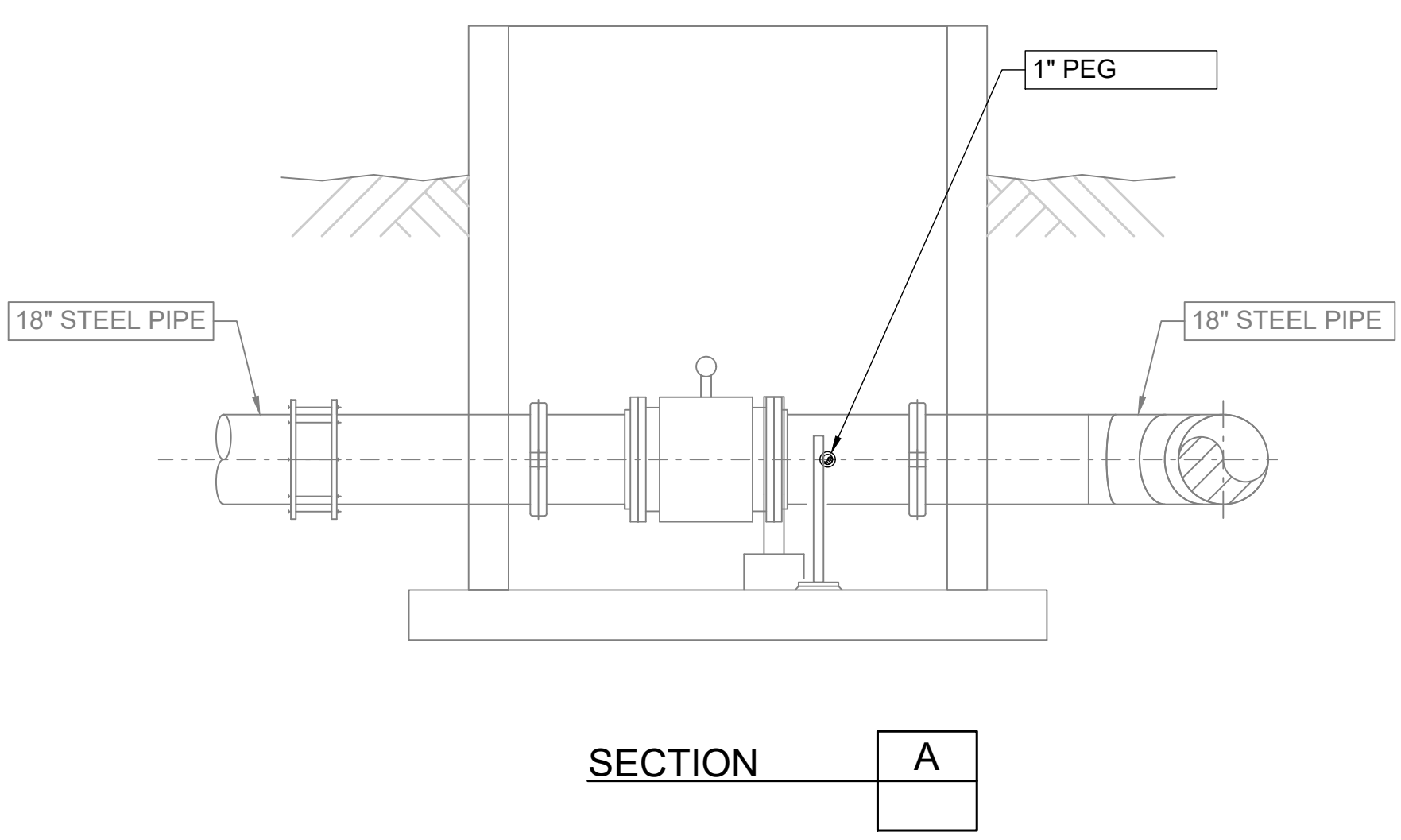
**CHEMICAL INJECTION VAULT 1, 2, & 4
 GREEN RIVER FILTRATION FACILITY
 CHEMICAL FEED LINE REPLACEMENT**

SCALE	
HORIZ:	NA
VERT:	NA
DRAWING NO.	TW24-0031
SHEET	16 OF 19

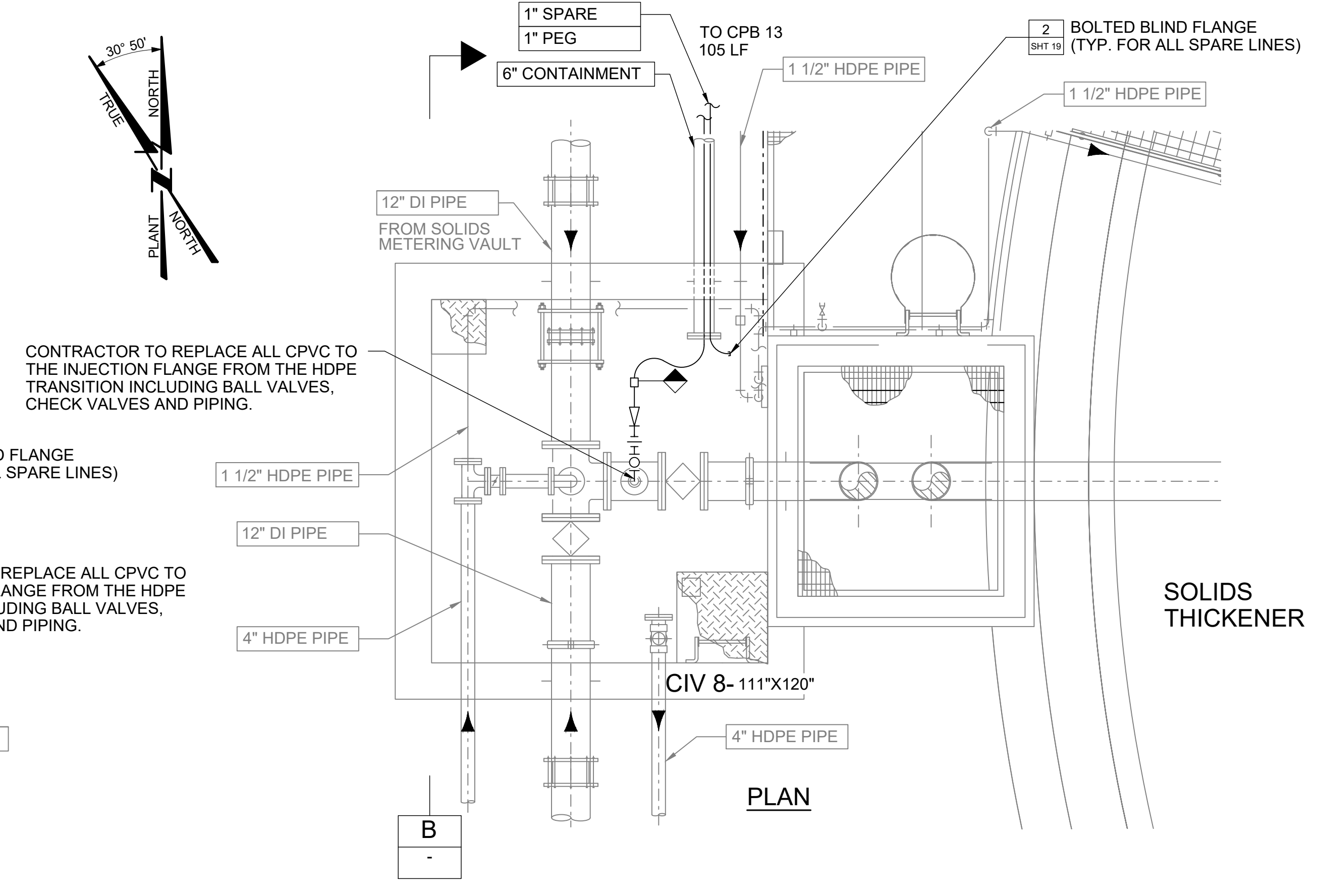
- GENERAL SHEET NOTES**
- CHEMICAL PIPING, LADDERS AND SUPPORTS MAY NOT BE SHOWN IN SECTIONS FOR CLARITY.
 - IF NOT WITHIN THE CONTAINMENT PIPE, BUNDLE CHEMICAL LINES LOOSELY WITHIN SUPPORT TO ALLOW MOVEMENT.
 - CONTRACTOR TO EXAMINE EXISTING PIPE SUPPORTS IN VAULTS FOR CORROSION AND REPLACE IF CORROSION EXISTS. SEE SPECIFICATION SECTION 43 10 52 FOR MORE DETAIL.
 - USE LONG SWEEP 90 DEGREES IN THE VAULTS WHERE APPLICABLE.



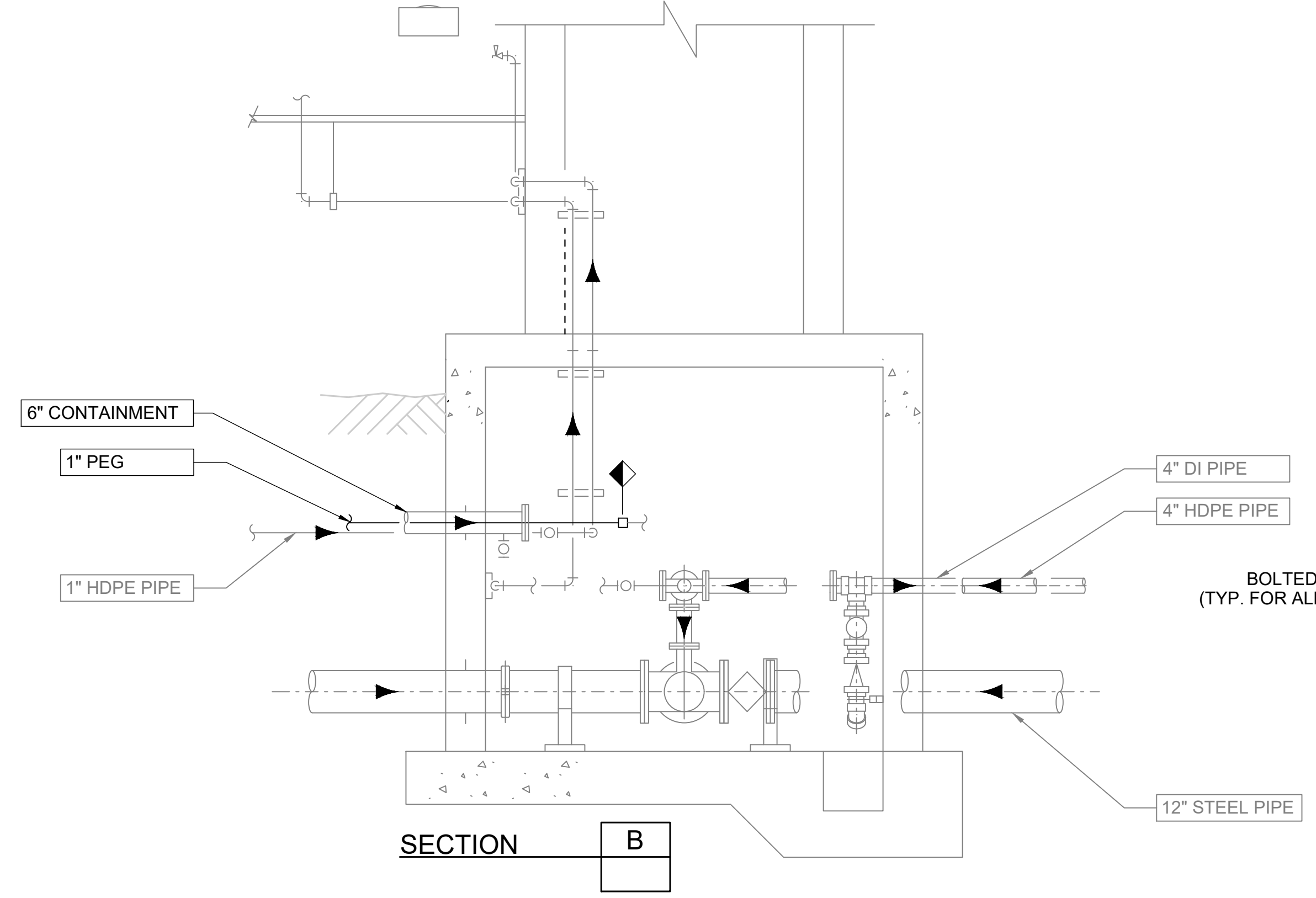
PLAN



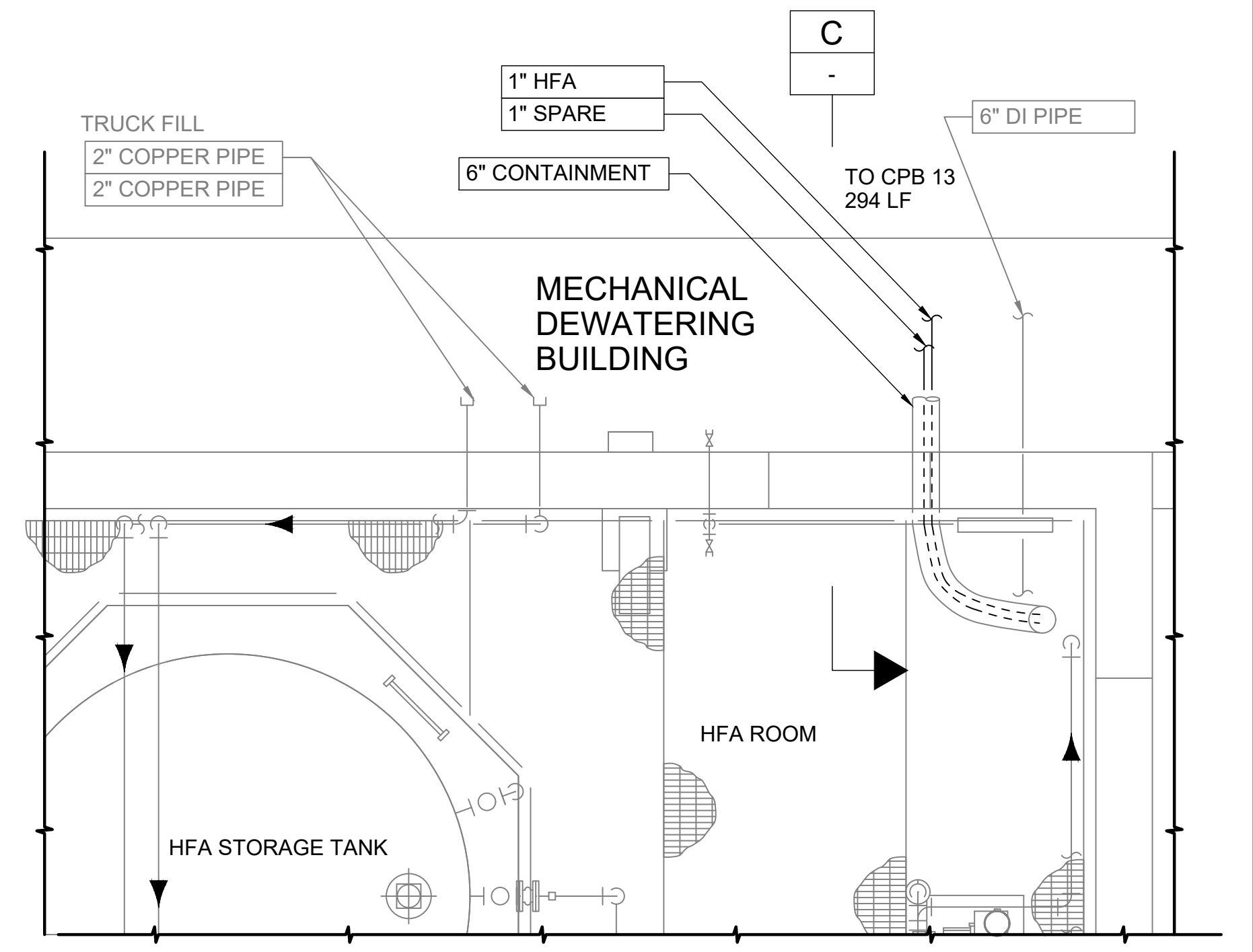
SECTION A



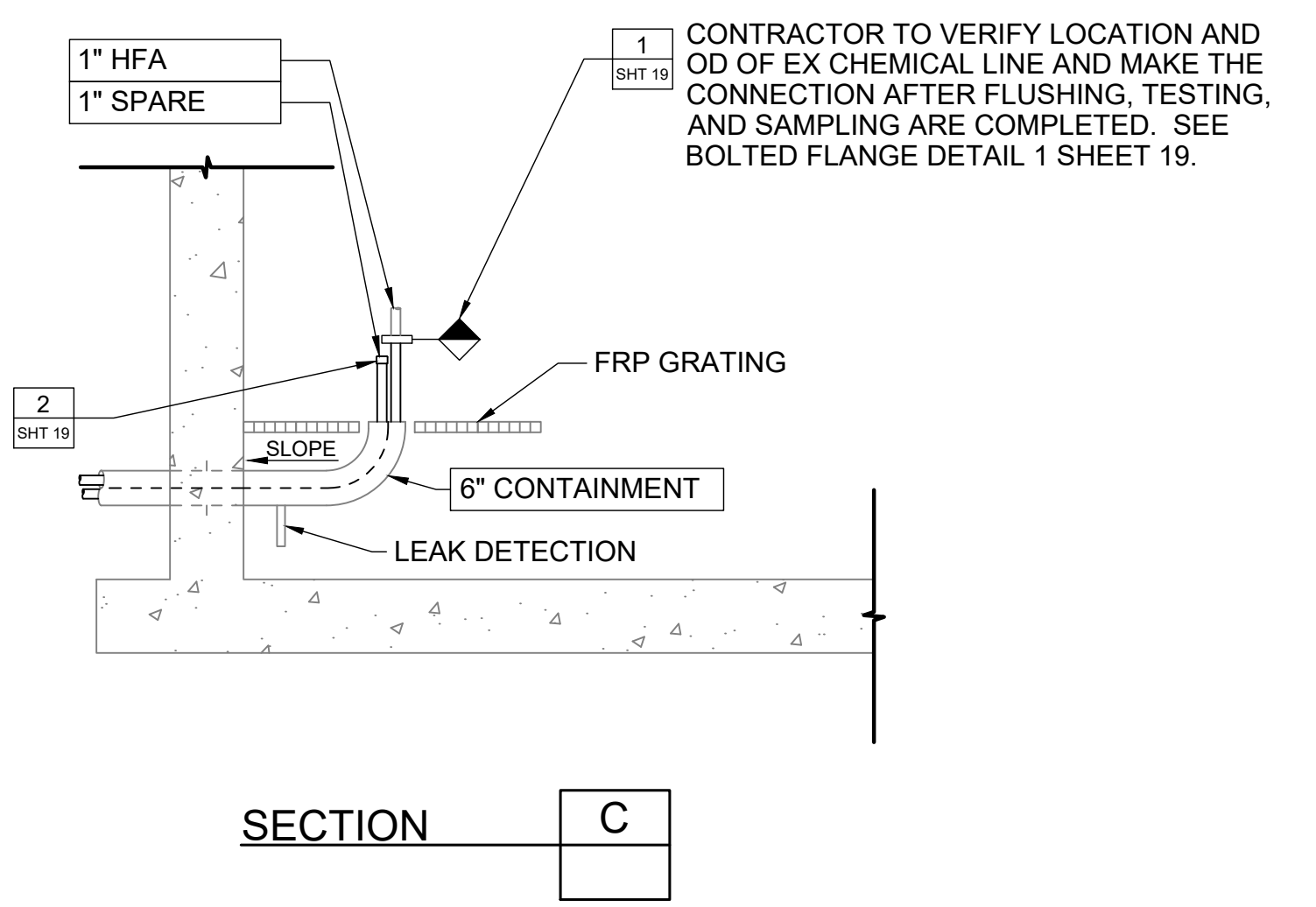
PLAN



SECTION B



PLAN

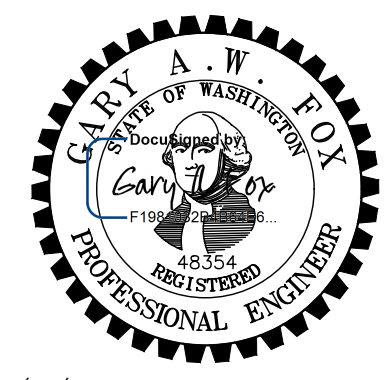


SECTION C

CHEMICAL INJECTION VAULT 7 1 SHT 5

CHEMICAL INJECTION VAULT 8 2 SHT 5

HFA ROOM MECHANICAL DEWATERING BLD 3 SHT 5



01/03/2025

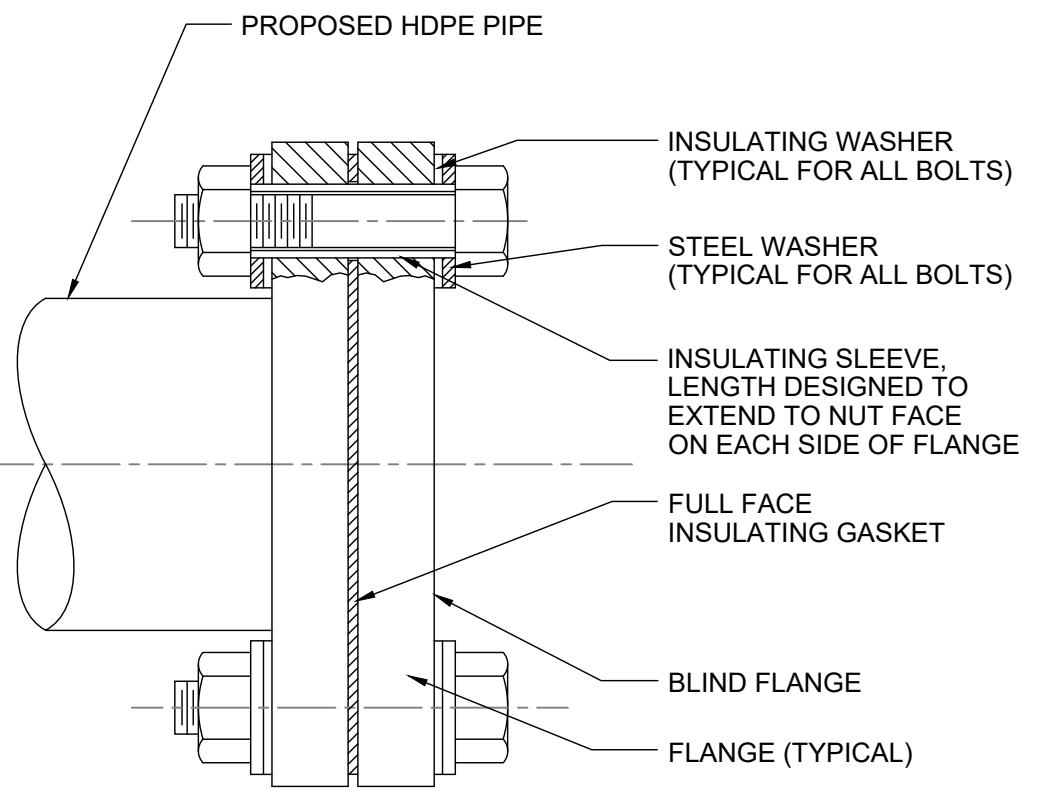
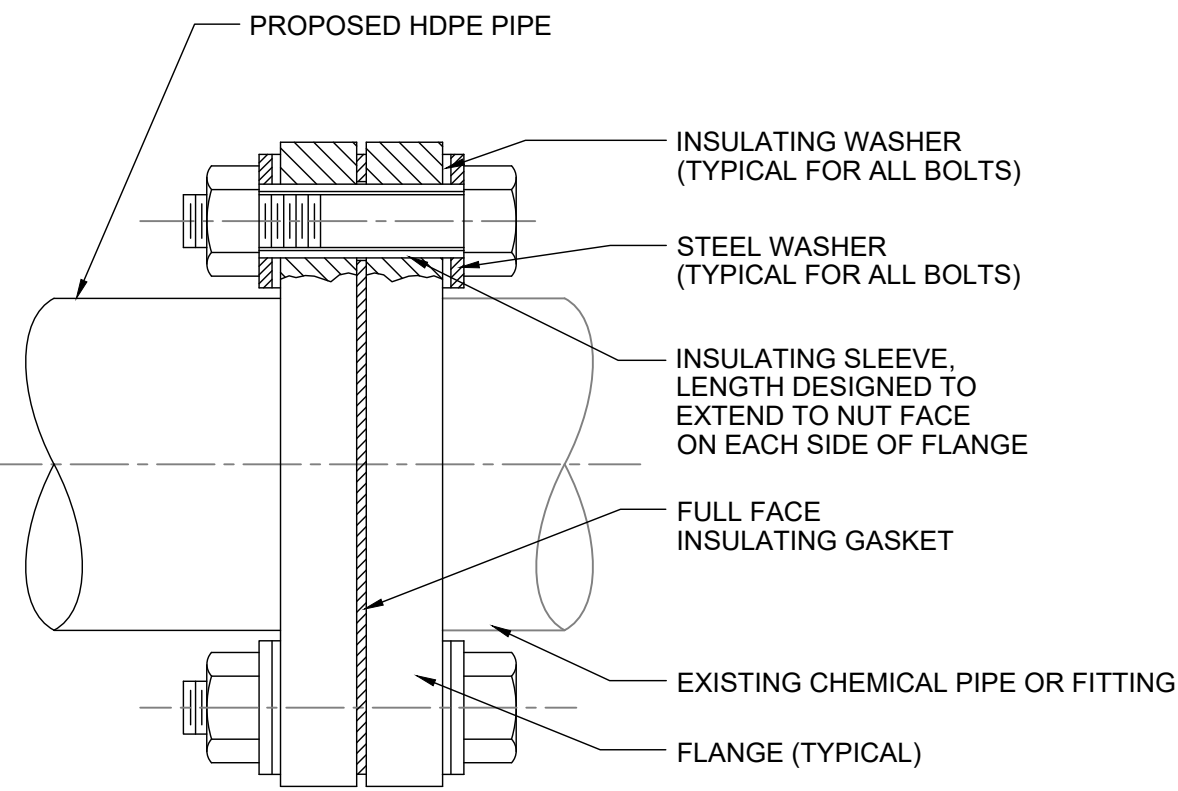
NO.		REVISION	DATE	BY	APP'D.	REV. COMPL.	REFERENCE	DATE	DESIGN	DRAWN	DIGITIZED	CHECKED	ACCOUNTING	CADNET PROJECT NAME	VAULT FILE NAME	FIELD BOOK	DATA FILE	APPROVED	SCALE	HORIZ:	VERT:	DRAWING NO.	SHEET 18 OF 19	
							C-P-9 THRU C-P-13 HCC-OM-10 THRU HCC-OM-18 OM-4 THRU OM-5 9M-3 THRU 9M-6 2M-14, 11M-4, 12M-3	03/31/2023	GF	SDP		KD		20000119358	GRFF CHEM LINES				Kimberly M. DeEdo, P.E. Principal		NA	NA	TW24-0031	



**CHEM INJECTION VAULT 7, 8, & HFA ROOM
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT**

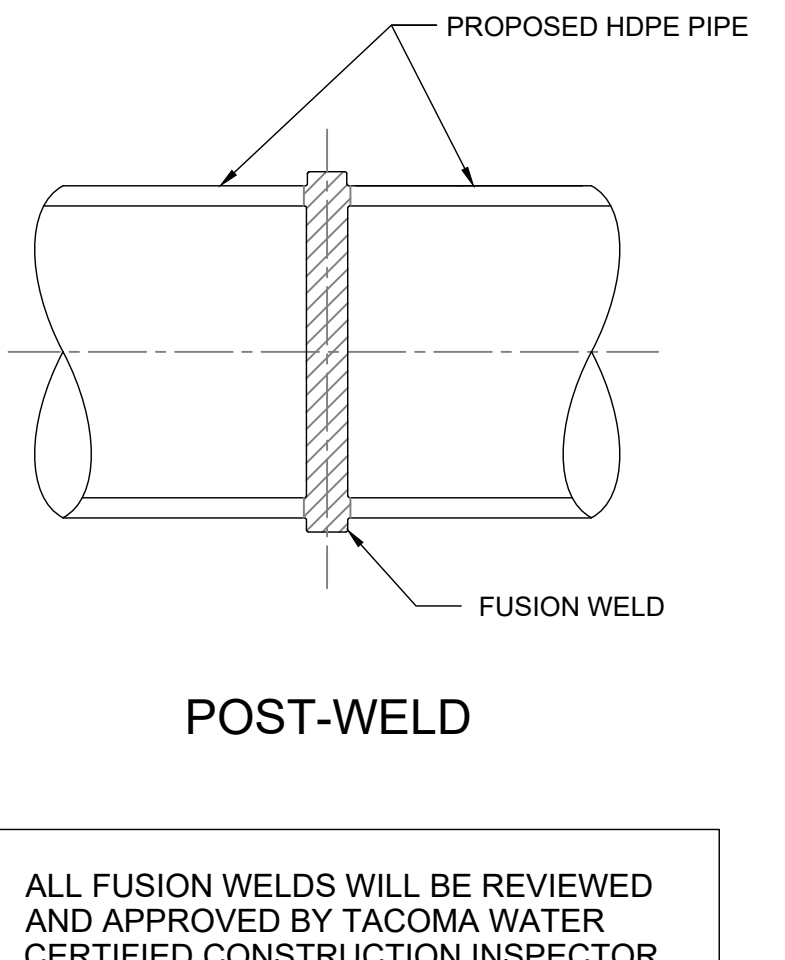
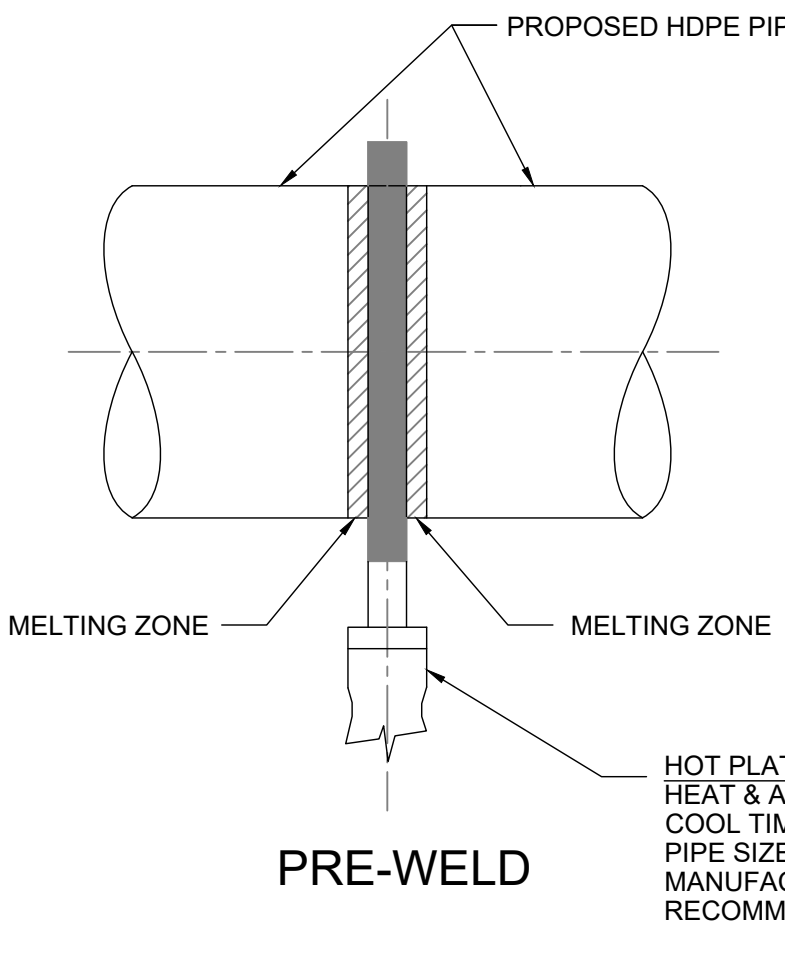
ALL METALS SHALL BE COMPATIBLE WITH THE CHEMICAL BEING CONVEYED

ALL METALS SHALL BE COMPATIBLE WITH THE CHEMICAL BEING CONVEYED



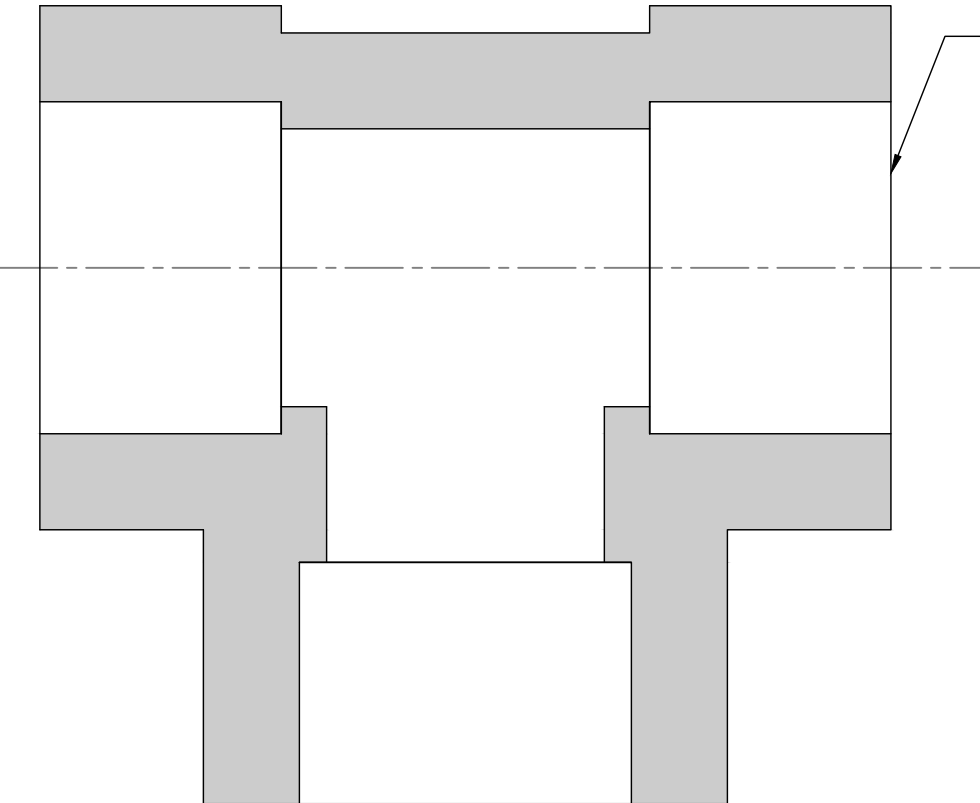
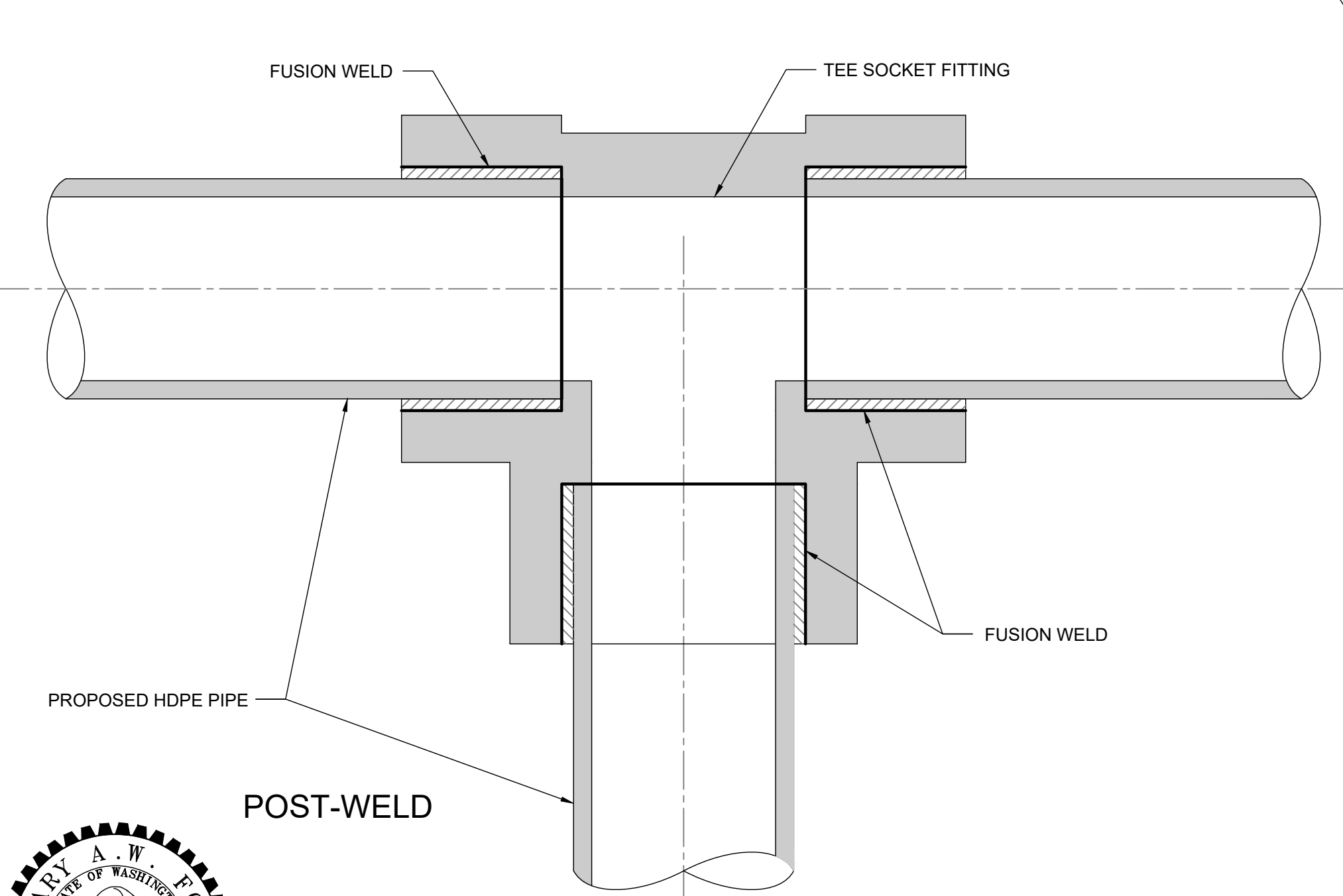
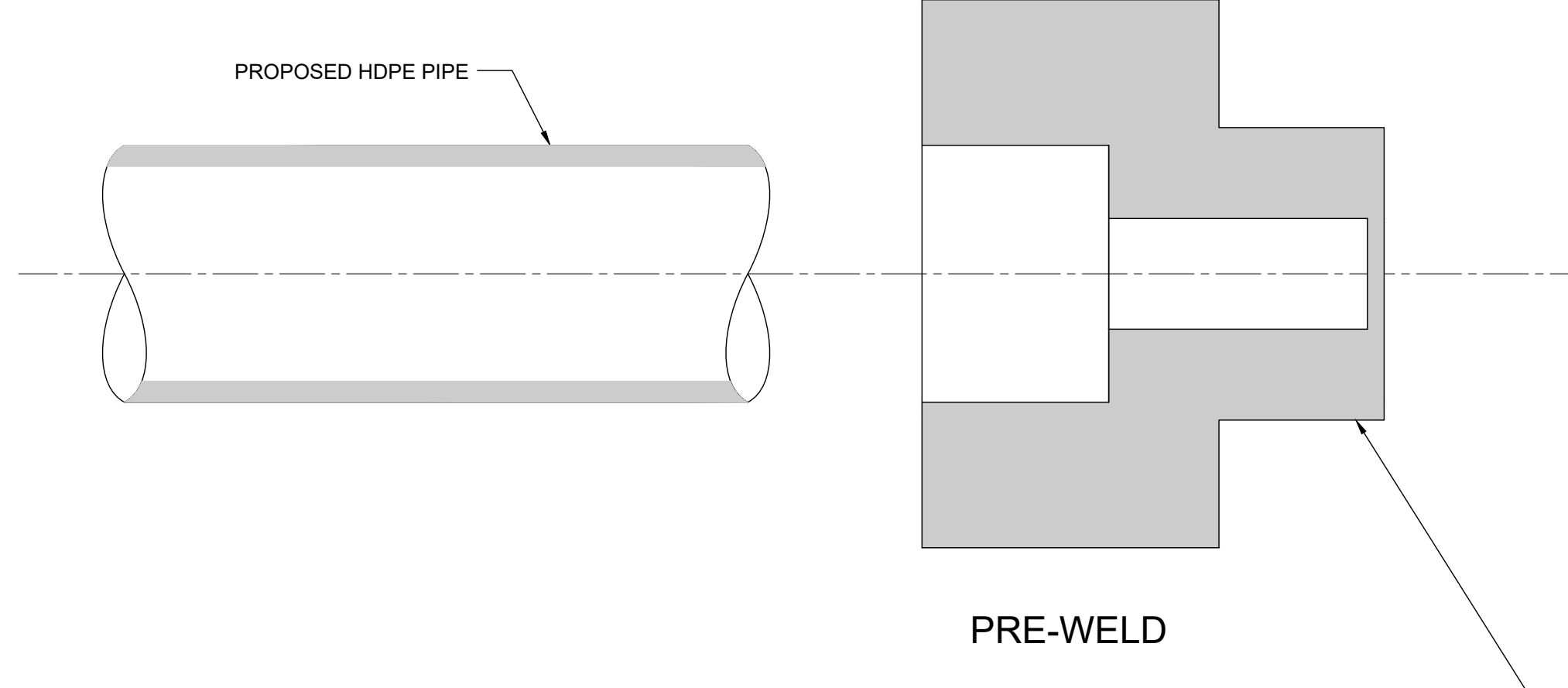
BOLTED FLANGE CONNECTION DETAIL 1

SPARE LINE BOLTED BLIND FLANGE DETAIL 2



ALL FUSION WELDS WILL BE REVIEWED AND APPROVED BY TACOMA WATER CERTIFIED CONSTRUCTION INSPECTOR BEFORE HYDROSTATIC TESTING

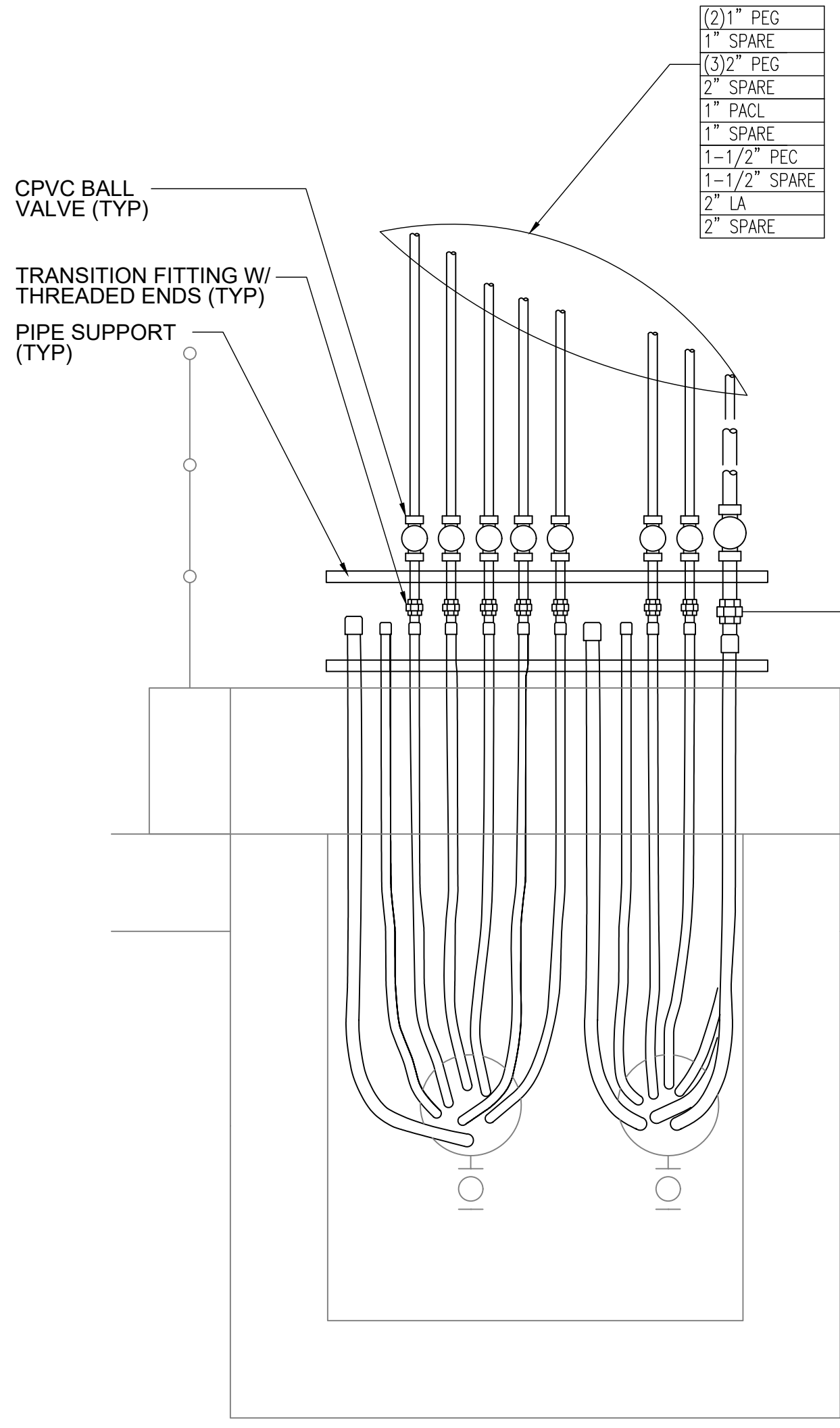
BUTT FUSION WELD 3



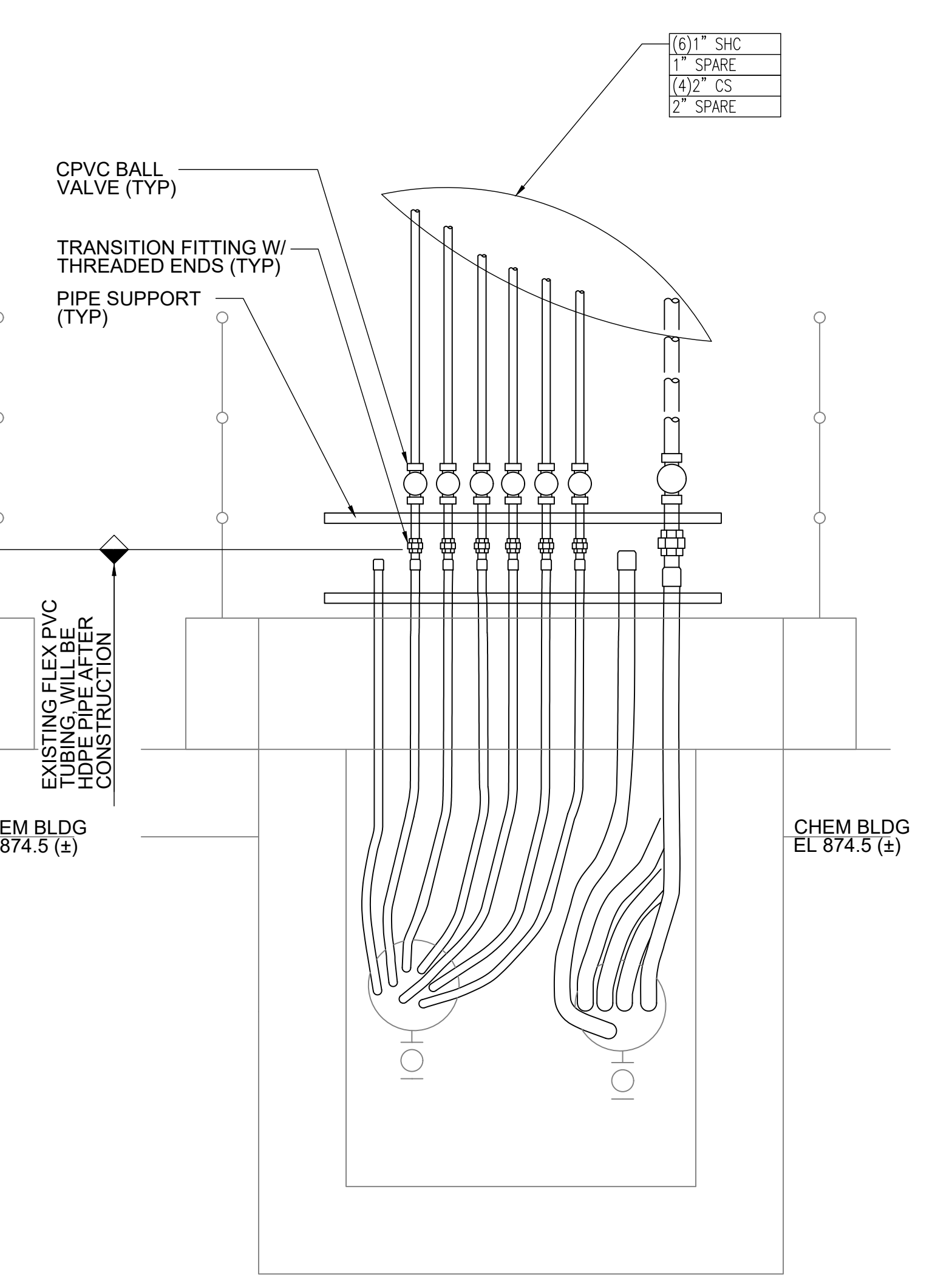
FUSION TOOL: SIMULTANEOUSLY HEAT THE OUTSIDE SURFACE OF THE HDPE PIPE END & THE INSIDE OF FITTING SOCKET, WHICH IS SIZED TO BE SMALLER THAN THE SMALLEST OUTSIDE DIAMETER OF THE PIPE. AFTER THE PROPER MELT HAS BEEN GENERATED AT EACH FACE TO BE MATED, THE TWO COMPONENTS ARE JOINED BY INSERTING ONE COMPONENT INTO THE OTHER. THE MELTS FROM THE TWO COMPONENTS FLOW TOGETHER & FUSE AS THE JOINT COOLS.
*REFER TO MANUFACTURERS RECOMMENDATIONS.

ALL FUSION WELDS WILL BE REVIEWED AND APPROVED BY TACOMA WATER CERTIFIED CONSTRUCTION TESTING INSPECTOR BEFORE HYDROSTATIC TESTING

SOCKET FUSION FITTING WELD 4



SUMP PIPING CONNECTION ILLUSTRATIVE SECTION - 1 5



SUMP PIPING CONNECTION ILLUSTRATIVE SECTION - 2 6



01/03/2025

NO.	REVISION	DATE	BY	APP'D.	REV. COMPL.

REFERENCE
C-P-9 THRU C-P-13
HCC-OM-10 THRU HCC-OM-18
OM-4 THRU OM-5
9M-3 THRU 9M-6
2M-14, 11M-4, 12M-3

DATE	03/31/2023
DESIGN	GF
DRAWN	SDP
DIGITIZED	
CHECKED	KD

ACCOUNTING	20000119358
CADNET PROJECT NAME:	GRFF CHEM LINES
VAULT FILE NAME:	
FIELD BOOK	
DATA FILE	

APPROVED
Signed by:
Kimberly M. DeEdo, P.E. Principal
OPERATIONS MANAGER



STANDARD DETAILS
GREEN RIVER FILTRATION FACILITY
CHEMICAL FEED LINE REPLACEMENT

SCALE
HORIZ: NA
VERT: NA
DRAWING NO.
TW24-0031
SHEET 19 OF 19



CPB 1



CPB 2



CPB 3



CPB 4



CPB 5



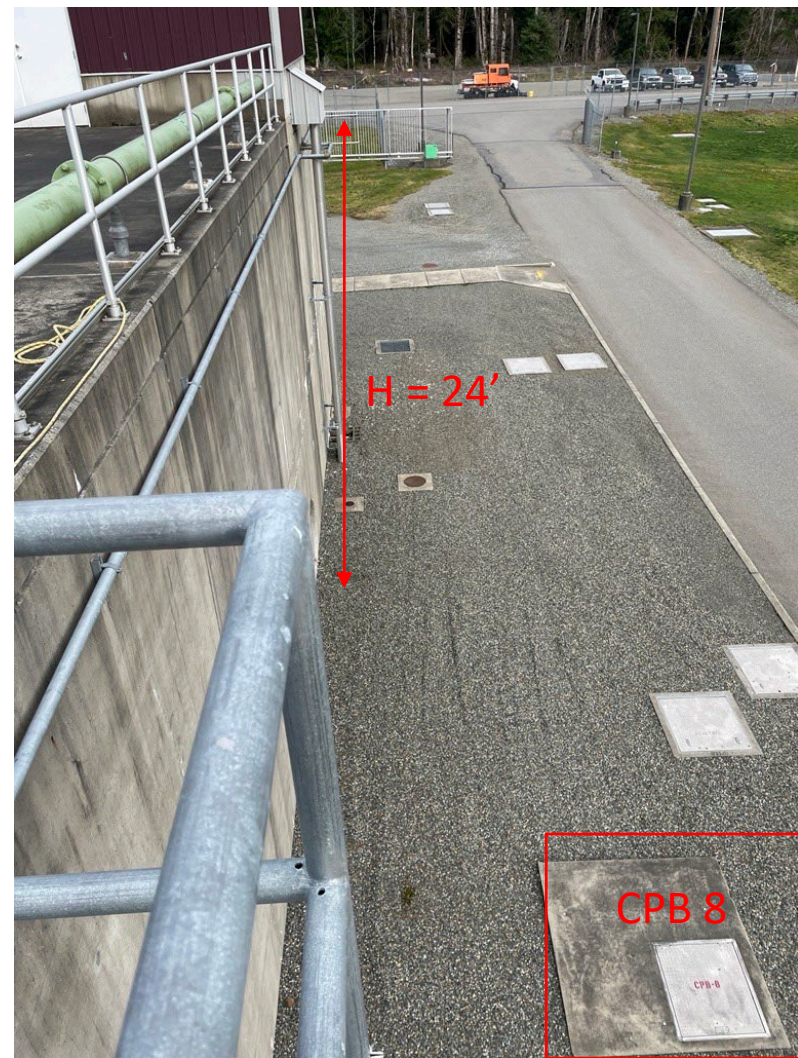
CPB 6



CPB 7



CPB 8



Upper Deck of Flash Mix Temporary Connection for PEC



Upper Deck of Flash Mix: Temporary Connection for LA and PACL



CPB 9



CPB 10



CPB 11



CPB 12



CPB 13



CPB 14



CPB 15



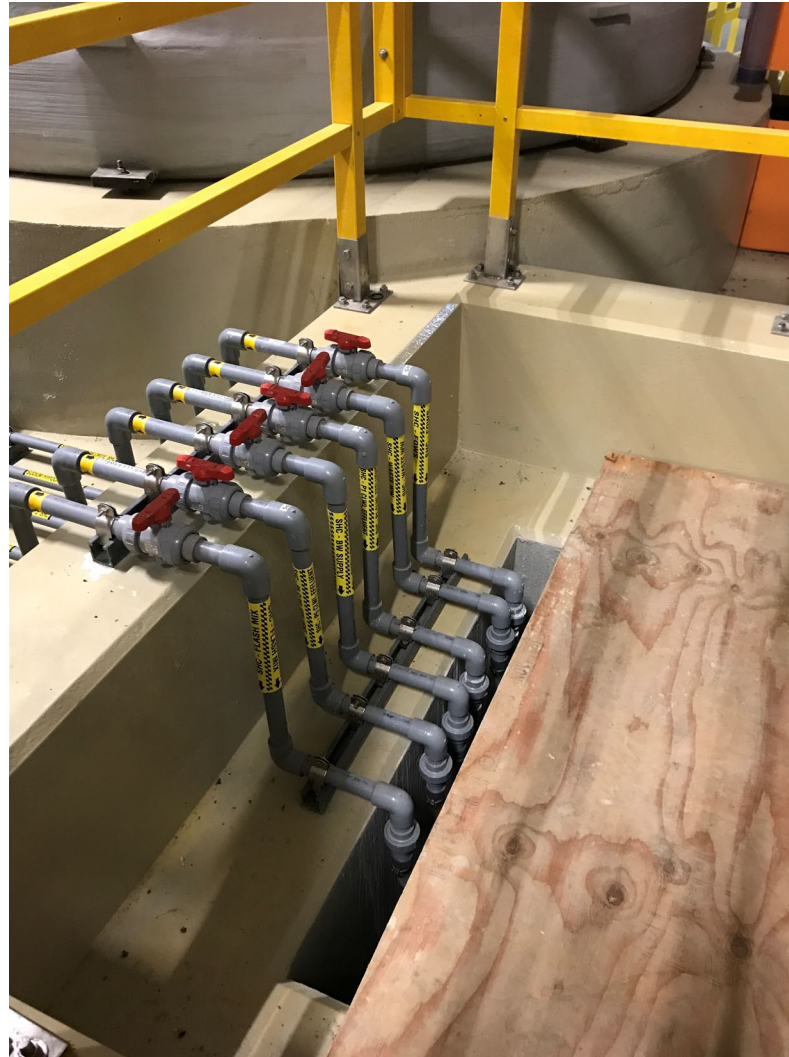
CPB 16



CPB 17



LA, PACL, PEG, PEC to CPB 13



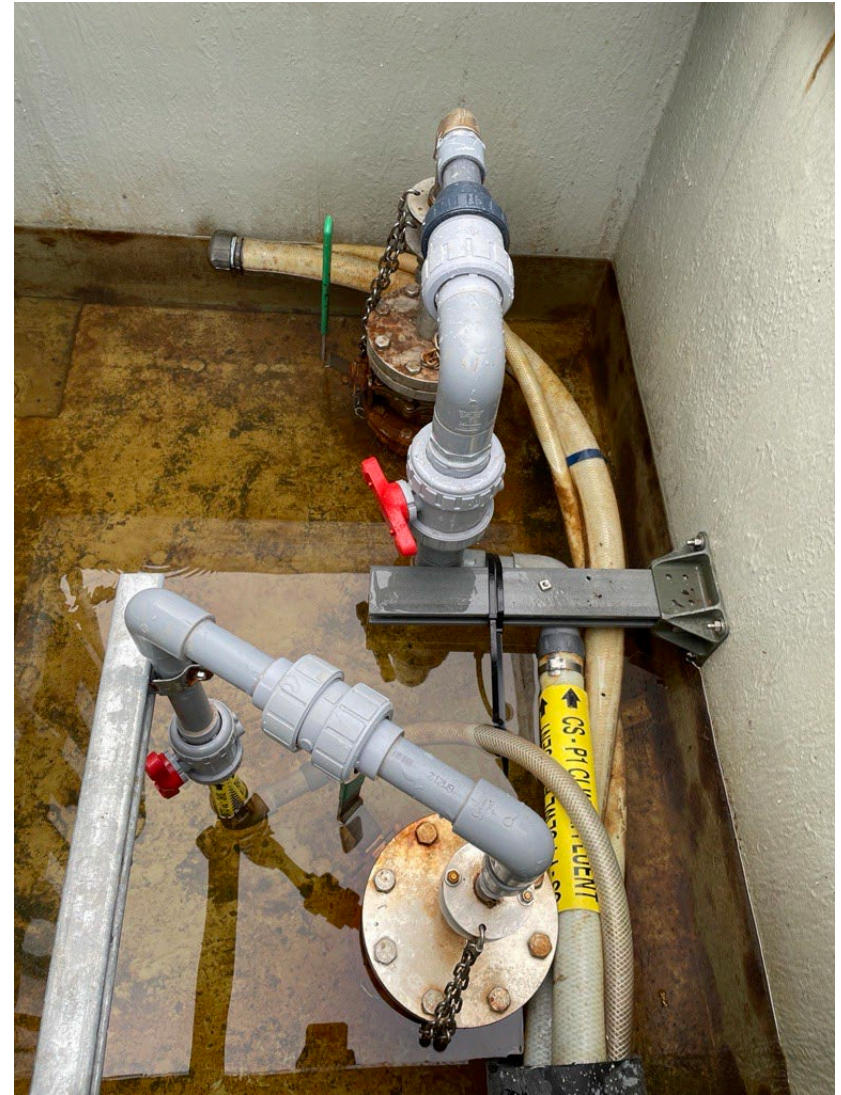
SHC to CPB 14



CS to CPB 14



CIV 1



CIV 2



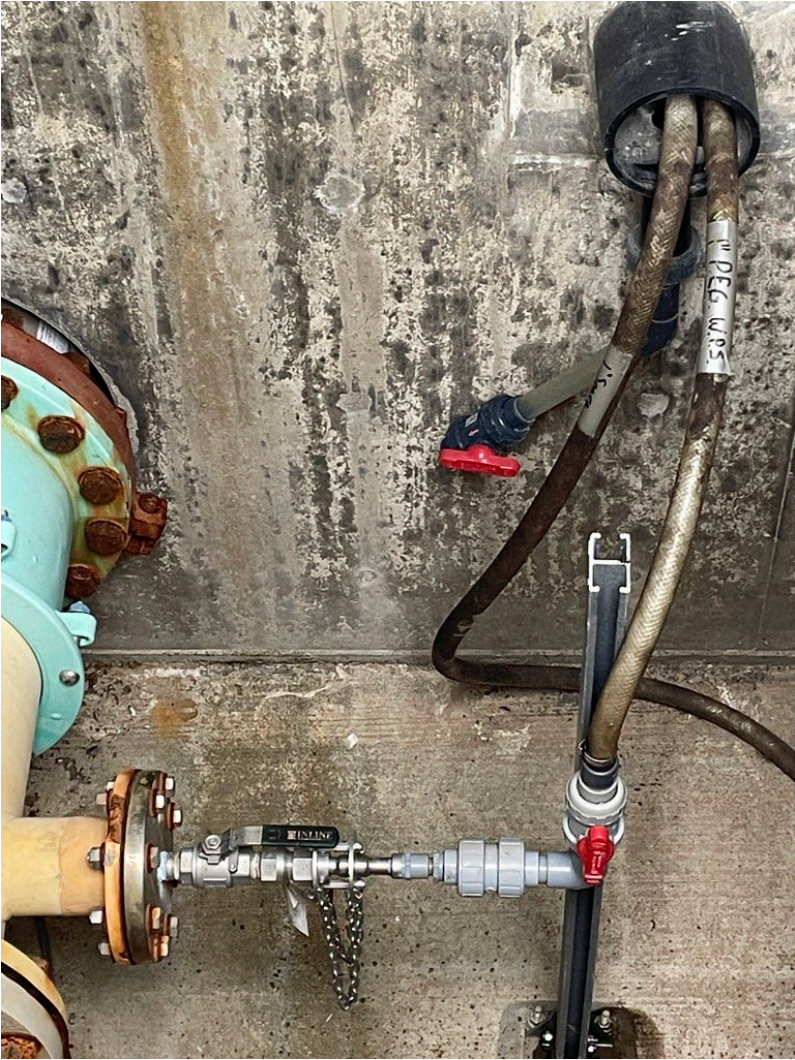
CIV 4



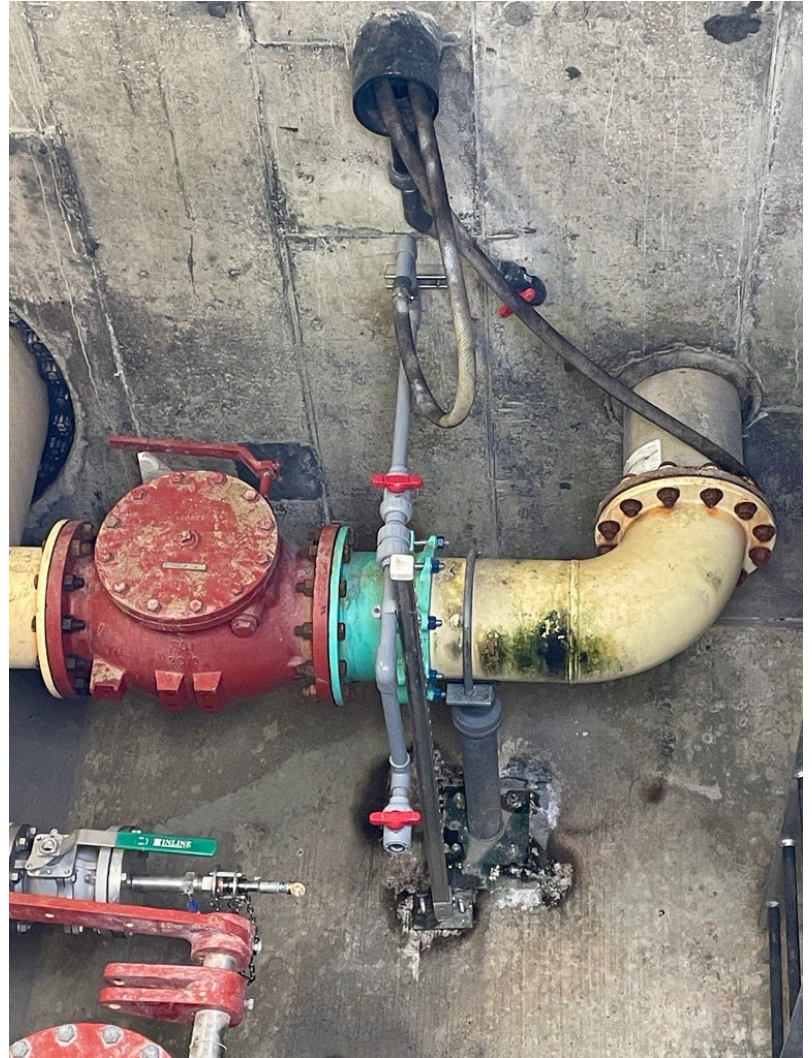
CIV 5



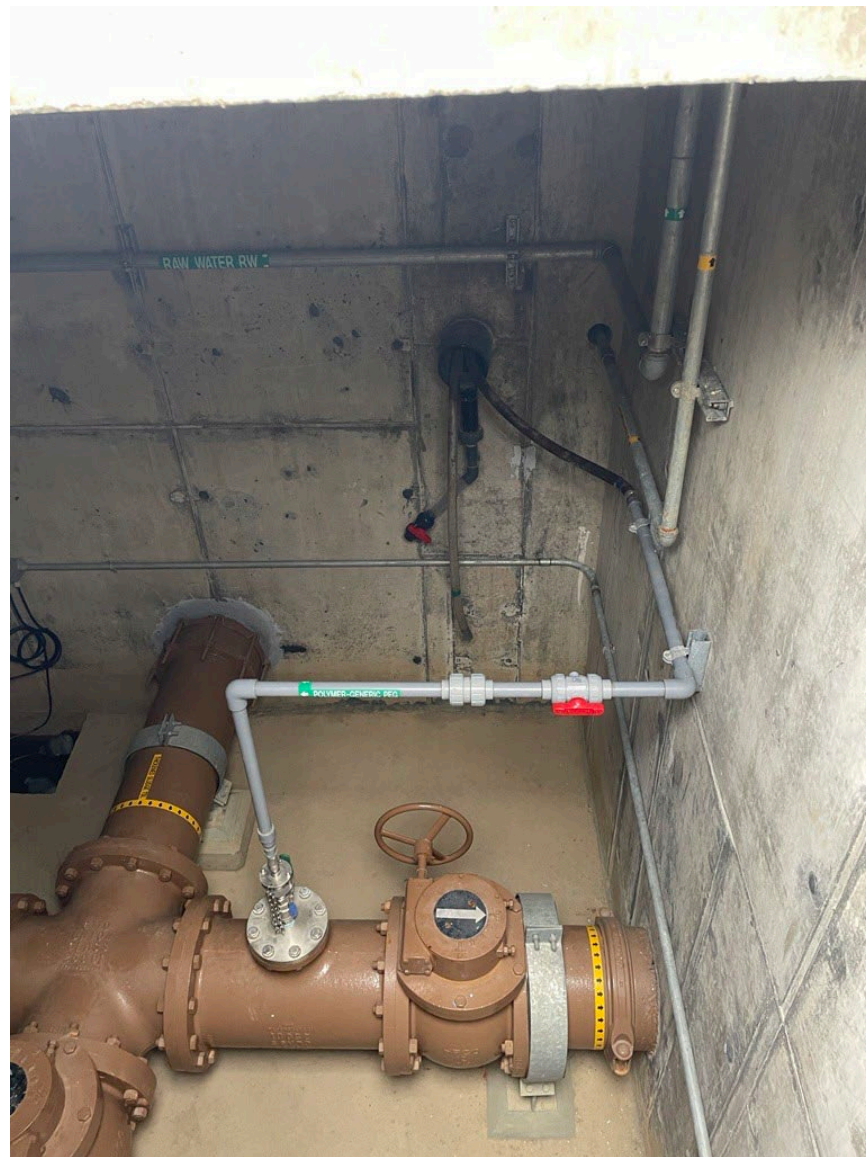
TW24-0031F GRFF Chemical Feed Lines Replacement (Appendix A)



CIV 6



CIV 7



CIV 8

APPENDIX B

Signature Page

Price Proposal Form

Bid Bond (if applicable – Typically for PWI)

Certification of Compliance With Wage Payment Statutes (Typically for PWI)

State Responsibility and Reciprocal Bid Preference Information (Typically for PWI)

Statement of Qualifications

SIGNATURE PAGE

**CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES/ TACOMA WATER**

All submittals must be in ink or typewritten, executed by a duly authorized officer or representative of the bidding/proposing entity, and received and time stamped as directed in the **Request for Bids page near the beginning of the specification**. If the bidder/proposer is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

**REQUEST FOR BIDS SPECIFICATION NO. TW24-0031F
GRFF Chemical Feed Lines Replacement**

The undersigned bidder/proposer hereby agrees to execute the proposed contract and furnish all materials, labor, tools, equipment and all other facilities and services in accordance with these specifications.

The bidder/proposer agrees, by submitting a bid/proposal under these specifications, that in the event any litigation should arise concerning the submission of bids/proposals or the award of contract under this specification, Request for Bids, Request for Proposals or Request for Qualifications, the venue of such action or litigation shall be in the Superior Court of the State of Washington, in and for the County of Pierce.

Non-Collusion Declaration

The undersigned bidder/proposer hereby certifies under penalty of perjury that this bid/proposal is genuine and not a sham or collusive bid/proposal, or made in the interests or on behalf of any person or entity not herein named; and that said bidder/proposer has not directly or indirectly induced or solicited any contractor or supplier on the above work to put in a sham bid/proposal or any person or entity to refrain from submitting a bid/proposal; and that said bidder/proposer has not, in any manner, sought by collusion to secure to itself an advantage over any other contractor(s) or person(s).

Bidder/Proposer's Registered Name

Signature of Person Authorized to Enter Date
into Contracts for Bidder/Proposer

Address

Printed Name and Title

City, State, Zip

(Area Code) Telephone Number / Fax Number

Authorized Signatory E-Mail Address

State Business License Number
in WA, also known as UBI (Unified Business Identifier) Number

E.I.No. / Federal Social Security Number Used on Quarterly
Federal Tax Return, U.S. Treasury Dept. Form 941

State Contractor's License Number
(See Ch. 18.27, R.C.W.)

E-Mail Address for Communications

Addendum acknowledgement #1 _____ #2 _____ #3 _____ #4 _____ #5 _____

THIS PAGE MUST BE SIGNED AND RETURNED WITH SUBMITTAL.

**Tacoma Water
Bid Proposal**

**TW24-0031F Green River Filtration Facility
Chemical Feed Line Replacement**

Item	Description	Units	Quantity	Unit Price	Total Price
1	Mobilization, Demobilization, Site Preparation, and Clean-up (10% or less)	LS	1	\$ _____	\$ _____
2	1" temporary HDPE piping for Sodium Hypochlorite (approximately 4400 LF) and appurtenances	LS	1	\$ _____	\$ _____
	Remaining 1" temporary HDPE piping (approximately 10,100 LF) and appurtenances	LS	1	\$ _____	\$ _____
3	HDPE Pipe- All permanent piping and appurtenances 1" Diameter Sodium Hypochlorite piping (approximately 8600 LF) All remaining 1" Diameter piping 1.5" Diameter piping 2" Diameter piping	\$/LF	8600 LF 3600 LF 1,100 LF 10,000 LF	\$ _____ \$ _____ \$ _____ \$ _____	\$ _____ \$ _____ \$ _____ \$ _____
4	SCH 80 CPVC- All permanent piping and appurtenances	LS	1	\$ _____	\$ _____
5	Site Work	LS	1	\$ _____	\$ _____
6	Minor Change	CALC	1	\$ 25,000	\$ 25,000
Total Base Bid (Items 1-6)					\$ _____
Sales Tax (8.8%)					\$ _____
TOTAL					\$ _____

Herewith find deposit in the form of a cashier's check in the amount of \$ _____ which amount is not less than 5-percent of the total bid.

SIGN HERE _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety, are held and firmly bound unto the City of Tacoma, as Obligee, in the penal sum of _____ dollars, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

The condition of this obligation is such that if the Obligee shall make any award to the Principal for

according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and enter into a contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for faithful performance thereof, with Surety or Sureties approved by the Obligee; or if the Principal shall, in case of failure to do so, pay and forfeit to the Obligee the penal amount of the deposit specified in the call for bids, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect and the Surety shall forthwith pay and forfeit to the Obligee, as penalty and liquidated damages, the amount of this bond.

SIGNED, SEALED AND DATED THIS _____ DAY OF _____, 20_____.

PRINCIPAL:

SURETY:

_____, 20_____

Received return of deposit in the sum of \$ _____



City of Tacoma

Certification of Compliance with Wage Payment Statutes

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date (2/18/2025) that the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the state of Washington that the foregoing is true and correct.

Bidder

Signature of Authorized Official*

Printed Name

Title

Date

City

State

Check One:

Individual

Partnership

Joint Venture

Corporation

State of Incorporation, or if not a corporation, the state where business entity was formed:

If a co-partnership, give firm name under which business is transacted:

** If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

Specification No. _____

Name of Bidder: _____

State Responsibility and Reciprocal Bid Preference Information

Certificate of registration as a contractor
(Must be in effect at the time of bid submittal):

Number: _____

Effective Date: _____

Expiration Date: _____

Current Washington Unified Business Identifier
(UBI) Number:

Number: _____

Do you have industrial insurance (workers' compensation)
Coverage nor your employees working in Washington?

Yes No
 Not Applicable

Washington Employment Security Department Number

Number: _____

Not Applicable

Washington Department of Revenue state excise tax
Registration number:

Number: _____

Not Applicable

Have you been disqualified from bidding any public
works contracts under RCW 39.06.010 or 39.12.065(3)?

Yes No
If yes, provide an explanation of your
disqualification on a separate page.

Do you have a physical office located in the state of
Washington?

Yes No

If incorporated, in what state were you incorporated?

State: _____ Not Incorporated

If not incorporated, in what state was your business
entity formed?

State: _____

Have you completed the training required by RCW
39.04.350, or are you on the list of exempt businesses
maintained by the Department of Labor and Industries?

Yes No

**STATEMENT OF QUALIFICATIONS
FOR CONTRACTORS**

This form shall be completed in its entirety and submitted with the bid. **Failure to submit and meet the requirements as stated in the minimum requirements, Section 1 of the Special Provisions may be grounds for rejection of the bid.**

The City of Tacoma will be the sole judge in determining if the prospective contractor meets the minimum experience requirements.

The successful Contractor shall have a minimum of 2 projects of similar size and scope within the last five (5) years in fusion welding and installing HDPE pressure pipe and fittings in satisfactory operation for at least 1 year.

Contractor:

Name: _____

Address: _____

Phone: _____ Contact Person: _____

Project Experience

#1 Project Name: _____

Owner: _____ Contact Person/Phone No: _____

Description of Work: _____

Completion Date: _____

#2 Project Name: _____

Owner: _____ Contact Person/Phone No: _____

Description of Work: _____

Completion Date: _____

APPENDIX C

Sample Contract

Sample Payment Bond (Typically for PWI)

Sample Performance Bond (Typically for PWI)

Sample Substitution Request Form

General Release Form

CONTRACT

This Contract is made and entered into effective as of [INSERT EFFECTIVE DATE Contract date should match date of award letter and month should be formally spelled out] ("Effective Date") by and between the City of Tacoma, a Municipal Corporation of the State of Washington ("City"), and [INSERT supplier name as it appears in Ariba, including dbas or trade names] ("Contractor").

That in consideration of the mutual promises and obligations hereinafter set forth the Parties hereto agree as follows:

I. Contractor shall fully execute and diligently and completely perform all work and provide all services and deliverables described herein and in the items listed below each of which are fully incorporated herein and which collectively are referred to as "Contract Documents":

-
1. Specification No. [INSERT Spec Number] and [Spec Title] together with all authorized addenda.
 2. Contractor's submittal dated [Enter Submittal Date] submitted in response to Specification No. [Spec Number] and [Spec Title].
 3. Describe with specific detail and list separately any other documents that will make up the contract (fee schedule, work schedule, authorized personnel, agreed upon exceptions, Exhibits etc.) or any other additional items mutually intended to be binding upon the parties.
-

[If there are no additional contract documents listed in #3 highlighted in the box above, delete the above highlighted sentence, and delete all of Section III below]

II. If federal funds will be used to fund, pay or reimburse all or a portion of the services or deliverables provided under the Contract, the terms and conditions set forth at Addendum A are incorporated into and made part of this Contract and CONTRACTOR will comply with all applicable provisions of Addendum A and with all applicable federal laws, regulations, executive orders, policies, procedures, and directives in the performance of this Contract.

If CONTRACTOR's receipt of federal funds under this Contract is as a sub-recipient, a fully completed Addendum B, "Sub-recipient Information and Requirements" is incorporated into and made part of this Contract.

If this Contract is funded in whole or in part by any Federally-assisted program of the U.S. Department of Transportation, the requirements of Appendices A and E of the USDOT Title VI Assurances, set forth in Addendum C are incorporated into and made part of this Contract.

III. In the event of a conflict or inconsistency between the terms and conditions contained in this document entitled Contract and any terms and conditions contained the above referenced Contract Documents the following order of precedence applies with the first listed item being the most controlling and the last listed item the least controlling:

1. Contract, inclusive of Addenda A and B and Insurance Requirements.
2. List remaining Contract Documents in applicable controlling order.

[If the only contract documents are the specification and submittal and insurance requirement **and no exceptions are taken in the submittal**, Section III should be deleted]

IV. The Contract terminates on [INSERT Termination Date], and may be renewed for [Renewal Term] [Complete as needed and as stated in the specification]

V. The total price to be paid by City for Contractor's full and complete performance hereunder, including during any authorized renewal terms, may not exceed: \$[INSERT TOTAL COMPENSATION NOT TO EXCEED AMOUNT], plus any applicable taxes. [If Contract is being used as Citywide, no NTE, but individual purchases of \$500k or more need governing body approval]

VI. Contractor agrees to accept as full payment hereunder the amounts specified herein and in Contract Documents, and the City agrees to make payments at the times and in the manner and upon the terms

and conditions specified. Except as may be otherwise provided herein or in Contract Documents Contractor shall provide and bear the expense of all equipment, work and labor of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work and providing the services and deliverables required by this Contract.

- VII. The City's preferred method of payment is by ePayables (Payment Plus), followed by credit card (aka procurement card), then Electronic Funds Transfer (EFT) by Automated Clearing House (ACH), then check or other cash equivalent. CONTRACTOR may be required to have the capability of accepting the City's ePayables or credit card methods of payment. The City, in its sole discretion, will determine the method of payment for this Contract.
- VIII. Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with the insurance requirements contained in the Contract Documents shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- IX. Contractor shall comply with all federal, state, municipal, and/or local laws and regulations in the performance of all terms and conditions of the Contract. Contractor shall be solely responsible for all violations of the law from any cause in connection with its performance of work under the Contract.
- X. Contractor and for its heirs, executors, administrators, successors, and assigns, does hereby agree to the full performance of all the requirements contained herein and in Contract Documents.

It is further provided that no liability shall attach to City by reason of entering into this Contract, except as expressly provided herein.

SAMPLE

IN WITNESS WHEREOF, the Parties hereto have accepted and executed this Contract, as of the Effective Date stated above, which shall be Effective Date for bonding purposes as applicable. The undersigned Contractor representative, by signature below, represents and warrants they are duly authorized to execute this legally binding Contract for and on behalf of Contractor and further represents and warrants that Contractor is not suspended, debarred, or otherwise disqualified under federal, state, or local law from participating in this Contract.

CITY OF TACOMA:
Signature:

CONTRACTOR:
Signature:

Name:

Name:

Title:

Title:

(City of Tacoma use only - blank lines are intentional)

Director of Finance: _____

Deputy/City Attorney (approved as to form): _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

**ADDENDUM A
FEDERAL FUNDING**

1. Termination for Breach

CITY may terminate this Contract in the event of any material breach of any of the terms and conditions of this Contract if CONTRACTOR's breach continues in effect after written notice of breach and 30 days to cure such breach and fails to cure such breach.

2. Prevailing Wages

- A. If federal, state, local, or any applicable law requires CONTRACTOR to pay prevailing wages in connection with this Contract, and CONTRACTOR is so notified by the CITY, then CONTRACTOR shall pay applicable prevailing wages and otherwise comply with the Washington State Prevailing Wage Act (RCW 39.12) in the performance of this Contract.
- B. If applicable, a Schedule of Prevailing Wage Rates and/or the current prevailing wage determination made by the Secretary of Labor for the locality or localities where the Contract will be performed is made of part of the Contract by this reference. If prevailing wages apply to the Contract, CONTRACTOR and its subcontractors shall:
- i. Be bound by and perform all transactions regarding the Contract relating to prevailing wages and the usual fringe benefits in compliance with the provisions of Chapter 39.12 RCW, as amended, the Washington State Prevailing Wage Act and/or the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable, including the federal requirement to pay wages not less than once a week.
 - ii. Ensure that no worker, laborer or mechanic employed in the performance of any part of the Contract shall be paid less than the prevailing rate of wage specified on that Schedule and/or specified in a wage determination made by the Secretary of Labor (unless specifically preempted by federal law, the higher of the Washington state prevailing wage or federal Davis-Bacon rate of wage must be paid.
 - iii. Immediately upon award of the Contract, contact the Department of Labor and Industries, Prevailing Wages section, Olympia, Washington and/or the federal Department of Labor, to obtain full information, forms and procedures relating to these matters. Per such procedures, a Statement of Intent to Pay Prevailing Wages and/or other or additional documentation required by applicable federal law, must be submitted by CONTRACTOR and its subcontractors to the CITY, in the manner requested by the CITY, prior to any payment by the CITY hereunder, and an Affidavit of Wages Paid and/or other or additional documentation required by federal law must be received or verified by the CITY prior to final Contract payment.

3. COPELAND ANTI-KICKBACK ACT

For Contracts subject to Davis Bacon Act the following clauses will be incorporated into the Contract:

- A. CONTRACTOR shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this Contract.

- B. CONTRACTOR or subcontractor shall insert in any subcontracts the clause above and such other clauses federal agencies may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these Contract clauses.
- C. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

4. EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this Contract, CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. If the CONTRACTOR does over \$10,000 in business a year that is funded, paid or reimbursed with federal funds, CONTRACTOR will take specific and affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

- A. Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- B. CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- C. CONTRACTOR will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.
- D. CONTRACTOR will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- E. CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

- F. In the event of CONTRACTOR's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further federally funded contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- G. CONTRACTOR will include the portion of the sentence immediately preceding paragraph (A) and the provisions of paragraphs (A) through (G) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. CONTRACTOR will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

5. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

- A. Overtime requirements. Neither CONTRACTOR or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- B. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (3)(A) of this section the CONTRACTOR and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such CONTRACTOR and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (3)(A) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (3)(A) of this section.

- C. Withholding for unpaid wages and liquidated damages. The CITY shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the CONTRACTOR or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such CONTRACTOR or sub-contractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (3)(B) of this section.
- D. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (3)(A) through (D) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime CONTRACTOR shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (3)(A) through (D) of this section.

6. CLEAN AIR ACT

- A. CONTRACTOR agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- B. CONTRACTOR agrees to report each violation to the CITY and understands and agrees that the CITY will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

CONTRACTOR agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with federal funds.

7. FEDERAL WATER POLLUTION CONTROL ACT

- A. CONTRACTOR agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- B. CONTRACTOR agrees to report each violation to the CITY and understands and agrees that the CITY will, in turn, report each violation as required to assure notification to the appropriate federal agency.
- C. CONTRACTOR agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with federal funding.

8. DEBARMENT AND SUSPENSION

- A. This Contract is a Covered Transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the CONTRACTOR is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- B. CONTRACTOR must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000,

subpart C, and must include a requirement to comply with these regulations in any lower tier Covered Transaction it enters into.

- C. This certification is a material representation of fact relied upon by the CITY. If it is later determined that the CONTRACTOR did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to CITY, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- D. CONTRACTOR agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period of this Contract and to include a provision requiring such compliance in its lower tier covered transactions.

9. **CONTRACTOR** shall be required to comply with 2 CFR part 25, and obtain a unique entity identifier and/or be registered in the federal System for Award Management as appropriate.

10. **BYRD ANTI-LOBBYING AMENDMENT**

- A. Contractors who apply or bid for an award of \$100,000 or more shall file the required certification with CITY. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the CITY.
- B. If applicable, CONTRACTOR's certification required by Appendix A to 44 CFR Part 18 contained at Addendum A-1 to this Contract is incorporated into this Contract.

11. **PROCUREMENT OF RECOVERED MATERIALS**

- A. In the performance of this Contract, CONTRACTOR shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - i. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - ii. Meeting contract performance requirements; or
 - iii. At a reasonable price.
- B. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- C. CONTRACTOR also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

ADDENDUM A-1

APPENDIX A to 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Supplier, by Contract signature, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap.38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

ADDENDUM B—Sub-recipient information and requirements

Pursuant to 2 CFR 200.332(a)(1) Federal Award Identification

(i) Agency Name (must match the name associated with its unique entity identifier)		(ii) Unique Entity Identifier <i>(i.e., DUNS)</i>	City of Tacoma Number for This Agreement
(iii) Federal Award Identification Number (FAIN)	(iv) Federal Award Date	(v) Federal Period of Performance Start and End Date	(vi) Federal Budget Period Start and End Date
(vii) Amount of Federal Funds <i>Obligated</i> to the agency <i>by this action</i>: \$	(viii) Total Amount of Federal Funds <i>Obligated</i> to the agency	(ix) Total Amount of the Federal Award <i>Committed</i> to the agency \$	
(x) Federal Award Project Description:			
(xi) Federal Awarding Agency:	Pass-Through Entity: City of Tacoma	Awarding Official Name and Contact Information:	
(xii) Assistance Listing Number and Name (the pass-through entity must identify the dollar amount made available under each Federal award and the Assistance Listing number at time of disbursement)			(xiii) Identification of Whether the Award is R&D
(xiv) Indirect Cost Rate for the Federal Award	Award Payment Method (lump sum payment or reimbursement)		



PAYMENT BOND TO THE CITY OF TACOMA

Resolution No. [Enter Reso # Here]
Bond No.

That we, the undersigned, [Supplier name]
as principal, and _____
as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of,
[\$(dollar value), plus any applicable taxes], for the payment whereof Contractor and Surety bind themselves,
their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No. [Enter Spec # Here]

Specification Title: [Enter Spec Title Here]

Contract No. [Enter Contract # Here]

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with RCW 39.08, 39.12, and 60.28, including all workers, laborers, mechanics, subcontractors, and materialmen, and all person who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work, and all taxes incurred on said Contract under Titles 50 and 51 RCW and all taxes imposed on the Principal under Title 82 RCW; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract shall in any way affect its obligation on this bond, and waives notice of any changes, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

No suit or action shall be commenced hereunder by any claimant unless claimant shall have given the written notices to the City, and where required, the Contractor, in accordance with RCW 39.08.030.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of claims which may be properly filed in accordance with RCW 39.08 whether or not suit is commenced under and against this bond.

If any claimant shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgment and attorney fees as provided by RCW 39.08.030, shall also pay such costs and attorney fees as may be incurred by the City as a result of such suit. Venue for any action arising out of or in connection with this bond shall be in Pierce County, WA.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

Resolution No. [Enter Reso # Here]
Specification No. [Enter Spec # Here]
Contract No. [Enter Contract # Here]

One original bond shall be executed, and be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: [Supplier name]

By: _____

Surety:

By: _____

Agent's Name: _____

Agent's Address: _____

SAMPLE



PERFORMANCE BOND TO THE CITY OF TACOMA

Resolution No. [Enter Reso # Here]
Bond No.

That we, the undersigned, [Supplier Name]
as principal, and _____
as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of
[\$[dollar value], plus any applicable tax], for the payment whereof Contractor and Surety bind themselves,
their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No. [Enter Spec # Here]
Specification Title: [Enter Spec Title Here]
Contract No. [Enter Contract # Here]

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory performance bond shall become null and void, if and when the principal, its heirs, executors, administrators, successors, or assigns shall well and faithfully perform all of the Principal's obligations under the Contract and fulfill all terms and conditions of all duly authorized modifications, additions and changes to said Contract that may hereafter be made, at the time and in the manner therein specified; and if such performance obligations have not been fulfilled, this bond shall remain in force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increase.

If the City shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgement, shall pay all costs and attorney's fees incurred by the City in enforcement of its rights hereunder. Venue for any action arising out of in in connection with this bond shall be in Pierce County, Washington.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

One original bond shall be executed, and signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: [Supplier name]

By: _____

Surety:

By: _____

Agent's Name: _____

Agent's Address: _____

TACOMA WATER SUBSTITUTION REQUEST FORM

This request shall be submitted to the Senior Buyer listed in the specification no later than 3:00 p.m., PST, Friday, February 28, 2025.

ATTN: Gary Fox, P.E.

Date: _____

PROJECT: TW24-0031F - GRFF Chemical Feed Lines Replacement Transmittal No. _____
(Specification/Name/Contract No., if applicable)

We hereby submit for consideration, the following product instead of the specified item for the above project:

Specification Section: _____

Specified Item: _____

Proposed Substitution: _____

NOTES: Attach complete technical data, including laboratory tests and samples as applicable.

Provide a detailed comparison of the significant qualities (size, weight, durability, performance and similar characteristics, including visual effect, where applicable) for the proposed substitution in comparison with the original requirements.

List completely, installation changes, changes to drawings, and specifications required by the proposal.

FILL IN BLANKS BELOW:

A. Does substitution require change in drawing dimensions? Yes No

If yes, provide detail: _____

B. Will undersigned pay for resulting building design changes including engineering/detailing costs? Yes No

C. What effect does substitution have on other trades?

D. Difference between proposed substitution and specified item?

E. Manufacturer's guarantees of proposed and specified items are? Same Different*

*Explain differences on attachment(s).

F. Are maintenance/service parts locally (within 50 miles) available for proposed substitution? Yes No

G. Will the proposed substitution have any effect on compliance with applicable codes? Yes No

If yes, explain: _____

H. Name, address, and current phone number of the Project Lead for one (1) similar project where the proposed product was used, along with the Project name and date of installation:

I. Contract completion date is? _____ Same Different*

*Explain differences on attachment(s).

TACOMA WATER SUBSTITUTION REQUEST FORM

This request shall be submitted to the Senior Buyer listed in the specification no later than 3:00 p.m., PST, Friday, February 28, 2025.

Undersigned attests function and quality equivalent or superior to specified item and waives their rights to additional payment and time which may subsequently be necessitated by failure of the substitution to perform adequately, and for the required work to make corrections thereof.

SUBMITTED BY:

Name	

Firm	

Address	

City, State, Zip	

Phone No.	

Signature	Date

FOR USE BY TACOMA WATER

Accepted Accepted as Noted

Not Accepted Received Too Late

By: Gary Fox, P.E.
(Project Lead/Manager)

Signature: _____

Date: _____

REMARKS:



City of Tacoma

City of Tacoma Contract No.: _____ Specification No.: _____

General Release to the City of Tacoma

The undersigned, named as the Contractor in a certain agreement between contractor name and the City of Tacoma, dated _____, 20____, hereby releases the City of Tacoma, its departmental officers, employees, and agents, from any and all claim or claims known or unknown, in any manner whatsoever, arising out of, or in connection with, or relating to said contract, excepting only the equity of the undersigned in the amount now retained by the City of Tacoma under said contract, to-wit: the sum of \$_____.

Signed on this _____ day of _____, 20____.

Contractor Name

Contractor Authorized Signature

Title

Type or Print Signature Name

APPENDIX D

City of Tacoma Insurance Requirements

City of Tacoma General Provisions



CITY OF TACOMA INSURANCE REQUIREMENTS FOR CONTRACTS

This Insurance Requirements shall serve as an attachment and/or exhibit form to the Contract. The Agency entering a Contract with City of Tacoma, whether designated as a Supplier, Contractor, Vendor, Proposer, Bidder, Respondent, Seller, Merchant, Service Provider, or otherwise referred to as "Contractor".

1. GENERAL REQUIREMENTS

The following General Requirements apply to Contractor and to Subcontractor(s) performing services and/or activities pursuant to the terms of this Contract. Contractor acknowledges and agrees to the following insurance requirements:

- 1.1. Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by the City of Tacoma.
- 1.2. Contractor shall keep in force during the entire term of the Contract, at no expense to the City of Tacoma, the insurance coverage and limits of liability listed below and for Thirty (30) calendar days after completion of all work required by the Contract, unless otherwise provided herein.
- 1.3. Liability insurance policies, except for Professional Liability and Workers' Compensation, shall:
 - 1.3.1. Name the City of Tacoma and its officers, elected officials, employees, and agents as **additional insured**
 - 1.3.2. Be considered primary and non-contributory for all claims with any insurance or self-insurance or limits of liability maintained by the City of Tacoma
 - 1.3.3. Contain a "Waiver of Subrogation" clause in favor of City of Tacoma
 - 1.3.4. Include a "Separation of Insureds" clause that applies coverage separately to each insured and additional insured
 - 1.3.5. Name the "City of Tacoma" on certificates of insurance and endorsements and not a specific person or department
 - 1.3.6. Be for both ongoing and completed operations using Insurance Services Office (ISO) form CG 20 10 04 13 and CG 20 37 04 13 or the equivalent
 - 1.3.7. Be satisfied by a single primary limit or by a combination of a primary policy and a separate excess umbrella
- 1.4. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements below. Verification of coverage shall include:
 - 1.4.1. An ACORD certificate or equivalent
 - 1.4.2. Copies of requested endorsements
- 1.5. Contractor shall provide to City of Tacoma Procurement & Payable Division, prior to the execution of the Contract, Certificate(s) of Insurance and endorsements from the insurer certifying the coverage of all insurance required herein. Contract or Permit number and the City of Tacoma Department must be shown on the Certificate of Insurance.
- 1.6. A renewal Certificate of Insurance shall be provided electronically prior to coverage



CITY OF TACOMA INSURANCE REQUIREMENTS FOR CONTRACTS

expiration via email sent annually to coi@cityoftacoma.org.

- 1.7. Contractor shall send a notice of cancellation or non-renewal of this required insurance within Thirty (30) calendar days to coi@cityoftacoma.org.
- 1.8. "Claims-Made" coverages, except for pollution coverage, shall be maintained for a minimum of three years following the expiration or earlier termination of the Contract. Pollution coverage shall be maintained for six years following the expiration of the Contract. The retroactive date shall be prior to or coincident with the effective date of the Contract.
- 1.9. Each insurance policy must be written by companies licensed or authorized (or issued as surplus line by Washington surplus line broker) in the State of Washington pursuant to RCW 48 with an (A-) VII or higher in the A.M. Best key rating guide.
- 1.10. Contractor shall not allow any insurance to be cancelled, voided, suspended, or reduced in coverage/limits, or lapse during any term of this Contract. Otherwise, it shall constitute a material breach of the Contract.
- 1.11. Contractor shall be responsible for the payment of all premiums, deductibles and self-insured retentions, and shall indemnify and hold the City of Tacoma harmless to the extent such a deductible or self-insured retained limit may apply to the City of Tacoma as an additional insured. Any deductible or self-insured retained limits in excess of Twenty Five Thousand Dollars (\$25,000) must be disclosed and approved by City of Tacoma Risk Manager and shown on the Certificate of Insurance.
- 1.12. City of Tacoma reserves the right to review insurance requirements during any term of the Contract and to require that Contractor make reasonable adjustments when the scope of services changes.
- 1.13. All costs for insurance are included in the initial Contract and no additional payment will be made by City of Tacoma to Contractor.
- 1.14. Insurance coverages specified in this Contract are not intended and will not be interpreted to limit the responsibility or liability of Contractor or Subcontractor(s).
- 1.15. Failure by City of Tacoma to identify a deficiency in the insurance documentation or to verify coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- 1.16. If Contractor is a government agency or self-insured for any of the above insurance requirements, Contractor shall be liable for any self-insured retention or deductible portion of any claim for which insurance is required. A certification of self-insurance shall be attached and incorporated by reference and shall constitute compliance with this Section.

2. SUBCONTRACTORS



CITY OF TACOMA

INSURANCE REQUIREMENTS FOR CONTRACTS

It is Contractor's responsibility to ensure that each subcontractor obtain and maintain adequate liability insurance coverage that applies to the service provided. Contractor shall provide evidence of such insurance upon City of Tacoma's request. Failure of any subcontractor to comply with insurance requirements does not limit Contractor's liability or responsibility.

3. REQUIRED INSURANCE AND LIMITS

The insurance policies shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve Contractor from liability in excess of such limits.

3.1 Commercial General Liability Insurance

Contractor shall maintain Commercial General Liability Insurance policy with limits not less than One Million Dollars (\$1,000,000) each occurrence and Two Million Dollars (\$2,000,000) annual aggregate. This policy shall be written on ISO form CG 00 01 04 13 or its equivalent and shall include product liability especially when a Contract is solely for purchasing supplies. It includes Products and Completed Operations for three years following the completion of work related to performing construction services. It shall be endorsed to include: A per project aggregate policy limit (using ISO form CG 25 03 05 09 or equivalent endorsement)

3.2 Commercial (Business) Automobile Liability Insurance

Contractor shall maintain Commercial Automobile Liability policy with limits not less than One Million Dollars (\$1,000,000) each accident for bodily injury and property damage and bodily injury and property damage coverage for owned (if any), non-owned, hired, or leased vehicles. Commercial Automobile Liability Insurance shall be written using ISO form CA 00 01 or equivalent. Contractor must also maintain MCS 90 and CA 99 48 endorsements or equivalent if "Pollutants" are to be transported unless in-transit Pollution coverage is covered under required Contractor's Pollution Liability Insurance.

3.3 Workers' Compensation

Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington, as well as any other similar coverage required for this work by applicable federal laws of other states. Contractor must comply with their domicile State Industrial Insurance laws if it is outside the State of Washington.

3.4 Employers' Liability Insurance

Contractor shall maintain Employers' Liability coverage with limits not less than One Million Dollars (\$1,000,000) each employee, One Million Dollars (\$1,000,000) each accident, and One Million Dollars (\$1,000,000) policy limit.

3.5 Pollution Liability Insurance

Contractor shall maintain Pollution Liability or Environmental Liability Insurance with limits not less than One Million Dollars (\$1,000,000) each occurrence and Two Million Dollars (\$2,000,000) in the aggregate. Coverage shall include investigation and defense costs for bodily injury and property damage, loss of use of damaged or destroyed property, Natural Resource Damage, and Hazardous Substance Removal. Such coverage shall provide both on-site and off-site cleanup costs, cover gradual and sudden pollution, and include in its scope of coverage the City of Tacoma damage claims for loss arising out of Contractor's work.

3.6 Other Insurance

Other insurance may be deemed appropriate to cover risks and exposures related to the scope of work or changes to the scope of work required by City of Tacoma. The costs of such



CITY OF TACOMA INSURANCE REQUIREMENTS FOR CONTRACTS

necessary and appropriate Insurance coverage shall be borne by Contractor.

GENERAL PROVISIONS

(Revised October 8, 2024)

SECTION I - BIDDING REQUIREMENTS

SECTION I REQUIREMENTS ARE BINDING ON ALL RESPONDENTS.

1.01 USE AND COMPLETION OF CITY PROPOSAL SHEETS

A. Respondent's Proposal

Each Respondent must bid exactly as specified on the Proposal sheets. All proposals must remain open for acceptance by the City for a period of at least 60 calendar days from the date of opening of the bids.

B. Alterations of Proposals Not Allowed

Proposals that are incomplete or conditioned in any way contain alternatives or items not called for in the General Provisions and Specifications, or not in conformity with law may be rejected as being nonresponsive. The City cannot legally accept any proposal containing a substantial deviation from these Specifications.

C. Filling Out City Proposal Sheets

All proposals must be completed using the proposal sheets and forms included with this specification, and the prices must be stated in figures either written in ink or typewritten. No proposal having erasures or interlineations will be accepted unless initialed by the Respondent in ink.

1.02 CLARIFICATION OF PROPOSAL FOR RESPONDENT

If a prospective Respondent has any questions concerning any part of the Proposal, he/she may submit a written request for answer of his/her questions. Any interpretation of the Proposal will be made by an Addendum duly issued and mailed or delivered to each prospective Respondent. Such addendum must be acknowledged in the proposal. The City of Tacoma will not be responsible for any other explanation or interpretation of the bid documents.

1.03 RESPONDENT'S BOND OR CERTIFIED CHECK

Each bid for construction must be accompanied either by a certified or cashier's check for 5 percent of the total amount bid, including tax, payable to the City Treasurer, or an approved bid bond, by a surety company authorized to do business in the State of Washington, for 5 percent of the total amount bid. The person legally authorized to sign the bid must sign all bid bonds. The approved bid bond form attached to these Specifications should be used: no substantial variations from the language thereof will be accepted.

If a bid bond is used, the 5 percent may be shown either in dollars and cents, or the bid bond may be filled in as follows, "5 percent of the total amount of the accompanying proposal."

The check of the successful Respondent will be returned after award of the Contract, acceptance of the Payment and Performance Bond and City's receipt of the signed Contract. The checks of all other Respondents will be returned immediately upon the award of the Contract. Bid bonds will not be returned.

1.04 DELIVERY OF PROPOSALS TO THE CITY'S PURCHASING OFFICE

- A. Proposal packages must be received by the City's Procurement and Payables Division in SAP Ariba (unless another form of delivery is stated), prior to the scheduled time and date stated in the Solicitation.
- B. Supplier is solely responsible for timely delivery of its Submittal.
- C. Submittals received after the time stated in the solicitation will not be accepted.
- D. For purposes of determining whether a Submittal has been timely received in SAP Ariba, the City's Procurement and Payables Division will rely on the submittal clock in SAP Ariba.

1.05 LICENSES/PERMITS

- A.** Suppliers, if applicable, must have a Washington state business license at the time of Submittal and throughout the term of the Contract. Failure to include a Washington state business license may be grounds for rejection of the Submittal or cancellation of contract award. Information regarding Washington state business licenses may be obtained at <http://bls.dor.wa.gov>.
- B.** Upon award, it is the responsibility of the Supplier to register with the City of Tacoma's Tax and License Division, 733 South Market Street, Room 21, Tacoma, WA 98402-3768, 253-591-5252, https://www.cityoftacoma.org/government/city_departments/finance/tax_and_license/. Supplier shall obtain a business license as is required by Tacoma Municipal Code Subtitle 6C.20.
- C.** During the term of the Contract, Supplier, at its expense, shall obtain and keep in force any and all necessary licenses and permits.

1.06 CONTRACTOR'S STATE REGISTRATION NUMBER

Contractors for construction or public works construction are required to be licensed by the state. If the provisions of Chapter 18.27 of the Revised Code of Washington apply to the Respondent, then the Respondent's Washington State Contractor's Registration No. must accompany the bid.

1.07 BID IS NONCOLLUSIVE

The Respondent represents by the submission of the Proposal that the prices in this Bid are neither directly nor indirectly the result of any formal or informal agreement with another Respondent.

1.08 EVALUATION OF BID

A. Price, Experience, Delivery Time and Responsibility

In the evaluation of bids, the Respondent's experience, delivery time, quality of performance or product, conformance to the specifications and responsibility in performing other contracts (including satisfying all safety requirements) may be considered in addition to price. In addition, the bid evaluation factors set forth in City Code Section 1.06.262 may be considered by the City. Respondents who are inexperienced or who fail to properly perform other contracts may have their bids rejected for such cause.

B. Prequalified Electrical Contractor

Certain types of electrical construction require special expertise, experience, and prequalification of the Contractor (or subcontractor) by the City. In such cases, the Respondent must be prequalified or the Respondent must subcontract with a City prequalified electrical contractor for the specialty work.

C. Insertions of Material Conflicting with Specifications

Only material inserted by the Respondent to meet requirements of the Specifications will be considered. Any other material inserted by the Respondent will be disregarded as being nonresponsive and may be grounds for rejection of the Respondent's Proposal.

D. Correction of Ambiguities and Obvious Errors

The City reserves the right to correct obvious errors in the Respondent's proposal. In this regard, if the unit price does not compute to the extended total price, the unit price shall govern.

1.09 WITHDRAWAL OF BID

A. Prior to Bid Opening

Any Respondent may withdraw his/her Proposal prior to the scheduled bid opening time by delivering a written notice to the City's Procurement and Payables Office. The notice may be submitted in person or by mail; however, it must be received by the City's Procurement and Payables Office prior to the time of bid opening.

B. After Bid Opening

No Respondent will be permitted to withdraw his/her Proposal after the time of bid opening, as set forth in the Call for Bids, and before the actual award of the Contract, unless the award of Contract is delayed more than sixty (60) calendar days after the date set for bid opening. If a delay of more than 60 calendar days does occur, then the Respondent must submit written notice withdrawing his/her Proposal to the Purchasing Manager.

1.10 OPENING OF BIDS

At the time and place set for the opening of bids, all Proposals, unless previously withdrawn, will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Proposal.

1.11 CITY COUNCIL/PUBLIC UTILITY BOARD FINAL DETERMINATION

The City Council or Public Utility Board of the City of Tacoma shall be the final judge as to which is the lowest and best bid in the interest of the City of Tacoma. The City reserves the right to reject any and all bids, waive minor deviations or informalities, and if necessary, call for new bids.

1.12 RESPONDENT'S REFUSAL TO ENTER INTO CONTRACT

Any Respondent who refuses to enter into a Contract after it has been awarded to the Respondent will be in breach of the agreement to enter the Contract and the Respondent's certified or cashier's check or bid bond shall be forfeited.

1.13 TAXES

A. Include In Proposal All Taxes

Respondent shall include in his/her Proposal all applicable local, city, state, and federal taxes. It is the Respondent's obligation to state on his/her Proposal sheet the correct percentage and total applicable Washington State and local sales tax. The total cost to the City including all applicable taxes may be the basis for determining the low Respondent.

B. Federal Excise Tax

The City of Tacoma is exempt from federal excise tax. Where applicable, the City shall furnish a Federal Excise Tax Exemption certificate.

C. City of Tacoma Business and Occupation Tax

Sub-Title 6A of the City of Tacoma Municipal Code (TMC) provides that transactions with the City of Tacoma, may be subject to the City of Tacoma's Business and Occupation Tax. It is the responsibility of the Respondent awarded the Contract to register with the City of Tacoma's Department of Tax and License, 733 South Market Street, Room 21, Tacoma, WA 98402-3768, telephone 253-591-5252. The City's Business and Occupation Tax amount shall not be shown separately but shall be included in the unit and/or lump sum prices bid.

1.14 FIRM PRICES/ESCALATION

Except as specifically allowed by the Special Provisions, only firm prices will be accepted.

1.15 AWARD

A. Construction and/or Labor Contracts

Unless specifically noted in the Special Provisions or Proposal sheets, all construction and/or labor contracts will be awarded to only one Respondent.

B. Supply/Equipment Contracts

The City reserves the right to award an equipment or supply contract for any or all items to one or more Respondents as the interests of the City will be best satisfied.

1.16 INCREASE OR DECREASE IN QUANTITIES

The City of Tacoma reserves the right to increase or decrease the quantities of any items under this Contract and pay according to the unit prices quoted in the Proposal (with no adjustments for anticipated profit).

1.17 EXTENSION OF CONTRACT

Contracts resulting from this specification shall be subject to extension by mutual agreement per the same prices, terms and conditions.

1.18 PAYMENT TERMS

- A. Prices will be considered as net 30 calendar days if no cash discount is shown. Payment discount periods of twenty (20) calendar days or more if offered in the submittal, will be considered in determining the apparent lowest responsible submittal. Discounts will be analyzed in context of their overall cumulative effect. Invoices will not be processed for payment nor will the period of cash discount commence until receipt of a properly completed invoice and until all invoiced items are received and satisfactory performance of the Contractor has been attained. If an adjustment in payment is necessary due to damage or dispute, the cash discount period shall commence on the date final approval for payment is authorized.
- B. ePayable/Credit Card Acceptance. Submittals offering ePayable/Credit card acceptance may be compared against submittals offering a prompt payment discount to evaluate the overall cumulative effect of the discount against the advantage to the City of the ePayable/Credit card acceptance, and may be considered in determining the apparent lowest responsible submittal.

1.19 PAYMENT METHOD – EPAYABLES – CREDIT CARD ACCEPTANCE – EFT/ACH ACCEPTANCE

- A. Payment methods include:
 - EPayables (Payment Plus). This is payment made via a virtual, single use VISA card number provided by the City's commercial card provider. Suppliers accepting this option will receive "due immediately" payment terms. Two options for acceptance are available to suppliers. Both are accompanied by an emailed advice containing complete payment details:
 - Straight-through processing (buyer initiated). Immediate, exact payments directly deposited to supplier accounts by the City's provider bank; the supplier does not need to know card account details.
 - Supplier retrieves card account through the secure, on-line portal provided via email notifications sent by the City's commercial card provider.
 - Credit card. Tacoma's VISA procurement card program is supported by standard bank credit suppliers and requires that merchants abide by the VISA merchant operating rules. It provides "due immediately" payment terms.
 - Suppliers must be PCI-DSS compliant (secure credit card data management) and federal FACTA (sensitive card data display) compliant.
 - Suppliers must be set up by their card processing equipment provider (merchant acquirer) as a minimum of a Level II merchant with the ability to pass along tax, shipping and merchant references information.
 - Electronic Funds Transfer (EFT) by Automated Clearing House (ACH). Standard terms are net 30 for this payment method.
 - Check or other cash equivalent. Standard terms are net 30 for this payment method.
- B. The City's preferred method of payment is by ePayables (Payment Plus) followed by credit card (aka procurement card). Suppliers may be required to have the capability of accepting the City's ePayables or credit card methods of payment. **The City of Tacoma will not accept price changes or pay additional fees when ePayables (Payment Plus) or credit card is used.**
- C. The City, in its sole discretion, will determine the method of payment for goods and/or services as part of the Contract.

1.20 COOPERATIVE PURCHASING

The Washington State Interlocal Cooperative Act RCW 39.34 provides that other governmental agencies may purchase goods and services on this solicitation or contract in accordance with the terms and prices indicated therein if all parties are agreeable.

1.21 PUBLIC DISCLOSURE: PROPRIETARY OR CONFIDENTIAL INFORMATION

- A. Respondent's Submittals, all documents and records comprising any Contract awarded to Respondent, and all other documents and records provided to the City by Respondent are deemed public records subject to disclosure under the Washington State Public Records Act, Chapter 42.56 RCW (Public Records Act). Thus, City may be required, upon request, to disclose the Contract and documents or records related to it unless an exemption under the Public Records Act or other laws applies. In the event CITY receives a request for such disclosure, determines in its legal judgment that no applicable exemption to disclosure applies; and Respondent has complied with the requirements to Respondent has complied with the requirements to mark records considered confidential or proprietary

as such requirements are stated below, City agrees to provide Respondent 10 days written notice of impending release. Should legal action thereafter be initiated by Respondent to enjoin or otherwise prevent such release, all expense of any such litigation shall be borne by Respondent, including any damages, attorneys' fees or costs awarded by reason of having opposed disclosure. City shall not be liable for any release where notice was provided and Respondent took no action to oppose the release of information.

B. If Respondent provides City with records or information that Respondent considers confidential or proprietary, Respondent must mark all applicable pages or sections of said record(s) as "Confidential" or "Proprietary." Further, in the case of records or information submitted in response to a Request for Proposals, an index must be provided indicating the affected pages or sections and locations of all such material identified Confidential or Proprietary. Information not included in the required index will not be reviewed for confidentiality or as proprietary before release. If Supplier fails to so mark or index Submittals and related records, then the City, upon request, may release said record(s) without the need to satisfy the requirements of subsection A above; and Respondent expressly waives its right to allege any kind of civil action or claim against the City pertaining to the release of said record(s). Submission of materials in response to City's Solicitation shall constitute assent by Respondent to the foregoing procedure and Respondent shall have no claim against the City on account of actions taken pursuant to such procedure.

1.22 FEDERAL AID PROJECTS

The City of Tacoma in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, subtitle A, Office of the Secretary, part 21, nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR, part 26, will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

SECTION II - CONTRACT REQUIREMENTS

2.01 CONTRACTOR'S RESPONSIBILITY

A. Contract Documents

The Respondent to whom the Contract is awarded, hereinafter called the Contractor, shall enter into a Contract with the City of Tacoma, , within 10 days after receipt from the City of Tacoma of a properly prepared Contract. In addition, the Contractor will do all things required to promptly perform this Contract pursuant to the terms of this Contract. Certain contracts for supplies, goods or equipment may use the City Purchase Order in place of a formal contract document.

B. Surety Bonds

Except as modified by the Special Provisions, the Respondent to whom the Contract is awarded shall provide a payment and performance bond, including power of attorney, for 100 percent of the amount of his/her bid (including sales taxes), to insure complete performance of the Contract including the guarantee. The bonds must be executed by a surety company licensed to do business in the State of Washington. For a supply-type contract, a cashier's check or cash may be substituted for the bonds; however, this cash or cashier's check must remain with the City through the guarantee period and any interest on said amount shall accrue to the City.

C. Independent Contractor

Contractor is an independent contractor; no personnel furnished by the Contractor shall be deemed under any circumstances to be the agent or servant of the City. Contractor shall be fully responsible for all acts or omissions of Subcontractors and its and their suppliers and of persons employed by them, and shall be specifically responsible for sufficient and competent supervision and inspection to assure compliance in every respect with the Contract. There shall be no contractual relationship between any Subcontractors or supplier and the City arising out of or by virtue of this agreement. No provision of the Contract is intended or is to be construed to be for the benefit of any third party.

2.02 CONFLICTS IN SPECIFICATIONS

Anything mentioned in the Specifications and not shown on the Drawings and anything on the Drawings and not mentioned in the Specifications shall be of like effect and shall be understood to be shown and/or mentioned in both. In case of differences between Drawings and Specifications, the Specifications shall govern. In addition, in the event of any conflict between these General Provisions, the Special Provisions, the Technical Provisions and/or the Proposal pages, the following order of precedence shall control:

1. Proposal pages prevail if they conflict with the General, Special or Technical Provisions.
2. Special Provisions prevail if they conflict with the General Provisions and/or Technical Provisions.
3. Technical Provisions prevail if they are in conflict with the General Provisions.

In case of discrepancy of figures between Drawings, Specifications or both, the matter shall immediately be submitted to the Engineer for determination. Failure to submit the discrepancy issue to the Engineer shall result in the Contractor's actions being at his/her own risk and expense. The Engineer shall furnish from time to time such detailed drawings and other information as he/she may consider necessary.

2.03 INSPECTION

A. Of the Work

All materials furnished and work done shall be subject to inspection.

The Inspector administering the Contract shall at all times have access to the work wherever it is in progress or being performed, and the Contractor shall provide proper facilities for such access and inspection. Such inspection shall not relieve the Contractor of the responsibility of performing the work correctly, utilizing the best labor and materials in strict accordance with the Specifications of this Contract. All material or work approved and later found to be defective shall be replaced without cost to the City of Tacoma.

B. Inspector's Authority

The inspector shall have power to reject materials or workmanship which do not fulfill the requirements of these Specifications, but in case of dispute the Contractor may appeal to the Director or Superintendent, whose decision shall be final. The word "Director" means the Director of the City of Tacoma General Government department that is administering the contract. The word "Superintendent" means the Superintendent of the City of Tacoma, Department of Public Utilities Division that is administering the contract.

The Contract shall be carried out under the general control of the representative of the particular City Department or Division administering the Contract, who may exercise such control over the conduct of the work as may be necessary, in his or her opinion, to safeguard the interest of the City of Tacoma. The Contractor shall comply with all orders and instructions given by the representative of the particular Department or Division administering the Contract in accordance with the terms of the Contract.

Provided, that for the purposes of construction contracts, such control shall only apply (a) to the extent necessary to ensure compliance with the provisions of this contract, and (b) to the extent necessary to fulfill any nondelegable duty of the City for the benefit of third parties not engaged in promoting the activity of this contract.

Nothing herein contained, however, shall be taken to relieve the Contractor of his/her obligations or responsibilities under the Contract.

2.04 FEDERAL, STATE AND MUNICIPAL REGULATIONS

All federal, state, municipal and/or local regulations shall be satisfied in the performance of all portions of this Contract. The Contractor shall be solely responsible for all violations of the law from any cause in connection with work performed under this Contract.

2.05 INDEMNIFICATION

A. Indemnification

Contractor acknowledges that pursuant to the terms of this agreement, Contractor is solely and totally responsible for the safety of all persons and property in the performance of this Contract. To the greatest extent allowed by law, Contractor assumes the risk of all damages, loss, cost, penalties and expense and agrees to indemnify, defend and hold harmless the City of Tacoma, from and against any and all liability which may accrue to or be sustained by the City of Tacoma on account of any claim, suit or legal action made or brought against the City of Tacoma for the death of or injury to persons (including Contractor's or subcontractor's employees) or damage to property involving Contractor, or subcontractor(s) and their employees or agents, arising out of and in connection with or incident to the performance of the Contract including if the City is found to have a nondelegable duty to see that work is performed with requisite care, except for injuries or damages caused by the sole negligence of the City. In this regard, Contractor recognizes that Contractor is waiving immunity under industrial Insurance Law, Title 51 RCW. This indemnification extends to the officials, officers and employees of the City and also includes attorney's fees and the cost of establishing the right to indemnification hereunder in favor of the City of Tacoma. In addition, within the context of competitive bidding laws, it is agreed that this indemnification has been mutually negotiated. Provided however, this provision is intended to be applicable to the parties to this agreement and it shall not be interpreted to allow a Contractor's employee to have a claim or cause of action against Contractor.

B. Limitation of Liability for Primarily Supply-Type Contracts

In all contracts where the total cost of the supply of materials and/or equipment constitute at least 70 percent of the total contract price (as determined by the City), the City agrees that it will not hold the contractor, supplier or manufacturer liable for consequential damages for that part of the contract related to the manufacture and/or design of the equipment, materials or supplies.

2.06 CONTRACTOR'S INSURANCE

A. During the course and performance of a Contract, Contractor will provide proof and maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements as is applicable to the services, products, and deliverables provided under the Contract. The City of Tacoma Insurance Requirements document, if issued, is fully incorporated into the Contract by reference.

B. Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

2.07 ASSIGNMENT AND SUBLETTING OF CONTRACT

C. Assignment

The Contract shall not be assigned except with the consent of the Superintendent or his/her designee.

Requests for assignment of this contract must be in writing with the written consent of the surety, and the request must show the proposed person or organization to which the contract is assigned is capable, experienced and equipped to perform such work. The proposed substitute person or organization may be required to submit to the City information as to his/her experience, financial ability and give statements covering tools, equipment, organization, plans and methods to fulfill any portion of the Contract prior to approval of assignment.

D. Subletting

The Contract shall not be sublet except with the written consent of the Superintendent or his/her designee. In the event that a prequalified electrical contractor is necessary to perform certain portions of the work, such work may be subcontracted with a City prequalified electrical contractor for the type of work involved.

Requests for subletting of this Contract must be in writing with the written consent of the Surety, and the request must show the proposed person or organization to which the Contract is sublet is capable, experienced and equipped to perform such work. The proposed substitute person or organization may be required to submit to the City information as to his experience, financial ability and give statements covering tools, equipment, organization, plans and methods to fulfill any portion of the Contract prior to approval of subletting.

The written consent approving the subletting of the Contract shall not be construed to relieve the Contractor of his/her responsibility for the fulfillment of the Contract. The Subcontractor shall be considered to be the agent of the Contractor and the Contractor agrees to be responsible for all the materials, work and indebtedness incurred by the agent.

A subcontractor shall not sublet any portion of a subcontract for work with the City without the written consent of the City.

2.08 DELAY

E. Extension of Time

With the written approval of the Superintendent or his/her designee, the Contractor may be granted additional time for completion of the work required under this Contract, if, in the Superintendent's opinion the additional time requested arises from unavoidable delay.

F. Unavoidable Delay

Unavoidable delays in the prosecution of the work shall include only delays from causes beyond the control of the Contractor and which he/she could not have avoided by the exercise of due care, prudence, foresight and diligence. Delay caused by persons other than the Contractor, Subcontractors or their employees will be considered unavoidable delays insofar as they necessarily interfere with the Contractor's completion of the work, and such delays are not part of this Contract.

Unavoidable delay will not include delays caused by weather conditions, surveys, measurements, inspections and submitting plans to the Engineer of the particular Division involved in administering this Contract.

2.09 GUARANTEE

A. Guarantee for Construction, Labor or Services Contract

Neither the final certificate of payment or any provision in the Contract Documents, nor partial or entire occupancy of the premises by the City, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The City will give notice of observed defects with reasonable promptness.

If it has been discovered, before payment is required under the terms of the Contract, that there is a failure to comply with any of the terms and provisions of this Contract, the City has the right and may withhold payment.

In case of a failure of any part of the work, materials, labor and equipment furnished by the Contract or to fully meet all of the requirements of the Contract, the Contractor shall make such changes as may be necessary to fully meet all of the specifications and requirements of this Contract. Such changes shall be made at the Contractor's sole cost and expense without delay and with the least practicable inconvenience to the City of Tacoma. Rejected material and equipment shall be removed from the City's property by and at the expense of the Contractor.

B. Guarantee for Supply Contracts

Unless a longer period is specified, the supplier and/or manufacturer of the supplies, materials and/or equipment furnished pursuant to this Contract agrees to correct any defect or failure of the supplies, materials and/or equipment which occurs within one year from the date of: (1) test energization if electrical or mechanical equipment; (2) commencement of use if supplies or materials, provided, however, said guarantee period shall not extend beyond eighteen months after date of receipt by the City. All of the costs (including shipping, dismantling and reinstallation) of repairs and/or corrections of defective or failed equipment, supplies and/or material is the responsibility of the supplier and/or manufacturer.

When the supplier is not the manufacturer of the item of equipment, supplier agrees to be responsible for this guarantee and supplier is not relieved by a manufacturer's guarantee.

C. Guarantee Period Extension

The Contract guarantee period shall be suspended from the time a significant defect is first documented by the City until the work or equipment is repaired or replaced by Contractor and accepted by the City. In addition, in the event less than ninety (90) days remain on the guarantee period (after recalculating), the guarantee period shall be extended to allow for at least ninety (90) days from the date the work or equipment is repaired or replaced and accepted by the City.

2.10 DEDUCTIONS FOR UNCORRECTED WORK

If the City of Tacoma deems it expedient to correct work not done in accordance with the terms of this Contract, an equitable deduction from the Contract price shall be made.

2.11 CITY OF TACOMA'S RIGHT TO TERMINATE CONTRACT

A. Termination for Convenience

1. **Supplies.** The City may terminate a Contract for supplies at any time upon prior written notice to Contractor. Upon the effective date of termination specified in such notice, and payment by the City, all conforming supplies, materials, or equipment previously furnished hereunder shall become its property.
2. **Services.** The City may terminate a Contract for services at any time, with or without cause, by giving 10-business day's written notice to Supplier. In the event of termination, all finished and unfinished work prepared by Supplier pursuant to the Contract shall be provided to the City. In the event City terminates the Contract due to the City's own reasons and without cause due to Supplier's actions or omissions, the City shall pay Supplier the amount due for actual work and services necessarily performed under the Contract up to the effective date of termination, not to exceed the total compensation set forth in the Contract.

B. Termination for Cause

1. The City may terminate a Contract for either services or supplies in the event of any material breach of any of the terms and conditions of the Contract if the Contractor's breach continues in effect after written notice of breach and 30 days to cure such breach and fails to cure such breach
2. **Bankruptcy.** If the Contractor should be adjudged as bankrupt, or makes a general assignment for the benefit of creditors, or a receiver should be appointed on account of his/her insolvency, or if he/she or any of his/her subcontractors should violate any of the provisions of the Contract, or if the work is not being properly and diligently performed, the City of Tacoma may serve written notice upon the Contractor and Surety, executing the Payment and Performance Bond, of its intention to terminate the Contract; such notice will contain the reasons for termination of the Contract, and unless within 10 days after the serving of such notice, such violation shall cease and an arrangement satisfactory to the City of Tacoma for correction thereof shall be made, the Contract shall, upon the expiration of said 10 days, cease and terminate and all rights of the Contractor hereunder shall be forfeited. In the event the Contract is terminated for cause, Contractor shall not be entitled to any lost profits resulting therefrom.
3. **Notice.** In the event of any such termination for cause, the City of Tacoma shall immediately send (by regular mail or other method) written notice thereof to the Surety and the Contractor. Upon such termination the Surety shall have the right to take over and perform the Contract, provided however, the Surety must provide written notice to the City of its intent to complete the work within 15 calendar days of its receipt of the original written notice (from the City) of the intent to terminate. Upon termination and if the Surety does not perform the work, the City of Tacoma may take over the work and prosecute the same to completion by any method it may deem advisable, for the account of and at the expense of the Contractor, and the Contractor and the Surety shall be liable to the City of Tacoma for all cost occasioned to the City of Tacoma thereby. The City of Tacoma may without liability for doing so, take possession of and utilize in completing the work, such materials, equipment, plant and other property belonging to the Contractor as may be on the site of the work and necessary therefore.

2.12 LIENS

In the event that there are any liens on file against the City of Tacoma, the City of Tacoma shall be entitled to withhold final or progress payments to the extent deemed necessary by the City of Tacoma to properly protect the outstanding lien claimants until proper releases have been filed with the City Clerk.

2.13 LEGAL DISPUTES

A. General

Washington law shall govern the interpretation of the Contract. The state or federal courts located in Pierce County Washington shall be the sole venue of any mediation, arbitration, or litigation arising out of the Contract.

Respondents providing submittals from outside the legal jurisdiction of the United States of America will be subject to Tacoma’s City Attorney’s Office (CAO) opinion as to the viability of possible litigation pursuant to a contract resulting from this Specification. If it is the opinion of the CAO that any possible litigation would be beyond reasonable cost and/or enforcement, the submittal may be excluded from evaluation.

B. Attorney Fees

For contracts up to \$250,000, which become the subject of litigation or arbitration, the substantially prevailing party may be entitled to reasonable attorney fees, as provided in RCW 39.04.240. Provided, however, the attorney fee hourly rate for the City of Tacoma’s assistant city attorneys is agreed to be \$150 per hour or the same as the hourly rate for Contractor’s legal counsel, whichever is greater.

2.14 DELIVERY

Prices must be quoted F.O.B. destination, freight prepaid and allowed with risk of loss during transit remaining with Contractor/Supplier (unless otherwise stated in these Specifications) to the designated address set forth in these Specifications.

Deliveries shall be between 9:00 a.m. and 3:30 p.m.; Monday through Friday only (except legal holidays of the City of Tacoma).

Legal holidays of the City of Tacoma are:

New Year's Day	January 1
Martin Luther King's Birthday	3rd Monday in January
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Juneteenth	June 19
Independence Day	July 4
Labor Day	1st Monday in September
Veteran's Day	November 11
Thanksgiving Day	4th Thursday of November
Day after Thanksgiving	4th Friday of November
Christmas Day	December 25

When any of these holidays occur on Saturday or Sunday, the preceding Friday or the following Monday, respectively, is a legal holiday for the City of Tacoma.

2.15 PACKING SLIPS AND INVOICES

A. Packing slips and shipping notices shall be sent to the specific City Division or Department receiving the item(s) at the address stated in City’s Solicitation or as otherwise stated in the Contract and include complete description of items, contents of items if crated or cased, quantity, shipping point, carrier, bill of lading number and City of Tacoma purchase order.

B. Each invoice shall show City of Tacoma purchase order number, release number if applicable, quantity, unit of measure, item description, unit price and extended price for each line if applicable, services and deliverables provided if applicable. Line totals shall be summed to give a grand total to which sales tax shall be added, if applicable.

1. For transactions conducted in SAP Ariba, invoices shall be submitted through Ariba.
2. For invoices paid by ACH or by check, unless stated otherwise, invoices shall be electronically submitted by email with corresponding PO number listed in the subject line to accountspayable@cityoftacoma.org.

3. For invoices paid by credit card, invoices shall also display the last name of the cardholder and last four digits (only) of the card number (e.g., Jones/6311). Unless stated otherwise, invoices shall be electronically submitted by email with corresponding PO number listed in the subject line to (do not combine different POs into one invoice or charge) to pcardadmin@cityoftacoma.org.

2.16 APPROVED EQUALS

A. Unless an item is indicated as "No substitute", special brands, when named, are intended to describe the standard of quality, performance or use desired. Equal items will be considered by the City, provided that the respondent specifies the brand and model, and provides all descriptive literature, independent test results, product samples, local servicing and parts availability to enable the City to evaluate the proposed "equal".

B. The decision of the City as to what items are equal shall be final and conclusive. If the City elects to purchase a brand represented by the respondent to be an "equal", the City's acceptance of the item is conditioned on the City's inspection and testing after receipt. If, in the sole judgment of the City, the item is determined not to be an equal, the item shall be returned at the respondent's expense.

C. When a brand name or level of quality is not stated by the respondent, it is understood the offer is exactly as specified. If more than one brand name is specified, respondents must clearly indicate the brand and model/part number being bid.

2.17 ENTIRE AGREEMENT

This written contract represents the entire Agreement between the parties and supersedes any prior oral statements, discussions or understandings between the parties.

2.18 CODE OF ETHICS

The City's Code of Ethics, Chapter 1.46, Tacoma Municipal Code, provides ethical standards for City personnel and prohibits certain unethical conduct by others including respondents and contractors. Violation of the City's Code of Ethics will be grounds for termination of this contract.

2.19 FEDERAL FINANCIAL ASSISTANCE

If federal funds, including FEMA financial assistance to the City of Tacoma, will be used to fund, pay or reimburse all or a portion of the Contract, Contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives and the following clauses will be incorporated into the Contract:

A. EQUAL EMPLOYMENT OPPORTUNITY During the performance of this Contract, Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

1. Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other

employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

B. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (B)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (B)(1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

3. Withholding for unpaid wages and liquidated damages. The City shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (B)(2) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (B)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (B)(1) through (4) of this section.

C. CLEAN AIR ACT

1. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
2. Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

D. FEDERAL WATER POLLUTION CONTROL ACT

1. Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. Contractor agrees to report each violation to the City, understands, and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

E. DEBARMENT AND SUSPENSION

1. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
2. Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
3. This certification is a material representation of fact relied upon by the City. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
4. Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

F. BYRD ANTI-LOBBYING AMENDMENT

1. Contractors who apply or bid for an award of \$100,000 or more shall file the required certification with City. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the City.
2. If applicable, Contractor must sign and submit to the City the following certification:

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap.38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

_____ Date

G. PROCUREMENT OF RECOVERED MATERIALS

1. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - a. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - b. Meeting contract performance requirements; or
 - c. At a reasonable price.
2. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
3. Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

[Section III is for contracts that involve construction and/or labor, and are not applicable to contracts solely for material/supply purchases.]

GENERAL PROVISIONS

SECTION III - CONSTRUCTION AND/OR LABOR CONTRACTS

SECTION III REQUIREMENTS APPLY ONLY TO CONSTRUCTION AND/OR LABOR CONTRACTS AND ARE IN ADDITION TO APPLICABLE REQUIREMENTS CONTAINED IN SECTION II CONTRACT REQUIREMENTS.

3.01 RESPONDENT'S DUTY TO EXAMINE

The Respondent agrees to be responsible for examining the site(s) and to have compared them with the Specifications and Contract Drawings, and to be satisfied as to the facilities and difficulties attending the execution of the proposed Contract (such as uncertainty of weather, floods, nature and condition of materials to be handled and all other conditions, obstacles and contingencies) before the delivery of his/her Proposal. No allowance will be subsequently made by the City on behalf of the Respondent by reason of any error or neglect on Respondent's part, for such uncertainties as aforesaid.

3.02 PERMITS

Except when modified by the Special Provisions, the Contractor shall procure and pay for all permits and licenses necessary for the completion of this Contract including those permits required by the City of Tacoma. The City will obtain county or state road crossing permits if required. In the event a necessary permit is not obtained, the Contractor will not be permitted to work on items subject to said permit and any delays caused thereby will not be subject to extra compensation or extensions.

3.03 NOTIFICATION OF OTHER GOVERNMENTAL AGENCIES AND UTILITIES WHEN UNDERGROUND WORK IS INVOLVED

The Contractor shall notify all other affected governmental agencies and utilities whenever underground work is done under the terms of this Contract. The Contractor is required to obtain permission of the appropriate public and private utilities and governmental agencies before performing underground work pursuant to the terms of this Contract. The Contractor is required to call "one call" at 1-800-424-5555 for all work involving excavation or digging more than 12 inches beneath ground or road surface.

The City may have indicated on the plans and specifications the existence of certain underground facilities that are known to the City department responsible for this Contract. It is the Contractor's responsibility to fully comply with the Underground Utility Locate Law, Chapter 19.122 RCW. If the site conditions are "changed or differing" as defined by RCW 19.122.040(l), the Contractor may pursue the party responsible for not properly marking or identifying the underground facility. The Contractor agrees not to file any claim or legal action against the City (department responsible for this Contract) for said "changed or differing" conditions unless said City department is solely responsible for the delay or damages that the Contractor may have incurred.

3.04 TRENCH EXCAVATION BID ITEM

In the event that "trench excavation" in excess of four feet requires a safety system pursuant to Washington State law and safety shoring, sloping, sheeting, or bracing is used, a separate bid item should be set forth in the Proposal for this work. If a separate bid item is not set forth in the Proposal pages, said installed safety system shall be paid at \$3.00 per lineal foot of trench, which unit price includes both sides of the trench.

3.05 SAFETY

A. General

The Contractor shall, at all times, exercise adequate precautions for the safety of all persons, including its employees and the employees of a Subcontractor, in the performance of this Contract and shall comply with all applicable provisions of federal, state, county and municipal safety laws and regulations. It is the Contractor's responsibility to furnish safety equipment or to contractually require Subcontractors to furnish adequate safety equipment relevant to their responsibilities.

The Contractor shall obtain the necessary line clearance from the inspector before performing any work in, above, below or across energized Light Division circuits.

The Inspector and/or Engineer may advise the Contractor and the Safety Officer of any safety violations. It is the Contractor's responsibility to make the necessary corrections. Failure to correct safety violations is a breach of this Contract and, as such, shall be grounds for an order from the Safety Officer, Inspector or Engineer to cease further work and remove from the job site until the condition is corrected. Time and wages lost due to such safety shutdowns shall not relieve the Contractor of any provisions of Section 3.14 of this Specification and shall be at the sole cost of the Contractor. The purpose of this authority to stop work is to enforce the contract and not to assume control except to the extent necessary to ensure compliance with the provisions of this contract.

Any of the above actions by employees of the City of Tacoma shall in no way relieve the Contractor of his/her responsibility to provide for the safety of all persons, including his/her employees.

B. Work Hazard Analysis Report

The Contractor will be required to complete a work hazard analysis report. This report shall outline how the Contractor proposes to satisfy all safety laws and regulations involved in performing the work. This report shall be completed and submitted to the City Safety Officer before the pre-construction conference. A copy of the report shall be maintained at the work site (accessible to the supervisor).

3.06 PROTECTION OF WORKERS AND PROPERTY

The Contractor shall erect and maintain good and sufficient guards, barricades and signals at all unsafe places at or near the work and shall, in all cases, maintain safe passageways at all road crossings, and crosswalks, and shall do all other things necessary to prevent accident or loss of any kind.

The Contractor shall protect from damage all utilities, improvements, and all other property that is likely to become displaced or damaged by the execution of the work under this Contract.

The Contractor is responsible for all roads and property damaged by his/her operations as shall be determined by the Engineer administering this Contract. The Contractor shall be responsible for repairing all damage to roads caused by his/her operations to the satisfaction of the particular governmental body having jurisdiction over the road.

3.07 CONTRACTOR - SUPERVISION AND CHARACTER OF EMPLOYEES

A. Superintendent to Supervise Contractor's Employees

The Contractor shall keep on his/her work, during its progress, a competent superintendent and any necessary assistants, all of whom must be satisfactory to the City of Tacoma. The Contractor's superintendent shall not be changed except with the consent of the City of Tacoma, unless the Contractor's superintendent proves to be unsatisfactory to the Contractor and ceases to be in his/her employ. The Contractor's superintendent shall represent the Contractor in his/her absence and all directions given to him/her shall be binding as if given to the Contractor directly. The Contractor shall give efficient supervision to the work, using his/her best skill and attention.

B. Character of Contractor's Employees

The Contractor shall employ only competent, skillful, faithful and orderly persons to do the work, and whenever the Engineer administering the Contract shall notify the Contractor in writing that any person on the work is, in his or her opinion, incompetent, unfaithful, disorderly or otherwise unsatisfactory, the Contractor shall forthwith discharge such persons from the work and shall not again employ him or her on this Contract.

3.08 CONTRACTOR'S COMPLIANCE WITH THE LAW

A. Hours of Labor

The Contractor and Subcontractors shall be bound by the provisions of RCW Chapter 49.28 (as amended) relating to hours of labor. Except as set forth in the Special Provisions, eight (8) hours in any calendar day shall constitute a day's work on a job performed under this Contract.

In the event that the work is not performed in accordance with this provision and in accordance with the laws of the State of Washington, then this Contract may be terminated by the City of Tacoma for the reason that the same is not performed in accordance with the public policy of the State of Washington as defined in said statutes.

B. Prevailing Wages

If federal, state, local, or any applicable law requires Supplier to pay prevailing wages in connection with a Contract, and Supplier is so notified by the City, then Supplier shall pay applicable prevailing wages.

If applicable, a Schedule of Prevailing Wage Rates and/or the current prevailing wage determination made by the Secretary of Labor for the locality or localities where the Contract will be performed is attached and made of part of the Contract by this reference. If prevailing wages do apply to the Contract, Supplier and its subcontractors shall:

1. Be bound by and perform all transactions regarding the Contract relating to prevailing wages and the usual fringe benefits in compliance with the provisions of Chapter 39.12 RCW, as amended, the Washington State Prevailing Wage Act and/or the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable, including the federal requirement to pay wages not less than once a week,
2. Ensure that no worker, laborer or mechanic employed in the performance of any part of the Contract shall be paid less than the prevailing rate of wage specified on that Schedule and/or specified in a wage determination made by the Secretary of Labor (unless specifically preempted by federal law, the higher of the Washington state prevailing wage or federal Davis-Bacon rate of wage must be paid)and Additionally, in compliance with applicable federal law, contractors are required to pay wages not less than once a week.
3. Immediately upon award of the Contract, contact the Department of Labor and Industries, Prevailing Wages section, Olympia, Washington and/or the federal Department of Labor, to obtain full information, forms and procedures relating to these matters. Per such procedures, a Statement of Intent to Pay Prevailing Wages and/or other or additional documentation required by applicable federal law, must be submitted by Contractor and its subcontractors to the City, in the manner requested by the City, prior to any payment by the City hereunder, and an Affidavit of Wages Paid and/or other or additional documentation required by federal law must be received or verified by the City prior to final Contract payment. In the event any dispute arises as to what are the prevailing rates of wages for work of a similar nature and such dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the Director of the State of Washington, Department of Labor and industries whose decision shall be final, conclusive and binding on all parties involved in the dispute.

3.09 COPELAND ANTI-KICKBACK ACT

For contracts subject to Davis Bacon Act the following clauses will be incorporated into the Contract:

A. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

B. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

C. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

3.10 CHANGES

A. In Plans or Quantities

The City of Tacoma, without invalidating this Contract, or any part of this Contract, may order extra work or make reasonable changes by altering, adding to or deducting from the materials, work and labor and the Contract sum will be adjusted accordingly. All such work and labor shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change. When work or bid items are deducted, reduced or eliminated, it is agreed that no payment will be made to Contractor for anticipated profit.

B. Extra Work

Any claim or order for extra materials, work and labor made necessary by alterations or additions to the plans or by other reasons for which no price is provided in this Contract, shall not be valid unless the Contractor and Engineer administering the Contract have agreed upon a price prior to commencing extra work, and the agreement has been signed by the Contractor and approved by the Superintendent or his/her designee, and approved by the payment and performance bond surety.

C. Extra Work - No Agreed Price

If it is impracticable to fix an increase in price definitely in advance, the order may fix a maximum price which shall not under any circumstances, be exceeded, and subject to such limitation, such alteration, modification, or extra shall be paid for at the actual necessary cost as determined by the City of Tacoma, which cost (including an allowance for profit) shall be determined as the sum of the following items (1) to (7) inclusive:

- (1) Labor, computed at regular wage scale, including premium on compensation insurance and charge for social security taxes, and other taxes, pertaining to labor; no charge for premium pay shall be allowed unless authorized by the Engineer administering the Contract;
- (2) The proportionate cost of premiums on comprehensive general liability and other insurance applicable to the extra work involved and required under this Contract;
- (3) Material, including sales taxes pertaining to materials;
- (4) Plant and equipment rental, to be agreed upon in writing before the work is begun; no charge for the cost of repairs to plant or equipment will be allowed;
- (5) Superintendence, general expense and profit computed at 20 percent of the total of paragraphs (1) to (4) inclusive;
- (6) The proportionate cost of premiums on bonds required by this Contract, computed by 1 1/2 percent of the total of paragraphs (1) to (5) inclusive.
- (7) The City of Tacoma reserves the right to furnish such materials as it may deem expedient, and no allowance will be made for profit thereon.

Whenever any extra work is in progress, for which the definite price has not been agreed on in advance, the Contractor shall each day, report to the Engineer the amount and cost of the labor and material used, and any other expense incurred in such extra work on the preceding day, and no claim for compensation for such extra work will be allowed unless such report shall have been made.

The above-described methods of determining the payment for work and materials shall not apply to the performance of any work or the furnishing of any material, which, in the judgment of the Engineer administering the Contract, may properly be classified under items for which prices are established in the Contract.

D. Claims for Extra Work

If the Contractor claims that any instructions by drawings or otherwise, involve extra cost under this Contract, he/she shall give the City of Tacoma written notice thereof within 30 days after receipt of such instruction, and in any event before proceeding to execute the work, except in an emergency endangering life or property, and the procedures governing the same shall be as provided for immediately above in this paragraph. The method in these paragraphs is the only method available to the Contractor for payment of claims for extra work performed under the terms of this Contract.

3.11 CLEANING UP

The Contractor shall at all times, at his/her own expense, keep the premises free from accumulation of waste materials or debris caused by any workers or the work, at the completion of the work the Contractor shall remove all his waste materials from and about the site and all his/her equipment, sanitary facilities and surplus materials. In the case of dispute, the City of Tacoma may remove the debris and charge the cost to the Contractor as the City of Tacoma shall determine to be just. All material that is deposited or placed elsewhere than in places designated or approved by the Engineer administering the Contract will not be paid for and the Contractor may be required to remove such material and deposit or place it where directed.

3.12 PROGRESS PAYMENT

Progress payments will be made up to the amount of ninety-five percent (95%) of the actual work completed as shall be determined by the Engineer administering the Contract.

The Contractor may request that an escrow account be established as permitted by law, in which event the Contractor will earn interest on the retained funds.

When the time for construction, services and/or installation will exceed thirty (30) days, the Contractor may request, by invoice, to be paid a progress payment based on percentage of work completed. The Engineer will review and approve the progress payment request on a monthly basis.

3.13 FINAL PAYMENT

The final payment of five percent (5%) of the Contract price shall be approved on final acceptance of the work under this Contract by the Superintendent or his/her designee. In addition, before final payment is made, the Contractor shall be required to:

- A. Provide a certificate from the Washington State Department of Revenue that all taxes due from the Contractor have been paid or are collectible in accordance with the provisions of Chapter 60.28 and Title 82 of the Revised Code of Washington;
- B. Provide the General Release to the City of Tacoma on the form set forth in these Contract documents;
- C. Provide a release of any outstanding liens that have been otherwise filed against any monies held or retained by the City of Tacoma;
- D. File with the City Director of Finance, and with the Director of the Washington State Department of Labor and Industries, on the state form to be provided, an affidavit of wages paid;
- E. File with the City Director of Finance, on the state form to be provided, a statement from the State of Washington, Department of Labor and Industries, certifying that the prevailing wage requirements have been satisfied.
- F. File with the City Director of Finance, on the state form to be provided, a statement of release from the Public Works Contracts Division of the State of Washington, Department of Labor and Industries, verifying that all industrial insurance and medical aid premiums have been paid.

If there is a fee assessed to the City for any certificate, release or other form required by law, the contractor agrees that the fee amount may be passed on to the Contractor and deducted from the monies paid to the Contractor.

3.14 FAILURE TO COMPLETE THE WORK ON TIME

Should the completion of the work required under the Contract be delayed beyond the expiration of the period herein set for the completion of said work, or such extension of said period as may be allowed by reason of unavoidable delays, there shall be deducted from the total Contract price of work, for each calendar day by which such completion shall be delayed beyond said period of such extension thereof the sum of \$300 or a sum of money as set forth hereinafter in these Specifications, as the amount of such deduction per calendar day.

Said sum shall be considered not as a penalty, but as liquidated damages, which the City will suffer by reason of the failure of the Contractor to perform and complete the work within the period, herein fixed or such extensions of said period as may be allowed by reason of unavoidable delays.

Any money due or to become due the Contractor may be retained by the City to cover said liquidated damages, and should such money not be sufficient to cover such damages, the City shall have the right to recover the balance from the Contractor or his/her Sureties.

The filing of any bid for the work herein contemplated shall constitute acknowledgment by the Respondent that he/she understands, agrees and has ascertained that the City will actually suffer damages to the amount hereinabove fixed for each and every calendar day during which the completion of the work herein required shall be delayed beyond the expiration of the period herein fixed for such completion or such extension of said period as may be allowed by reason of unavoidable delays.

3.15 CITY RESERVES RIGHT TO USE FACILITIES PRIOR TO ACCEPTANCE

The City of Tacoma hereby reserves the right to use the facilities herein contracted prior to final acceptance under this Contract. The use of said facilities, as mentioned herein, shall not be construed as a waiver or relinquishment of any rights that the City of Tacoma has under this Contract.

3.16 LIST OF SUBCONTRACTORS

Bid proposals for construction, alteration or repair of any building or other public works that may exceed \$1,000,000 including tax shall satisfy the following requirement: Respondent shall submit as part of the bid, the names of the subcontractors, with whom the respondent, if awarded the contract, will subcontract performance of the work of heating, ventilation and air conditioning, plumbing as described in chapter 18.106 RCW, and electrical as described in chapter 19.28 RCW, or to name itself for the work. The respondent shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the respondent must indicate which subcontractor will be used for which alternate. Failure to comply with this provision or the naming of two or more subcontractors to perform the same work shall require the City (pursuant to state law RCW 39.30.060) to determine that respondent's bid is nonresponsive; therefore, the bid will be rejected.