

**COVERSHEET  
DOCUMENTS POSTED ON BUILDER'S EXCHANGE OF WASHINGTON**



<b>Project Name</b>	20th Street Sewer Rehabilitation Project
<b>Contractor Name</b>	Allied Plumbing & Pumps LLC DBA Allied Trenchless
<b>Bid Opening Date</b>	June 18 <sup>th</sup> 2024
<b>City Clerk's Digital Certification Stamp</b>	



**CITY OF EVERETT, WASHINGTON**  
**20TH STREET SEWER REPLACEMENT PROJECT**  
**TECHNICAL SPECIFICATIONS**  
**MAY 2024**  
**VOLUME 1 OF 2**

Digitally signed by Austin M. Wong  
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Date: 2024.05.20 13:54:08 -100







**CITY OF EVERETT**  
**20TH STREET SEWER REHABILITATION PROJECT**  
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**SECTION 00 1113 - ADVERTISEMENT FOR BIDS**

Notice is hereby given that sealed bids for the 20th Street Sewer Rehabilitation Project will be received at the office of the City Clerk, 1st Floor Everett Municipal Building, 2930 Wetmore, Everett, WA, 98201 until 2:00 p.m. on June 18, 2024. At the appointed time, all bids will be opened and read aloud publicly via live streaming, or bidders may attend the bid opening in person at 2930 Wetmore, Everett, WA, 98201. The link for the webcast is located at <https://www.everettwa.gov/319/purchasing>.

The engineer's estimate for this Project is \$ 1,750,000, not including sales tax.

The City of Everett owns several sewer pipelines and sewer manholes that have shown signs of corrosion and is seeking a Contractor to rehabilitate 2,450 linear feet of 36-inch on 20th Street and an additional 750 feet of 8-inch, 10-inch, and 24-inch sewer pipe from Mill to Winter Street and behind 1525 East Marine View Drive. 12 manholes within the City will also be rehabilitated. The rehabilitation work will be performed during Summer 2024.

Free-of-charge access to project bid documents (plans, specifications, addenda, and Bidders List) is provided to Prime Bidders, Subcontractors, and Vendors by going to [www.bxwa.com](http://www.bxwa.com) and clicking on "Posted Projects", "Public Works", and "City of Everett". This online plan room provides Bidders with fully usable online documents with the ability to: download, view, print, order full/partial plan sets from numerous reprographic sources, and a free online digitizer/take-off tool. It is recommended that Bidders "Register" in order to receive automatic e-mail notification of future addenda and to place themselves on the "Self-Registered Bidders List". Bidders that do not register will not be automatically notified of addenda and will need to periodically check the on-line plan room for addenda issued on this project. Contact Builders Exchange of Washington at (425) 258-1303 should you require assistance with access or registration.

All bids must be made upon the City forms provided for this purpose and must be accompanied by a bid bond or certified check or cashier's check in an amount not less than five percent (5%) of the total amount of the Bid, all in accordance with the Contract Documents. One hundred percent (100) payment and performance Bonds will be required of the successful Bidder to guarantee faithful performance of the contract.

The City reserves the right to reject any and all bids and to waive any irregularities or informalities. No Bidder may withdraw his Bid after the hour set for the opening thereof.

The City further reserves the right to make the bid award as deemed in the best interest of the City. The right is reserved by the City to postpone the award for a period of 45 days after bid opening.

The Contractor will be required to comply with all local, State, and Federal laws and regulations pertaining to equal employment opportunities.

By order of the City Council, Everett, Washington.

**END OF SECTION 00 1113**



## SECTION 00 2113 - INSTRUCTIONS TO BIDDERS

### 1-00 INTRODUCTORY MATTERS

#### ***General Description and Location of Project***

The Work to be performed will include furnishing all labor, materials and equipment necessary to perform all Work as required by the Contract in accordance with the Contract Documents.

The Project is located at the following locations within the City of Everett:

1. 20th Street between Grand Ave and Broadway.
2. Mill Street and Winter Street.
3. 1525 East Marine View Drive.
4. Miscellaneous manholes across the City.

#### ***Project Manager***

Questions and inquiries about these Contract Documents should be directed in writing to the attention of John Nottingham ([JNottingham@everettwa.gov](mailto:JNottingham@everettwa.gov)).

#### ***Standard Specifications***

The following other Specifications and Standard Plans shall apply **only to the extent** that they are called out in the Contract Documents.

- WSDOT "Standard Specifications for Road, Bridge and Municipal Construction", Current Edition, hereinafter referred to as the "Standard Specifications."
- City of Everett "Design and Construction Standards and Specifications" (Revised January 2018), as found online on the City's Website at: <https://everettwa.gov/1531/Design-Construction-Standards>
- "Standard Plans for Road and Bridge Construction," latest edition as prepared by WSDOT.
- "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition.
- APWA Standards, latest edition.
- AWWA Standards, latest edition.
- American Concrete Institute (ACI), latest edition

### 1-01 DEFINITIONS AND TERMS

#### ***1-01.3 Definitions***

Definitions are found in SECTION 00 7200 GENERAL CONDITIONS.

### 1-02 BID PROCEDURES AND CONDITIONS

#### ***1-02.1 Bidder Responsibility Criteria***

##### **1-02.1(1) Mandatory Bidder Responsibility Criteria**

Bidder shall meet mandatory responsibility criteria in accordance with RCW 39.04.350(1). The City may require Bidder to submit documentation demonstrating compliance with the criteria under this 1-02.1(1). Bidder must:

1. Registration. At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW, a plumbing contractor license in compliance with chapter 18.106 RCW, an elevator contractor license in compliance with chapter 70.87 RCW, or an electrical contractor license in compliance with chapter 19.28 RCW, as required under the provisions of those chapters; and
2. UBI. Have a current Washington Unified Business Identifier (UBI) number; and

3. State Requirements. 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; and
  - c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW.
4. Disqualification. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).
5. Prevailing Wage Training. Unless Bidder has completed three or more public works projects and had a valid business license for three or more years, Bidder must have received Department of Labor and Industries training on the requirements related to public works and prevailing wage under RCW 39.12 and RCW 39.04.
5. Certification of Wage Compliance. Within the three-year period immediately preceding the date of the bid solicitation, not have been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW.
6. Apprentices. If the Project is subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation.

#### **1-02.1(2) Supplemental Bidder Responsibility Criteria**

If this Project is subject to supplemental bidder responsibility criteria, then such criteria will be contained in SECTION 00 2213, SUPPLEMENTAL INSTRUCTIONS TO BIDDERS. If there is no SECTION 00 2213, SUPPLEMENTAL INSTRUCTIONS TO BIDDERS in the bid package, then the Project is not subject to supplemental bidder responsibility criteria.

#### **1-02.2 Plans and Specifications**

Information as to where bid documents can be obtained or reviewed will be found in the Call for Bids (Advertisement for Bids) for the Work.

#### **1-02.3 Not Used**

#### **1-02.4 Examination of Plans, Specifications, and Site of Work**

##### **1-02.4(1) General**

The Bidder shall carefully examine the Contract Documents. Submittal of a Bid shall be conclusive evidence that the Bidder has made these examinations and understands all requirements for the performance of the completed Work. The Bidder further warrants, agrees, and acknowledges by submitting a Bid that it:

1. Has taken steps reasonably necessary to ascertain the nature and location of the Work, including without limitation the actual physical conditions of and at the location, surface and subsurface conditions, and conditions ordinarily to be encountered and generally recognized as inherent in the Work;

2. Has investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to:
  - a. Conditions bearing upon acquisition, transportation, disposal, handling, and storage of materials;
  - b. The availability of labor, materials, services, utilities (including without limitation water and electric power), and roads;
  - c. Uncertainties of weather, river stages, tides, or similar physical conditions at the site;
  - d. The conformation and condition of the ground;
  - e. The character of equipment and facilities needed preliminary to and during Work performance;
  - f. The site biological hazards and associated physical hazards;
  - g. Access to the Site;
  - h. Environmental factors; and
  - i. All other data, matters and things requisite to the fulfillment of the Work.
3. Has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the Work site (including material sites) as well as from the bid documents and other information made a part of this Contract, and, if physical testing by Bidder of the Site is permitted by the City, Bidder has completed such testing to its satisfaction; and
4. Has satisfied itself as to the adequacy of time allowed for the completion of the physical Work on the Contract.

Any failure of the Bidder to take the actions described and acknowledged in this clause shall not relieve the Bidder from responsibility for estimating properly the difficulty and cost of successfully performing the Work, or from proceeding to successfully perform the Work without additional expense to the City.

The Bidder agrees that the City shall not be liable to it on any claim for additional payment or additional time or any claim whatsoever if the claim directly or indirectly results from the Bidder's failure to investigate and familiarize itself sufficiently with the conditions under which the Contract is to be performed.

The Bidder shall be familiar and comply with all Federal, State, tribal, and local laws, ordinances, and regulations which might affect those engaged in the Work. The City will not consider any plea of misunderstanding or ignorance of such requirements.

Bid prices shall include everything necessary for the completion of the Work including, but not limited to, providing the materials, equipment, tools, plant and other facilities, and the management, superintendence, labor, and all necessary testing services.

Prospective Bidders are advised that projects with Work on or adjacent to water may require insurance coverage in compliance with:

1. The Longshoremen's and Harbor Worker's Compensation Act (administered by U.S. Department of Labor), or
2. The State Industrial Insurance (administered by the Washington State Department of Labor and Industries), or
3. Both.



The Contractor shall bear all cost for such insurance as provided in the Contract Documents.

No Claim shall be allowed because of any ambiguity in the Contract if:

1. The Bidder discovers an ambiguity but fails to notify the City, or
2. The Bidder failed to discover a patent ambiguity that would be discovered by a reasonably prudent contractor in preparing its Bid.

Any prospective Bidder desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business seven business days preceding the Bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

Bidder acknowledges that the Bidder has not relied on representation or warranty of the City not expressly included in the Contract Documents.

The information provided by the City is not intended to be a substitute for, or a supplement to, the independent verification by the Bidder to the extent such independent investigation of the Drawings and Specifications or Site conditions is deemed necessary or desirable by the Bidder. Bidder acknowledges that they have not relied upon City or Engineer furnished information regarding site conditions in preparing and submitting a Bid.

#### **1-02.4(1)A Interpretation of Contract Documents**

Should a Bidder find what is believed to be discrepancies in or omissions from the Plans, Specifications, or any other Contract Document, or should the Bidder be in doubt as to their meaning, Bidder may submit to the City a written request for an interpretation thereof. The Bidder submitting the request will be responsible for its prompt delivery. Any interpretation of the documents, if made, will be made only by addendum duly issued. **All requests for interpretations must be received by the City or Engineer no later than 7 calendar days prior to the bid opening date.** All questions regarding the Contract Documents shall be referred to the City at the address provided in the Contract Documents.

#### **1-02.4(1)B Prevailing Wages**

Bidder is directed to the Contract Documents for requirements regarding applying payment of prevailing wage rates for employment of labor within Snohomish County.

All laborers, workmen, or mechanics in each trade or occupation employed in the performance of the Contract either by Contractor, Subcontractor, or other person doing Work shall be paid not less than the prevailing rate of wage as defined in RCW 39.12.010. Current prevailing wage rates may be found online at <http://www.lni.wa.gov/TradesLicensing/PrevWage/WageRates/>. The rules and regulations noted within the Contract Documents are available from:

State of Washington Department of Labor and Industries  
Prevailing Wage Section  
PO Box 44540  
Olympia, WA 98504-4540  
(360) 902-5335  
[pw1@lni.wa.gov](mailto:pw1@lni.wa.gov)

Bidders are advised to examine and to be thoroughly familiar with such requirements. No claim for additional compensation will be allowed that is based

upon a lack of knowledge of these requirements or a failure to include adequate increases in such wages over the term of this Contract in the Bidder's Bid.

#### **1-02.5 Bid Form**

The City reserves the right to arrange the bid forms with alternates and additives, if such be to the advantage of the City. The Bidder shall bid on all alternates and additives set forth in the Bid Form unless otherwise specified.

#### **1-02.6 Preparation of Bid**

Bids shall be submitted on the forms provided by the City and found in the Contract Documents. All blank spaces in the Bid form shall be legibly filled in using a non-erasable medium. Do not qualify Bids, since this will automatically be cause for rejection of the Bid.

A Bid will be rejected if the authorized Bid form furnished by the City is not used.

Bid prices shall include everything necessary for the completion of the Work including, but not limited to, providing the materials, equipment, tools, plant and other facilities, and the management, superintendence, labor, and all necessary testing services.

Bidders are warned against making erasures or alterations of any kind to the Bid Form, and bids that contain omissions, erasures, or irregularities of any kind may be rejected. No oral, telegraphic, electronic, or telephonic bids or modifications will be considered.

In the event that the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimated quantity shall be deemed to be the amount bid. If the sum of two or more items in a bidding schedule does not equal the total amounts quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount bid.

#### **RCW 35.22.650 CERTIFICATION**

Contractor agrees that the Contractor shall actively solicit the employment of minority group members. Contractor further agrees that the Contractor shall actively solicit Bids for the subcontracting of goods or services from qualified minority businesses. Contractor shall furnish evidence of the Contractor's compliance with these requirements of minority employment and solicitation. Contractor further agrees to consider the grant of subcontracts to said minority bidders on the basis of substantially equal proposals in the light most favorable to said minority businesses. The Contractor is required to submit evidence of compliance with this section as part of the Bid by completing and submitting with the Bid the RCW 35.22.650 CERTIFICATION.

#### **PROPOSED SUBCONTRACTORS FORM**

Bidder shall complete SECTION 00 4336 - PROPOSED SUBCONTRACTORS FORM and submit it with the Bid.

#### **NONCOLLUSION AFFIDAVIT**

The City has determined every Bidder must submit a Non-Collusion Affidavit for every Project. Accordingly, the Bidder shall submit a "Non-Collusion Affidavit", contained in the Contract Documents as SECTION 00 4519 - NONCOLLUSION AFFIDAVIT, with the Bid. If the City has reason to believe that collusion exists among Bidders, the City will reject the Bids of the known participants in such collusion and may, at its option, require that all Bidders certify under penalty of perjury, that no collusion has occurred or exists.

**1-02.7 Bid Security**

Bid Security in the amount of at least 5 percent of the Total Bid shall accompany each Bid. This security may be by certified check, cashier's check, or a bid bond made payable to the City of Everett. A bid bond shall be on the form provided in the Contract Documents. A bid bond shall not be conditioned 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 security of a minimum of 5 percent shall make the Bid nonresponsive and shall cause the Bid to be rejected by the City of Everett.

Bid security shall serve as evidence of good faith and as a guarantee that if awarded the Contract the Bidder will execute the Contract and provide bonds as required by the Bid. Should the successful Bidder fail to enter into the Contract, furnish a satisfactory performance and payment bond, and furnish evidence of insurance within 14 calendar days after the award date unless such date is extended by the City, the certified check, cashier's check or bid bond shall be forfeited as liquidated damages.

**1-02.8 Not Used.****1-02.9 Delivery of Bid**

Bidder shall submit Bidder's Bid in a sealed opaque envelope that clearly and legibly notes the Project Name, the time and date of the bid opening, and the Bidder's name and address on the outside of the envelope.

The City will not open or consider any Bid or any supplement to a Bid that is received after the time specified for receipt of Bids, or received in a location other than that specified for receipt of Bids.

**1-02.10 Withdrawing, Revising, or Supplementing Bid**

After submitting a physical Bid Form to the City, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits a written request signed by an authorized person and physically delivers it to the place designated for receipt of Bids, and
2. The City receives the request before the time set for receipt of Bids, and
3. The revised or supplemented Bid (if any) is received by the City before the time set for receipt of the Bid.

The original physical Bid Form may be supplemented, or revised and resubmitted as the official Bid if the City receives it before the time set for receipt of Bids.

Email, fax or telephone requests to withdraw, revise, or supplement a Bid are not acceptable.

Resubmitted Bids shall be in full compliance with the bidding requirements. Bid deposit shall be in an amount sufficient for the Bid as resubmitted.

After the scheduled time for opening Bids, no Bidder will be permitted to withdraw its Bid unless the award of contract is delayed for a period exceeding 45 calendar days. Proposals received after the scheduled closing for opening Proposals will be returned unopened to the Bidder.

**1-02.11 Not Used****1-02.12 Public Opening of Proposals****1-02.12(1) Postponement of Opening**

Proposals will be opened and publicly read at the time indicated in the call for Bids unless the Bid opening has been delayed or canceled. Bidders, their authorized agents, and other interested parties are invited to be present.

If an emergency or unanticipated event interrupts normal work processes of the City so that Bids cannot be opened at the time indicated in the call for Bids the time specified for opening of Bids will be deemed to be extended to the same time of day on the first work day on which the normal work processes of the City resume.

The City reserves the right to postpone the date and time for receiving or opening of Bids, or both, at any time prior to the date and time established in the Notice to Bidders. Postponement notices shall be provided to Bidders in the form of addenda.

**1-02.12(2) Video Conferencing**

The City reserves the right to open and publicly read Bids by use of video conferencing, such as by Microsoft Teams, Zoom or other application.

**1-02.13 Irregular Bids**

1. A Proposal will be considered irregular and will be rejected if:
  - a. The authorized bid form furnished by the City is not used or is altered;
  - b. The completed bid form contains any unauthorized additions, deletions, alternate Bids, or conditions;
  - c. The Bidder adds provisions reserving the right to reject or accept the Award, or enter into the Contract;
  - d. A price per unit cannot be determined from the Bid Form;
  - e. The Bid Form is not properly executed;
  - f. The Bidder fails to submit or properly complete on the form provided by the City a Subcontractor list, if applicable, as required in these Instructions;
  - g. The Bidder fails to submit or properly complete a RCW 35.22.650 Certification, as required in these Instructions;
  - h. The Bidder fails to submit or properly complete a Non-collusion Affidavit, as required in these Instructions;
  - i. The Bid Form does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation; or
  - j. More than one proposal is submitted for the same project from a Bidder under the same or different names.
2. A Proposal may be considered irregular and may be rejected if:
  - a. If the Bid Form includes unit prices, the Bidder's Bid Form does not include a unit price for every Bid item;
  - b. If the Bid Form includes unit prices, any of the Bidder's unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the City, as determined by the City;
  - c. Receipt of Addenda is not acknowledged;

- d. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected); or
- e. If Bid Form entries are not made in ink.

#### **1-02.14 Disqualification of Bidders**

A Bidder will be deemed not responsible if the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended, and noted in 1-02.1(1). The City will verify that the Bidder meets the mandatory bidder responsibility criteria in RCW 39.04.350(1). To assess bidder responsibility, the City reserves the right to request documentation as needed from the Bidder and third parties concerning the Bidder's compliance with the mandatory bidder responsibility criteria.

If the City determines the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1) 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 with this determination, it may appeal the determination within two business days of the City's determination by presenting its appeal and any additional information to the City. The City will consider the appeal and any additional information before issuing its final determination. If the final determination affirms that the Bidder is not responsible, the City will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the City's final determination.

If the Contract Documents contain supplemental responsibility criteria, then a Bidder will be deemed not responsible if the Bidder does not meet those criteria, all as set forth in SECTION 00 2213 - SUPPLEMENTAL INSTRUCTIONS TO BIDDERS.

#### **1-02.15 Pre-Award Information**

Before awarding any contract, the City may require one or more of these items or actions of the apparent lowest responsible Bidder:

1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,
2. Samples of these materials for quality and fitness tests,
3. A progress schedule, in a form the City requires, showing the order of and time required for the various phases of the Work,
4. A breakdown of costs assigned to any bid item,
5. Attendance at a conference with the Engineer or representatives of the Engineer,
6. Obtain, and furnish a copy of, a business license to do business in the City of Everett.
7. A copy of State of Washington Contractor's Registration, or
8. Any other information or action taken that is deemed necessary to ensure that the Bidder is the lowest responsible bidder.

After Bid opening, but prior to award, the apparent successful Bidder shall, if requested by the City, attend a pre-award conference to respond to questions by the City regarding evaluation of Bids. The City will emphasize items such as insurance and bonding that will assist in prompt issuance of the Notice to Proceed. By conducting a pre-award conference, the City has not thereby waived its right to make determinations regarding responsiveness and responsibility of the Bidder.

**1-03 AWARD AND EXECUTION OF CONTRACT****1-03.1 Consideration of Bids**

Bids will be evaluated by the City to determine which bid is the lowest responsive bid by a responsible bidder and which bid, if any, should be accepted in the best interest of the City. The right is reserved by the City to waive informalities in the bidding, accept a Bid of the lowest responsible Bidder, reject any or all Bids, republish the call for Bids, revise or cancel the Work, or require the Work to be done in another way if the best interest of the City is served.

Within 5 days after the opening of Bids (or such longer time as the City may grant in writing), a Bidder who wishes to claim error shall submit a notarized affidavit signed by the Bidder, accompanied by original work sheets used in the preparation of the Bid, requesting relief from the responsibilities of Award. The affidavit shall describe the specific error(s) and certify that the work sheets are the originals used in the preparation of the Bid. The Engineer will review the certified work sheets to determine the validity of the claimed error and make recommendation to the City. If the City concurs in the claim of error, the Bidder will be relieved of responsibility, and the bid deposit of the Bidder will be returned. Thereafter, at the discretion of the City, all Bids may be rejected or Award made to next lowest and responsive Bidder.

**1-03.1(2) Preference for Resident Contractors**

In accordance with RCW 39.04.380, if a Bid is received from a nonresident contractor from a state that provides a percentage bidding preference and does not have an office located in Washington, then a comparable percentage disadvantage will be applied to the Bid of that nonresident contractor.

**1-03.1(3) Tie Bids**

After opening Bids, if two or more lowest responsive and responsible Bid totals are exactly equal, then the tie-breaker will be determined by drawing as described in this section. Two or more slips of paper will be marked as follows: one marked "Winner" and the other(s) marked "unsuccessful". The slips will be folded to make the marking unseen. The slips will be placed inside a box. One authorized representative of each Bidder shall draw a slip from the box. Bidders shall draw in alphabetic order by the name of the firm as registered with the Washington State Department of Licensing. The slips shall be unfolded and the firm with the slip marked "Winner" will be determined to be the successful Bidder and eligible for Award of the Contract. Only those Bidders who submitted a Bid total that is exactly equal to the lowest responsive Bid are eligible to draw.

**1-03.2 Award of Contract**

Within 45 days after the opening of Bids, the City will act either to accept the Bid from the lowest responsive, responsible Bidder, or to reject all Bids. The City reserves the right to request extensions of such Bid acceptance period. If the lowest responsible Bidder and the City cannot agree on an extension by the 45 day deadline, the City reserves the right to award the Contract to the next lowest responsible Bidder or reject all Bids.

The acceptance of a Bid will be evidenced by a written Notice of Award of Contract delivered in person or by certified mail to the Bidder whose Bid is accepted, together with a request to furnish a Contract Bond and evidence of insurance and to execute the Contract set forth in the Contract Documents. No Contract is formed until the Contract Execution Date.

**1-03.3 Execution of Contract**

Within 3 calendar days of receiving Notice of Award (not including Saturdays, Sundays and Holidays), the successful Bidder shall provide to the City the information necessary to execute the Contract electronically. This information shall include contact information, including the full name, title, email address, and phone number, for the authorized signer of the Bidder.

Successful Bidder has 14 calendar days after receiving the Notice of Award to complete the following:

- Execute the Contract upon receipt from the City's AdobeSign System.
- Submit to the City two original paper payment bonds and two original paper performance bonds submitted on forms contained in Contract Documents and fully executed, with proper power of attorney document(s).
- Submit to the City in pdf format certificate of insurance and additional insured endorsements in accordance with the Contract Documents.

Until the City executes a Contract, no Bid shall bind the City, nor shall any Work begin within the project limits or within City-furnished sites. The Bidder shall bear all risks for any Work begun outside such areas and for any materials ordered before the Contract is executed by the City.

If the Bidder experiences circumstances beyond its control that prevents return of the Contract, bonds, and insurance documents within 14 calendar days after receiving Notice of Award, the City may grant more time, provided the City deems the circumstances warrant it.

A Contract shall not be formed until the Contract is signed by the Mayor.

**1-03.4 Contract Bonds**

The Contractor shall provide a separate payment bond and performance bond, each in the amount of 100 percent of the Contract Sum and each in the form contained in the Contract Documents. The bonds must be accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety.

**1-03.5 Failure to Execute Contract**

Failure to return the proof of insurance and the bonds with the signed Contract as required in these Instructions, or failure or refusal to sign the Contract, or failure to register as a contractor in the state of Washington shall result in forfeiture of the bid bond or deposit of this Bidder. If this should occur, the City may then Award the Contract to the second lowest responsible Bidder or reject all remaining Bids. If the second lowest responsible Bidder fails to return the required documents as stated above within the time provided after Award, the Contract may then be Awarded successively in a like manner to the remaining lowest responsible Bidders until the above requirements are met or the remaining Bid are rejected.

In addition, failure to have or obtain a City of Everett business license prior to executing the Contract, unless immediately cured by Bidder after notice from the City, shall result in forfeiture of the proposal bond or deposit of this Bidder.

**1-03.6 Return of Bid Deposit**

When Bids have been examined and corrected as necessary, proposal bonds and deposits accompanying Bids ineligible for further consideration will be returned. All other proposal bonds and deposits will be held until the Contract has been properly executed. When the Contract has been properly executed, all remaining deposits or bonds, except those subject to forfeiture, will be returned.

Within 15 calendar days after the Bids are opened, the City will return the bid deposit accompanying the Bids that are not to be considered in making the Award.

#### **1-03.7 Judicial Review**

All protests by Bidders must be in accordance with Chapter 3.46 of the Everett Municipal Code, "Bid Protest Procedures."

The exclusive venue of all lawsuits shall be in Snohomish County Superior Court.

### **OTHER MATTERS**

#### ***Time of Completion***

The Contractor shall complete the Work on or before the date or dates specified in Section 00 5213 - AGREEMENT FORM.

#### ***Equal Employment Opportunity***

The Contractor will be required to assure that equal employment opportunities will be in effect to all individuals throughout the duration of this Contract, pursuant to SECTION 00 7200, Part 7 "Labor Standards," of the Contract Documents. The Contractor must comply with all local, State and Federal laws pertaining to non-discrimination and equal employment opportunity.

#### ***Sales Tax***

The Washington State Department of Revenue has issued special rules on the State sales tax. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The City will not adjust its payment if the Contractor bases a Bid on a misunderstood tax liability. The Contractor shall not include State retail sales taxes in the unit bid prices. A separate line item for applying State retail sales tax is provided in the Bid Form.

#### ***Limitations Regarding Contractor's Claim for Damages***

Bidders should review the Contract Documents regarding limitations on claims for damages.

#### ***Delays and Interference***

Bidders should review the Contract Documents regarding delays and interference.

#### ***Business License***

A City of Everett business license is required for the Contractor and Subcontractors performing Work on this Project.

### **BIDDER'S CHECKLIST**

#### ***Forms for Submission with the Bid***

The Bidder's attention is especially called to the following forms that must be executed in full as required and submitted with the Bid.

1. Bid Form: Show the lump sum and unit price items in the spaces provided on the Bid Form. To be filled in and signed by the Bidder.
2. Document 00451F Cured-In-Place Pipe Rehabilitation Qualifications Form: To be filled in by Bidder.
3. Document 00451G Cured-In-Place Manhole Rehabilitation Qualifications Form: To be filled in by bidder.
4. Subcontractors Form: To be filled in by the Bidder, if required by these Instructions.



5. Bid Security: This form is to be executed by the Bidder and the surety company unless Bid is accompanied by a certified or cashier's check, as required by these instructions. The amount of the bond or cashier's check, which shall be not less than five percent of the Total Bid Amount, may be shown in dollars or on a percentage basis.
6. RCW 35.22.650 Certification: To be filled in and signed by the Bidder.
7. Non-Collusion Affidavit: To be signed, notarized and submitted with the Bid.

Failure to complete and fully execute the aforementioned forms and to submit them with the Bid may result in rejection of Bid.

***Forms for Submission after Award of Contract***

The following forms are to be executed after the award of Contract:

1. Contract: This Contract to be executed by the successful Bidder with the City's AdobeSign system within 14 calendar days after the award date.
2. Payment and Performance Bonds: These forms are to be executed by the successful Bidder and the Bidder's surety company. The amount of these bonds shall be 100 percent of the Total Bid and shall be submitted with the Contract.
3. Proof of Insurance: Insurance certificates and endorsements shall be obtained and maintained in force in accordance with SECTION 00 7200, Part 15 "Liability and Insurance", of the Contract Documents.
4. Power of Attorney: Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their Power of Attorney.
5. Statement of Intent to Pay Prevailing Wage (L&I Form F700-029-000) and Affidavit of Wages Paid (F700-007-000) from the Contractor, Subcontractor and agents to the Subcontractor shall be submitted to the Employment Standards Division, State Department of Labor and Industries, Olympia, Washington. If the prime contract is over \$1,000,000, then Contractor also needs to submit L&I Form F700-164-000 (Affidavit of Wages Paid EHB 2805 Addendum).
6. Weekly Statement with Respect to Payment of Wages (U.S. Dept of Labor Form WH347): Contractors, Subcontractors, and agents to Subcontractors using Payroll Form WH347 may use State of Compliance found on the back of the form.
7. Weekly Statement of Compliance (U.S. Dept of Labor Form WH348). Contractors, Subcontractors, or agents to Subcontractors not using Payroll Form WH347 shall attach the Statement of Compliance Form WH348 to each payroll.
8. Approval of Subcontractors: Contractors shall request approval of Subcontractors on a form provided by the City prior to their working on the Site.
9. Construction Progress Schedule: To be submitted as required by Section 00 7200, Part 5 "Progress and Completion", of the Contract Documents by the Contractor within ten calendar days, or such time as determined by the City, after the date of receipt of Notice to Proceed.
10. Traffic Control Plan: Standard Traffic Control Plans are included in the City's Design and Construction Standards. If, and to the extent, such plans are not sufficient, complete or adequate to support the Bidder's planned means and methods of performing the Work, the Bidder must develop an adequate, complete and sufficient traffic control plan at its cost, that shall be submitted for the City's

approval prior to construction. Deviation from the Standard Plans must be submitted by the Contractor and approved by the City prior to construction.

11. Disposal Sites: Provide the City with the location of all disposal sites to be used, and also provide copies of the permits and approvals for such disposal sites. The Contractor shall provide the City with copies of all permits for disposal and storage of surplus materials within ten calendar days after award of the Contract.

**END OF SECTION 00 2113**



**SECTION 00 2213 - SUPPLEMENTAL INSTRUCTIONS TO BIDDERS****PART 1 - GENERAL****1.1 GENERAL**

- A. It is the intent of the City to award a contract to the lowest responsive and responsible Bidder. Before award, the Bidder must also meet the supplemental bidder responsibility criteria listed below. Further, the apparent low Bidder and second apparent low bidder must submit the Bidder Qualification Statement (Documents 00451F and 00451G) and any other documentation listed below to the City within one business day after the bid opening, unless the City's project manager, in writing, allows additional time. The City reserves the right to require such documentation from other bidders also.

**1.2 SUPPLEMENTAL RESPONSIBILITY CRITERIA**

- A. Experience
1. Criteria:
    - a. The Bidder must meet the requirements listed in Document 00451F - Cured-In-Place Pipe Rehabilitation Qualification Form for cured in-place pipe lining.
    - b. The Bidder must meet the requirements listed in Document 00451G - Manhole Rehabilitation Qualification Form for cured-in-place manhole lining.
  2. Documentation: The Bidder shall submit the Cured-In-Place Pipe Rehabilitation Qualification Form and Manhole Rehabilitation Qualification Form in Document 00451F and 00451G. The City may also use independent sources of information that may be available to demonstrate whether the Bidder is in compliance with these criteria.
  3. Evaluation: In evaluating whether these criteria are met, the City may check references for the previous projects and may evaluate the project owner's assessment of the Bidder's performance, including but not limited to the following areas:
    - a. Quality control;
    - b. Safety record;
    - c. Timeliness of performance;
    - d. Use of skilled personnel;
    - e. Management of subcontractors;
    - f. Availability of and use of appropriate equipment;
    - g. Compliance with contract documents;
    - h. Management of submittals process, change orders, and close-out.

**1.3 PROCEDURE**

- A. Requests for Criteria Modification.
1. A Bidder may request that City modify the supplemental bidder responsibility criteria listed above. This request must be in writing to the City project manager and must be received by the City project manager at least ten business days before the bid opening. The City project manager will evaluate the information submitted by the Bidder and will respond within three business days after receipt of the request. If City evaluation results in a change of the criteria, the City will issue an addendum to the bid documents identifying the new or revised criteria. Any protest

of a City decision regarding a request for criteria modification must be in strict conformity with Everett Municipal Code Chapter 3.46, Bid Protest Procedures.

B. Additional Information.

1. The City may require that the Bidder submit information in addition to the Bidder's Supplemental Responsibility Statement. The City may require supplementation or revision of the Bidder's Supplemental Responsibility Statement. The City also reserves the right to obtain information from third parties and independent sources of information concerning a Bidder's compliance with the mandatory and supplemental criteria, and to use that information in their evaluation. The City may consider mitigating factors in determining whether the Bidder complies with the requirements of the Supplemental Criteria.

C. Appeal of Responsibility Decision.

1. If the City determines the Bidder does not meet the bidder responsibility criteria above and is therefore not a responsible bidder, the City will notify the Bidder in writing with the reasons for its determination. If the Bidder disagrees with this determination, the Bidder may appeal to the director of the City department responsible for this Contract (the "Director") by presenting additional information to the Director in writing within two (2) business days after receipt of the City's determination. The Director will consider the appeal and any additional information and will issue a decision regarding the appeal. Any protest by Bidder of the Director decision must be in strict conformity to Everett Municipal Code Chapter 3.46, Bid Protest Procedures, which (among other requirements) requires that any protest be filed with the City Clerk no later than the business day prior to the date of City Council proposed award or rejection of all bids. The City will not execute a contract with any other Bidder until two business days after the Bidder determined to be not responsible has received the Director decision or, if a protest is filed under Everett Municipal Code Chapter 3.46, until two business days after the Bidder receives written notice of the City's final determination of the protest.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

**END OF SECTION 00 2213**

## DOCUMENT 00451F

### CURED-IN-PLACE PIPE REHABILITATION QUALIFICATIONS FORM

#### ARTICLE 1 — REHABILITATION METHOD

1.01 Qualification requirements are based on experience with the following pipe rehabilitation methods:

A. Cured-in-Place-Pipe (CIPP) Liner.

1.02 Experience requirements are based on experience with the following systems:

A. Wastewater systems.

#### ARTICLE 2 — CONTACT INFORMATION

2.01 Provide the following contact information:

<b>CIPP MANUFACTURER NAME:</b>	
Address:	
Phone:	
Contact Person:	
<b>CIPP INSTALLER COMPANY NAME: (subcontractor)</b>	
Address:	
Phone:	
Superintendent Name:	
Lateral Cutting Technician Name:	
Resin Impregnation (Wet Out) Crew Lead Name:	
Installation Crew Lead Name:	

#### ARTICLE 3 — MANUFACTURER REQUIREMENTS

3.01 Minimum experience: 300,000 linear feet of CIPP successfully installed in accordance with the Contract Documents.

3.02 Provide answers to the following questions regarding the CIPP manufacturer's experience with CIPP.

	YES	NO
Is the CIPP manufacturing processes third-party certified to the latest ISO 9000 standards?		
Is proof of CIPP manufacturing process ISO 9000 certification attached?		
Does the CIPP Manufacturer have a minimum of 1,000,000 linear feet of successful system installations in the U.S.?		
Does the CIPP Manufacturer have a minimum of 50,000 linear feet of the cured-in-place pipe product in successful service in the U.S. in the last 5 years?		

3.03 Provide the following information regarding the CIPP manufacturer's project experience with CIPP installations.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):



### 3.04 INSTALLER REQUIREMENTS

- A. Minimum experience: 10,000 linear feet of CIPP successfully installed in accordance with the Contract Documents.
- B. Provide answers to the following questions regarding the CIPP Installer's experience with CIPP.

	YES	NO
Is the CIPP Liner Installer a manufacturer's certified installer?		
Does the CIPP Liner Installer have a minimum of 3 projects using the proposed lining system with 10 or more installations within the last 5 years?		

- C. Provide the following information regarding the CIPP Installer's project experience with CIPP installations.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

### 3.05 SUPERINTENDENT REQUIREMENTS

- A. Minimum experience: 10,000 linear feet of CIPP successfully installed in accordance with the Contract Documents.
- B. Provide answers to the following questions regarding the CIPP Superintendent's experience with CIPP.

	YES	NO
Does the CIPP Liner Superintendent have a minimum of 3 projects using the proposed lining system with 10 or more installations within the last 5 years?		

- C. Provide the following information regarding the CIPP Superintendent's project experience with CIPP installations.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

### 3.06 INSTALLATION CREW LEAD REQUIREMENTS

- A. Minimum experience: 10,000 linear feet of CIPP successfully installed in accordance with the Contract Documents.
- B. Provide answers to the following questions regarding the CIPP Installation Crew Lead's experience with CIPP.

	YES	NO
Does the CIPP Liner Installation Crew Lead have a minimum of 3 projects using the proposed lining system with 10 or more installations within the last 5 years?		

- C. Provide the following information regarding the CIPP Installation Crew Lead's project experience with CIPP installations.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

END OF DOCUMENT



## DOCUMENT 00451G

### MANHOLE REHABILITATION QUALIFICATIONS FORM

#### ARTICLE 1 — REHABILITATION METHOD

- 1.01 Qualification requirements are based on experience with the following manhole rehabilitation methods:
- A. Cured-in-Place-Manhole (CIPM) Liner.
- 1.02 Experience requirements are based on experience with the following systems:
- B. Wastewater systems.

#### ARTICLE 2 — CONTACT INFORMATION

- 2.01 Provide the following contact information:

<b>MANUFACTURER NAME:</b>	
Address:	
Phone:	
Contact Person:	
<b>MANHOLE REHABILITATION INSTALLER COMPANY NAME: (subcontractor)</b>	
Address:	
Phone:	
Superintendent Name:	
Installation Crew Lead Name:	

#### ARTICLE 3 — MANUFACTURER REQUIREMENTS

- 3.01 Minimum experience: 200 manholes rehabilitated in accordance with the contract documents.
- 3.02 Provide answers to the following questions regarding the manufacturer's experience with manhole rehabilitation.

	YES	NO
Is the manufacturing processes third-party certified to the latest ISO 9000 standards?		
Is proof of manufacturing process ISO 9000 certification attached?		
Does the Manufacturer have a minimum of 200 manholes successfully rehabilitated in the U.S.?		
Does the Manufacturer have a minimum of 200 rehabilitated manholes in successful service in the U.S. in the last 5 years?		



3.03 Provide the following information regarding the CIPM Manufacturer's project experience with manhole installations.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

#### ARTICLE 4 — INSTALLER REQUIREMENTS

- 4.01 Minimum experience: 100 manholes successfully rehabilitated in accordance with the Contract Documents.
- 4.02 Provide answers to the following questions regarding the installer's experience with manhole rehabilitation.

	YES	NO
Does the Installer hold certified installer status from the Manufacturer?		
Does the Installer have a minimum of 200 manholes successfully rehabilitated in the U.S.?		

4.03 Provide the following information regarding the installer's project experience with manhole rehabilitation.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	DEPTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3 PROJECT NAME	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

## ARTICLE 5 — SUPERINTENDENT REQUIREMENTS

- 5.01 Minimum experience: 200 manholes successfully rehabilitated in accordance with the Contract Documents.
- 5.02 Provide answers to the following questions regarding the superintendent's project experience with manhole rehabilitation.

	YES	NO
Does the Superintendent have a minimum of 200 manholes successfully rehabilitated in the U.S.?		
Does the Superintendent have a minimum of 5 years of supervisory field experience on at least 3 successfully completed projects containing at least 10 rehabilitated manholes each?		
Does the Superintendent have a minimum of 3 years of flow diversion supervisory field experience?		

5.03 Provide the following information regarding the superintendent's project experience with manhole rehabilitation.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

4. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

5. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	LENGTH OF LINER INSTALLED (feet):

#### ARTICLE 6 — INSTALLATION CREW LEAD REQUIREMENTS

- 6.01 Minimum experience: 2 years of successfully rehabilitating manholes in accordance with the Contract Documents.
- 6.02 Provide answers to the following questions regarding the Installation Crew Lead's experience with manhole rehabilitation.

	YES	NO
Does the Installation Crew Lead have a minimum of <b>2</b> years of field experience?		

6.03 Provide the following information regarding the Installation Crew Lead's project experience with manhole rehabilitation.

1. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	DEPTH OF LINER INSTALLED (feet):

2. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	DEPTH OF LINER INSTALLED (feet):

3. PROJECT NAME:	DATE COMPLETED:
OWNER NAME:	OWNER ADDRESS:
CONTACT PERSON:	CONTACT PHONE NO. (Office and mobile number):
SIZE OF LINER INSTALLED:	DEPTH OF LINER INSTALLED (feet):

END OF DOCUMENT

**SECTION 00 4113 - BID FORM****BIDDER INFORMATION**

Project Title: 20th Street Sewer Rehabilitation Project

Project No.: UP-3776

Date: \_\_\_\_\_

Submitted by: \_\_\_\_\_

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

Address: \_\_\_\_\_

\_\_\_\_\_

**OFFER**

Having examined the place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Owner for the above-referenced Project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the prices listed in this Bid Form.

We have included the Bid security as required by the Instructions to Bidders.

All applicable federal taxes are included, and State of Washington taxes are excluded from the Unit Prices.

Our bid includes overhead, profit, performance and payment bonds, and all other expenses involved whatsoever.



ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	CONTRACT PRICE
1.	Mobilization and Demobilization	LS	1	N/A	\$_____.____
2.	Temporary Erosion and Sediment Control	LS	1	N/A	\$_____.____
3.	Project Temporary Traffic Control	LS	1	N/A	\$_____.____
4.	Temporary Sewage Bypassing System	LS	1	N/A	\$_____.____
5.	36-inch Cured-In-Place Pipe (CIPP) Rehabilitation	LF	2,450		\$_____.____
6.	10-inch Cured-In-Place Pipe (CIPP) Rehabilitation	LF	470		\$_____.____
7.	8-inch Cured-In-Place Pipe (CIPP) Rehabilitation	LF	150		\$_____.____
8.	24-inch Cured-In-Place Pipe (CIPP) Rehabilitation	LF	135		\$_____.____
9.	Standard 48-inch Cured-In-Place Manhole	VF	236		\$_____.____
10.	Standard 96-inch Cured-In-Place Manhole	VF	10		\$_____.____
11.	Force Account	FA	50,000	\$1.00	<u>\$50,000.00</u>
12.	Record Drawings	LS	1	\$20,000	<u>\$20,000.00</u>
				SUBTOTAL	\$_____.____
			Washington State Sales Tax @ 9.9%		\$_____.____
				TOTAL BID	\$_____.____

## ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for 45 days from the Bid closing date.

If this Bid is accepted by the Owner within the time period stated above, we will:

1. Execute the Agreement within 14 days of receipt of Notice of Award.
2. Furnish the required 100% payment and 100% performance bonds within 14 calendar days of receipt of Notice of Award in the form described in Contract Documents.
3. Submit to the City in pdf format within 14 calendar days of receipt of Notice of Award the certificate of insurance and additional insured endorsements in accordance with the Contract Documents
4. Commence Work within seven calendar days after receipt of Notice to Proceed.

If this Bid is accepted within the indicated time, and we fail to commence the Work or we fail to provide the required bonds, the Bid security shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the Bid security or the difference between this Bid and the Bid upon which Contract is signed.

In the event our Bid is not accepted within the time stated above, the required Bid security will be returned to the undersigned, according to the provisions of the Instructions to Bidders, unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

## CONTRACT TIME

If this Bid is accepted, we will:

1. Begin work immediately after receiving Owner's letter of Notice to Proceed and to reach Substantial Completion within the dates required under the Contract Documents.
2. Agree to pay liquidated damages to the City as stated in the Contract in the event the project is not completed on or before required time periods.
3. Contract with the Owner using the Contract form provided herewith, on the terms and conditions contained herein, to do everything necessary to complete the construction of the project in the allotted time.

## ADDENDA

Following Addenda have been received, and the modifications to the Bid Documents noted below have been considered and all costs are included in the Bid.

Addendum No....., dated .....  
Addendum No....., dated .....  
Addendum No....., dated .....  
Addendum No....., dated .....

**BIDDER CERTIFICATIONS**

Bidder, at the time of submitting this Bid and throughout the period of the contract, will remain licensed by the state of Washington to perform the type of work required under the Contract Documents.

Bidder is skilled and regularly engaged in the general class and type of work required by the Contract Documents and has the capability to successfully manage construction projects.

Bidder agrees to provide upon written request of the City all information related to its qualifications and those of its key personnel and its proposed Subcontractors.

Bidder certifies that its Bid is in all respects fair, and is made without collusion on the part of any person, firm, or corporation mentioned below, and that no officer or employee of the City is personally or financially interested, directly or indirectly, in the Bid, or in any purposes of, or the sale of, any materials or supplies for the work to which it relates, or any portion of the profits thereof.

**DESIGNATED/AUTHORIZED REPRESENTATIVE**

Bidder designates \_\_\_\_\_ of its office to which notice of acceptance of this Bid may be mailed, emailed or delivered.

City may provide notice of any kind to the Bidder using the email address Bidder provides below.

1. A notice is considered delivered to the Bidder on the date it is emailed to the email address.

**INTERESTED PARTIES**

The full names and residences of all persons and parties interested in this Bid as principals are as follows:

NAME	TITLE	ADDRESS
------	-------	---------

_____	_____	_____
_____	_____	_____
_____	_____	_____

**BID FORM SIGNATURES**

By submitting this Bid, Bidder certifies that it has reviewed the insurance requirements of Document 00 7200 - GENERAL CONDITIONS and certifies that coverage will be provided as required.

The undersigned also hereby certifies that, within the three-year period immediately preceding the bid solicitation date for this Project, the Bidder has not been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW. The

undersigned declares under penalty of perjury under the laws of the State of Washington that the foregoing sentence is true and correct.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 2024

Name of Bidder: \_\_\_\_\_

Signature of Bidder's Authorized Agent: \_\_\_\_\_

City and State Where Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: \_\_\_\_\_

State of Incorporation \_\_\_\_\_ Contractor's License No. \_\_\_\_\_

Washington State \_\_\_\_\_

Email address of Bidder's authorized Agent:

\_\_\_\_\_

**The remainder of this page intentionally left blank**

**END OF SECTION 00 4113**

**SECTION 00 4313 - BID SECURITY FORM****BID SECURITY/DEPOSIT**

Bidder herewith guarantees its bid by depositing one of the following with its bid/proposal in an amount of five percent (5%) or more of the bidder's total bid/proposal:

- ☐ Certified check
- ☐ Cashier's check
- ☐ Bid Bond

\_\_\_\_\_  
Signature

---

---

**BID BOND**

Bond No. \_\_\_\_\_

Project: \_\_\_\_\_

Project No. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS,

that \_\_\_\_\_ **[Contractor]**, a corporation organized under the laws of the State of \_\_\_\_\_, and registered to do business in the State of Washington as a contractor, as Principal, and \_\_\_\_\_ **[Surety]**, a corporation organized under the laws of the State of \_\_\_\_\_ and registered to transact business in the State of Washington, as Surety, their heirs, executors, administrators, successors and assigns, are jointly and severally held and bound to the City of Everett, Washington, hereinafter called "City", and are similarly held and bound unto the City in the sum of \_\_\_\_\_ and \_\_\_/100's Dollars (\$\_\_\_\_\_), the payment of which, well and truly to be paid, we bind ourselves, our heirs, executors and successors, jointly and severally, formally by these presents.

NOW, THEREFORE, the condition of this obligation is such that the Surety is held and bound to the City to pay and forfeit to the City the amount of this bond as provided herein, upon the conditions contained herein, unless the conditions for release contained herein are satisfied or expressly waived in a writing signed by the City Attorney.

It is expressly understood and agreed that:

- A. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to the City upon default of Bidder the penal sum set forth on the face of this Bond.
- B. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the bidding documents the executed Contract required by the bidding documents, any performance and payment bonds required by the bidding documents and Contract Documents, and evidence of insurance required by the bidding documents and Contract Documents.
- C. This obligation shall be null and void if:
  - 1. The City accepts Bidder's bid and Bidder delivers within the time required by the bidding documents (or any extension thereof agreed to in writing by the City) the executed Contract required by the bidding documents, any performance and payment bonds required by the bidding documents and Contract Documents, and evidence of insurance required by the bidding documents and Contract Documents, or
  - 2. All bids are rejected by the City.
- D. Payment under this Bond will be due and payable upon default of Bidder and within thirty (30) calendar days after receipt by Bidder and Surety of written notice of default from the City, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
- E. Surety waives notice of any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by the City and Bidder, provided that the time for issuing notice of award including extensions shall not in the aggregate exceed one hundred twenty (120) days from Bid Due Date without Surety's written consent.
- F. No suit or action shall be commenced under this Bond prior to thirty (30) calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety. Any suit or action under this bond must be instituted within the time period provided by applicable law.
- G. The laws of the State of Washington shall apply to the determination of the rights and obligations of the parties hereunder. Venue for any dispute or claim hereunder shall be the state courts of Washington in Snohomish County, Washington.
- H. Notice required hereunder shall be in writing sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or United States Registered or Certified Mail, return receipt requested, postage prepaid, and shall be deemed to be effective upon receipt by the party concerned.
- I. Surety shall cause to be attached to this Bond current and effective Power of Attorney evidencing authority of the officer, agent or representative to execute this Bond on behalf of Surety to execute and deliver such Bond and bind the Surety thereby.

- J. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of the Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
- K. The term "bid" as used herein includes a bid, offer or proposal as applicable.

BIDDER	SURETY
<hr/>	<hr/>
Bidder's Name	Surety's Name and Corporate Seal (seal)
By: <hr/>	By: <hr/>
Signature, Title, and Date	Signature, Title, and Date
Address: <hr/>	Address: <hr/>
<hr/>	<hr/>
Attest:	Attest:
<hr/>	<hr/>
Signature, Title and Date	Signature, Title and Date

**The remainder of this page intentionally left blank**



**END OF SECTION 00 4313**

**SECTION 00 4336 - PROPOSED SUBCONTRACTORS FORM**

1. For heating, ventilation and air conditioning, plumbing (as defined by RCW Chap. 18.106) and electrical work (as defined by RCW Chap. 19.28), and structural steel installation and rebar installation, Bidder **MUST** either identify itself or Subcontractors in the chart below. If Bidder believes such work is not part of the Work, Bidder shall write "NO WORK".
2. Bidder shall not list more than one Subcontractor for each category of Work identified, unless Subcontractors vary with Bid alternates, in which case the Bidder must indicate which Subcontractor will be used for which alternate.
3. **Bidder's Bid shall be deemed non-responsive and void if:**
  - A. For heating, ventilation and air conditioning, plumbing, electrical work, structural steel installation and rebar installation, Bidder fails: (1) to submit as part of the Bid the names of such Subcontractors; (2) to name itself to perform such Work; or (3) to write "No Work"; or
  - B. Bidder names two or more Subcontractors to perform the same Work.
4. The requirement to name the Bidder's proposed heating, ventilation, air conditioning, plumbing, electrical, structural steel installation and rebar installation subcontractors applies only to proposed heating, ventilation, air conditioning, plumbing, electrical, structural steel installation and rebar installation subcontractors who will contract directly with the general contractor submitting the Bid to the City.
5. The heating, ventilation and air conditioning, plumbing, and electrical portions of the chart below must be submitted with the bid proposal or within one hour of the published bid submittal time.
6. The structural steel installation and rebar installation portions of the chart below must be submitted with the bid proposal or within forty-eight hours of the published bid submittal time.

Type/Scope of Work	Name and Address of Subcontractor or Bidder
HEATING Subcontractor, bidder or "no work" <b>MUST</b> be stated	
VENTILATION AND AIR CONDITIONING Subcontractor, bidder or "no work" <b>MUST</b> be stated	
PLUMBING (as described in RCW Chap. 18.106) Subcontractor, bidder or "no work" <b>MUST</b> be stated	
ELECTRICAL (as described in RCW Chap. 19.28) Subcontractor, bidder or "no work" <b>MUST</b> be stated	
STRUCTURAL STEEL INSTALLATION Subcontractor, bidder or "no work" <b>MUST</b> be stated	
REBAR INSTALLATION Subcontractor, bidder or "no work" <b>MUST</b> be stated	

**END OF SECTION 00 4336**



**SECTION 00 4519 - NON-COLLUSION AFFIDAVIT****NON-COLLUSION AFFIDAVIT**

STATE OF WASHINGTON                    )  
                                                  ) ss.  
COUNTY OF \_\_\_\_\_ \_)

The undersigned, being duly sworn, on oath says that the bid submitted is a genuine and not a sham or collusive bid, or made in the interest or on behalf of any person not therein named; and the undersigned further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure an advantage over any other bidder or bidders.

\_\_\_\_\_  
Firm Name

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

SUBSCRIBED and SWORN to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC in and for the State of  
Washington, residing at \_\_\_\_\_

My commission expires: \_\_\_\_\_

**END OF SECTION 00 4519**



**SECTION 00 4539 - RCW 35.22.650 CERTIFICATION**

A set percentage of minority group member employees or minority business subcontracts is not required in the performance of the Work under this Contract. However, RCW 35.22.650 requires bidders (a) to actively solicit (i) employment of minority group members and (ii) subcontract bids from minority businesses, and (b) to submit evidence of its compliance with these requirements for active solicitations:

**RCW 35.22.650**

All contracts by and between a first-class city and contractors for any public work or improvement exceeding the sum of ten thousand dollars, or fifteen thousand dollars for construction of water mains, shall contain the following clause:

"Contractor agrees that the contractor shall actively solicit the employment of minority group members. Contractor further agrees that the contractor shall actively solicit bids for the subcontracting of goods or services from qualified minority businesses. Contractor shall furnish evidence of the contractor's compliance with these requirements of minority employment and solicitation. Contractor further agrees to consider the grant of subcontracts to said minority bidders on the basis of substantially equal proposals in the light most favorable to said minority businesses. The contractor shall be required to submit evidence of compliance with this section as part of the bid."

As used in this section, the term "minority business" means a business at least fifty-one percent of which is owned by minority group members. Minority group members include, but are not limited to, blacks, women, native Americans, Asians, Eskimos, Aleuts, and Hispanics.

- I. Bidder confirms that it actively solicits employment of minority group members. \_\_\_\_\_  
[yes or no]
- II. Please estimate the percentage of Bidder's employees on this Project that will be made up of minority group members: \_\_\_\_\_ [state estimated percentage]
- III. Please estimate the percentage of goods and services that will be subcontracted to minority businesses on this Project: \_\_\_\_\_ [state estimated percentage]

- IV. List all minority businesses from whom bids or quotes for goods or services on this Project have been solicited (attach additional sheet if necessary):

Minority Business Name	Address	Goods or Services Involved	Certification Number*

\*Certification numbers (for MBE, MWBE, DBE, etc.) are found at Office of Minority & Women's Business Enterprises:  
<https://omwbe.diversitycompliance.com/FrontEnd/SearchCertifiedDirectory.asp>. If a minority business does not have a certification number, the Bidder must provide with this certification form evidence that the business is at least fifty-one percent owned by minority group members.

During Contract performance, or in any event prior to final payment, Bidder shall provide the City with the names and addresses of all minority businesses actually awarded subcontracts under the Contract. In the event that a subcontract bid or quote is solicited and listed above and a subcontract is not awarded to the minority business so listed, Contractor shall state the reasons such subcontract was not awarded to the minority business and shall provide the minority business quote together with the actual subcontract price paid and the name of the subcontractor to whom the subcontract was subsequently awarded.

**FAILURE TO PROPERLY COMPLETE AND SUBMIT THIS CERTIFICATION FORM WITH THE BID WILL RESULT IN REJECTION OF BID.** THE BIDDER CERTIFIES UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF WASHINGTON THAT THE ABOVE IS TRUE AND COMPLETE CORRECT TO THE BEST OF ITS KNOWLEDGE AND BELIEF AND FURTHER AGREES TO PROVIDE INFORMATION AS REQUESTED BY THE CITY REGARDING MINORITY BUSINESS SUBCONTRACTS AND EMPLOYMENT OF MINORITY GROUP MEMBERS.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**END OF SECTION 00 4539**

**SECTION 00 5213 - AGREEMENT FORM****CONTRACT**

THIS CONTRACT is made and entered by and between the City of Everett, Washington, a municipal corporation existing under the laws of the State of Washington (the "City") and \_\_\_\_\_, (the "**Contractor**").

In consideration of the sums to be paid to it by the City, Contractor hereby covenants and agrees to furnish all labor, tools, materials, equipment, and supplies required to complete in a workmanlike manner the work, improvements, and/or appurtenances in accordance with the Specifications and Drawings and all other Contract Documents entitled: "20th Street Sewer Rehabilitation Project" (the "**Project**").

**1. Contract Documents.** The "Contract Documents" are defined in the General Conditions. The Contract Documents are part of this Contract and are hereby incorporated by reference. Terms that are capitalized in a Contract Document but not defined in that Contract Document shall have the meaning defined to them in the other Contract Documents. A copy of the Contract Documents that were posted for the Project on Builder's Exchange of Washington (www.bxwa.com) as of Bid Opening Date is maintained by the City Clerk's Office as a single pdf and is available as follows:

Link to PDF	
-------------	--

Contractor acknowledges that Contractor has downloaded and reviewed this pdf prior to signing this Contract. City and Contractor agree that this pdf contains all posted Contract Documents as of the Bid Opening Date. City and Contractor further agree that this pdf may contain some other documents (such as Reference Information) that are not Contract Documents.

**2. Contract Time.** Substantial Completion of the Work shall be achieved within One Hundred Eighty (180) days after the effective date of the Notice to Proceed. Physical Completion shall be within One Hundred Twenty (120) calendar days after the actual date of issuance of Substantial Completion.

**3. Liquidated Damages.** The parties agree the City will suffer damage and be put to additional expense in the event that the Contractor does not complete the Work in all respects and have it ready for use by the Substantial and Physical Completion dates stated above. Because it is difficult to accurately compute the amount of such costs and damages, the Contractor hereby covenants and agrees to pay to the City liquidated damages for each and every calendar day (or working day, if Contract Time is described in working days) in the amounts set forth in this Section. For failure to achieve Substantial Completion by the Substantial Completion date stated above, the Contractor shall pay liquidated damages to the City computed at the daily rate of fifteen percent (15%) of the Contract Sum divided by the number of days of Contract Time stated above. Once Substantial Completion is achieved, for failure to achieve Physical Completion by the Physical Completion Date stated above, the Contractor shall pay liquidated damages at the daily rate of ten percent (10%) of the liquidated damages rate applicable to delays to Substantial Completion.



**4. Contract Sum.** The Contract Sum of this Contract is:

+ WA Sales Tax (as applicable)	
Contract Sum	

This is based on the proposal/bid submitted by Contractor dated \_\_\_\_\_. A copy of this proposal/bid is attached hereto.

The basis for final payment will be the actual amount of work performed according to the Contract Documents and payments, whether partial or final, shall be made as specified therein. If, and to the extent, payment (in whole or in part) is based upon unit prices multiplied by quantities of work actually performed, the total amount paid to the Contractor may be less than Contract Sum stated herein and the Contractor agrees to execute one or more change orders in such event. In no event shall the total amount paid Contractor exceed the Contract Sum stated herein, unless the Contract amount has first been increased by one or more Change Orders signed by the City. The City may, in its sole discretion, withhold amounts from payments otherwise due as offsets or back charges for expenses, damages, liquidated damages or costs for which the Contractor is liable for not to exceed 10% of the total amount of the contract. If the City chooses not to offset or deduct any such expenses, damages, liquidated damages or costs from one or more payments or return of retainage, the City does not waive its claim for such damages and hereby expressly reserves its right to assert a claim against the Contractor for such damages.

**5. Withholding.** Five percent (5%) of amounts due Contractor shall be retained and withheld to comply with RCW Chap. 60.28. Retained amounts shall only be released: (A) as required by law or (B) sixty (60) days after completion of all contract work if there are no claims against the retained funds. In addition to the amounts required by RCW 60.28 to be withheld from the progress or retained percentage payments to the Contractor, the City may, in its sole discretion, withhold any amounts sufficient to pay any claim against the Contractor of which the City may have knowledge and regardless of the informalities of notice of such claim arising out of the performance of this Contract. The City may withhold the amount until either the Contractor secures a written release from the claimant, obtains a court decision that such claim is without merit, or satisfies any judgment in favor of the claimant on such claim. The City shall not be liable for interest during the period the funds are so held.

**6. Compliance with Employment and Wage Laws.** Contractor agrees to comply with all state and federal laws relating to the employment of labor and wage rates to be paid.

**7. RCW 35.33.650.** Contractor shall actively and in good faith solicit the employment of minority group members and bids for the supply of goods or subcontracting of services from qualified minority businesses. Contractor shall consider granting contracts to possible minority suppliers and subcontractors on the basis of substantially equal proposals in the light most favorable to the minority businesses. Contractor shall furnish evidence of its compliance with these requirements. As used in this section, the term "minority business" means a business at least fifty-one percent (51%) of which is owned by minority group members. Minority group members include, but are not limited to, African-Americans, Women, Native Americans, Asian/Pacific Islander-Americans, and Hispanic-Americans.

**8. Indemnification.**

A. Contractor will defend, indemnify and hold harmless the City from any and all Claims arising out or relating to any acts, errors, omissions, or conduct by Contractor in connection with its performance of this Contract, including without limitation (and without limiting the generality of the foregoing) all Claims resulting from Contractor's performance of, or failure to perform, its express and implied obligations under the Contract. The Contractor will defend and indemnify and hold harmless the City whether a Claim is asserted directly against the City, or whether a Claim is asserted indirectly against the City, e.g., a Claim is asserted against someone else who then seeks contribution or indemnity from the City. The amount of insurance obtained by, obtainable by, or required of the Contractor does not in any way limit the Contractor's duty to defend and indemnify the City. The City retains the right to approve Claims investigation and counsel assigned to said Claim and all investigation and legal work regarding said Claim shall be performed under a fiduciary relationship to the City. This Section 8 is in addition to any other defense or indemnity or hold harmless obligation in the Contract Documents.

B. The Contractor's obligations under this Section 8 shall not apply to Claims caused by the sole negligence of the City. If (1) RCW 4.24.115 applies to a particular Claim, and (2) such Claim is caused by or results from the concurrent negligence of (a) the Contractor and (b) the City, then the Contractor's liability under this Section 8 shall be only to the extent of the Contractor's negligence.

C. As used in this section: (1) "City" includes the City's officers, employees, agents, and representatives; (2) "Claims" include all losses, claims, demands, expenses (including, but not limited to, attorney's fees and litigation expenses), suits, judgments, or damage, whether threatened, asserted or filed against the City, whether such Claims sound in tort, contract, or any other legal theory, whether such Claims have been reduced to judgment or arbitration award, irrespective of the type of relief sought or demanded (such as money or injunctive relief), and irrespective of the type of damage alleged (such as bodily injury, damage to property, economic loss, general damages, special damages, or punitive damages); and (3) "Contractor" includes Contractor, its employees, agents, representatives and subcontractors. If, and to the extent, Contractor employs or engages subcontractors, then Contractor shall ensure that each such subcontractor (and subsequent tiers of subcontractors) shall expressly agree to defend and indemnify and hold harmless the City to the extent and on the same terms and conditions as the Contractor pursuant to this section.

**9. Insurance.** The Contractor shall purchase and maintain such insurance as set forth in the Contract Documents. Failure to maintain such insurance shall be a material breach of the Contract. The City shall be entitled to damages for such a breach that include, but are not limited to, any loss (including, but not limited to, third party litigation expenses and professional fees) suffered by the City if the City is determined to be solely or concurrently negligent, and if the City suffers any loss or must pay or defend against any such claim, suit, demand or damage as a result of such breach.

**10 Waiver of Industrial Insurance Immunity.** Contractor waives any right of contribution against the City. It is agreed and mutually negotiated that in any and all claims against the City, its agents or employees, the Contractor, a subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor, or anyone for whose acts any of them may be liable, the defense and indemnification obligations hereunder shall not be limited in any way by any limitation on the amount of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under industrial worker's compensation acts, disability benefit acts, or

other employees' benefit acts. Contractor's and City's signatures hereto indicate specific waiver of Contractor's industrial insurance immunity in order to fulfill the indemnities hereunder. Solely for the purpose of indemnification and defense as provided in this Contract, the Contractor specifically waives any immunity under the State Industrial Insurance Law, Title 51 RCW. The Contractor expressly acknowledges that this waiver of immunity under Title 51 RCW was the subject of mutual negotiation and was specifically entered into pursuant to the provisions of RCW 4.24.115.

**8. Repair of Damage.** The Contractor agrees to repair and replace all property of the City and all property of others damaged by it, its employees, subcontractors, suppliers and agents.

**9. Pre-Bid Inspection and Risk of Loss.** It is understood that the whole of the work under this contract is to be done at the Contractor's risk and that: (1) prior to submitting its proposal or bid, it became familiar with the conditions of excavation, subsurface, backfill, materials, climatic conditions, location, traffic, and other contingencies that may affect the work and has made its bid or proposal accordingly and (2) that it assumes the responsibility and risk of all loss or damage to materials or work that may arise from any cause whatsoever prior to completion.

**10. Headings for Convenience Only.** The headings in this document are for convenience only, and shall not be used or considered to interpret or construe this document.

**11. Effective Date/Counterparts/Signature.** This Contract is effective as of the date of the last person to sign it, and may be executed in multiple counterparts, each of which shall be deemed an original. This Contract may be signed with AdobeSign, and any such signature is fully binding.

**CITY OF EVERETT  
WASHINGTON**

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

Cassie Franklin, Mayor

ATTEST: \_\_\_\_\_

Date \_\_\_\_\_

Office of the City Clerk

STANDARD DOCUMENT  
APPROVED AS TO FORM  
OFFICE OF THE CITY ATTORNEY  
(9.6.23)

**CONTRACTOR:**

**Corporation**  
**Limited Liability**  
**Company**  
**Partnership**

\_\_\_\_\_  
[Contractor's Complete Legal Name]By: \_\_\_\_\_  
Signature

Typed/Printed Name of Signer: \_\_\_\_\_

Title of Signer: \_\_\_\_\_

Date: \_\_\_\_\_

**Sole**  
**Proprietorship**

\_\_\_\_\_  
[Printed Name]\_\_\_\_\_  
Signature

Date: \_\_\_\_\_

**END OF SECTION 00 5213**



**SECTION 00 6113 - PERFORMANCE BOND AND PAYMENT BOND****PERFORMANCE BOND**

Bond No.: \_\_\_\_\_

The City of Everett has awarded to \_\_\_\_\_ (Principal), a contract for the construction of the project designated as 20th Street Sewer Rehabilitation Project, No. UP-3776, in Everett, Washington (Contract), and said Principal is required to furnish a bond for performance of all obligations under the Contract.

The Principal, and \_\_\_\_\_ (Surety), a corporation organized under the laws of the State of \_\_\_\_\_ and licensed to do 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. Treasury Dept., are jointly and severally held and firmly bound to the City of Everett in the sum of \_\_\_\_\_ US Dollars (\$ \_\_\_\_\_), which is the Contract Sum, subject to the provisions herein.

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 the 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 full force and effect.

The Surety agrees to indemnify, defend, and protect the City of Everett against any claim of direct or indirect loss resulting from the failure of the Principal, its heirs, executors, administrators, successors, or assigns (or any of the employees, subcontractors, or lower tier subcontractors of the Principal) to faithfully perform the Contract.

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 increased obligation.

This bond may be executed in two (2) original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety. The Surety agrees to be bound by the laws of the state of Washington and subjected to the jurisdiction of the state of Washington.

PRINCIPAL

SURETY

---

---

Printed Name:

Printed Name:

---

---

Title:

Title:

---

---

STANDARD BOND FORM  
OFFICE OF THE CITY ATTORNEY  
APPROVED AS TO FORM  
APPROVED AS TO CITY CHARTER § 4.1

Local Office/ Agent of Surety:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

**The remainder of this page intentionally left blank**

## PAYMENT BOND

Bond No. \_\_\_\_\_

The City of Everett has awarded to \_\_\_\_\_ (Principal), a contract for the construction of the project designated as 20th Street Sewer Rehabilitation Project, No. UP-3776, in Everett, Washington (Contract), and said Principal is required under the terms of that Contract to furnish a payment bond in accord with Title 39.08 Revised Code of Washington (RCW) and (where applicable) 60.28 RCW.

The Principal, and \_\_\_\_\_ (Surety), a corporation organized under the laws of the State of \_\_\_\_\_ and licensed to do 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. Treasury Dept., are jointly and severally held and firmly bound to the City of Everett in the sum of \_\_\_\_\_ US Dollars (\$ \_\_\_\_\_), which is the Contract Sum, subject to the provisions herein.

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 Titles 39.08 and 39.12 including all workers, laborers, mechanics, subcontractors, and material suppliers, and all persons 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 Title 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 agrees to indemnify, defend, and protect the City of Everett against any claim of direct or indirect loss resulting from the failure of the Principal, its heirs, executors, administrators, successors, or assigns, (or the subcontractors or lower tier subcontractors of the Principal) to pay all laborers, mechanics, subcontractors, lower tier subcontractors material persons, and all persons who shall supply such contractor or subcontractors with provisions and supplies for the carrying on of such work.

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 increased obligation.

This bond may be executed in two (2) original counterparts, and shall be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed and original power of attorney for the officer executing on behalf of the surety. The Surety agrees to be bound by the laws of the state of Washington and subjected to the jurisdiction of the state of Washington.



PRINCIPAL

SURETY

Printed Name:

Printed Name:

Title:

Title:

STANDARD BOND FORM  
OFFICE OF THE CITY ATTORNEY  
APPROVED AS TO FORM  
APPROVED AS TO CITY CHARTER § 4.1

Local Office/ Agent of Surety:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

**END OF SECTION 00 6113**

**SECTION 00 6123 - NEW RETAINAGE BOND****BOND NO. \_\_\_\_\_****RETAINAGE BOND**

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_, a corporation organized under the laws of the State of \_\_\_\_\_, and registered to do business in the State of Washington as a contractor, as Principal, and \_\_\_\_\_, a corporation organized under the laws of the State of \_\_\_\_\_ and registered to transact business in the State of Washington as Surety, their heirs, executors, administrators, successors and assigns, are jointly and severally held and bound to the City of Everett, Washington, hereinafter called "City", and are similarly held and bound unto the beneficiaries of the trust fund created by RCW Chapter 60.28, in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) plus five (5%) percent of any increases that may occur under the Contract (as defined below), the payment of which, well and truly to be paid, we bind ourselves, our heirs, executors and successors, jointly and severally, formally by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE THAT:

WHEREAS, the Principal has executed a contract \_\_\_\_\_ (the "Contract") with the City known as:

**PROJECT NAME: 20TH STREET SEWER REHABILITATION PROJECT**

**CONTRACT NUMBER: UP-3776**

WHEREAS, said Contract and RCW Chapter 60.28 require the City to withhold from monies earned by the Principal during the progress of the construction, hereinafter referred to as "earned retained funds";

WHEREAS, the Principal requested that the City accept a retainage bond and release earned retained funds to Principal, as allowed under RCW Chapter 60.28; and

NOW, THEREFORE, the condition of this obligation is such that the Surety is held and bound to the City to indemnify, defend and hold the City harmless from any and all loss, costs or damages that the City may sustain by reason of release of said earned retained funds to Principal, then this obligation to be null and void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, it is expressly understood and agreed that:

1. Any suit or action under this bond must be instituted within the time period, if any, provided by applicable law. The bond shall be subject to all claims and liens provided for by law or Contract against the earned retained funds and in the same manner and priority as set forth for retained percentages in RCW Chapter 60.28 and the Contract.

2. The Surety hereby consents to and waives notice of any extension in the time for performance of the Contract, assignment of obligations under the Contract, or Contract alteration, termination, amendment or change order. This expressly includes, but is not limited to, consent to and waiver of any notice with respect to increases in the Contract price by change order. Upon any such Contract price increase, the amount of this bond automatically increases by an amount equal to 5% of Contract price increase.

3. Until written release of this obligation by the City, this bond may not be terminated or canceled by the Principal or Surety for any reason. Any extension of time for the Principal's performance on the Contract, assignment of obligations under the Contract, or Contract alteration, amendment or change order shall not release the Surety from its obligation under this bond.

4. RCW Chapter 60.28 authorizes the City to substitute a retainage bond in lieu of earned retained funds and the Surety hereby waives any defense that this bond is void or otherwise not authorized by law.

5. Any claim or suit against the City to foreclose the liens provided for by RCW Chapter 60.28 shall be effective against the Principal and Surety and any judgment under RCW Chapter 60.28 against the City shall be conclusive against the Principal and the Surety.

6. The laws of the State of Washington shall apply to the determination of the rights and obligations of the parties hereunder. Venue for any dispute or claim hereunder shall be the state courts of Washington in Snohomish County, Washington.

SIGNED AND SEALED THIS \_\_\_\_\_ of \_\_\_\_\_, 20\_\_.

<hr/> Surety	<hr/> Principal
By: <hr/>	By: <hr/>
Typed/Printed Name: <hr/>	Typed/Printed Name: <hr/>
Title: <hr/>	Title: <hr/>

STANDARD RETAINAGE BOND FORM  
OFFICE OF THE CITY ATTORNEY  
APPROVED AS TO FORM  
APPROVED AS TO CITY CHARTER § 4.1



**SECTION 00 6125 - RETAINAGE ESCROW AGREEMENT**

Project	20th Street Sewer Rehabilitation Project
Contractor	
Bank	

**RETAINAGE ESCROW AGREEMENT AND INSTRUCTIONS**

**1. Escrow Agreement.** The Contractor on a public improvement project for the City exercised its option pursuant to RCW 60.28.011 to place Retainage in escrow with the Bank. This Agreement constitutes both the escrow agreement between the City and Contractor and instructions to the Bank for handling of the Escrow Account. This Agreement is not effective until (a) the Agreement has been signed by the Contractor, Bank and City and (b) Contractor, Bank and City have entered the appropriate information in Exhibit A.

**2. Check Issuance, Endorsement, and Deposit.** From time to time, the City will issue a Check payable to the Bank and Contractor jointly. Contractor expressly authorizes and grants the power to the Bank to endorse the check on its behalf, to negotiate the check, collect the funds represented by the Check, and to deposit the funds so collected into the Escrow Account. These powers shall be deemed to be powers coupled with an interest and shall be irrevocable during the term of this escrow.

**3. Investment of Funds.** Funds and cash balances in the Escrow Account may be invested in Eligible Securities at the direction of the Contractor. For purchase of Eligible Securities, the Bank may follow the last written direction it received from the Contractor, provided such direction provides for investment in Eligible Securities. The Bank shall not invest any funds, cash balances, or proceeds of sale of Eligible Securities in any securities, bonds or accounts that are not Eligible Securities. Eligible Securities purchased pursuant to this Agreement shall be held by the Bank as custodian as part of this escrow. Eligible Securities shall be held in the Bank's name. Interest on the purchased Eligible Securities, if any, shall be paid to Contractor when, as and if any accrued interest is received by the Bank.

**4. Eligible Securities.** The following securities are deemed Eligible Securities, and the Bank may invest funds and cash balances in such securities at the direction of Contractor without further approval of the City, provided that any maturity dates are no later than twenty-five (25) calendar days after the Completion Date and provided they are held in a manner and form that allows Bank alone to liquidate the securities as provided for in the Agreement.

- A. Bills, certificates, notes or bonds of the United States;
- B. Other obligations of the United States or its agencies;
- C. Obligations of any corporation wholly owned by the Government of the United States;
- D. Indebtedness of the Federal National Mortgage Association;

- E. Time deposits in commercial banks; and
- F. Mutual funds, pools, or investment trusts, provided the investments of the fund, pool or trust consists solely of securities listed in herein.

Other securities may be deemed Eligible Securities upon the written request of the Contractor and written approval of the City, provided the City has the staff assistance and expertise which will permit it to exercise sound judgment in assessing the security. The City shall consider probable safety, risk to principal, liquidity and any other factor the City deems reasonable to consider. Nothing herein obligates the City to incur any expense or charge to assess the appropriateness of a proposed security. The City has no obligation to consider a proposed security if the City would incur expenses, charges or fees in its assessment of the appropriateness of the security as an investment. If the proposed security has a maturity date, the security must mature on or before the Completion Date. The Contractor expressly acknowledges that any investment in securities involves risks, including, but not limited to, the risks of loss or diminution of principal and failure to realize anticipated or expected appreciation, dividends, interest, or other gain. Contractor expressly waives and releases both City and Bank from any and all liability associated with, or arising out of, these and all market risks.

**5. Bank Duties and Responsibilities.** Although the Bank will be a joint payee of any Check, the Bank shall only have (a) those duties and responsibilities that a depository bank would have pursuant to Article 4 of the Uniform Commercial Code of the State of Washington for an item deposited to Bank and (b) those duties and responsibilities created by this Agreement. The Bank must not deliver to the Contractor all or any part of the securities or money held by the Bank pursuant to this Agreement (or any proceeds from the sale of such securities, or the negotiation of the City's warrants or checks) except in accordance with written instructions from the City. The City Clerk is authorized to give written instructions and the Finance Director or Treasurer (or its designee) is authorized to give written approval of securities. Written instructions and written approval of securities must be countersigned by the City Attorney. The City may designate different authorized persons from time to time by notifying the Bank in writing of the change, which notice must be countersigned by the City Attorney.

**6. Change of Completion Date.** Upon written request by the Bank, City shall advise the Bank in writing of any change in the Completion Date. If the changed Completion Date is later than the original Completion Date, the Bank may reinvest any funds on hand, cash balances or proceeds of Eligible Securities with maturities, reverse loads, etc. consistent with the later Completion Date. If the changed Completion Date is earlier than the original Completion Date, the Bank shall execute such transactions as are commercially reasonable to liquidate Eligible Securities in the Escrow Account no later than twenty-five (25) calendar days after the earlier Completion Date.

**7. Return of Funds to City.** At the City's sole option and notwithstanding any other provision of this Agreement, the City may direct the Bank in writing to liquidate any and all Eligible Securities held in or for the Escrow Account and to deliver all funds, cash, accrued interest and proceeds in the Escrow Account to the City. Such liquidation shall occur within thirty-five (35) calendar days of receipt of the written direction.

**8. Compensation of Bank.** Contractor shall be solely responsible for, and shall pay separately to the Bank, any and all fees, charges, or commissions of the Bank relating to the Escrow Account. No fees, charges or commissions of any kind may be deducted by the Bank from any property, funds, proceeds or Eligible Securities in the Escrow Account until and unless the City

directs the release of the Escrow Account to the Contractor, in which case the Bank is hereby granted a lien upon the property, proceeds or Eligible Securities in the Escrow Account for the entire amount of unpaid Bank fees, costs or charges arising out of or relating to the Escrow Account. Said lien arises and is effective upon the City's written direction to release the Escrow Account to the Contractor. The City shall not be liable for any fees, charges, expenses or commissions relating to the Escrow Account or any Eligible Securities.

**9. Termination of Escrow By Bank.** Bank may terminate the escrow by giving written notice to the City and Contractor. Within twenty (20) calendar days of the receipt of such notice, the City and Contractor shall jointly appoint a successor escrow holder and instruct Bank to deliver all securities and funds of the Escrow Account to said successor. If Bank is not so notified of the appointment of a successor escrow holder, Bank may return all funds, securities and contents of the Escrow Account to the City

#### 10. Definitions

"**Agreement**" shall mean this document, including exhibit, when completely executed by the City, Contractor and Bank.

"**Bank**" shall mean that national or state chartered bank identified in Exhibit A that holds the escrow.

"**Check**" shall mean a check or warrant payable jointly to the Bank and Contractor, representing accrued Retainage.

"**City**" shall mean the City of Everett, a municipal corporation of the State of Washington

"**Completion Date**" shall mean that date occurring immediately after the expiration of the project duration (as defined by the contract for the public improvement), including any agreed extensions thereof. The initial Completion Date can be found at the top of the first page of this Agreement.

"**Contractor**" shall mean the undersigned contractor.

"**Escrow Account**" shall mean the escrow created by this Agreement.

"**Eligible Securities**" are those bonds and securities identified in the paragraph entitled, **Eligible Securities** on page 1 above.

"**Retainage**" shall mean moneys reserved by the City under the provisions of a public improvement contract.

**11. Miscellaneous.** With the possible exception of any agreement between the Bank and Contractor regarding amount and payment of fees, commissions and charges related to the Escrow Account, this document contains the entire agreement between the Bank, Contractor and the City with respect to this Escrow Account. This Agreement binds the assigns, successors, personal representatives and heirs of the parties hereto. Those persons executing this Agreement represent and warrant they are duly authorized to bind their principals to this Agreement and to execute this Agreement on their behalf. Venue for any dispute arising out of, or related to, this Agreement shall be Snohomish County, Washington. This Agreement shall be executed in triplicate, each of which shall be deemed to be an original.



<p>AGREED AND ACCEPTED this the ____ day of _____, 20__.</p> <p>Contractor:</p> <p>By: _____</p> <p>Typed or Printed Name: _____</p> <p>Title: _____</p> <p>Address: _____</p> <p>City: _____</p> <p>State: _____ Zip: _____</p>	<p>AGREED AND ACCEPTED by the City of Everett this the ____ day of _____, 20__.</p> <p>By _____</p> <p>Cassie Franklin, Mayor</p> <p>ATTEST:</p> <p>City Clerk</p>
<p>PART 1 - AGREED AND ACCEPTED this the ____ day of _____, 20__.</p> <p>BANK: _____</p> <p>By: _____</p> <p>Typed or printed name: _____</p> <p>Its _____</p>	<p>STANDARD DOCUMENT APPROVED AS TO FORM OFFICE OF THE CITY ATTORNEY (10.22.21)</p>

## EXHIBIT A

**City Supplied Information.** The City provides the following information:

CITY SUPPLIED INFORMATION		
Project		
	Name	Work Order # (if applicable)
Contractor		
	City Vendor #	
Bank		
	City Vendor #	
Completion Date	(as of Agreement date)	

**Bank Supplied Information.** Bank provides the following information:

BANK SUPPLIED INFORMATION		
Bank		
	Name	
	Branch	
	Address/Phone	
	Contact Person/Account Officer	
Escrow Account		
	Account Name	Bank Account #

**Contractor Supplied Information.** Contractor provides the following information:

CONTRACTOR SUPPLIED INFORMATION		
Contractor		
	Name	
	Address/Phone	
	Representative Authorized to Direct Investment	

**END OF SECTION 00 6125**



## SECTION 00 6363 - CHANGE ORDER - AGREED



Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

**CITY OF EVERETT****CHANGE ORDER***Project Title*

Department \_\_\_\_\_

Work Order No. \_\_\_\_\_

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

Contract Award Date: \_\_\_\_\_

City Staff Contact: \_\_\_\_\_

Change Order No. \_\_\_\_\_

Change Order

Effective Date \_\_\_\_\_

**CONTRACT SUM**

	Original Contract Sum	Total of Previous Change Orders	This Change Order	Contract Sum After this Change Order
Amount	\$	\$	\$	\$
+ WSST	\$	\$	\$	\$
Total	\$	\$	\$	\$

**CONTRACT TIME**

Original Contract Time	Working Days <input type="checkbox"/> / Calendar Days <input type="checkbox"/>
Date of Notice to Proceed	
Cumulative adjustment to time by <i>prior</i> Change Orders	
Adjustment to time by <i>this</i> Change Order	
New Contract Time ( <i>including</i> this Change Order)	0

Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

Contractor and City agree as follows:

1. The scope of Work shall be changed to the extent described in Exhibit A.
2. The amount of this Change Order for the changes described in Exhibit A, represents complete compensation for the changes described in Exhibit A, including all direct and indirect costs and impacts. The Contract Sum shall be adjusted as described in this Change Order.
3. Everett Municipal Code 3.80.050 sets forth the threshold amounts below which the Mayor or his designee is authorized to direct Contractor to perform additional work. In calculating such threshold amounts, Washington State sales tax, as applicable to the Work, has been considered.
4. The Contract Time of the Contract shall be adjusted to the extent described in this Change Order.
5. Contractor waives and releases any and all claims arising out of, or related to, this Change Order, the work described in Exhibit A, and all work and actual or constructive changes that occurred or began prior to the date of this Change Order, including, but not limited to, claims for equitable adjustment of time and compensation, delay, impact, overhead, or inefficiencies. This provision does not apply to requests for equitable adjustment of time or price for which the Contractor timely and properly provided notice of a differing site condition, protest, dispute, claim or Contract Claim as required by the Contract Documents. If the Contract Documents establish a time period for notice of a differing site condition, protest, dispute, claim, or Contract Claim that ends after the date of this Change Order, but relates to work performed prior to the date of this Change Order, then this provision does not apply if the Contractor timely and properly submits such notice
6. This Change Order only changes the contract between Contractor and City to the extent explicitly provided herein.
7. Signature(s) on this Change Order may be by pdf, email, fax or other electronic means, in which case such signature(s) will have the same effect as an original ink signature. This Change Order may be signed in counterparts, each of which shall be deemed an original, and all of which, taken together, shall be deemed one and the same document.

Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

CITY			
   _____ Mayor Date: _____		Attest:	
		Standard Document Approved as to Form Office of the City Attorney (5.13.22)	
		City Clerk Date: _____	
Recommended By:			
Construction Manager (if applicable)	Project Manager (if applicable)	Engineering Manager (if applicable)	Department Director
_____ _ Date: _____ _____	_____ Date: _____	_____ Date: _____	_____ Date: _____
CONTRACTOR			
          By _____ Date: _____ Officer			

## **Exhibit A—Description of Changed Work**

## SECTION 00 6395 - CHANGE ORDER - UNILATERAL



Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

## CITY OF EVERETT

## Unilateral Change Order

*Project Title*

Department

Work Order No.

Contractor:

Contract Award Date:

City Staff Contact:

Change Order No.

Change Order Effective Date

## CONTRACT SUM

	Original Contract Sum	Total of Previous Change Orders	This Change Order	Contract Sum After this Change Order
Amount	\$	\$	\$	\$
+ WSST	\$	\$	\$	\$
Total	\$	\$	\$	\$

## CONTRACT TIME

Original Contract Time	Working Days <input type="checkbox"/> / Calendar Days <input type="checkbox"/>
Date of Notice to Proceed	
Cumulative adjustment to time by <i>prior</i> Change Orders	
Adjustment to time by <i>this</i> Change Order	
New Contract Time ( <i>including</i> this Change Order)	0

Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_



As allowed by the contract, the City directs the Contractor as follows:

1. The Scope of Work shall be changed to the extent described in Exhibit A.
2. The Contract Sum shall be adjusted as described in this Change Order.
3. The Contract Time of the Contract, and contractually scheduled completion date, shall be adjusted to the extent described in this Change Order.
4. Unless the Contractor timely and properly follows the procedures in the Contract Documents for seeking further equitable adjustment of time and compensation, including, but not limited to, delays, impacts, inefficiencies, overhead, and direct and indirect costs, and except as otherwise expressly provided herein, the Contractor will be barred from (a) asserting any claim for further adjustment of time and compensation arising out of, or relating to, the charges described in this Change Order or Work described in Exhibit A and (b) asserting an equitable adjustment of time or price arising earlier than the date of this Change Order. This provision does not apply to requests for equitable adjustment of time or price for which the Contractor timely and properly provided notice of a differing site condition, protest, dispute, claim or Contract Claim as required by the Contract Documents. If the Contract Documents establish a time period for notice of a differing site condition, protest, dispute, claim, or Contract Claim that ends after the date of this Change Order, but relates to work performed prior to the date of this Change Order, then this provision does not apply if the Contractor timely and properly submits such notice.
5. This Change Order only changes the Contract between Contractor and City to the extent explicitly provided herein.

Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

CITY			
   _____ Mayor Date: _____		Attest:	
		Standard Document Approved as to Form Office of the City Attorney (5.13.22)	
City Clerk Date: _____			
Recommended By:			
Construction Manager (if applicable)	Project Manager (if applicable)	Engineering Manager (if applicable)	Department Director
      Date: _____	      Date: _____	      Date: _____	      Date: _____

Change Order No. \_\_\_\_\_

Change Order Effective Date: \_\_\_\_\_

**Exhibit A—Description of Changed Work**

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## 1. GENERAL INFORMATION

### 1.1 DEFINITIONS OF WORDS AND TERMS

Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine and feminine of all words and terms.

**Addenda:** Written or graphic instruments issued prior to the opening of Bids that clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

**Additive:** A supplemental unit of work or group of bid items, identified separately in the Bid Form, that may, at the discretion of the City, be awarded in addition to the base Bid.

**Alternative or Alternate:** One of two or more units of Work or groups of bid items, identified separately in the Bid Form, from which the City may make a choice between different methods or material of construction for performing the same Work.

**Application for Payment:** Form acceptable to Owner that Contractor is to use during the course of the Work in requesting progress or final payments that is to be accompanied by such supporting documentation as is required by the Contract Documents.

**Architect:** An individual or entity retained by the Owner to be the Owner's representative with regard to matters of design intent. The terms "Owner's Representative", "Engineer" and "Architect" are interchangeable.

**Award Date:** The date of the formal action by the Everett City Council to accept the lowest responsible and responsive Bidder for the Work.

**Bid:** The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

**Bid Form:** The form provided to Bidders by the City for submittal of a Proposal or Bid to the City for a specific project.

**Bidder:** An individual, partnership, firm, corporation, or joint venture, submitting a Bid.

**Bid Opening Date:** The date the Everett City Clerk publicly opens and reads the Bids.

**Call for Bids (Advertisement for Bids):** The published public notice soliciting or Bids for Work stating, among other things, the time, place, and date for receiving and opening the Bids.

**Change Order:** Reference to Change Order shall include all rights of the Owner and Contractor under **ARTICLE 6. CHANGES**.

**Completion Date:** Date on which Project is ready for Final Acceptance. All physical Work, including Punch List, is complete and Contractor has completed and fulfilled all contractual obligations except any maintenance of landscaping. Contractual obligations that must be fulfilled prior to achievement of the Completion Date include, but are not limited to, the Contractor's furnishing all documentation (including correct, complete and accurate as-built or record drawings) and operation and maintenance manuals and transfer of warranties.

**Contract:** Agreement signed by the Owner and Contractor (Section 005213). Depending on context, "Contract" may also refer to the Contract Documents as a whole. Contract Documents are defined in section 1.2 below.

**Contract Claim:** Any request by the Contractor for additional time or money (adjustment of Contract Sum or Contract Time) irrespective of the cause or reason for the request. Contract Claims include, but are not limited to, requests by the Contractor for additional time or money

due to Extra Work, inefficiencies, Delays, interferences, and problems with the design. Contract Claim includes, but is not limited to, claims or requests by Subcontractors for extensions of Contract Time, adjustment of Contract Sum, additional compensation that the Contractor attempts to pass through or assert against the Owner, or claims against the Owner arising out of a third party's claim against the Contractor.

**Contract Sum:** The price in dollars stated in the Contract to be paid by the Owner to the Contractor for the Work described in the Contract Documents, as modified by any Change Orders.

**Contract Time:** The duration of the Project as stated in the Contract and as modified by any Change Orders.

**Contractor:** The individual or entity with whom Owner has entered into the Agreement.

**Day:** Calendar day, unless explicitly stated otherwise.

**Delay:** Any increase of the duration of the critical path of the Project.

**Dispute:** Any controversy or disagreement.

**Drawings:** That part of the Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor Submittals are not Drawings as so defined.

**Effective Date of Agreement:** See **18.10 EFFECTIVE DATE**.

**Engineer:** An individual or entity retained by the Owner to be the Owner's representative with regard to matters of design intent. The terms "Owner's Representative", "Engineer" and "Architect" are interchangeable.

**Equipment:** Mechanical, electrical, instrumentation, or other devices with one or more moving parts, or devices requiring an electrical, pneumatic, electronic, or hydraulic connection.

**Extended Overhead:** The increase in Overhead costs attributable to an extension of Contract Time.

**Extra Work:** Providing materials and Equipment and the performance of Work not directly called for in, or implied by, the Contract Documents, such that Contractor would be entitled to an adjustment of Contract Sum and possibly an extension of Contract Time.

**Field Order:** A written order issued by Owner's Representative that requires minor changes in the Work, but does not involve a change in the Contract Sum or the Contract Time.

**Final Acceptance:** Formal action by Everett City Council determining that all of the Contractor's Work has been completed, except for any landscaping maintenance.

**Float:** The amount of time between the early start date and the late start date, or the early finish date and the late finish date of any activity in the project schedule.

**Force Account:** Costs of performing Work as defined in **9.6. FORCE ACCOUNT**.

**Furnish, Install, Perform, Provide, Supply:** The word "Furnish" or the word "Install" or the word "Perform" or the word "Provide" or the word "Supply," or any combination or similar directive or usage thereof, shall mean furnishing and incorporating in the Work including all necessary labor, materials, equipment, and everything necessary to perform the Work indicated, unless specifically limited in the context used.

**General Conditions:** This Section 007200 of the Contract Documents.

**May:** Conduct that is permitted, but not required.

**Milestone:** A principal event specified in the Contract documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

**Notice:** A signed, written communication by the Contractor to the Owner as described in **ARTICLE 10. NOTICE TO OWNER.**

**Notice of Award:** The written notice from the City of Everett to the successful Bidder signifying the City's acceptance of the Bid. No Contract is formed until the Effective Date.

**Notice to Proceed:** The written Notice from the Owner or Owner's Representative to the Contractor authorizing and directing the Contractor to proceed with the Work and establishing the date on which the Contract Time begins. Multiple and partial Notices to Proceed may be issued on a single Project.

**Over-absorbed Overhead:** Over recovery of fixed indirect costs that occurs when a Contractor performs more overall Work than it otherwise would have performed.

**Overhead:** For the purpose of calculating additional compensation under this section of the Contract, Overhead shall include only those costs that are expended for the administration of the business as a whole. Such costs usually accrue or are incurred due to the passage of time, and cannot be traced to a particular project or Contract. Examples of possible Overhead costs include, but are not limited to, General and Administrative salaries and benefits, rent, general company insurance (exclusive of insurance on owned equipment that is directly job costed), depreciation on office facilities, utilities, maintenance, office supplies, general company accounting and legal fees (exclusive of amounts expended directly on any specific project), personal property taxes, general company business licenses, dues and subscriptions.

The following costs and expenses are excluded from the definition and calculation of Overhead. Overhead costs that vary substantially with the volume of Work performed (as measured by billings) shall not be included in Overhead for the purpose of determining additional compensation for Extended or Unabsorbed Home Office Overhead or both.

Examples of costs that are not included in Overhead include, but are not limited to, travel and business meetings, telephones, professional fees expended for the benefit of a specific project, union welfare benefits, payroll taxes and equipment rental.

If related party transactions are included in a Contractor's Overhead, they shall be explicitly identified as related party transactions and shall not exceed amounts that would be incurred in an arms-length transaction for the provision of the same or similar goods and services. If such transactions exist and the amounts paid by the Contractor and included in Overhead are in excess of that which would normally be expended in an arms-length transaction, an adjustment, in the form of a reduction in the amount for calculation purposes, shall be included in any calculation in determining the amount of Allocable Overhead.

Overhead shall not include any cost directly attributable to a particular project. If a cost can be traced to a particular Contract, the Contractor may not classify the cost as Overhead.

Indirect or home office costs that vary substantially with the amount of Work performed shall not be included in the group of costs comprising Overhead.

Overhead shall not include costs specifically disallowed by Federal Acquisition Regulations, Subpart 31.2 – Contracts with Commercial Organizations, or its successor. Further, "Overhead" shall not include the costs of "field support services" that are more closely direct costs in nature, regardless of the manner in which the Contractor normally accounts for such costs. An example of such disallowed cost would be for material handling and expediting, which are costs incurred for the direct support and benefit of specific project(s).

In addition to compliance with Federal Acquisition Regulations, Subpart 31.2 examples of specific costs not allowed in a calculation under this section of the Contract include, but are not limited to, Incentive Compensation paid to personnel classified as Overhead and otherwise includable under this section of Contract, travel and business meetings, employer paid benefits and taxes on direct payroll costs of any project, insurance costs directly identifiable to a specific project, penalties, and costs incurred regarding company owned equipment normally classified as a direct project costs.

**Owner:** The City of Everett, Washington. "Owner" and the "City" mean the same.

**Owner's Representative:** The person designated in writing and employed or retained by the Owner to act as its representative at the construction Site and to perform construction inspection service and administrative functions relating to this Contract. The terms "Owner's Representative", "Engineer" and "Architect" are interchangeable.

**Person:** Includes individuals, associations, firms, companies, corporations, partnerships, and joint ventures.

**Physical Completion:** Physical Completion Date is the day all of the Work is physically completed on the Project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

**Progress Schedule:** A schedule prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Time.

**Project:** The undertaking to be performed under the provisions of the Contract.

**Punch List:** List of incomplete items of Work and of items of Work that are not in conformance with the Contract Documents, prepared after Substantial Completion.

**Reference Information:** Information provided to the Contractor by the City that is not part of the Contract.

**RCW:** Means the Revised Code of Washington.

**Samples:** Physical examples of materials, Equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

**Schedule of Values:** Allocation of Contract Sum to items of Work as provided in **9.1.1. Schedule of Values**.

**Shall:** Required conduct.

**Shop Drawings:** All drawings, diagrams, illustrations, schedules, and other data or information, which are specifically prepared or assembled by or for Contractor and submitted by Contractor, to illustrate some portion of the Work.

**Shown:** Refers to information presented on the Drawings, with or without reference to the Drawings.

**Site:** Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner that are designated for the use of Contractor.

**Specifications:** That part of the Contract Documents consisting of written descriptions of the technical features of materials, Equipment, construction systems, standards, and workmanship.

**Specify:** Refers to information described, shown, noted or presented in any manner in any part of the Contract Documents.

**Subcontractor:** An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

**Submittals:** The information required by the Contract Documents provided by Contractor to the Owner's Representative or Owner.

**Substantial Completion:** The day on which the Owner or Owner's Representative determines the Owner has full and unrestricted use and benefit of the Project, from both the operational and safety standpoints and only minor incidental Work, replacement of temporary substitute facilities, or minor correction or repair Work remains. Determination of Substantial Completion in whole or in part is solely at the discretion of the Owner. Substantial Completion does not mean complete in accordance with the Contract nor shall Substantial Completion of all or any part of the Project entitle the Contractor to Final Acceptance under the Contract.

**Supplier:** A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or Equipment to be incorporated in the Work.

**Total Float:** The amount of time any given activity or path of activities may be delayed before it will affect the Completion Date.

**Traffic:** Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

**Unabsorbed Overhead:** The reduction or loss of contribution to recovery of the Contractor's Overhead costs realized by the result of reduced Project or Contractor billings, or both, due to any reason whatsoever, including a Project extension.

**Unit Price Work:** Refers to items of Work identified by unit prices in the Bid form.

**Work:** Refers to the Project and the provision of all labor, materials, Equipment, supplies, services, and other items necessary for the execution, completion and fulfillment of the Contract.

## 1.2. CONTRACT DOCUMENTS

The complete Contract includes the following, which are Contract Documents:

1. Federal and state requirements that apply to this Contract and Project;
2. Supplemental agreements between Owner and Contractor, if any, subsequent to the Owner's execution of the Contract and signed by the Mayor of the City of Everett for Owner and by an authorized representative of Contractor
3. Change Orders;
4. Addenda;
5. The Contract;
6. Bid Form;
7. Specifications, including, but not limited to, these General Conditions and other numbered Documents and Sections;
8. Supplementary Conditions, if any;
9. Drawings and plans;
10. City of Everett standard plans in effect as of the date Bids are opened;

11. Notice to Bidders/Instructions to Bidders; and
12. Certifications and affidavits as required by this Contract and by law.

Any inconsistency in the parts of the Contract shall be resolved by following this order of precedence in the list above (e.g., 1 presiding over 2, 3, 4, 5, and 6; 2 presiding over 3, 4, 5, and 6; and so forth). This order of precedence shall not apply when Work is required by one part of the Contract but omitted from another part or parts of the Contract. The Work required in one part must be furnished even if not mentioned in other parts of the Contract.

These parts complement each other in describing the complete Work. Any requirement in one part binds as if stated in all parts. The Contractor shall provide any work or materials clearly implied in the Contract even if the Contract does not mention it specifically. Any inconsistency in the parts of the Contract shall be referred to the Owner's Representative attention for a determination of the intended requirements.

The Work required in one part must be furnished even if not mentioned in other parts of the Contract. If any part of the Contract requires Work that does not include a description for how the Work is to be performed, the Work shall be performed in accordance with standard trade practice(s). For purposes of the Contract, a standard trade practice is one having such regularity of observance in the trade as to justify an expectation that the Contractor will follow or observe the practice in performing the Work. In case of any ambiguity, disagreement or Dispute over interpreting the Contract, the Owner's Representative's decision will be final as provided in these General Conditions.

Approved Shop Drawings, other Contractor's Submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

## **2. SPECIFICATIONS AND DRAWINGS**

### **2.1. INTERPRETATION OF SPECIFICATIONS AND DRAWINGS**

The Specifications and Drawings are intended to be explanatory and supportive of each other. Work specified on the Drawings and not in the Specifications, or vice versa, shall be executed as if specified in both. In the event the Work to be done or matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall immediately ask the Owner's Representative for further explanation and shall comply with such explanation. In the event of doubt or question arising respecting the true meaning of the Specifications or Drawings, Contractor shall refer to the Owner's Representative for his or her decision.

The Specifications may vary in form, format and style. Some specification sections are written in varying degrees of streamlined or declarative style and some sections may be relatively narrative by comparison. Omissions of such words and phrases as "the Contractor shall," "in conformity with," "as shown," or "as specified" are intentional in streamlined sections. Omitted words and phrases shall be supplied by inference. Similar types of provisions may appear in various parts of a section or articles within a part depending on the format of the section. The Contractor shall not take advantage of any variation of form, format or style in making claims for extra Work.

The cross referencing of specification sections under the subparagraph heading "Related Sections include but are not necessarily limited to:" and elsewhere within each specification section is provided as an aid and convenience to the Contractor. The Contractor shall not rely on the cross referencing provided and shall be responsible to coordinate the entire Work under the Contract Documents and provide a complete Project whether or not the cross referencing is provided in each section or whether or not the cross referencing is complete.

Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

No provision of a standard, specification, manual or code, or an instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Owner's Representative, or their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Owner's Representative, or their related entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

## **2.2. DIVISION OF SPECIFICATIONS AND DRAWINGS**

Specifications and Drawings are divided into groups for convenience. These divisions are not for the purpose of apportioning Work or responsibility for Work among Subcontractors, Suppliers and manufacturers. The Contractor is responsible for all Work shown or described, regardless of location(s) in the Contract Documents.

## **2.3. DISCREPANCIES IN SPECIFICATIONS AND DRAWINGS**

### **2.3.1. Errors and Omissions**

If the Contractor, in the course of the Work, becomes aware of any errors or omissions in the Contract Documents or in the Owner's field work, he or she shall immediately inform the Owner's Representative in writing. The Owner's Representative will promptly review the matter and if he or she finds an error or omission has been made, then he or she will determine the corrective actions and advise the Contractor accordingly. If the corrective work associated with an error or omission significantly increases or decreases the amount of Work called for in the Contract, the Owner will issue an appropriate Change Order. After discovery by the Contractor of an error or omission, related work performed by the Contractor shall be done at its risk unless authorized by the Owner's Representative and approved by the Owner. Omissions from the Drawings or Specifications or the misdescription of details of Work that are manifestly necessary to carry out the intent of the Drawings and Specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the Work, but they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

### **2.3.2. Conflicting Provisions**

Figure dimensions on drawings shall govern over scale dimensions and detail drawings shall govern over general drawings. In the event an item of Work is described differently in two or more locations on the Drawings and in the Specifications, the Contractor shall, upon request of the Owner's Representative, submit in writing to the Owner's Representative the description upon which the Contractor relied in preparing its Bid or laying out the Work. If the Owner's Representative directs the Contractor to perform Work in a manner other than that contemplated by the Contractor in preparing its Bid or laying out the Work, Change Order procedures will be followed. In this event, the Contractor shall submit to the Owner's Representative such supporting information, including bidding or layout documents, as may reasonably be necessary for the Owner's Representative to determine whether the Contract Sum is increased, decreased or unchanged by the Change Order.



### 2.3.3. Utilities

#### 2.3.3.1 General

The Owner has endeavored to determine the existence of utilities at the Site of the Work from the records of the owners of known utilities in the vicinity of the Work. The positions of these utilities as derived from such records are shown on the Drawings. No excavations were made to verify the locations shown for underground utilities. The service connections to these utilities are not shown on the Drawings. It shall be the responsibility of the Contractor to determine the exact location of utilities and service connections thereto. Such field verification must be performed in sufficient time so as not to impede the progress of the Work or fabrication of materials to be incorporated into the Work. The Contractor shall call the Utility Location Request Center (one call center) for location of utilities in the field not less than two (2) nor more than (10) ten business days before the scheduled date of commencement of excavation. The Contractor shall make its own investigations, including exploratory excavations, to determine the locations and type of existing utilities, including service connections, prior to commencing work that could result in damage to such utilities. The Contractor shall immediately notify the Owner's Representative as to any utility discovered by him in a different position than shown on the Drawings or which is not shown on the Drawings. No excavation shall begin until all known facilities in the excavation areas have been marked. Contractor shall coordinate its activities with the utility provider. Contractor shall bear the cost of maintaining utility service.

The Contractor should be aware of, and comply with, Chapter 19.122 RCW, a law relating to underground utilities. The Owner shall not pay Contractor any of Contractor's cost of complying with this law, or repairing or indemnifying any damage or injury arising out of Contractor's failure to comply with this law.

Owner does not represent or warrant who may be obligated to pay for the cost of relocation or temporary maintenance of the utility. Contractor shall investigate whether such cost must be borne by the owner of the utility.

Governmental agencies and owners of utilities reserve the right to enter upon streets, alleys, rights-of-way, or easements for the purpose of making changes in their property made necessary by the Work and for the purpose of maintaining and making repairs to their property.

#### 2.3.3.2 Known Utilities

The Contractor shall provide at its sole expense all labor, equipment, materials and services necessary to remove, relocate, or maintain utilities specified on the Drawings. The work on each utility shall be performed in a manner satisfactory to the utility owner. The utility owner has the option of doing such work with its own forces at the Contractor's expense, or permitting the work to be performed by the Contractor.

#### 2.3.3.3 Service Connections

Locations of service connections are not identified on the Drawings. The Contractor shall provide at its sole expense all labor, equipment and material to remove, relocate or maintain service connections. Work on service connections shall be performed in a manner satisfactory to the service connection owner. The service connection owner has the option of doing such work with its own force at the Contractor's expense, or permitting the work to be performed by the Contractor.

#### 2.3.3.4 Unknown Utilities

When a utility interferes with the Work and is either (1) not identified on the Drawings or (2) located in a position significantly different from that specified on the Drawings, Contractor shall follow the procedures of **ARTICLE 11. DIFFERING SITE CONDITIONS**. Interference with the Work is defined as a utility that crosses or projects into the plane of the Work at an elevation

between the top and bottom of the Work. If it is necessary to remove, relocate, or temporarily maintain the utility, that work shall be included in a Change Order. The utility owner has the option of doing such work or permitting the work to be performed by the Contractor. In either case, the cost of the work incurred by or charged to the Contractor will be included in a Change Order.

## **2.4. SUBMITTALS**

Where required by the Contract Documents, the Contractor shall submit information which will enable the Owner's Representative to advise the Owner whether the Contractor's proposed materials, Equipment or methods of work are in general conformance to the design concept and in compliance with the Drawings and Specifications, such as catalog cuts and shop, working or detail drawings. In its Submittals, the Contractor shall expressly and explicitly notify the Owner's Representative of any and all deviations from the Specifications. Without express and explicit Notice of a deviation from the Contract requirements, approval of a Submittal does not relieve Contractor from complying with Contract requirements. The Owner's approval of a Submittal does not constitute a waiver of the Contract requirements. The Owner or Owner's Representative shall respond to a Submittal within thirty (30) days of receipt. The Owner or Owner's Representative may extend this time for good cause by notifying the Contractor. The Owner will not be obligated to accept or pay for Work performed by the Contractor that may be affected by materials, Equipment, or methods of work not submitted in a timely manner so that final review can be accomplished before the affected Work is complete. The Owner shall not be responsible for Delays, inefficiencies, or any additional costs or expenses caused in whole or in part by Contractor's failure to submit required information in sufficient time for review, comment, and correction. Contractor's failure to submit required information in sufficient time for review, comment and correction shall be deemed a waiver of any and all Contract Claims for adjustment of Contract Sum or Contract Time arising out of, or related to, such a Submittal. Contractor acknowledges and agrees that it may not rely upon receiving the Owner's response to a Submittal in less than thirty (30) days, unless the Owner explicitly changes this section by a signed Change Order. Requests for information or clarification from the Contractor to the Owner shall be treated as a Submittal.

## **2.5. CONTRACTOR'S COPIES OF CONTRACT DOCUMENTS**

The Contractor shall keep at the construction site at least one set of Contract Documents and one set of full-size Drawings that shall be available to the Owner's Representative and Owner.

## **3. OWNER**

### **3.1. GENERAL**

The Owner, and the Owner's Representative, shall have the authority to act as the sole judge of the Work, Equipment and materials with respect to both quantity and quality as set forth in the Contract. It is expressly stipulated that the Drawings, Specifications and other Contract Documents set forth the requirements as to the nature of the completed Work and do not purport to control the method of performing Work except in those instances where the nature of the completed Work is dependent on the method of performance.

The Owner has the authority to act, do, perform, and make any all decisions and actions authorized by the Contract Documents, including, but not limited to, Change Orders, progress payments, Contract decisions, acceptability of the Contractor's Work, and early possession. The Owner has the authority to accept or reject requests for progress payments that have been submitted by the Contractor and recommended by the Owner's Representative. The Owner has the authority to make determinations of the acceptability of the Work. The Owner also has the

authority to accept or reject the Owner's Representative's recommendations regarding retention of defective Work.

### **3.2. OWNER'S REPRESENTATIVE**

The Owner's Representative shall be satisfied that all the Work is being done in accordance with the requirements of the Contract. The Contract and Specifications give the Owner's Representative authority over the administration of the Contract. Whenever it is so provided in this Contract, the decision of the Owner's Representative shall be final.

The Owner's Representative's decisions will be final on all questions including but not limited to, unless specifically assigned to an Architect or Engineer, the following:

1. Measurement of Work, whether lump sum, Force Account, or unit price;
2. Acceptability of rates of progress on the Work;
3. Interpretation of Drawings and Specifications with regard to administrative matters;
4. Determination as to the existence of changed or differing site conditions;
5. Fulfillment of the Contract by the Contractor;
6. Payments under the Contract including adjustment and;
7. Suspension(s) of Work.

If the Contractor fails to respond promptly to the requirements of the Contract or orders from the Owner's Representative:

1. The Owner's Representative may use the Owner's resources, other contractors, or other means to accomplish the Work, and
2. The Owner will not be obligated to pay the Contractor, and will deduct from the Contractor's payments, any costs that result when any other means are used to carry out the Contract requirements or Owner's Representative's orders.

At the Contractor's risk, the Owner's Representative may suspend all or part of the Work if:

1. The Contractor fails to fulfill Contract terms, to carry out the Owner's Representative's orders, or to correct unsafe conditions of any nature; or
2. It is in the public interest.

The Owner's Representative and Owner shall have complete access to the Work and to the Site of the Work and to the places where Work is being prepared or where materials, Equipment, and machinery are being obtained for the Work. If requested by the Owner's Representative or Owner, the Contractor shall provide the assistance necessary for obtaining such access, and shall provide information related to the inspection of construction. Absence of such access or information, as needed, may result in the Owner's refusal to accept the Work.

The Owner's Representative has the authority to recommend Change Orders, but does not have authority to approve Change Orders. Proposed Change Orders are subject to review and approval by the Owner. No proposed Change Order or any change of Contract Sum or Contract Time is effective or binding upon the Owner unless and until the Mayor or his or her designee signs it, as authorized by City Council or by ordinance.

To detail and illustrate the Work, the Owner's Representative may furnish to the Contractor additional Drawings and explanations consistent with the original Drawings. The Contractor shall perform the Work according to these additional Drawings and explanations.

The Owner's Representative may appoint assistants and inspectors to assist in determining that the Work and materials meet the Contract requirements. Assistants and inspectors have the authority to reject defective material and suspend Work that is being done improperly, subject to the final decisions of the Owner's Representative or, when appropriate, the Owner.

Assistants and inspectors are not authorized to accept work, to accept materials, to issue instructions, or to give advice that is contrary to the Contract. Work done or material furnished which does not meet the Contract requirements shall be at the Contractor's risk and shall not be a basis for a Contract Claim even if the Owner's Representative, inspectors or assistants purport to change the Contract.

Assistants and inspectors may advise the Contractor of faulty Work or materials or infringements of the terms of the Contract; however, failure of the Owner's Representative or the assistants or inspectors to advise the Contractor does not constitute acceptance or approval.

The Contractor shall submit supplemental working or detail drawings as required for the performance of the Work pursuant to **2.4. SUBMITTALS**. Except as noted, all drawings and other Submittals shall be delivered directly to the Owner's Representative. The drawings shall be on sheets measuring 22 by 34 inches, 11 by 17 inches, on sheets with dimensions in multiples of 8 1/2 by 11 inches, or other size approved by the Owner consistent with the Work to be detailed. Contractor shall provide drawings far enough in advance of ordering or installation to allow for review by the Owner's Representative or other agencies and possible resubmittal and further review after resubmittal. After a plan or drawing has been reviewed and returned to the Contractor, all changes proposed by the Contractor may be submitted to the Owner's Representative for review and comment.

The Contractor shall obtain the Owner's Representative's written acknowledgement of approved Submittals before proceeding with the Work represented by the Submittal. Such review does not impose any responsibility upon the Owner, nor does it relieve the Contractor of any responsibility for the accuracy of the Submittal or its conformity with the Contract. The Contractor shall bear all risk and all costs of any Work delays caused by resubmittal or correction of Submittals. The Contractor shall allow sufficient time for Owner's review of Submittals and possible corrections by the Contractor so as not to delay the Work.

The Contractor's Bid price shall include all costs of all Submittals, including, but not limited to, working, detail and shop drawings.

## **4. CONTRACTOR**

### **4.1. CONTRACTOR'S REPRESENTATIVE**

The Contractor shall notify the Owner in writing of the name of the person who will act as the Contractor's representative and shall have the authority to act in matters relating to this Contract. This person shall have authority to carry out the provisions of the Contract and to supply materials, Equipment, tools and labor without delay for the performance of the Work.

Contractor shall employ and keep on Site on a full time basis personnel experienced in the management of construction of projects of this size and type. These shall include, but not be limited to, a project manager and superintendent. Neither the Contractor's project manager nor the superintendent shall have supervisory responsibility for other Projects for the Contractor while assigned to this Project. Contractor shall employ and assign such additional, full time office, support and engineering personnel to support the project manager and superintendent and allow timely completion of the Project. The project manager and superintendent shall be approved by the Owner, and such approval shall not be unreasonably withheld. Contractor

acknowledges that one of the instances in which it will be reasonable for the Owner to withhold consent is if the project manager or superintendent is different than as stated in the Bidder Qualification Statement. Contractor shall submit personnel qualifications within ten (10) days of Contractor's execution of the Contract. Bases for disapproval include, but are not limited to, lack of sufficient experience managing the construction of similar type or size projects or relationships on other projects unsatisfactory to the Owner. Owner may require removal and replacement of Contractor's supervisory staff who are disruptive or who appear to lack sufficient competence to complete the Project successfully.

#### **4.2. CONSTRUCTION PROCEDURES**

The Contractor shall supervise and direct the Work and determine the means, methods, techniques, sequences and procedures of construction, except in those instances where the Owner, to define the quality of an item of Work, specifies in the Contract, a means, method, technique, sequence or procedure for construction of that item of Work.

#### **4.3. SUBCONTRACTORS**

Unless explicitly specified elsewhere in the Contract Documents or expressly authorized in writing by the Owner before Contractor submits its Bid, the Contractor shall perform with its own organization at least one-third of the Work by dollar volume and Contractor shall not sublet to a single Subcontractor more than one-half of the Project. A Subcontractor of the Contractor shall not sublet to another Subcontractor more than one-half of its work without the written consent of the Owner obtained within twenty (20) days of award of the Contract to the Contractor. The Owner may refuse to approve such subcontract for any reason. Only unit price and Schedule of Value items of the Contract will be used in computing the total Work. The Owner may, at its sole option, refuse to approve a Subcontractor that is also providing services to the Owner on the same project.

Subcontractors will be considered agents of the Contractor and their work shall be subject to the provisions of the Contract. References in the Contract Documents to actions required of Subcontractors, manufacturers, Suppliers, or persons other than the Contractor, the Owner or the Owner's Representative shall be interpreted as requiring that the Contractor shall require such Subcontractor, manufacturer, Supplier or Person to perform the specified action.

Contractor shall comply with RCW 39.04.250 and RCW 39.76.011, as amended, and any successor and other laws, ordinances, and regulations regarding payment of Subcontractors. Contractor shall also comply with the requirements of RCW Chap. 60.28 and any other law, ordinance, or regulation relating to the release of retainage to Subcontractors.

The Contractor shall specifically include in each of its first tier subcontracts the language in this section with regard to the Subcontractor's obligation to meet bidder responsibility criteria, and shall require each of its Subcontractors to include substantially 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.

At the time of subcontract execution, the Contractor must verify that each of its first tier subcontracts meets the following bidder responsibility criteria:

1. At the time of subcontract Bid Submittal, have a certificate of registration in compliance with Chapter 18.27 RCW;
2. Have a current state unified business identifier number;
3. If applicable, have:

- a. Industrial insurance coverage for the Subcontractor's employees working in Washington as required in Title 51 RCW;
  - b. An employment security department number as required in Title 50 RCW;
  - c. A state excise tax registration number as required in Title 82 RCW;
  - d. An electrical contractor license, if required by Chapter 19.28 RCW;
  - e. An elevator contractor license, if required by Chapter 70.87 RCW.
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).
  5. If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation;
  6. Within the three-year period immediately preceding the date of the bid solicitation, not have been 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 to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW; and
  7. Have received training on the requirements related to public works and prevailing wage under in accordance with the requirements of RCW 39.04.350(f), or demonstrate exemption from such requirements.

The Contract Documents shall apply to Subcontractors and Suppliers as if each had signed the Contract with the Owner. Contractor shall include the provisions of these Contract Documents or a "flow down" clause in each contract with Subcontractors and Suppliers.

#### **4.4. RESPONSIBILITIES**

##### **4.4.1. Subcontractors, Manufacturers and Suppliers**

The Contractor shall be responsible for the adequacy, efficiency and sufficiency of Subcontractors, manufacturers, Suppliers and their employees.

##### **4.4.2. Contractor's Employees**

The Contractor shall be responsible for the adequacy, efficiency and sufficiency of its employees. Workers shall have sufficient knowledge, skill and experience to perform properly the Work assigned to them.

##### **4.4.3. Payment for Labor and Materials**

The Contractor shall pay and require its Subcontractors to pay any and all accounts for labor including Worker's Compensation premiums, State Unemployment and Federal Social Security payments and other wage and salary deductions required by law. The Contractor also shall pay and cause its Subcontractors to pay any and all accounts for services, Equipment, and materials used by him and its Subcontractors during the performance of Work under this Contract. The Contractor shall pay such accounts as they become due and payable. If requested by the Owner, the Contractor shall promptly furnish proof of payment of such accounts to the Owner.

**4.4.4. Attention to Work**

The Contractor, acting through its representative, shall give personal attention to and shall manage the Work so that it shall be prosecuted faithfully and completed under the Project schedule. When its representative is not personally present at the Project Site, its designated alternate shall be available and shall have the authority to act in matters relating to this Contract.

**4.4.5. Safety**

The Contractor alone shall be responsible for safety on the job Site, including, but not limited to, the safety of its and its Subcontractor's employees. The Contractor shall maintain the Project Site and perform the Work in a manner which meets the Owner's responsibility under statutory and common law for the provision of a safe place to work.

**4.4.6. Threats, Intimidation and Harassment Forbidden**

Contractor shall not allow its employees, its Subcontractors, its Subcontractors' employees, or any other agents to threaten bodily injury or property damage, to intimidate or attempt to intimidate any person, or to assault or physically harass any person. Forbidden conduct includes, but is not limited to, threatening, appearing, or actually doing any of the following: pushing, shoving, striking, physically blocking a person or a person's vehicle, vandalism, malicious mischief, or any other act that a reasonable person would understand be intended to intimidate, cause personal injury, or cause property damage. Contractor shall remove from the job site any person reasonably under its control or direction who the Contractor or Owner reasonably believes violated this section. The lack of a request from the Owner or Owner's Representative to the Contractor to remove someone from the job Site does not relieve the Contractor from its obligation to remove someone.

**4.4.7. Weapons Forbidden**

Contractor shall not allow its employees, its Subcontractors, its Subcontractors' employees, or any other agents or representatives to carry or possess, openly or concealed, explosives or weapons on the job Site, except: (a) such explosives are as reasonably required for performance of the Work, such as those necessary for blasting or demolition work called for by the Contract Documents or (b) commissioned law enforcement officers or security personnel under authority of their commission. A weapon is any object, instrument or chemical which is (1) designed in such a manner to inflict harm or injury to another person; or (2) any item used in a manner threatening harm or injury to another person. Weapons include, but are not limited to, firearms, dangerous knives, dangerous chemicals, tear gas, martial arts weapons, blackjacks or other weapons. Further, weapons should include those delineated in EMC Chapter 10.78. b. Possession of mace, pepper spray or the like for defensive purposes is not a violation of this policy. Contractor shall remove from the job Site any person reasonably under its control or direction who the Contractor or Owner reasonably believes violated this section. The lack of a request from the Owner or Owner's Representative to the Contractor to remove someone from the job Site does not relieve the Contractor from its obligation to remove someone.

**4.4.8. Safety Standards**

The Contractor shall comply with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor Regulations (29 CFR, Part 5). Under this section, the Contractor shall not require any laborer or mechanic to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to its health and safety as determined under construction, safety, and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchase of supplies or

materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

#### **4.4.9. Public Safety and Convenience**

The Contractor shall conduct its work so as to ensure the least possible obstruction to Traffic and inconvenience to the general public, business, organizations and residents in the vicinity of the Work and to reasonably protect persons and property. No roads or street shall be closed to the public except with the permission of the Owner's Representative and the proper governmental authority. Fire hydrants on or adjacent to the Work shall be accessible to firefighting Equipment. Temporary provisions shall be made by the Contractor for the use of sidewalks, private and public driveways and proper functioning of gutters, sewer inlets, drainage ditches and culverts, irrigation ditches and natural water courses.

#### **4.4.10. Access to Work**

Owner, Owner's Representative, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

#### **4.4.11. Emergencies**

In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Owner's Representative prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Owner's Representative determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### **4.4.12. Trench Excavation**

For all trench excavations that exceed a depth of four feet, the Contractor must use adequate safety systems that meet the requirements of the Washington Industrial Safety and Health Act, chapter 49.17 RCW.

#### **4.4.13 COVID-19 Requirements**

The Contractor shall be in compliance at all times with all governmental laws, regulations, requirements, and orders relating to COVID-19 applicable to the Work, including without limitation OSHA, L&I or other safety rules relating to COVID-19 and COVID-19 gubernatorial proclamations and orders. These laws, regulations, requirements, and orders are referred to as "COVID-19 Requirements."

Contractor's Bid includes all costs necessary for the duration of the Work for compliance with COVID-19 Requirements. Contractor's Bid takes into account that COVID-19 Requirements may create direct and indirect costs, including inefficiency and delay.

Contractor shall have no entitlement to an adjustment or other increase to the Contract Sum for any direct or indirect costs (including without limitation delay, cumulative impact, inefficiency or ripple costs) incurred by the Contractor to comply with COVID-19 Requirements.



#### **4.5. OWNER-CONTRACTOR COORDINATION**

##### **4.5.1. Service of Notice**

Contractor agrees that any Notice, order, direction, request or other communication by the Owner's Representative or Owner to the Contractor shall be deemed received by the Contractor if left at any office used by the Contractor or delivered to any of the Contractor's officers, clerks or employees or posted at the site of the Work or mailed to any post office addressed to the Contractor at the address given in the Contract Documents or mailed to the Contractor's last known place of business. If mailed, any form of communication will be deemed to have been given to and received by the Contractor the day after the day of mailing.

##### **4.5.2. Suggestions to Contractor**

Nothing in these Contract Documents requires the Owner's Representative to provide the Contractor with direction or advice on how to do the Work, construction practices, or means and methods. If the Owner's Representative approves, suggests or recommends any construction practice, means, method or manner for doing the Work or producing materials, the approval or recommendation shall not: (A) guarantee that following the method or manner will result in compliance with the Contract Documents; (B) relieve the Contractor of any risks or obligations under the Contract Documents; or (C) create any liability by the Owner to the Contractor.

Suggestions as to the plans or methods of accomplishing the Work or Contract requirements by the Owner or the Owner's Representative to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor. The Owner and the Owner's Representative assume no responsibility therefore and in no way will be held liable for any defects in the Work which may result from or be caused by use of such plan or method or Work.

##### **4.5.3 Meetings with Owner**

The Contractor shall have its duly authorized representative attend periodic informational meetings with the Owner's Representative and City staff, as reasonably required by the Owner.

Contractor, Owner, and Owner's Representative shall meet as often as determined by the Owner's Representative, but no less often than once each month. The purpose of the meeting is to review Project status in relation to the construction schedule; review value of Work completed during the previous month; and, if applicable, review Contractor's plans to return Project status to that required by the schedule. If requested by the Owner or Owner's Representative, the Contractor shall submit a written progress report within five (5) days following this meeting, comprising:

1. The current construction schedule indicating percent complete, actual completion or start dates since the previous review, the estimated remaining duration for each activity in progress, Schedule of Values update, and narrative summary.
2. Reasons any activities are behind schedule and the corrective steps being taken.

##### **4.5.4. Cooperation with Others**

The Contractor agrees to permit entry to the Site of the Work by the Owner, its employees or other contractors performing work on behalf of the Owner. The Contractor shall afford to the Owner, other contractors and their employees, reasonable facilities and cooperation and shall arrange its work and dispose of its materials in such a manner as to not interfere with the activities of the Owner or of others upon the Site of Work. The Contractor shall promptly make good any Contractor-caused injury or damage to persons or property that may be sustained by

other contractors or employees of the Owner. The Contractor shall join its work to that of others and perform its work in proper sequence in relation to that of others.

If requested by the Contractor, the Owner will arrange meetings with other contractors performing work on behalf of the Owner to plan coordination of construction activities. The Contractor shall inform itself of the planned activities of other contractors and will coordinate its work with the other contractors.

Contractor shall notify the Owner of problems, interference or any difficulty with other contractors or workers engaged by the Owner. The Notice shall be sufficiently prompt and specific so as to allow the Owner to mitigate or avoid increased costs, time of performance, damages or injury. Contractor's failure to provide such Notice in a timely way shall be deemed a waiver and release of any and all Contract Claims relating to, arising out of, or caused by, any alleged interference, difficulty or problem with another contractor or worker engaged by the Owner.

## **5. PROGRESS AND COMPLETION**

### **5.1. NOTICE TO PROCEED**

Following execution of the Contract by the Owner, the Owner or Owner's Representative will give the Contractor a written Notice to Proceed. Notwithstanding other provisions of the Contract, the Contractor shall not be obligated to perform Work, and the Owner will not be obligated to accept or pay for Work performed by the Contractor or be liable for any Delays, prior to delivery of the Notice to Proceed. The Owner's knowledge of Work being performed prior to delivery of the Notice to Proceed will not obligate the Owner to accept or pay for such Work. Contractor waives any and all Contract Claims for an adjustment of Contract Sum and Contract Time arising out of, or related to, work it performs prior to receipt of the Notice to Proceed. The Owner may issue partial Notices to Proceed.

### **5.2. CONTRACT TIME**

#### **5.2.1. General**

**TIME IS OF THE ESSENCE IN PERFORMING THE CONTRACT.** Failure to complete the Project within the contractually specified time may affect other Projects and Owner activities. Contract Time starts upon the later of the issuance of the Notice to Proceed or a date specified in the Notice to Proceed. The Contractor shall promptly start the Work as soon as possible after the date of the Notice to Proceed and shall prosecute the Work so that the various portions of the Project shall be completed in accordance with the Contract Time period. Contractor shall perform its work at such times and in such ways that the Work is not damaged by weather such as wind, rain, or snow. Contractor shall correct or repair at its sole expense any Work damaged by weather, irrespective of whether such damage is covered by insurance. No portions of the Work where acceptable quality will be affected shall be constructed while unfavorable conditions exist. By bidding on the Project and executing a Contract to perform the Work, Contractor agrees the contractually required completion dates are feasible, reasonable, and achievable for the Contract Sum. Contractor represents that it has considered all factors relevant to its price and achieving the Completion Dates, including, but not limited to, weather, Site access, labor conditions and the availability of materials, supplies and Equipment. Compliance with **ARTICLE 10. NOTICE TO OWNER, ARTICLE 12. CONTRACT CLAIMS, and 5.2.2. Construction Schedule** are conditions precedent to a request for, consideration of, and grant of, any extension of Contract Time. Failure to request a time extension in the manner and in the time required by this section, and the Specifications referred to herein, constitutes a waiver by the

Contractor of any and all entitlement to an extension of time and any adjustment of Contract Sum arising out, or related to, such Delay.

## **5.2.2. Construction Schedule**

### **5.2.2.1 General**

Contractor shall submit, update and maintain schedules as required by the Contract Documents.

The Contractor shall provide sufficient material, equipment, and labor to meet the interim milestones, Substantial Completion, Physical Completion and Completion Dates provided by the Contract Documents. The Owner allocates its resources to a Contract based on the total time allowed in the Contract. The Contractor may submit a schedule indicating Completion Date earlier than the end of Contract Time, but Owner cannot guarantee its resources will be available to meet such schedule. Owner shall not pay or be liable for any additional compensation if the Contractor is not able to meet a schedule that indicates a Completion Date earlier than the end of Contract Time.

Failure to schedule Owner furnished or installed materials and Equipment for installation on or after its planned arrival pursuant to the Owner's contract with the supplier or failure to Notify the Owner of tasks dependent upon the fact or date of arrival of such Owner furnished materials and Equipment, constitute a waiver by Contractor of any Contract Claim arising out of or related to the timeliness of the furnishing or installation of such material and Equipment. All schedules must allow for timely incorporation of any other's work under separate contract with Owner and for timely incorporation of work provided and installed by Owner. Unless otherwise expressly authorized in writing by the Owner's Representative, the Contractor must integrate the schedules with the Schedule of Values and unit price items so that each construction activity is represented by a dollar value.

Float in a Progress Schedule belongs to the Owner.

Subcontractors shall review all schedules prior to submission to the Owner and Owner's Representative. At the Owner's option and sole discretion, Owner may require Contractor to obtain written acceptance of each schedule by Subcontractors as practical and feasible, as the schedule relates to Subcontractors' work.

Contractor shall not schedule any activity with an unrealistic, unduly long, or unduly short duration. Contractor shall use its best efforts in good faith to set reasonable durations for all activities. Contractor shall not attempt to "grab the Float" or make any effort to use any Float in the Progress Schedule for the benefit of the Contractor.

Contractor shall submit with each Application for Payment or progress pay estimate an updated Progress Schedule, but no less often than monthly. If requested by the Owner's Representative or the Owner, Contractor shall prepare and submit updated Progress Schedules from time to time, which may be more frequent than monthly.

The Contractor hereby expressly agrees and acknowledges that any failure by Contractor to provide accurate, complete, current and updated schedules with each and every progress pay estimate or Application for Payment constitutes a waiver of any and all claims or requests for adjustment of Contract Sum or Time that arise out of, result from, or are caused by, any Delay on the Project or scheduling of the Work. Timely submission of monthly updated schedules is a condition precedent to any later or subsequent Contract Claim or request for an adjustment of either Contract Sum or Time related to or arising out of time, an alleged Delay, or the schedule or sequence of Work. Similarly, the parties agree the Owner may withhold progress pay estimates if updated schedules are not timely submitted. These remedies are cumulative and not exclusive of any other remedy. The Owner's use of one or more of these remedies does not

constitute an election or prevent the Owner from pursuing other remedies for this or other defaults.

The Owner's Representative's review of any schedule shall not transfer any of the Contractor's responsibilities to the Owner. The Contractor alone shall remain responsible for adjusting forces, equipment, and work schedules to ensure completion of the Work within the Contract Time. Review by the Owner or Owner's Representative shall not constitute approval or acceptance of the Contractor's construction means, methods, sequencing, logic, order, precedence and succession of activities or Contractor's ability to complete the Work in a timely manner. Any mistakes or errors in any schedule, including, but not limited to, mistakes or errors of logic, order, precedence, and duration, are and remain the Contractor's. The Owner or Owner's Representative may comment upon the schedule.

#### **5.2.2.2 Extensions of Contract Time**

Any requests for extensions in Contract Time, whether resulting from Extra Work directed by the Owner or not, shall be accompanied by an analysis of schedules using the critical path method. This analysis shall include an updated schedule, an as-planned schedule, an as-built schedule, a but-for schedule, and narrative explaining the alleged causes, schedule impacts and all costs related to or arising out of the proposed extension. Any requests for extensions of Contract Time by the Contractor shall be submitted in accordance with these General Conditions. Extensions of Contract Time will be granted only as provided in the General Conditions and to the extent that affected critical activities exceed the Total Float time along the affected paths of the reviewed Preliminary Schedule at the time the change was authorized in writing by the Owner. Contractor has the burden of clearly and convincingly demonstrating entitlement to any adjustment of Contract Time.

If the Owner is solely responsible for any Delay to Substantial Completion, Physical Completion, Completion Date, or Final Acceptance, the Contractor shall only be entitled to compensation or other damages as described in **12.4 REMEDIES**, provided that Contractor timely gave Notice pursuant to **ARTICLE 10. NOTICE TO OWNER**, timely submitted a Contract Claim pursuant to **ARTICLE 12. CONTRACT CLAIMS** and fulfilled the requirements of **5.2.2. Construction Schedule**.

#### **5.2.3. Construction Progress**

The Contractor shall furnish all labor, materials, facilities and Equipment necessary to insure the prosecution and completion of the Project within the interim milestones, Substantial Completion, Physical Completion and Completion Dates of the Contract. If Work falls seven (7) days or more behind the reviewed Preliminary Schedule, the Contractor agrees that, at its sole cost and expense, it will take all actions necessary to return the Project to the accepted schedule. These actions may include the following:

1. Increase labor in quantities and crafts.
2. Increase the number of working hours per shift, shifts per working day, working days per week, or the amount of Equipment, or any combination of the foregoing.
3. Reschedule activities.

If requested by the Owner's Representative, the Contractor shall prepare a proposed schedule revision demonstrating a plan to make up the lag in progress and insure completion of the Work within the Contract Time. All actions taken to return the Project to the accepted schedule are at the Contractor's expense.

The Contractor shall pay all costs incurred by the Owner that result from the Contractor's action to return the Project to its accepted schedule, including, but not limited to, additional, overtime,

or third party inspection, design and construction management service costs. Contractor agrees that Owner shall deduct such charges from payments due the Contractor. It is further understood and agreed that none of the services performed by the Owner's Representative in monitoring, reviewing and reporting Project status and progress shall relieve the Contractor of responsibility for planning and managing construction Work in conformance with the construction schedule.

#### **5.2.4. Delays**

##### **5.2.4.1 General**

In the event of a Delay, the Contractor shall take immediate steps to minimize the Delay or avoid further Delay. The Contractor agrees it shall not make any Contract Claim or request for adjustment of Contract Time or Contract Sum based upon Delays for which it did not timely provide Notice to the Owner.

##### **5.2.4.2 Bonuses**

If the Contract Documents provide the Contractor with a bonus or other incentive for early completion of a milestone or other completion point, Contractor assumes the risk of Delays caused wholly or partially by third parties. Owner shall not pay any bonus that Contractor would have achieved but for any and all Delays caused in whole or in part by a third party. By way of example only, the Contractor bears the risk of utility companies' failure to locate underground utilities accurately and the Contractor bears the risk of timely asking for the marking of the location of underground utilities.

#### **5.3. SUSPENSION PROCEDURES**

The Owner may, at its convenience and at any time and without cause, suspend all or any part of the Work by notice in writing to the Contractor. The Work shall be resumed by the Contractor within five (5) days after receiving written notice from the Owner to do so. The Contractor will be allowed an increase in the Contract Sum or an extension of Contract Time, or both, directly attributable to any suspension in accordance with the Change Order procedures herein; provided, (1) the Contractor shall not be entitled to any increase to the extent caused by the Contractor and (2) Contract Sum increases and Contract Time extensions for suspension caused by Third Parties or Force Majeure Events are limited as set forth in **12.4.3.4 Third Party Caused Delays and Force Majeure**.

#### **5.4. TERMINATION PROCEDURES**

##### **5.4.1. Termination by Owner for Default**

The Owner may terminate the Contract upon written notice to Contractor and its surety whenever the Contractor is deemed to be in default or fails to fulfill, in a timely and proper manner, one or more Contract obligations, or is in violation of any provisions or covenants of the Contract. Termination shall be effective upon receipt of such notice by the Contractor.

For purposes of this paragraph, the Contractor shall be deemed to be in default upon the occurrence of any one or more of the following events:

1. If Contractor is bankrupt or insolvent.
2. If Contractor makes a general assignment for the benefit of creditors.
3. If a trustee or receiver is appointed for Contractor, or for any of Contractor's property.
4. If Contractor files a petition to take advantage of any debtor's law, or to reorganize under any bankruptcy chapter or law.

5. If Contractor repeatedly fails to make prompt payments to Subcontractors or others for labor, materials, or Equipment.
6. If Contractor disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction.
7. If Contractor disregards the authority of the Owner or Owner's Representative.
8. If Contractor violates in a substantial way the provisions of the Contract Documents or fails, neglects, or refuses to proceed in compliance with the provisions of the Contract Documents.
9. If the Contractor made material misrepresentations to the Owner with respect to: (a) its qualifications or those of its Subcontractors; (b) its or its subcontractors' ability to perform the Work in a timely, workmanlike manner; (c) the materials installed or to be installed; or (d) progress pay estimates.
10. If Contractor fails to supply sufficient skilled workers or suitable materials or equipment.
11. If Contractor refuses or fails to prosecute the Work with such diligence as will ensure its Physical Completion within the original Physical Completion time and any extensions of time which may have been granted to the Contractor by change order or otherwise.
12. If Contractor performs Work which deviates from the Contract.
13. If Contractor otherwise violates in any material way any provisions or requirements of the Contract.

After termination of the Contractor for default, the Owner may transfer performance of the Work to the Contractor's surety. The Owner may exclude the Contractor from the Site and take possession of the Work and all of the Contractor's tools, appliances, owned or rented construction equipment, and machinery at the Site and use the same to the full extent they could be used by the Contractor. The Owner may incorporate in the Work all materials and Equipment stored at the Site or for which the Owner has paid the Contractor, but which are not yet on Site. In such case, the Contractor will not be entitled to receive any further payment until the Work is finished. At the Owner's sole option, Contractor shall assign and transfer any contractual rights to material and Equipment to be installed, incorporated, or used in the performance of the Work. Owner shall credit Contractor for the reasonable fair market rental value of any and all Contractor owned equipment for so long as retained and used by the Owner. Owner shall credit Contractor for all materials and supplies on Site or on order, but not yet paid for by Owner, provided that ownership is transferred and assigned to the Owner and the materials and supplies conform to the requirements of the Contract Documents.

If the unpaid balance of the Contract Sum exceeds the direct and indirect cost of the completed Work, including construction management services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner. Such costs incurred by the Owner will be verified by the Owner's Representative and incorporated into a Change Order, but in finishing the Work, the Owner may negotiate for materials, Equipment and services to complete the Work and will not be required to obtain the lowest figure for Work performed.

Where the Contractor services have been so terminated by the Owner, the termination shall not affect any rights of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies due the Contractor by the Owner will not release the Contractor from liability.

If the Owner terminates this agreement for default, and it is thereafter determined that the Contractor had not so failed to perform its obligations or defaulted in any way, the termination shall then be deemed to have been made for the convenience of the Owner pursuant to **5.4.2 Termination For Convenience**. In that event, any adjustment of Contract Sum shall be in accordance with the General Conditions.

The Contractor covenants and agrees that in the event suit is instituted by the Owner for any default on the part of the Contractor and the Contractor is adjudged by court of competent jurisdiction to be in default, the Contractor shall pay to the Owner all costs, expenses expended or incurred by the Owner in connection therewith.

In exercising the Owner's right to prosecute the Physical Completion of the Work, the Owner shall have the right to exercise its sole discretion as to the manner, method, and reasonableness of the costs of completing the Work. In the event that the Owner takes Bids for remedial Work or Physical Completion of the project, the Contractor shall not be eligible for the Award of such Contracts.

#### **5.4.2. Termination for Convenience**

Without prejudice to any other remedy it may have under law or and/or the provisions of the Contract, the Owner may terminate this Contract for convenience, with or without cause, in whole or in part, at any time by giving written notice to the Contractor. Termination will be effective upon receipt of such Notice by the Contractor. The Contractor shall immediately discontinue Work and take all reasonable steps with its suppliers and subcontractors to minimize cancellation charges and other costs.

In the event of termination for convenience, the Contractor shall be compensated as provided in **9.2.3. Deleted Work**. The Contractor will be entitled to no further payments whatsoever for the Work.

In the event of a breach or default by the Contractor, Owner may, at its sole option, terminate this Contract in whole or in part for convenience as provided herein. The Owner may pursue any and all contractual, legal and equitable remedies for such breach or default. Absent an express written agreement to the contrary, a termination for the Owner's convenience shall not be deemed a waiver or release of any rights by the Owner nor shall the Owner be estopped from any legal or equitable remedies that may be appropriate.

#### **5.4.3. Termination by Contractor after Suspension**

If the Work has been wholly suspended pursuant to **5.3. Suspension Procedures** for more than ninety (90) days as measured from the date of the notice to suspend, then the Contractor may terminate this Contract by providing Owner with ten (10) days' Notice that the Contractor shall deem the Contract to be terminated if the Owner does not provide Contractor with notice to resume Work within those ten (10) days. Such termination shall be treated as a termination for the Owner's convenience pursuant to **5.4.2. Termination for Convenience**.

#### **5.4.4. Contractor Obligations upon Termination**

On receipt of notice of termination, the Contractor shall immediately discontinue the Work but shall do such Extra Work as may be ordered by the Owner's Representative or Owner to safeguard the Work then completed and the materials and Equipment then delivered to the Site of the Work and to leave the Work in a safe and useful condition. Payment for this Extra Work will be made in accordance with **9.2. PAYMENT FOR CHANGES**.

#### **5.4.5. Ownership of Materials upon Termination**

As of the termination date, whether effected by the Owner or Contractor as provided herein, all the Contractor's right, title, and interest in and to materials ordered by the Contractor prior to

termination, whether or not they have been delivered to the Site of Work, shall be vested in the Owner, and the Contractor shall, upon demand of the Owner, execute and deliver to the Owner all requisite bills of sale, assignments, and other documents of transfer that may be necessary to give effect to the intention of the termination procedures set forth above.

#### **5.4.6. Opportunity to Cure**

If the Contractor has not already had an opportunity to cure the default or breach the Owner shall specify the default or breach and a reasonable period of time to allow the Contractor to cure the default or breach. The notice of termination will state the time period in which cure is permitted and other conditions as the Owner, in its sole judgment, shall deem appropriate. If Contractor fails to remedy the breach or default or any of the terms, covenants, or conditions of this Contract to the Owner's satisfaction within the time period specified or the Owner shall have the right to terminate the Contract without any further obligation to the Contractor. Any such termination for default shall not in any way operate to preclude the Owner from also pursuing all available remedies against Contractor and its sureties for said breach or default.

#### **5.4.7 Waiver of Remedies for Any Breach**

In the event that the Owner elects to waive its remedies for any breach by Contractor or any covenant, term or condition of this Contract, such waiver by the Owner shall not limit the Owner's remedies for any succeeding breach of that or of any other term covenant, or condition of this Contract.

### **5.5. POSSESSION AND USE OF COMPLETED PORTIONS OF THE WORK**

The Owner shall have the right to take possession of and use completed or partially completed portions of the Work even though the time for completing the Work for such portions may not have expired. Operations and maintenance costs of use of such Work will be borne by the Owner. Such possession and use shall not be deemed as acceptance of the Work. If such prior possession or use increases the cost of the Work, the Contractor may be entitled to request extra compensation by giving Notice and following the procedures of **ARTICLE 10.**

**NOTICE TO OWNER and ARTICLE 12. CONTRACT CLAIMS** within five (5) days of each occurrence. The Contractor shall not submit a Contract Claim for possession by the Owner of portions of the Work specifically required in the Contract Documents to be placed into use or operation before completion of the entirety of the Work.

### **5.6. POSSESSION OF INCOMPLETE PORTIONS OF THE PROJECT**

Should the Contractor fail to meet any date specified for Substantial Completion of Work or any portion of work requiring early possession and use by the Owner, the Owner may, after a 10-day notice to the Contractor, take over such portion or any Work that is behind schedule. In such case, the Owner's Representative will prepare a list of incomplete Work taken over by the Owner. The cost of Owner's work will be charged to and deducted from amounts due to the Contractor. The Substantial Completion date of the entire or a portion of the Project will be established as the date when the Owner actually begins using the Project or portion of the Project for its intended purpose. Division of responsibilities between Owner and Contractor, beginning of warranties, and any other issues relating to Substantial Completion shall be as specified in **5.7. SUBSTANTIAL COMPLETION.**

### **5.7. SUBSTANTIAL COMPLETION**

When the Contractor considers the Work to be Substantially Complete and ready for its intended use, it shall give Notice to the Owner's Representative. The Notice shall include an itemized list of remaining incomplete Work. If the Owner's Representative determine the Work is not substantially complete, the Contractor will be notified in writing, identifying the reasons for



such a determination. If the Owner's Representatives find the Work substantially complete, he or she will meet with the Contractor to (1) prepare a Punch List of incomplete items of Work; (2) define the division of responsibility between Owner and Contractor with respect to security, operation, maintenance, heat, utilities, insurance, and warranties; and (3) describe any other issues related to acceptance of the substantially completed Work.

If the Owner's Representative is not an employee of the Owner, the Owner's Representative will write to the Owner upon reaching agreement with the Contractor, certifying that the Work is substantially complete, listing the items of incomplete Work, stating the date for completion of incomplete Work, defining the division of responsibilities, and setting forth any other terms related to acceptance. In such event, the Owner will review the Owner's Representative's certification that the Work is substantially complete. If the Owner concurs, the Owner will notify the Contractor in writing that the Work is accepted as substantially complete. Except for any portion(s) of Work specified for early completion or required by the Owner for early possession, Substantial Completion will not occur for any Work until the entire Project is ready for possession and use. The acceptance notice will include a Punch List of incomplete Work items and corrective Work, set the date for their completion and repair, describe the division of responsibility between the Owner and Contractor, and describe any other terms of acceptance. The Contractor will acknowledge receipt of the acceptance notice in writing, indicating acceptance of all of its terms and provisions.

Subsequent to the Substantial Completion date, the Owner may exclude the Contractor from the Work during such periods when construction activities might interfere with the intended operation of the Project. The Owner, however, shall allow the Contractor reasonable access for completion or correction of incomplete Punch List items.

## **5.8. ACCEPTANCE OF WORK**

Upon completion of the Project, including, but not limited to, record drawings, as-builts, required reports and operations and maintenance manuals, the Contractor shall so notify the Owner's Representative in writing. Upon receipt of the notification, the Owner's Representative will promptly, by personal inspection, determine the actual status of the Work in accordance with the terms of the Contract. If the Owner's Representative finds materials, Equipment, or workmanship that do not meet the terms of the Contract, he or she will prepare a Punch List of such items and submit it to the Contractor. Following completion of the corrective Work by the Contractor, the Owner's Representative will notify the Owner that the Work has been completed in accordance with the Contract. The Owner shall make the final determination of acceptability and completion. For portions of the Project not previously accepted as substantially complete, the conditions of guarantee shall commence on the date that the Owner determines the Project is complete.

## **6. CHANGES**

### **6.1 OWNER'S RIGHT TO DIRECT CHANGES TO THE WORK**

The Owner reserves the right to change the Work at any time. Such changes shall not invalidate the Contract nor release the surety, and the Contractor agrees to perform the Work as changed. Among others, these changes and alterations may include:

1. Deleting or omit any part of the Work, Equipment or material to be provided under this Contract, and
2. Increasing or decreasing quantities,
3. Altering Specifications, designs, or both,

4. Altering the way the Work is to be done,
5. Adding new Work or Extra Work,
6. Altering facilities, Equipment, materials, services, or sites, provided by the Owner, and
7. Ordering the Contractor to accelerate or Delay Work.

If the Contractor and Owner do not agree upon scope of Work changed or adjustment to the Contract Sum and Contract Time, the Owner may, at its sole option, unilaterally direct the Contractor to implement any change by notice. The Owner shall not pay or be responsible or liable for any change implemented by the Contractor without explicit notice from the Owner to proceed.

## **6.2 EXTRA WORK**

At its sole option, the Owner may (1) perform Extra Work itself, (2) employ others to do it, (3) direct the Contractor to perform the Extra Work at existing unit bid price, (4) direct the Contractor to perform the Extra Work at a mutually agreed upon price, or (5) direct the Contractor to perform the Extra Work on a Force Account basis.

## **6.3 CHANGE ORDERS**

Changes to the Work may result in an increase or decrease in Contract Sum, as provided in **9.2. PAYMENT FOR CHANGES**. Requests for an increase in Contract Time must be made as provided in **5.2.2.2 Extensions of Contract Time**, as applicable. Substantial changes in Contract Time, Contract Sum or Work will often be negotiated and agreed between the Contractor and Owner before the Owner directs the Contractor to proceed with the change.

If the Contractor and Owner agree on the scope of Work and any changes to Contract Sum and Contract Time, the Contractor and Owner shall execute an agreed Change Order. However, if the Contractor and Owner do not agree, the Owner may, in its sole discretion, issue a unilateral Change Order changing the scope of Work and making any adjustments to the Contract Sum pursuant to **9.2. PAYMENT FOR CHANGES** and Contract Time in such amount and for such time as the Owner thinks appropriate. Contractor agrees to use the agreed and unilateral Change Order forms included in the Contract Documents or otherwise provided by Owner. The Contractor accepts all requirements, terms and conditions of a Change Order by: signing it; writing a separate acceptance; or by failing to notify the Owner immediately in writing that Contractor disagrees with the Change Order and does not intend to be bound by its terms.

The Contractor waives all Contract Claims with respect to (and is estopped from denying its agreement with) any unilateral Change Order for which the Contractor does not immediately give Notice to the Owner as provided in **ARTICLE 10. NOTICE TO OWNER** and submit a Contract Claim as provided in **ARTICLE 12. CONTRACT CLAIMS**. A unilateral Change Order that is not timely protested as provided in this section shall be full payment and final settlement of all asserted and unasserted Contract Claims for Contract Time and all costs of any kind, including costs of Delays, inefficiencies and impacts, related to, arising out of, or resulting from, any Work described in the Change Order.

The Contractor shall obtain written consent of the surety or sureties if the Owner's Representative requests such consent.

## **6.4 VALUE ENGINEERING AND COST SHARING**

The Contractor may submit proposals for changing the Drawings, Specifications, or other requirements of the Contract Documents and the Owner, in its sole discretion, may accept or reject such proposals. If accepted by the Owner and if the proposal decreases the direct, actual costs of constructing the Work, the Contract Sum shall be reduced by fifty percent (50%) of the

direct, actual construction cost saved. Because the Owner has the sole discretion whether to consider, accept or reject the Contractor's proposal and the Contractor has no right to require the Owner to consider or accept such proposals, the Owner's decision is not reviewable by any court. This subsection applies only to change proposals initiated solely by the Contractor (or its Subcontractors and Suppliers) and does not apply to change proposals requested or initiated by the Owner or the Owner's Representative. The Owner is not obligated or required to consider any Contractor initiated change proposals and may, in its sole discretion, refuse to do so. Under no circumstances shall the Contractor be entitled to additional compensation arising out of, or related to, the Owner's refusal to consider or approve a Contractor initiated change proposal. The Contractor shall not do any of the following without the express written agreement of the Owner: fail to perform any Work; commence performance of any proposed change; reduce its resources assigned to performance of the Work in order to prepare a change proposal or in anticipation of approval of a change proposal; adjust or change the project schedule or take any action or fail to do any action that would affect the Completion Date of the Work; take any action or fail to take any action arising out of the Contractor's change proposal that would result in the Contractor seeking an adjustment upward of the Contract Sum.

## **7. LABOR STANDARDS**

### **7.1. WAGES OF EMPLOYEES**

#### **7.1.1. General**

Pursuant to the requirements of Chapter 39.12 RCW, the Contractor and each Subcontractor or other person doing the whole or any part of Work to be performed under this Contract in the State of Washington shall pay each employee working in the State of Washington an amount not less than the general prevailing rate of wage, as specified by the Industrial Statistician of the Department of Labor and Industries of Washington State, paid in the vicinity of the Work to be performed under this Contract for the particular grade or occupation of each employee

Any employee whose type of work is not covered by any of the classified wage rates specified by the Industrial Statistician shall be paid not less than the rate of wage listed for the classification that most nearly corresponds to the type of work performed.

In case any Dispute arises as to what are the prevailing rates of wages for work of a similar nature that 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 Department of Labor and Industries of the State of Washington, and his or her decision therein shall be final and conclusive and binding on all parties involved in the Dispute. The schedule of prevailing wage rates as determined by the Industrial Statistician for the locality or localities where this Contract will be performed are by this reference made a part of this Contract as though fully set forth herein. The Contractor shall be held responsible for notifying its Subcontractors of these wage requirements. Failure by either the Contractor or any Subcontractors to comply with requirements of Chapter 39.12 RCW will result in delay of payment to the Contractor and/or imposition of other sanctions as may be available under the law and this Contract.

#### **7.1.2. Contractor's Responsibility**

The Contractor will be held responsible for paying not less than the prevailing wages, including increases in such wages, over the term of this Contract. It is, therefore, imperative that the Contractor and its Subcontractors familiarize themselves with the wage rates before submitting bids based upon these Specifications.

### 7.1.3. Federal Labor Requirements

Contractor shall comply with applicable federal laws and regulations relating to workers, safety and labor.

### 7.2. PAYMENT CERTIFICATES

A. The Contractor and each Subcontractor on or before the date of commencement of the Work shall file a statement of "Intent to Pay" prevailing wages under oath with the Owner and with the Washington State Department of Labor and Industries certifying the rate of hourly wage including the usual benefits paid and to be paid each classification of laborers, workmen, or mechanics employed upon the Work by the Contractor or its Subcontractor that shall not be less than the prevailing rate of wage. No payment will be made to the Contractor prior to the submission of such statements and the issuance by the Industrial Statistician of said Department of an acknowledgment of approval. Such statement and any supplemental statements that may be necessary shall be filed in accordance with the practices and procedures required by the Department of Labor and Industries. Upon the completion of the Work, the Contractor and all of its Subcontractors shall submit affidavits of wages paid to the Department of Labor and Industries in such form as may be required by said Department. Payment of the retained percentage will not be made until certification is received from the Department of Labor and Industries that the prevailing wage requirements of state law have been satisfied.

B. Any fees charged by the Department of Labor and Industries for filing such statements or submitting such affidavits shall be the responsibility of the Contractor, and each Subcontractor; if, for any reason, the Owner pays such fees, then the Contractor shall be charged the amounts thereof.

C. Unless otherwise determined by Owner, the Owner will require payroll reports for the Contractor and every Subcontractor be submitted weekly to the Construction Division, Public Works Annex, 3101 Cedar Street, Everett, Washington 98201. The payroll reports shall contain the following information:

1. Name and residence address of each worker.
2. Social Security number of each worker.
3. Classification of work performed by each worker. The classification shall be specific and match the classification categories listed in the Contract Documents.
4. Total number of hours employed each day.
5. Total number of hours employed during the payroll period.
6. Straight time and overtime hourly rate of wages paid to each worker.
7. Total or gross amount earned by each worker.
8. Deductions for Medical Aid, FICA, Federal withholding tax, and any other deductions taken.
9. Net amount paid each worker.
10. Contractor's, or Subcontractor's, name and address.
11. Days and dates worked.
12. Date of final day of pay period.
13. Whether fringe benefits were paid to each worker as part of the hourly wage rate or whether fringe benefits were paid into an approved plan, fund, or program.

Payrolls may be submitted on Federal payroll form WH-347, or equivalent. The reverse side of the form contains an affidavit that shall be filled out and signed. If the Contractor's payroll reports are computerized, the computerized reports may be submitted along with a Statement of Compliance affidavit photo copied from the back of form WH-347, or equivalent.

The first payroll submitted for the Work for both the Contractor and each Subcontractor shall be labeled "Initial." The last payroll submitted for the Work for both the Contractor and each Subcontractor shall be labeled "Final." Payrolls shall be sequentially numbered for all periods in which Work has been done. A certificate of completion for the Work, signed by the City, will constitute acceptance of the Work. The issuance of this certificate of completion will not constitute acceptance of unauthorized or defective Work or material is performed.

### **7.3. HOURS OF LABOR**

Contractor shall comply with all applicable laws and regulations regarding hours of work, including, but not limited to, RCW Chap. 49.28.

### **7.4. CONTRACT WORK HOURS**

The Contractor shall comply with Section 103 of the Contract Work Hours and Safety Standards Act (40 U.S.C. section 327-330) as supplemented by Department of Labor Regulations (29 CFR, Part 5). Under this section the Contractor shall compute the wages of every mechanic and laborer on the basis of a standard work week of forty (40) hours. Work in excess of the standard work week is permissible, provided the worker is compensated as required by law.

### **7.5. OVERTIME WORK**

Overtime and shift work may be established as a regular procedure by the Contractor with reasonable Notice to and written permission of the Owner's Representative. Permission may be denied for such reasons as noise, traffic, or other interference with the neighborhood in which the Project is located, or the lack of availability of inspectors during overtime or shift work.

### **7.6 LABOR RELATIONS**

The Contractor shall take all reasonable steps to prevent any labor Disputes involving the Contractor and any of its Subcontractors or Suppliers of any products or services from disrupting the Work under this Contract or interfering with access to the Owner's property by the Owner, including its agents, representatives, employees and officials, any other contractors engaged in construction activities, or members of the public. In the event any picketing or other concerted activity by employees involved in a labor Dispute with the Contractor or its Subcontractors or Suppliers interferes in any way with access to the Owner's property by any persons, the Contractor shall promptly and expeditiously take all reasonable actions to eliminate or minimize such interference, including but not limited to: (1) utilizing all reasonable means of restricting any picketing to a single entrance to the Owner's property; (2) posting notices or signs which advise interested persons and labor organizations that a particular entrance to the Owner's property is for the employees of "primary" or, as the case may be, "neutral" employers; (3) policing entrances to ensure that only authorized personnel may use those entrances; (4) notifying all interested labor organizations of the "primary" or "neutral" status of particular entrances; and (5) in the event any such picketing or concerted activity is unlawful or has a secondary impact upon the employees of neutral employers, promptly and expeditiously taking appropriate action to seek recourse through the appropriate governmental agency or state or federal courts to limit the location of such picketing so as to reduce the impact thereof upon neutral employers.

The Owner will cooperate with the Contractor to accomplish the foregoing actions and will render assistance as may be in the best interests of the Owner. However, the Owner shall have

the right to direct the Contractor to modify any of the foregoing actions the Contractor has taken or plans to take or to overrule such actions, to designate the entrances to be used as "primary" or "neutral" entrances, and to take appropriate legal action in order to protect the Owner's property and interests. In any event, the Contractor shall be liable for all Delays and costs, including costs to the Owner, and actual damages resulting from the relocation, rerouting, Delays or actions required to maintain the uninterrupted progress of the Work. Failure by the Contractor to take the actions described above or to comply with the directives of the Owner shall be considered a breach of this Contract and the Owner may terminate the Contract or suspend the Contractor as provided in this Contract.

## **8. MATERIAL, EQUIPMENT, WORKMANSHIP AND CONSTRUCTION UTILITIES**

### **8.1. GENERAL**

Unless otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for materials, labor, tools, Equipment, water, light, power, transportation, supervision, and temporary construction of any nature, and other services and facilities of any nature, whatsoever necessary, to execute, complete and deliver the Work within the specified time. Contractor shall be liable for all power and water costs until Substantial Completion, whether such power or water is provided by temporary or permanent facilities. Owner shall not be liable for any costs or Delays arising out of or caused by the availability or lack of availability of permanent power or utilities. Material and Equipment shall be new and of the specified quality. Equipment offered shall be new or current specified models. This requirement does not apply to minor details, or to thoroughly demonstrated improvements in design or in materials of construction. Construction Work shall be executed in conformity with the standard practice of the trade.

### **8.2. PRODUCT DATA**

When specified, the Contractor shall provide data required for inspecting, testing, operating, or maintaining parts of the Work. Unless otherwise specified, such data shall be provided at the time the referenced material or Equipment is delivered to the job Site. The data shall be as specified and shall include, unless otherwise specified, such items as shop drawings, erection drawings, reinforcing steel schedules, testing and adjusting instructions, operations manuals, maintenance procedures, parts lists, and record drawings. Such data shall be provided as part of the Work under this Contract and its acceptability determined by the Owner in its sole discretion.

### **8.3. QUALITY**

Where detailed Specifications of materials, Equipment, or construction Work are not set forth, the Contractor shall perform the Work using materials and Equipment of a quality comparable to the materials and workmanship specified for the other parts of the Work, from firms of established good reputations, and shall follow standard practices to perform construction Work of good quality in a workmanlike way. Work performed shall be in conformity and harmony with the intent to secure the standard of construction and Equipment of Work as a whole and in part. All Work must comply and conform to applicable building codes in effect when the Work is performed.

### **8.4. MATERIAL AND EQUIPMENT SPECIFIED BY NAME**

When material or Equipment is specified by reference to patents, brand names, or catalog numbers, the Owner will not usually consider or approve a substitution. However, the Contractor

may offer substitutions of products it considers to be equal to that specified, but the Owner is not obliged or required to consider or accept such offered substitution.

#### **8.5. REQUESTS FOR SUBSTITUTION**

The Contractor may offer material or Equipment of equal or better quality and performance in substitution for those specified. Only the Contractor may request substitutions. The Contractor's offers of substitution shall be made in writing to the Owner's Representative and shall include sufficient data to enable the Owner's Representative to assess the acceptability of the material or Equipment for the particular application and requirements. The Owner and Owner's Representative are not required or obligated to consider or review a request for substitution and may, in their sole discretion and option, consider or review such requests.

If the offered substitution requires changes to or coordination with other portions of the work, the Contractor shall include with its substitution request any such drawings and details showing such changes. The Contractor agrees to perform these changes as part of the substitution of material or Equipment at no additional cost to the Owner. Approval of a substitution request shall not relieve the Contractor from responsibility for the efficiency, quality, and performance of the substitute material or Equipment, in the same manner and degree as the material and Equipment originally specified. Any cost differential associated with a substitution shall be reflected in the offer. If the Owner approves the substitution, the Contract Documents shall be modified by a Change Order modifying the Contract Sum in the amount of the cost differential.

#### **8.6. DEMONSTRATION OF COMPLIANCE WITH CONTRACT REQUIREMENTS**

##### **8.6.1. Inspection**

The burden of proving the constructed Work complies with the Contract Documents shall be on the Contractor at all times. To demonstrate its compliance with the Contract requirements, the Contractor shall assist the Owner's Representative in his or her inspection and observation of the Work. The Contractor shall grant the Owner's Representative access to the Work and Work Site, and to places where Work is being prepared, or where materials, Equipment, or machinery are being obtained for Work. The Contractor shall provide information requested by the Owner's Representative in connection with inspection work.

If the Contract Documents, laws, ordinances, or any public regulatory authority requires parts of the Work to be specially inspected, tested, or approved, the Contractor shall give the Owner's Representative adequate prior written Notice of the availability of the subject Work for examination, which Notice shall be not less than two (2) working days.

Inspection and quality control tests performed on Work by the Contractor by the Owner's Representative shall not relieve the Contractor of its responsibility for errors or lack of quality therein and shall not be regarded as an assumption of risks or liability by the Owner's Representative for the Contractor's compliance with these Contract Documents. Contractor remains responsible and liable for all errors, defects or a lack of quality not discovered by inspection or observation.

If parts of the Work are covered prior to inspection or observation, the cost of exposing the Work for inspection and closing and re-covering shall be borne by the Contractor regardless of whether the Work is found to be in compliance with the Contract.

##### **8.6.2. Samples of Materials**

The Contractor shall provide Samples or specimens of materials to be incorporated in the Work that require laboratory examination or special testing, as requested by the Owner's Representative. Such Samples or specimens shall be provided in ample time to permit making proper test analysis and examinations before the Contractor plans to incorporate the material

into the Work. An independent testing laboratory will conduct tests of material in accordance with the Specifications. In the absence of a specific test requirement, the Owner's Representative will determine the appropriate standard test to be used.

### **8.6.3. Certification**

In cases where compliance of materials or Equipment to Contract requirements is not readily determinable through inspection and tests, the Contractor shall provide properly authenticated documents, certificates, or other proof satisfactory to the Owner's Representative that the materials and Equipment comply with the Contract requirements. These documents, certifications, and proofs shall include performance characteristics, construction materials, and physical or chemical characteristics of materials. The Contractor shall pay all associated costs of such certification.

### **8.6.4. Inspection at Point of Manufacturing**

The Contractor shall be responsible and reimburse the Owner for the costs of inspections occurring outside of Whatcom, Skagit, Island, Snohomish, King, Pierce and Thurston counties if (a) inspection and testing of materials or Equipment in the vicinity of the Work by the Owner is not practicable, (b) the Contractor requests the Owner to inspect and test material or Equipment at the point of manufacture, or (c) the Specifications require that inspection, testing or witnessing of tests take place at the point of manufacture. Costs to be paid or reimbursed by the Contractor include, but are not limited to, travel, subsistence, labor and lodging expenses of the Owner's inspector.

### **8.6.5. Testing and Commissioning of Completed Work**

Testing and commissioning of all mechanical, electrical, and instrumentation systems and completed portions of the Work, functioning as a completed system and the complete Project, functioning as a completed facility, shall be done in accordance with the Specifications.

### **8.6.6. Storage of Materials and Equipment**

Contractor shall store materials and Equipment so as to insure the preservation of their quality and fitness for the Work. Stored Equipment and materials shall be located so as to facilitate inspection. The Contractor shall be responsible for damages, loss or casualty occurring to materials and Equipment until Final Acceptance.

### **8.6.7. Manufacturer's Directions**

Manufactured articles, material and Equipment shall be transported, stored, applied, installed, connected, erected, adjusted, tested, operated and maintained as recommended by the manufacturer, unless otherwise specified herein. Manufacturer's installation instructions and procedures shall be provided to the Owner prior to installation of the manufactured articles, material and Equipment.

## **8.7. DEFECTIVE WORK**

### **8.7.1. Correction of Defective Work**

When, and as often as the Owner's Representative determines through his or her inspection procedures, material, Equipment or workmanship incorporated in the Project do not meet the requirements of the Contract, the Owner's Representative will give written notice of the noncompliance to the Contractor. Within fourteen (14) days from the receipt of such notice, the Contractor shall undertake the Work necessary to correct the deficiencies, and to comply with the Contract. If the Contractor disagrees with the Owner's Representative's determination and believes that the corrective Work should be covered by a Change Order, he or she shall immediately notify the Owner, in writing, setting forth its position. Within five (5) days after



receipt of the Contractor's notification, the Owner will review the matter and notify the Contractor, in writing, of his or her determination.

If the Owner determines that the corrective Work is required to comply with the Contract, the Contractor shall proceed with such Work. As a condition precedent to the Contractor's request for adjustment of Contract Sum, Contract Time, or both, resulting from the performance of such corrective Work, the Contractor shall, within fifteen (15) days after receipt of the Owner's determination, provide the Owner with Notice of a Contract Claim for an adjustment of Contract Sum, Contract Time, or both. Contract Claims not timely and completely submitted are deemed waived. The Contractor shall document the cost information associated with the corrective work with daily records in accordance with Force Account procedures and shall provide such information to the Owner's Representative daily. Receipt of the cost data by the Owner's Representative will not be construed to be an acceptance of the corrective Work, or an authorization for a Change Order to cover the corrective Work. Contractor waives any such Contract Claim by failing to maintain accurate and complete Force Account records.

#### **8.7.2. Retention of Defective Work**

In its sole discretion, the Owner may retain Work that is not in compliance with the Contract. The Owner will determine the just and reasonable value for such defective and/or noncompliant Work and deductions will be made in the payments due or to become due to the Contractor. Final Acceptance will not act as a waiver of the Owner's right to recover from the Contractor an amount representing the deduction for retention of defective and/or noncompliant Work.

#### **8.8. MATERIALS AND EQUIPMENT FURNISHED BY OWNER**

Contractor shall install materials and Equipment furnished by the Owner as provided in the technical sections of the Specifications. Furnishing of material and Equipment by the Owner will be considered conclusive evidence of their acceptability for the purpose intended. If the Contractor discovers defects in material or Equipment furnished by the Owner, he or she shall immediately notify the Owner. After such discovery, the Contractor shall not proceed with Work involving Owner-furnished materials and Equipment unless authorized by the Owner. Unless otherwise noted or specifically stated, materials and Equipment furnished by the Owner, which are not of local occurrence or manufacture, are considered to be "FOB" railroad station or truck terminal nearest to the Site of the Work. At no cost to the Owner, the Contractor shall unload, transport, store, and protect such material and Equipment from damage. The Contractor shall inspect such Owner-furnished material and Equipment on receipt and provide the Owner with written acceptance for the incorporation of said material and Equipment into the Work. After receipt by the Contractor, the Contractor bears all risk of loss and casualty to Owner furnished materials and Equipment.

#### **8.9. GUARANTEE**

The Contractor warrants to the Owner that all materials and Equipment furnished under this Contract will be of highest quality and new unless otherwise specified by the Owner, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards shall be considered defective. If required by the Owner's Representative, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and Equipment.

The Work furnished must be of first quality and the workmanship must be the best obtainable in the various trades. The Work must be of safe, substantial and durable construction in all respects.

"Acceptance of the Work" shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract that has not, in fact, been performed or fulfilled at the time of such acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

The Owner and the Contractor agree that the guarantee on the completed portions of the Work possessed and used by the Owner shall commence as to those portions on the date that the Owner takes possession of those portions and so notifies the Contractor in writing. Owner and Contractor further agree that such taking possession and use shall not be deemed as acceptance of the Work. Takeover of completed portions of the Work shall be at the Owner's option and will not be made until the Work can be put into routine service on a permanent basis.

The guarantee provided in this section 8.9 shall be in addition to those specific guarantee or warranty requirements for particular Equipment and Work items as indicated in the Specifications.

#### **8.10. CORRECTION PERIOD**

If within one year after the date of Substantial Completion, or such longer period of time as may be prescribed by the terms of any applicable special guarantee or warranty required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damage to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 8.6.6. is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such damaged land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting there from.

If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where Delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of Work of others) will be paid by Contractor.

The Owner is hereby authorized to make such repairs if, ten (10) days after giving of such notice to the Contractor, the Contractor has failed to make or undertake the repairs with due diligence. In case of an emergency where, in the opinion of the Owner, Delay could cause serious loss or damage, repairs may be made prior to or concurrent with notice being sent to the Contractor. All expenses in connection with such repairs will be charged to the Contractor.

In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

Where defective Work (and damage to other Work resulting there from) has been corrected or removed and replaced under this Paragraph 8.10, the correction period hereunder with respect

to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Contractor's obligations under this Paragraph 8.10 are in addition to any other obligation, guarantee or warranty. The provisions of this Paragraph 8.10 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

## **9. MEASUREMENT AND PAYMENT**

### **9.1. PAYMENTS TO CONTRACTOR**

#### **9.1.1. Schedule of Values**

The Contractor shall submit a Schedule of Values at least fifteen (15) days prior to submitting its first Application for Payment. If the Project contains Unit Price Work, in whole or in part, then the Schedule of Values for that portion of the Work shall also be based on unit prices. If the Bid form calls for a lump sum price, in whole or in part, then the Schedule of Values shall: reasonably allocate the Contract Sum among the various portions of the Work; be complete; be organized to include detailed breakdown of each major unit of the Work; be organized to correspond to Contractor's schedule; break down the Contract Sum showing the value assigned to each part of the Work; include an allowance for profit and Overhead; include Unit Price Work, if and to the extent indicated on the Bid form; be so organized as to facilitate assessment of work and payment of Subcontractors; and be balanced. To the greatest extent possible, the breakdown shall use the same tasks or units as the Contractor's schedule. Contractor shall provide documentation substantiating the cost allocation if asked by the Owner's Representative. Upon acceptance of the Schedule of Values by the Owner's Representative, it shall be used as a basis for all requests for payment.

#### **9.1.2. Progress Payments**

##### **9.1.2.1 Payment Request Procedures:**

By the tenth day of each month, or by schedule mutually agreed upon in writing by the Contractor and Owner's Representative, the Contractor shall submit to the Owner's Representative a partial payment estimate filled out and signed by the Contractor covering acceptable Work performed during the previous month, or since the last partial payment estimate was submitted. Contractor's submission of a progress pay estimate constitutes a material representation by the Contractor that it performed all of the Work described in the progress pay estimate during the relevant time period in a workmanlike manner and that the materials for which payment is requested reasonably conform to the Specifications and are either on the job Site or have been installed. If requested by the Owner's Representative, the Contractor shall provide such additional data as may be reasonably required to support the payment estimate. Such data may include satisfactory evidence of payment for Equipment, materials and labor including payments to Subcontractors and Suppliers. Certified invoices by the Suppliers shall accompany a request for payment for delivered Equipment and material. Such Equipment and material shall be suitably and safely stored at the Site of the Work. Payment requests shall summarize accepted operating and maintenance material with request for Equipment payment. A progress payment is preliminary only. By making a progress payment, the Owner does not waive or release its right, nor is it estopped from asserting, that previous progress payments were not earned or were in error, whether in whole or in part.

##### **9.1.2.2 Review Procedures:**

The Owner's Representative will review the estimate and either indicate in writing to the Owner his or her concurrence with the estimate and his or her recommendation that payment be made,

or indicate in writing to the Contractor his or her reasons for not concurring with the estimate. If the Owner's Representative recommends payment and the Owner concurs, the Owner will pay the Contractor a progress payment on the basis of the approved partial payment estimate, less retainage and any amounts the Owner may withhold pursuant to Contract or law. The recommendation of the Owner's Representative is not conclusive, final or binding upon the Owner.

In the event the Owner's Representative does not concur with the estimate, the Contractor may make the changes necessary to obtain the Owner's Representative's concurrence and resubmit the partial payment estimate, or submit the original progress payment estimate directly to the Owner, indicating in writing its reasons for refusing to make the changes necessary to obtain concurrence.

#### **9.1.2.3 Retained Percentage**

As provided in **9.7. Retainage**, the Owner will retain five percent (5%) of all progress payments.

#### **9.1.2.4 Withholding**

The Owner's Representative may refuse to recommend the whole or any part of any payment if in the Owner's Representative's opinion it would be incorrect to make such recommendation to the Owner. The Owner's Representative may also refuse to recommend any such payment, or because of subsequently discovered evidence or the result of tests, may nullify any such payment previously recommended to such extent as may be necessary in the Owner's Representative's opinion to protect the Owner from loss as a result of:

1. Defective or damaged Work.
2. A deductive Change Order.
3. Persistent failure of the Contractor to perform the Work in accordance with the Contract Documents, including failure to maintain the progress of the Work in accordance with the construction schedule. Persistent failure to maintain the progress of the Work shall mean that for a period of two consecutive months following a written notice from the Owner's Representative or Owner, the Contractor fails to correct a behind-schedule condition at a rate that would reasonably indicate that he or she will finish the Project on schedule.
4. Disregard of authority of the Owner or Owner's Representative or the laws of any public body having jurisdiction.
5. Liquidated damages.
6. Misrepresentation of the quality of materials installed or amount of Work performed.
7. Discovery that a previous pay estimate erred with respect to the amount of Work performed or materials installed, irrespective of the Owner's Representative's recommendation at the time of the progress pay estimate.
8. Any other event that consists of a default under Section 5.4.1 of these General Conditions.

The Owner may refuse to make payment of the full amount recommended by the Owner's Representative because of Contract Claims made against the Owner on account of Contractor's performance or furnishing the Work or because of liens filed in connection with the Work or other set offs entitling Owner to reduce the amount recommended. In such case, the Owner shall give Contractor prompt written notice with copy to the Owner's Representative stating the reasons for each action.

### 9.1.3. Final Payment

Upon receipt of Contractor's written Notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner's Representative will inspect the Work. If the Owner's Representative finds the Work acceptable under the Contract Documents and the Contract fully performed and if the Contractor has signed a final contract voucher in the form provided by the City, the Owner's Representative will issue a final certificate for payment. The certificate for payment (or certificate of completion) will state that to the best of the Owner's Representative's knowledge, the Work appears to have been completed in accordance with terms and conditions of the Contract Documents.

Final payment shall not become due until the Contractor, unless otherwise determined by the City, submits to the Owner's Representative; (1) an affidavit that payrolls, bills for materials and Equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered, less amounts withheld by Owner, have been paid or otherwise satisfied; (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) days' prior written Notice has been given to the Owner; (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents; (4) consent of surety, if any, to final payment; and (5) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

Prior estimates and payments, including those relating to Extra Work or Work omitted, shall be subject to correction by the final payment.

If, after Substantial Completion of the Work, Final Acceptance thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting Final Acceptance, and the Owner's Representative so confirms, the Owner may, upon application by the Contractor and certification by the Owner's Representative, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Owner's Representative prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Acceptance of final payment by the Contractor, a Subcontractor or material Supplier shall constitute a waiver of Contract Claims by that payee, except those Contract Claims previously timely and completely submitted that remain pending at the time of final payment, provided that Contractor specifically so notifies the Owner in writing prior to the Owner making such final payment. Payment by the Owner shall not release the Contractor or its surety from any obligation under the Contract or under the payment and performance bond.

## **9.2. PAYMENT FOR CHANGES**

### **9.2.1. Changes in Estimated Quantities of Unit Price Work**

Contractor will be paid only for the actual quantities of Work performed and accepted in conformance with the Contract. When the accepted quantities of an item of Unit Price Work vary from the quantities originally estimated in the Contract Documents, payment will be at the Contract unit prices for accepted Work. If the total quantity of a Unit Price Work item varies by more than twenty-five percent (25%) from the quantity originally estimated in the Contract Documents, that part of the variance exceeding twenty-five percent (25%) may be adjusted as follows:

#### **9.2.1.1. Increased Quantities**

Either party to the Contract will be entitled to renegotiate the price for that portion of the actual quantity in excess of one hundred twenty-five percent (125%) of the original Bid quantity. The price for increased quantities will be determined by agreement of the parties, or, where the parties cannot agree, the price will be determined by the Owner's Representative based upon the actual costs to perform the Work, including reasonable markup for Overhead and profit.

#### **9.2.1.2. Decreased Quantities**

Either party to the Contract will be entitled to an adjustment of Contract Sum if the actual quantity of Work performed is less than seventy-five percent (75%) of the original Bid quantity. The adjustment of Contract Sum in the case of decreased quantities shall be based upon any increase or decrease in costs due solely to the variation of the estimated quantity. The total payment for any item will be limited to no more than seventy-five percent (75%) of the amount originally Bid for the item.

#### **9.2.1.3. Limitations**

The following limitations shall apply to the adjustment:

1. The equipment rates shall be actual cost but shall not exceed the rates set forth in the AGC/WSDOT Equipment Rental Agreement in effect at the time the Work is performed.
2. No payment will be made for extended or unabsorbed home office Overhead and field Overhead expenses to the extent that there is an unbalanced allocation of such expenses among the Contract bid items.
3. No payment for consequential damages or loss of anticipated profits will be allowed because of variance in quantities from those originally shown in the bid form, Contract provision, and Drawings.

When ordered by the Owner's Representative, the Contractor shall proceed with the Work pending determination of the adjustment of Contract Sum or Contract Time for the variation in quantities.

The Owner will not adjust for increases or decreases if the Owner has entered the amount for the item in the bid form only to provide a common Bid for Bidders.

### **9.2.2. Changes in Work Not Covered By Unit Prices**

Contractor shall be paid for changes in Work not covered by unit prices as provided in **9.5.**

### **ADJUSTMENT OF CONTRACT SUM.**

#### **9.2.3. Deleted Work**

The Owner's Representative may delete Work as provided in **ARTICLE 6. CHANGES** or may terminate the Contract in whole or part as provided in **5.4.2. Termination for Convenience.**

When the Contract is partially terminated for the Owner's convenience, the partial termination shall be treated as a deductive Change Order for payment purposes under this section.

Payment for completed items will be at Contract unit prices or pursuant to the Schedule of Values.

When a Change Order deletes an item in whole or in part, or when the Contract is terminated for convenience in whole or in part, payment for deleted or terminated Work will be made as follows:

1. Payment will be made for the actual number of units of Work completed at the unit contract prices unless the Owner's Representative determines the unit prices are inappropriate for the Work actually performed. When the Owner's Representative determines the unit prices are inappropriate for the Work actually performed, payment for Work performed will be as mutually agreed. If the parties cannot agree, the Owner's Representative will determine the amount of the adjustment of Contract Sum in accordance with **9.5. ADJUSTMENT OF CONTRACT SUM**;
2. Payment for partially completed lump sum items will be as mutually agreed. If the parties cannot agree, the Owner's Representative will determine the amount of the adjustment of Contract Sum in accordance with **9.5. ADJUSTMENT OF CONTRACT SUM**;
3. To the extent not paid for by the Contract Sum for the completed units of Work, the Owner will pay as part of the adjustment of Contract Sum those direct costs necessarily and actually incurred by the Contractor in reasonable anticipation of performing the Work that has been deleted or terminated;
4. The total payment for any one item in the case of a deletion or partial termination shall not exceed the Bid price as modified by approved Change Orders less the estimated cost, including Overhead and profit, to complete the Work and less any amount paid to the Contractor for the item;
5. If the entire remainder of the Contract is terminated, the total payment to the Contractor shall not exceed the total Contract Sum as modified by approved Change Orders less those amounts paid to the Contractor before the effective date of the termination; and
6. No claim for damages of any kind or for loss of anticipated profits or consequential damages on deleted or terminated Work will be allowed because of termination or Change Order. Contract Time shall be adjusted as the parties agree. If the parties cannot agree, the Owner's Representative will determine the adjustment of Contract Time.

Acceptable materials ordered by the Contractor prior to the date the Work was terminated or deleted will either be purchased from the Contractor by the Owner at the actual cost and shall become the property of the Owner, or the Owner will reimburse the Contractor for the actual costs of returning these materials to the Suppliers.

If Contractor disagrees with the adjustment of Contract Sum determined by the Owner's Representative, Contractor may submit a Contract Claim for the difference between the amount determined by the Owner's Representative and the amount sought by the Contractor.

Contractor shall not be entitled to anticipated profits on deleted, terminated, or uncompleted Work.

### **9.3. CHARGES TO CONTRACTOR**

The Contractor shall pay the Owner on demand everything charged to it under the terms of this Contract. Such charges may be deducted by the Owner from money due or to become due to

the Contractor under the Contract. The Owner may recover such charges from the Contractor or from its surety.

Contractor agrees to pay the costs of overtime or excessive inspection and observation costs incurred by the Owner. Overtime inspection shall include inspection required during Saturdays, Sundays, City holidays and weekdays, in excess of 40 hours per week or outside of normal working hours and inspections or observations that result in an inspector or observer working more than forty hours in a week. Costs of such overtime or excessive inspection or observation include architecture, engineering, construction management services, inspection, general supervision and Overhead expenses which are directly chargeable to the overtime or excessive work. Contractor agrees that Owner will deduct such charges from payments due the Contractor. In the event the Owner by Change Order requires the Contractor to work in excess of the established schedule of working hours, the Owner will not charge the Contractor for inspection costs associated therewith.

#### **9.4. COMPENSATION TO OWNER FOR TIME EXTENSION**

The Owner shall be compensated by the Contractor for the actual costs to the Owner of engineering, inspection, general supervision, right-of-way costs, permit fees, Overhead expenses, and any other ascertainable direct costs to the Owner that are directly chargeable to the Work and which accrue during the period of such extension. The actual costs do not include charges for final inspection and preparation of the final payment by the Owner.

#### **9.5. ADJUSTMENT OF CONTRACT SUM**

##### **9.5.1 Calculation**

Except as otherwise expressly provided in these General Conditions, any and all adjustments of Contract Sum shall be determined as follows:

1. If the parties are able to agree, the price will be determined by using:
  - a. Unit prices, if the Work items are defined by unit prices; and
  - b. Other prices agreed upon by the Contractor and Owner for Work not defined by unit prices.
2. If the parties cannot agree, the Owner's Representative will determine the price pursuant to the following order:
  - a. Unit prices, if the Work items are defined by unit prices; and
  - b. Other means to establish the reasonable cost of the Work if it is not defined by unit prices, including, but not limited to, Force Account as described in **9.6. FORCE ACCOUNT**, the Schedule of Values, or estimating manuals.

##### **9.5.2 Limitations**

The following limitations shall apply in determining the amount of an adjustment:

1. Except as otherwise expressly provided, Contractor will only be paid for costs it clearly and convincingly proves it actually and directly incurred, and shall not include consequential or indirect damages not otherwise expressly permitted by the Contract Documents. Costs and damages for which Owner shall not be liable under any circumstances include, but are not limited to: (a) borrowing or interest costs, charges, or expenses of Contractor; (b) alleged lost profit or Overhead on any other project; and (c) Contractor's failure or inability to obtain other work.
2. No Contract Claim for adjustment of Contract Sum or additional compensation for extra, affected, impacted or inefficient Work will be allowed where the Contractor does not keep



and maintain contemporaneous, complete and accurate time records for labor and equipment and contemporaneous, complete and accurate records for materials and where such records do not contemporaneously segregate and allocate by time, location and work the time and costs for each item or element of such work. Contractor's failure to keep and maintain such records constitutes a waiver of any Contract Claim or request by the Contractor for adjustment of Contract Sum for such costs or event.

3. To the extent the Contractor is entitled to an adjustment of Contract Sum due to any Delay or extension of Contract Time, Contractor shall be compensated as provided in **12.4 REMEDIES**. Such compensation shall be full, adequate and complete compensation for all direct, indirect, cumulative, inefficiency, impact and ripple costs causing, arising out of, or relating to such delays or extension.
4. Contractor and Owner agree that compensation to the Contractor for a Contract Claim shall not exceed the Contractor's actual costs based upon Force Account as described in **9.6. FORCE ACCOUNT**. Contractor waives, releases, and agrees not to submit any request for adjustment of Contract Sum or Contract Claim based upon a "total cost" or "modified total cost" calculation, in whole or in part, but instead agrees that any and all requests for compensation shall be based upon accurate, complete and contemporaneous cost records that segregate and allocate actual costs (a) between base Contract Work and the work for which additional compensation is sought and (b) between each item of work for which additional compensation is sought. Claims for inefficiency shall only be based on and calculated by a comparison of productivity of similar Work performed in an unaffected or least affected area of the Project.
5. No claim for consequential damages of any kind will be allowed.

### 9.5.3 Unabsorbed and Extended Overhead

Any Extended or Unabsorbed Overhead to which the Contractor may be entitled shall be calculated using the *Eichleay* formula by:

1. Determining the pro-rata amount of Overhead allocable to the subject project. This is accomplished by multiplying Overhead costs by the ratio of the subject project's billings to the Contractor's overall billings during the overall period of the subject Project's performance. The result is "Allocable Overhead."
  - a. Any additional and unresolved direct cost claims presented by the Contractor concurrently with any request for Extended and/or Unabsorbed Overhead shall not be included in determining the ratio of the subject Project billings to overall Contractor billings for the period of project performance.
2. Determining the daily amount of Allocable Overhead for the subject Project. This is accomplished by dividing the Allocable Overhead for the subject Project by the number of days (as contractually defined) of Contract performance. The result is the Daily Rate of Allocable Overhead.
3. Determining the gross amount of potential additional compensation for Home Office Overhead due to the project extension. This is accomplished by multiplying the Daily Rate of Allocable Overhead by the number of days of project extension caused solely by the Owner. This results in the Gross Amount of Additional Home Office Overhead Compensation.
4. Adjusting the Gross Amount of Additional Home Office Overhead Compensation for any additional contribution for Overhead received by the Contractor on any Change Orders that are being presented and resolved concurrently with the subject calculation for

Unabsorbed and/or Extended Home Office Overhead. The necessary adjustment would be to reduce the Gross Amount of Additional Home Office Overhead Compensation by any additional compensation for Overhead included in any direct cost claims being resolved concurrently with any claim for Extended and/or Unabsorbed Home Office Overhead.

Contractor shall not receive compensation for cost of use of equity capital.

#### **9.6. FORCE ACCOUNT**

If Work or materials are to be paid for by Force Account, payment amounts will be determined and Contractor shall contemporaneously prepare, keep and maintain records segregated and allocated by time, location and item of Work in compliance with this subsection. Such records must be contemporaneously countersigned by the Owner or the Owner's Representative (or its designee). Any records not countersigned by the Owner or Owner's Representative shall be excluded from the calculation of payment under this subsection.

The payments provided for herein shall be full payment for all Work done on a Force Account basis. The payment shall be deemed to cover all expenses of every nature, kind, and description, including all Overhead expenses, profit, occupational tax and any other Federal or State revenue acts, premiums on public liability and property damage insurance policies, and for the use of small tools and equipment for which no rental is allowed.

No Contract Claim for Force Account shall be allowed except upon written order by the Owner's Representative for Extra Work prior to the performance of the Extra Work. No Extra Work shall be construed as Force Account Work that can be measured under the Specifications and paid for at the unit prices or lump sum named in the Contract.

The Owner's Representative shall compute the amount and costs of any Work to be paid by Force Account, and the amount certified by the Owner's Representative shall be final as provided in **3.2. OWNER'S REPRESENTATIVE**.

The Contractor's wage, payroll, and cost records pertaining to Work paid for on a Force Account basis shall be open to inspection or audit as provided in **ARTICLE 17. AUDITS**.

##### **9.6.1 Labor.**

The Owner will reimburse the Contractor for labor and for supervision by foremen dedicated solely to the particular Force Account item of Work, but not for supervision by general superintendents or general foremen. The Owner's Representative will compute the labor payment on the basis of these four factors:

1. Weighted Wage Rate. The Weighted Wage Rate combines:
  - a. the current basic wage and fringe benefits the Contractor is required and has agreed to pay,
  - b. Federal Insurance Compensation (FICA),
  - c. Federal Unemployment Tax Act (FUTA), and
  - d. State Unemployment Tax Act (SUTA)

A Weighted Wage Rate shall be computed for each classification of labor used. This rate shall reflect the Contractor's actual cost. It shall neither exceed what is normally paid to comparable labor nor fall below the minimum required by **7.1. WAGES OF EMPLOYEES**. If the Owner's Representative authorizes overtime, the Weighted Wage Rate shall be determined on the same basis.

2. Travel Allowance and Subsistence. This includes the actual costs of allowances for travel or subsistence paid to employees in the course of their work on the item. This reimbursement will be made only if such allowances are required by a regional labor agreement or are normally paid by the Contractor to comparable labor for performing other work.
3. Industrial Insurance and Medical Aid Premiums. The Owner will reimburse Contractor-paid premiums for Marine Industrial Insurance, for State of Washington Industrial Insurance, and Medical Aid Premiums that become an obligation of the Contractor and are chargeable to the Force Account Work. The Owner will not pay the Contractor for Medical Aid premiums that are paid by the employees.
4. Overhead and Profit. The Owner will pay the Contractor twenty-nine (29) percent of the sum of the costs listed in a, b, and c above to cover Project Overhead, general company Overhead, profit, and any other costs incurred.

#### **9.6.2. Materials.**

The Owner will reimburse actual invoice cost for Contractor-supplied materials. This cost includes actual freight and express charges and taxes, provided that these costs have not been paid in some other manner under the Contract. A deduction will be made for any offered or available discounts or rebates if the Owner has provided the Contractor with the means to comply with the provisions allowing the discount. The Owner will then add twenty-one (21) percent of the balance to cover Project overhead, general company Overhead, profit, and any other cost of supplying materials.

To support charges for materials, the Contractor shall provide the Owner's Representative with authentic, complete and accurate copies of vendor invoices, including freight and express bills. If invoices are not available for materials from the Contractor stocks, the Contractor shall certify actual costs by affidavit.

If Contract Claims for materials costs are too high, inappropriate, or unsupported by satisfactory evidence, the Owner's Representative may determine the cost for all or part of the materials. When determined in this manner, the cost will be the lowest current wholesale price from a source that can supply the required quantity, including delivery costs.

The Owner reserves the right to provide materials. If so, the Contractor will receive no payment for any costs, Overhead, or profit on such materials.

#### **9.6.3. Equipment.**

The equipment rates shall be actual cost but shall not exceed the rates set forth in the AGC/WSDOT Equipment Rental Agreement in effect at the time the Work is performed,

The approval of the Owner's Representative shall be required for the selection of machine-power tools or equipment prior to their use in Force Account situations.

The payment for any machine-power tools or equipment shall be made according to the current AGC/WSDOT Equipment Rental Agreement in effect at the time the Force Account is authorized. The rates as set forth in the Rental Rate Blue Book (as modified by the current AGC/WSDOT Equipment Rental Agreement) are the maximum rates allowable for equipment of modern design and in good working condition. These rates shall be full compensation for all fuel, oil, lubrication, repairs, maintenance, and all other costs incidental to furnishing and operating the equipment except labor for operation.

The Owner will add twenty-one (21) percent to equipment costs to cover Project Overhead, general company Overhead (excluding equipment Overhead included in the Rental Rate Blue Book), and profit.

Current copies of the Rental Rate Blue Book and the AGC/WSDOT Equipment Rental Agreement will be maintained at each region office of the Washington State Department of Transportation and at each of the offices of the Associated General Contractors of America, in Seattle, Spokane, Tacoma, Washington and Wilsonville, Oregon, where they are available for inspection.

#### **9.6.4. For Services.**

Compensation under Force Account for specialized services shall be made on the basis of an invoice from the providing entity. A "specialized service" shall be one that is typically billed through invoice in standard industry practice. Before Work is started, the Owner's Representative may require the Contractor to obtain multiple quotations for the service to be utilized and select the provider with prices and terms most advantageous to the Owner. In the event that prior quotations are not obtained and the service invoice is submitted by the Subcontractor, then after-the-fact quotations may be obtained by the Owner's Representative from the open market in the vicinity and the lowest such quotation may be used in place of the submitted invoice.

Except as noted below, the Owner will pay the Contractor an additional twenty-one (21) percent of the sum of the costs included on invoices for specialized services to cover project Overhead, general company Overhead, profit, bonding, insurance, Business & Occupation tax, and other costs incurred.

When a Supplier of services is compensated through invoice, but acts in the manner of Subcontractor, as described in **9.6.6. For Contractor Markup of Subcontractors Work** of this provision, then markup for that invoice shall be according to **9.6.6. For Contractor Markup of Subcontractors Work**.

#### **9.6.5. For Mobilization.**

Force Account mobilization is defined as the preparatory work performed by the Contractor including procurement, loading and transportation of tools and equipment, and personal travel time, when such travel time is a contractual obligation of the Contractor or a customary payment for the Contractor to all employees. Mobilization also includes the costs incurred during demobilization applies to both Force Account and other Contract Work. Owner will pay for mobilization for off-site preparatory work for Force Account items provided that Notice has been provided sufficiently in advance to allow the Owner's Representative to witness the activity, if desired.

Any costs experienced during mobilization activities for labor, equipment, materials or services shall be listed in that section of the Force Account summary and paid accordingly.

#### **9.6.6. For Contractor Markup on Subcontractor's Work.**

When Work is performed on a Force Account basis by one or more approved Subcontractors, by lower-tier Subcontractors or Suppliers, or through invoice by firm(s) acting in the manner of a Subcontractor, the Contractor will be allowed an additional markup, from the table below, applied to the costs computed for Work done by each Subcontractor through **9.6.1**, **9.6.2**, **9.6.3**, and **9.6.4**, to compensate for all administrative costs, including project Overhead, general company Overhead, profit, bonding, insurance, Business & Occupation tax, and any other costs incurred.

A firm may be considered to be acting as a Subcontractor when the Owner's Representative observes one or more of the following characteristics:

1. The person in charge of the firm's activities takes an active role in managing the overall project, including extensive coordination, interpretation of Drawings, interaction with the Owner or management of a complex and interrelated operation.
2. Rented equipment is provided fueled, operated and maintained by the firm. Operators of rented equipment are supervised directly by the firm's representative. There is a little interaction between the Contractor and the employees of the firm.
3. The firm appears to be holding the risk of performance and quality of the Work.
4. The firm appears to be responsible for liability arising from the Work.

Markups on Work Performed by Subcontractor(s):

On amounts paid for Work performed by each Subcontractor on each Force Account and calculated through 9.6.1-4	Up to \$25,000	12%
On amounts greater than	\$25,000 up to \$100,000	10%
On amounts greater than	\$100,000	7%

The amounts and markup rates shall be calculated separately for each Subcontractor on each Force Account item established.

The payments provided above shall be full payment for all Work done on a Force Account basis. The calculated payment shall cover all expenses of every nature, kind and description, including those listed above and any others incurred on the Work being paid through Force Account. Nothing in this provision shall preclude the Contractor from seeking an extension of time or time-related damages to unchanged Work arising as a result of Force Account Work. The amount and costs of any work to be paid by Force Account shall be computed by the Owner's Representative and the result shall be final as provided in **3.2 OWNER'S REPRESENTATIVE**.

An item that has been bid at a unit price or lump sum in the Bid will not be paid as Force Account unless a change, as defined in **ARTICLE 6. CHANGES**, has occurred and the provisions require a payment adjustment. Items which are included in the Bid as Force Account or which are added by change order as Force Account may, by agreement of the parties at any time, be converted to agreed unit prices or lump sums applicable to the remaining Work.

## 9.7. RETAINAGE

Pursuant to RCW Chap. 60.28, a sum of five percent (5%) of the monies earned by the Contractor will be retained from progress estimates. In addition to protecting the interests of those identified in RCW Chap. 60.28, such retainage shall be used as a trust fund for the protection of the Owner.

At the option of the Contractor; monies retained under the provisions of RCW 60.28 shall be:

1. Retained in a fund by the Owner, or
2. Deposited by the Owner in an escrow (interest-bearing) account in a bank, mutual saving bank, or savings and loan association (interest on monies so retained shall be paid to the Contractor). Deposits are to be in the name of the Owner and may not be withdrawn without the Owner's written authorization. The Owner will issue a check representing the sum of the monies reserved, payable to the bank or trust company. Such check shall be converted into bonds and securities chosen by the Contractor as

the interest accrues. Bank and Contractor will execute an escrow agreement in the form provided by Owner.

3. Released after submission of fully executed retainage bond in the form provided by Owner.

The Contractor shall designate the option desired at the time the Contract is executed. If the Contractor chooses option 2 (deposit in escrow account), Contractor agrees to assume full responsibility to pay all costs that may accrue from escrow services, brokerage charges or both, and further agrees to assume all risks in connection with the investment of the retained percentages in securities. The City may also, at its option, accept a bond in lieu of retainage.

Retainage will be released when all of the following conditions are satisfied:

1. Sixty (60) days have elapsed following the completion of all Work specified in the Contract; and
2. The Contractor fulfilled all of all obligations of the Contractor under the Contract, including, but not limited to, the Contractor's furnishing all documentation required by Contract and law; and
3. A release has been obtained from the Washington State Department of Revenue; and
4. Affidavits of Wages Paid for the Contractor and all Subcontractors are on file with the Owner (RCW 39.12.040); and
5. A release has been obtained from the Washington State Department of Labor & Industries and the Washington State Employment Security Department; and
6. All claims, as provided by law, filed against the retainage have been resolved. In the event claims are filed and provided the conditions one through five are met, the Contractor will be paid the retained percentage less an amount sufficient to pay any such claims together with a sum determined by the Owner sufficient to pay the cost of claims and attorney's fees.
7. All other conditions required by law are satisfied.

## 10. NOTICE TO OWNER

### 10.1 WHEN NOTICE MUST BE GIVEN

Whenever

1. The Contractor disagrees with any requirement, direction, interpretation or determination by the Owner or Owner's Representative;
2. The Contractor knows, or should with the reasonable exercise of ordinary care know, of a differing site condition as provided in **11. DIFFERING SITE CONDITIONS**;
3. The Contractor knows, or should with the reasonable exercise of ordinary care know, of any Delay or an event that may cause a Delay;
4. The Contractor believes, or with the reasonable exercise of ordinary care should believe, it is entitled to an adjustment of Contract Sum or Time, even if the total or exact amount or impact cannot yet be determined;

5. The Contractor believes it is required or directed to perform work that is outside the scope of the Contract Documents; or
6. An event occurs, or fails to occur, that the Contractor believes, or should reasonably foresee, may result in a Contract Claim;

the Contractor shall immediately give Notice to the Owner or Owner's Representative as provided in this section and elsewhere in the General Conditions and Specifications.

Timely and adequate Notice is a condition precedent to a Contract Claim.

Requests for extensions of Contract Time must be made and will be evaluated in accordance with **5.2.2.2 Extensions of Contract Time**.

Irrespective of any request for additional compensation or Contract Time or any Contract Claim that work is extra and not part of the original scope of Work, the Contractor shall proceed expeditiously and promptly with the work as the Owner orders.

If the Contractor fails to follow the procedures of this Contract, including failing to give Notice, the Contractor completely waives such Contract Claim. In its sole discretion, the Owner may waive strict compliance with procedures, but any such waiver of one or more items or elements does not waive the necessity for Contractor's strict compliance with any other item or element, nor shall such waiver be admissible in any legal proceeding for any reason.

## **10.2 FORM OF NOTICE**

The Notice must include the following minimum information:

1. A complete and accurate description of the event or events giving rise to the Notice, including dates, times, and locations;
2. A preliminary list of persons involved in such event;
3. A statement whether the Contractor believes the event may result in a Contract Claim for additional Contract Time or adjustment of the Contract Sum;
4. A date by which Contractor shall begin providing Supplemental Information as provided in this section.

## **10.3 SUPPLEMENTAL INFORMATION**

Contractor shall supplement the written Notice as soon as possible with a written statement providing the following:

1. The date of the event, incident, direction, and other pertinent information;
2. The nature and circumstances giving rise to the Notice;
3. The Contract provisions relating to, but not limited to, the event, incident, and direction;
4. The estimated dollar cost, if any, of the Extra Work, or Delay, or both and how that estimate was determined; and
5. An analysis of the schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.

Throughout any work related to a Notice, the Contractor shall keep complete and accurate records of costs, expenses, and time incurred for which Contractor will or may seek an adjustment. Contractor waives and is stopped from seeking an adjustment of Contract Sum or Contract Time where Contractor fails to keep and maintain cost, timekeeping, and scheduling records segregated and contemporaneously allocated to the subject work for which an adjustment is sought. For example, failure to keep contemporaneous labor and equipment time

records specifically and only allocated to each item of claimed Extra Work shall constitute a waiver of any Contract Claim for reimbursement or additional Contract Time for each such item of Extra Work. The Contractor shall permit the Owner access to these and any other records needed for evaluating requests for additional Contract Time or Contract Sum.

## 11. DIFFERING SITE CONDITIONS

Upon discovery and before such conditions are disturbed, the Contractor shall promptly provide Notice to the City's Representative of:

1. Pre-existing subsurface or latent physical conditions at the site differing materially from those indicated in this Contract, or
2. Pre-existing unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this Contract.

Upon written request, the City's Representative shall determine whether the actual conditions encountered by the Contractor conditions are materially different and, if so, are the cause of a material increase or decrease in the Contractor's cost of performance of the Work, or extend the duration of the critical path of the schedule. Upon such determination, the City's Representative will make an adjustment of Contract Sum or Contract Time, as appropriate. Extensions of Contract Time will be evaluated in accordance with **5.2.2.2 Extensions of Contract Time**.

The City's Representative's determination that differing site conditions do not exist and/or the appropriate adjustment in Contract Sum or Contract Time (if any) shall be final. If there is a decrease in the cost or time required to perform the Work, failure of the Contractor to notify the City's Representative of the differing site condition shall not affect the City's right to make an adjustment in the Contract Sum or Contract Time. Additionally, no Contract Claim or adjustment of Contract Sum or Contract Time shall be allowed unless the Contractor has followed the procedures provided for in this Contract, including, but not limited to, furnishing timely Notice of the event and its effect on Contract Time and Contract Sum as required herein.

Contractor shall in no event be entitled to a Contract Claim or adjustment of Contract Sum or Contract Time based on an allegation that the pre-existing subsurface or latent physical conditions at the site differ materially from those indicated in this Contract unless Contractor establishes that it reasonably relied on the conditions indicated in this Contract when making its bid, that the actual conditions encountered on the site differed materially from those indicated in this Contract, and that such materially-different conditions were not foreseeable at the time of its bid.

## 12. CONTRACT CLAIMS

### 12.1 GENERAL

If the Contractor requests or believes for any reason that it is entitled to an adjustment of Contract Sum or Contract Time, or if the Contractor has a Dispute with the Owner and wants the Owner to take some action, or refrain from taking action, the Contractor shall file a Contract Claim as provided in this section. A timely and complete Contract Claim is a condition precedent to any entitlement by the Contractor to an adjustment of Contract Sum or Contract Time. No Contract Claim shall be allowed unless the Contractor has given Notice as required by **10. NOTICE TO OWNER** and/or **11. DIFFERING SITE CONDITIONS** and otherwise fully complies with the requirements of this section **12. CONTRACT CLAIMS**. The Contractor waives any Contract Claim if: (a) Notice was not timely given in accordance with the requirements of **10**.



**NOTICE TO OWNER and/or 11. DIFFERING SITE CONDITIONS;** (b) the Owner's Representative is not afforded reasonable access by the Contractor to complete records, including, but not limited to, correspondence, job diaries, and actual cost and additional time incurred; (c) a Contract Claim is not timely filed as required by the General Conditions; or (d) adequate, accurate, contemporaneous and segregated supporting time and expense records are not kept and maintained. The fact that the Contractor provided proper and timely Notice, provided a properly filed Contract Claim, or provided the Owner's Representative access to records of actual cost, shall not in any way be construed as proving or substantiating the validity of the Contract Claim. If the Owner determines the Contract Claim has merit in whole or in part, the Owner's Representative will make an adjustment of Contract Sum or Contract Time required for the work, or both. If the Owner's Representative finds the Contract Claim to be without merit, no adjustment will be made.

The Contractor shall keep full, complete, accurate and contemporaneous records of the costs and additional time incurred for any alleged Contract Claim. The Contractor shall permit the Owner's Representative to have access to those records and any other records as may be required by the Owner's Representative to determine the facts or contentions involved in the Contract Claim. Owner is not obligated to respond to a Contract Claim unless the Contractor is in full compliance with all the provisions of the General Conditions and the formal Contract Claim document has been submitted.

Full compliance by the Contractor with the provisions of this section 12 is a contractual condition precedent to the Contractor's right to sue or seek any recovery against the Owner in any legal proceeding.

## **12.2 CONTENTS**

All Contract Claims filed by the Contractor shall be in writing, verified under penalty of perjury by an officer or principal of the Contractor, and in sufficient detail to enable the Owner's Representative to ascertain the basis and amount of the Contract Claim. All Contract Claims shall be submitted to the Owner's Representative. At a minimum, each Contract Claim must include:

1. A detailed factual statement of the Contract Claim for an adjustment of the Contract Sum or Contract Time, if any, providing all necessary dates, locations, and items of work affected by the Contract Claim.
2. The dates of all facts related to the Contract Claim.
3. The name of each Owner's individual, official, or employee involved in or knowledgeable about the Contract Claim.
4. The specific provisions of the Contract that support the Contract Claim and a statement of the reasons why such provisions support the Contract Claim.
5. If the Contract Claim relates to a decision of the Owner's Representative that the Contract leaves to the Owner's Representative's discretion or as to which the Contract provides that the Owner Representative's decision is final, the Contractor shall set out in detail all facts supporting its position relating to the decision of the Owner's Representative.
6. Identification of any documents and the substance of any oral communications that support the Contract Claim.
7. Copies of any identified documents that support the Contract Claim, other than Owner documents and documents previously furnished to the Owner by the Contractor. Standard industry manuals may be incorporated by reference.

8. If Contractor seeks an extension of Contract Time:
  - a. The specific amount of time (including days and dates) sought.
  - b. The specific reasons the Contractor believes an extension of Contract Time should be granted, including, but not limited to, compliance with the requirements of **5.2.2.2 Extensions of Contract Time**; and
  - c. The specific provisions of the Contract Documents under which it is sought.
9. If Contractor seeks an increase in the Contract Sum, the exact amount sought and a breakdown of that amount into the following categories:
  - a. Labor
  - b. Materials
  - c. Direct Equipment. The actual cost for each piece of equipment for which a Contract Claim is made or in the absence of actual cost, the rates established by the AGC/WSDOT Equipment Rental Agreement that was in effect when the work was performed. In no case shall the amounts sought or paid for each piece of equipment exceed the rates established by the Equipment Rental Agreement even if the actual cost for such equipment is higher. The Owner may audit the Contractor's cost records to determine actual equipment cost. The following information shall be provided for each piece of equipment:
    - i. Detailed description (e.g., Motor Grader Diesel Powered Caterpillar 12 "G", Tractor Crawler ROPS & Dozer Included Diesel)
    - ii. The hours of use or standby; and
    - iii. The specific day and dates of use or standby;
    - iv. Job Overhead.
    - v. Overhead (general and administrative).
    - vi. Subcontractor's contract claims (in the same level of detail as specified herein is required for all Subcontractor's contract claims); and
    - vii. Other categories as specified by the Contractor or the Owner.
10. A notarized statement shall be submitted to the Owner's Representative containing the following language:

Under the penalty of law for perjury or falsification, the undersigned,

\_\_\_\_\_,  
(name) (title)

of \_\_\_\_\_  
(company)

hereby certifies that the Contract Claim for an adjustment to the Contract Sum and/or Contract Time, if any, made herein for Work on this Contract is a true and complete statement of the factual basis of the Contract Claim and all actual costs incurred and time sought, and is fully documented and supported under the Contract between the parties.

Date \_\_\_\_\_ /s/ \_\_\_\_\_

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_

Notary Public

My Commission Expires: \_\_\_\_\_

### 12.3 FALSE OR OMITTED INFORMATION

The Contractor waives each Contract Claim for which it presents material information that it knows, or in the exercise of reasonable care should know, is false, or omits or fails to disclose material information relating to such Contract Claim. In such case, Contractor shall reimburse the Owner for any and all fees and expenses incurred in investigating any such Contract Claim.

### 12.4 REMEDIES

#### 12.4.1 General

If a Contract Claim has merit in whole or in part, then Contractor's sole remedies shall be those provided in this subsection. Contractor must timely and strictly comply with the requirements of **10. NOTICE TO OWNER, 11. DIFFERING SITE CONDITIONS, 12. CONTRACT CLAIMS** and all other General Conditions relating to the Contract Claim. Adjustments to Contract Time shall be determined pursuant to **5.2.2.2 Extensions of Contract Time**. Failure to comply strictly and timely shall be deemed a waiver of the Contract Claim.

#### 12.4.2 Extra Work

##### 12.4.2.1 Adjustment of Contract Sum

If the Contractor is entitled to an adjustment of Contract Sum because of Extra Work, the adjustment shall be calculated and paid as provided in **9.5. ADJUSTMENT OF CONTRACT SUM**. This amount includes jobsite and home office Overheads for such Work, including any schedule delays relating to such Work. Therefore, no compensation in addition to that provided in **9.6. FORCE ACCOUNT** shall be paid for such things as extended Overhead or other costs or damages.

##### 12.4.2.2 Extension of Contract Time

Extensions of Contract Time caused by Extra Work shall be determined as provided in **5.2.2.2 Extensions of Contract Time**.

#### 12.4.3 Delays

##### 12.4.3. Owner Caused Delay Unrelated to Extra Work

###### 12.4.3.1.1 Adjustment of Contract Sum

If the Contractor is entitled to an adjustment of Contract Sum because of a Delay solely caused by the Owner that does not relate to Extra Work, Contractor shall only be compensated for the items below, less all funds paid pursuant to any change in the Contract Sum that contributed to the Delay:

1. Documented, incurred cost of nonproductive field supervision or labor extended because of the Delay;
2. Documented, incurred cost of home office supervision to attend jobsite meetings;
3. Documented, incurred cost of temporary facilities or equipment rental extended because of the Delay;

4. Documented, incurred cost of insurance extended because of the Delay;
5. General and administrative Overhead in an amount to be agreed upon, but not to exceed three percent (3%) of original Contract Sum divided by the Contract Time for each day of the Delay.

Owner shall not owe Contractor compensation for extended Overhead or other delay costs to the extent Contractor or anyone other than the City contributed to or is concurrently responsible for the Delay.

#### **12.4.3.1.2 Adjustment of Contract Time**

If the Contractor is entitled to an adjustment of Contract Time because of a Delay solely caused by the Owner that does not relate to Extra Work, Contractor shall be entitled to an adjustment of Contract Time to the extent the Delay increases the duration of the Project, as measured by the critical path and as demonstrated pursuant to the requirements of

#### **5.2.2.2 Extensions of Contract Time.**

#### **12.4.3.2 Contractor Caused Delay**

If the Contractor is solely responsible for any Delay to any interim milestone, Substantial Completion, Physical Completion or the Completion Date, the Owner shall be entitled to liquidated or other damages as provided elsewhere in the Contract Documents. The Contractor accepts the risk of any Delays caused by strikes, work slowdowns, job actions and labor unrest of any kind. Contractor shall not be entitled to any increase in Contract Sum or Contract Time due to a Delay it caused.

#### **12.4.3.3 Delays Concurrently Caused by Contractor and Owner**

If the Owner and the Contractor cause a Delay concurrently, neither the Owner nor the Contractor shall be liable to the other except as provided herein.

##### **12.4.3.3.1 Adjustment of Contract Sum**

The Contractor shall not be entitled to any adjustment in Contract Sum for Delays concurrently caused by the Owner and the Contractor.

##### **12.4.3.3.2 Adjustment of Contract Time**

The Contractor shall be entitled to an extension of Contract Time for the Owner caused portion of any Delay concurrently caused by the Owner and Contractor to the extent the Owner caused the Delay to extend longer than if the Contractor had solely caused the Delay.

#### **12.4.3.4 Third Party Caused Delays and Force Majeure**

For the purposes of this section 12.4.3.4, a "Force Majeure Event" is defined as earthquake, flood, pandemic (and governmental laws, regulations, requirements, and orders resulting therefrom), natural disasters, acts of war or acts of terrorism. Pandemic in the preceding sentence includes without limitation the COVID-19 / novel coronavirus (SARS-CoV-2) pandemic, which is the subject of the Governor's proclamation dated February 29, 2020, and subsequent proclamations.

For the purposes of this section 12.4.3.4, a "Third Party" is defined as a third party for whom neither the Contractor nor the City is responsible.

#### **12.4.3.4.1 Adjustment of Contract Sum**

The Owner and the Contractor shall not be responsible to compensate each other financially for any Delay to the extent caused by a Third Party or a Force Majeure Event. A Delay caused by a utility's failure to provide service or relocate its lines (despite a timely request for such service or relocation) is an example of this kind of Delay for which neither the Contractor nor the Owner is financially responsible to the other. Mislocated utility lines or utility lines not located are another example of a Delay for which neither the Contractor nor the Owner is responsible to the other. However, the Contractor's failure to request a utility locate or relocation in a timely way is not, and any resulting Delay would be the responsibility of the Contractor. Because the Contractor is responsible for ordering materials and Equipment, Contractor shall not be entitled to an adjustment of Contract Time or Contract Sum due to Delays caused by the lack of materials or Equipment. A strike, job action, slowdown, work to rule, or other job action or labor dispute or problem is not a Delay caused by a Third Party for the purposes of section **12.4.3 Delays**.

#### **12.4.3.4.2 Adjustment of Contract Time**

The Contractor shall be entitled to an extension of Contract Time for Delays to the extent caused by a Third Party or Force Majeure Event. Extension of Contract Time shall be determined pursuant to 5.2.2.2 Extensions of Contract Time.

### **12.4.3.5 Extended or Unabsorbed Overhead**

#### **12.4.3.5.1 General**

To present a request for additional compensation for Extended or Unabsorbed Overhead, the Contractor has the burden of keeping and maintaining accurate documentation to support any such claim. If the Contractor fails to provide or keep adequate financial data for an accurate and fair Eichleay calculation, Contractor waives and releases any claim for Unabsorbed or Extended Overhead. In presenting any claim under this section of the Contract, the Contractor agrees to provide to the Owner any and all financial data needed by the Owner, or its representative, to review, substantiate and evaluate any claim for Extended and/or Unabsorbed Home Office Overhead. Failure to provide the requested information shall constitute waiver by the Contractor.

If Contractor is entitled to an adjustment of Contract Sum for Unabsorbed or Extended Overhead, it shall be calculated as provided in **9.5.3. Unabsorbed and Extended Overhead**.

#### **12.4.3.5.2 Elements**

Contractor shall only be entitled to an adjustment of Contract Sum for Unabsorbed or Extended Overhead if it clearly and convincingly demonstrates all of the following:

1. The Owner solely caused a delay to the Completion Date as measured by analysis of the project duration by the critical path method pursuant to **5.2.2.2 Extensions of Contract Time**;
2. Because of such Delay, the Contractor was forced to suspend or significantly interrupt its performance so that it was on standby or idled, and the Owner required the Contractor to be ready to resume performance on short notice. Extended time of performance of Work, such as extensions caused by changes, inefficiencies, or Extra Work, does not constitute suspension or significant interruption of performance.

3. The Contractor could not and did not use resources, including but not limited to labor, materials and equipment, standing by or idled on this or any other project for any work during the period of delay;
4. The Contractor's Overhead costs did not materially vary from its usual seasonal Overhead costs during the period of delay; and
5. The Delay did not cause Overabsorbed Overhead in the period in which the delayed Work was completed.

#### **12.4.3.5.2.1 Resources**

To demonstrate the Contractor could not and did not use resources, including but not limited to labor, materials and equipment from this Project for any other work on this or any other project during the period of delay (**12.4.3.5.2.(3)**), the Contractor must:

- a. Affirmatively represent and warrant that it did not perform substitute Work;
- b. Identify the specific resources that were idled; and
- c. Show that those resources did not, and could not, work on other contracts or projects during the Delay.

#### **12.4.3.5.2.2 No Material Variations**

To demonstrate the Contractor's Overhead costs did not materially vary from its usual seasonal Overhead costs during the period of delay (**12.4.3.5.2.(4)**), the Contractor must;

- a. Affirmatively represent and warrant that the completion of the subject Work was extended and that such extension prevented the performance of other work during both the period of delay and the later period of time required to complete the extended Work,
- b. Disclose the details of Contractor generated billings and Contractor Overhead Costs (as hereinafter defined) throughout the actual project performance. The details of such information should be no less than specific identification of the sources and amounts of revenue on no greater than a monthly basis and specific identification of the types and amounts of Contractor Overhead Costs on no greater than a monthly basis for the actual Project duration.

#### **12.4.3.5.2.3 Overabsorbed Overhead**

To demonstrate that it did not incur Overabsorbed Overhead in the period following the Delay (**12.4.3.5.2.(5)**), the Contractor must:

- a. Affirmatively represent and warrant that completion of the delayed Work prevented the performance of other work;
- b. Identify the critical resource unavailable for other work due to completion of the delayed Contract; and
- c. Showing that unavailability of this critical resource precluded the performance of other work.

### **12.4.4 Inefficiencies**

#### **12.4.4.1 Adjustment of Contract Sum**

To the extent Contractor is entitled to an increase in Contract Sum because of inefficiencies or impaired productivity, then compensation due, if any, shall be calculated as provided in

**9.5. ADJUSTMENT OF CONTRACT SUM.** There is no entitlement to increase in Contract Sum for inefficiencies related to a Third Party or to a Force Majeure Event.

#### **12.4.4.2 Adjustment of Contract Time**

To the extent Contractor is entitled to an extension of Contract Time because of inefficiencies or impaired productivity, then the time extension, if any, shall be determined as provided in **5.2.2.2 Extensions of Contract Time**.

### **13. DISPUTES**

#### **13.1 RESOLUTION**

When a Dispute occurs during a Contract, the Contractor shall pursue resolution through the Owner's Representative. The Contractor shall follow the procedure stated in **12. CONTRACT CLAIMS** herein and **5.2.2.2 Extensions of Contract Time** for issues regarding the schedule and Contract Time. Timely and adequate Notice is a condition precedent to a Contract Claim. Timely and complete submission of a Contract Claim is a condition precedent to any entitlement by the Contractor to an adjustment of Contract Sum or Contract Time. Unless waived by the Owner, mediation is a condition precedent to the filing of any lawsuit, action or proceeding that seeks to recover on a Contract Claim, whether in whole or in part.

#### **13.2 CONTINUING THE WORK**

Contractor shall carry on the Work and adhere to the schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of Disputes or disagreements, except as permitted by paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

### **14. TIME LIMITATIONS AND JURISDICTION**

The parties intend that all Claims and Disputes be dealt with promptly and expeditiously when they arise. The parties intend that all Claims and Disputes be resolved quickly and expeditiously and desire to avoid claims and Disputes that relate back to events or Work occurring months before. The parties desire to avoid litigation and the costs and expense of Claims and Disputes at the end of the Project.

Any Contract Claim for adjustment of Contract Sum or Contract Time, or any Dispute or Contract Claim of any kind whatsoever, must be submitted, if at all, to the Owner or Owner's Representative no later than thirty (30) days after Notice was first required to be given by the Contractor as provided in **ARTICLE 10. NOTICE TO OWNER**. Failure to submit a Contract Claim within the thirty (30) days of the date Notice was required pursuant to **ARTICLE 10. NOTICE TO OWNER** constitutes a complete waiver of and bar to the Contract Claim, and Contractor is estopped from later asserting a Contract Claim or seeking any relief or remedy relating to the Dispute for which it failed to submit a Claim.

Contractor may not sue, cross-claim, claim, or bring any action of any kind whatsoever against the Owner on any Contract Claim or Dispute after the expiration of one hundred eighty (180) days from Physical Completion.

Any alleged cause of action by Owner or Contractor as to any acts or failures to act occurring prior to Substantial Completion shall be deemed to have accrued in any and all events not later than such date of Substantial Completion.

## **15. LIABILITY AND INSURANCE**

### **15.1 GENERAL**

Contractor bears all risk of loss, casualty or damage to installed Work prior to Final Acceptance, irrespective of whether the Owner has taken possession of the Project in whole or in part and notwithstanding the existence or availability of insurance or the insurance coverages required by the Contract Documents.

### **15.2 BONDS**

#### **15.2.1 Payment and Performance Bonds**

The Contractor shall provide a payment bond and a performance bond, each in the amount of 100 percent of the Contract Sum in the form required by the Contract. This bond shall serve as security for the faithful performance of the Work and as security for the faithful payment and satisfaction of the persons furnishing materials and performing labor on the Work. The bond shall be issued by a corporation duly and legally licensed to transact surety business in the State of Washington. Such bond shall remain in force throughout the period required to complete the Work, and thereafter for a period of three hundred sixty-five (365) calendar days after Final Acceptance. The bond must be executed by a duly licensed surety company, which is listed in the latest Circular 570 of the United States Treasury Department, as being acceptable as surety on federal bonds. No surety's liability on the bond shall exceed the underwriting limitations for the respective surety specified in Circular 570. The scope of the bond or the form thereof prescribed in these Contract Documents shall in no way affect or alter the liabilities of the Contractor to the Owner as set forth herein.

#### **15.2.2 Maintenance Bond**

The Contractor shall, prior to the release of Final Payment, furnish separate Maintenance (or Guarantee) Bonds in form acceptable to the Owner written by the same corporate surety that provides the Payment and Performance Bond for this Contract. These bonds shall secure the Contractor's obligation to replace or repair defective materials and faulty workmanship for a minimum period of one (1) year after Final Payment and shall be written in an amount equal to one hundred percent (100%) of the Contract Sum, as adjusted (if at all).

### **15.3 INSURANCE**

#### **15.3.1 General**

The Contractor shall obtain and keep in force during the term of the Contract and until thirty (30) days after the Completion Date, unless otherwise indicated below, the following insurance with insurance companies or through sources approved by the State Insurance Commissioner pursuant to Title 48 RCW.

#### **15.3.2 Insurer Rating**

The insurance provided must be with an insurance company with a rating of A-: VII or higher in the A.M. Best's Key Rating Guide, which is licensed to do business in the state of Washington (or issued as a surplus line by a Washington Surplus lines broker). The Owner reserves the right to approve the security of the insurance provided, the company, terms and coverage, and the Certificate of Insurance.

#### **15.3.3 Claims Made Form Requirements**

If any policy is written on a claims made form, the retroactive date shall be prior to or coincident with the effective date of this Contract. The policy shall state that coverage is claims made, and state the retroactive date. Claims made form coverage shall be maintained by the Contractor for



a minimum of three years following the expiration or earlier termination of this Contract, and the Contractor shall annually provide the Owner with proof of renewal. If renewal of the claims made form of coverage becomes unavailable, or economically prohibitive, the Contractor shall purchase an extended reporting period ("tail") or execute another form of guarantee acceptable to the Owner to assure financial responsibility for liability for services performed.

#### **15.3.4 Cross Liability Endorsement**

The policies of insurance shall contain a "cross liability" endorsement substantially as follows:

The inclusion of more than one insured under this policy shall not affect the rights of any insured as respects any claim, suit, or judgment made or brought by or for any other insured or by or for any employee of any other insured. This policy shall protect each insured in the same manner as though a separate policy had been issued to each, except that nothing herein shall operate to increase the company's liability beyond the amount or amounts for which the company would have been liable had only one insured been named.

#### **15.3.5 Additional Insured**

All insurance policies, with the exception of Workers Compensation shall be endorsed to name the Owner, and its elected officials, officers, employees, agents, and volunteers, and other entities specifically required by the Contract Documents, as additional insured(s). Such endorsement shall not limit the policy limits available to the Owner as additional insured to the coverage amounts required herein if the Contractor maintains larger policy limits.

#### **15.3.6 Contractor Insurance Primary / Waiver of Subrogation**

Contractor's insurance shall be primary as respects the Owner, and any other insurance or self-insurance maintained by the Owner shall be excess and not contributing insurance with the Contractor's insurance.

The Contractor waives all rights against the Owner and its separate contractors, and their agents and employees, for damages caused by fire or other perils to the extent such damage cost is actually paid by property insurance applicable to the Work. The Contractor shall require similar waivers from all Subcontractors.

#### **15.3.7 Assumption of Risk**

Contractor hereby assumes all risk of damage to its property, or injury to its officers, directors, agents, contractors, or invitees, in or about the Property from any cause, and hereby waives all claims against the Owner. The Contractor further waives, with respect to the Owner only, its immunity under RCW Title 51, Industrial Insurance.

#### **15.3.8 Cost Included in Price**

All costs for insurance shall be incidental to and included in the unit contract prices or lump sum price of the Contract and no additional payment will be made for required insurance.

#### **15.3.9 Subcontractors**

Contractor shall furnish separate evidence of insurance as stated above for each Subcontractor or shall include all Subcontractors as insureds under its policies. All coverage for Subcontractors shall be subject to all the requirements stated herein and applicable to their profession. If Contractor does not include Subcontractors as insured under Contractor's own insurance policies, Contractor shall be responsible for assuring that all Subcontractors obtain all insurance as required by this Agreement and that the Owner be specifically endorsed as an additional insured on such insurance.

**15.3.10 No Work Until Insurance Requirements Met**

Neither the Contractor nor any of its subcontractors shall begin work under the Contract until all required insurance has been obtained and approved by the Owner, irrespective of whether a Notice to Proceed has been issued. Working or calendar days will be charged against Contract Time from the date specified in the Notice to Proceed (or the date of the Notice to Proceed, if no start date is specified in the Notice to Proceed), and will not be suspended or not charged if insurance requirements are not fulfilled. Purchase of appropriate insurance and providing satisfactory evidence of required insurance is wholly the obligation of the Contractor, and any Delay that is not the fault of the Owner shall be attributed to the Contractor.

**15.3.11 Failure to Procure and Maintain Insurance**

Failure on the part of the Contractor to obtain, maintain and deliver the policy or policies (in whole or in part) and receipt or receipts as required shall constitute a material breach of Contract. After giving five (5) working days notice to the Contractor to correct the breach, the Owner may, in its sole discretion and option: (a) immediately terminate the Contract; (b) procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Owner on demand, or, at the sole discretion of the Owner, offset against funds due the Contractor from the Owner; (c) withhold progress payments (in whole or in part); and (d) avail itself of any other remedy at law, in equity, or allowed by Contract. These remedies are cumulative and not exclusive. The Contractor hereby appoints the Owner its true and lawful attorney, to do the things necessary for the purpose of procuring or renewing insurance as provided herein. Failure of the Owner to obtain such insurance shall in no way relieve the Contractor of its responsibilities under this Contract.

**15.3.12 Cancellation**

The Owner shall be given at least thirty (30) days prior written Notice of any cancellation, non-renewal, or other material change in any insurance policy. Owner acknowledges that the Contractor's Worker's Compensation/Employer's Liability insurance cannot be endorsed or amended to provide the Owner with prior Notice of material changes.

**15.3.13 Evidence of Insurance**

The Contractor shall deliver the executed Contract for the Work to the Owner together with a Certificate(s) of Insurance and endorsements for each policy of insurance meeting the requirements set forth above. The certificate must conform to the following requirements:

1. An ACORD certificate Form 25-S, or equivalent, showing the insuring company, policy effective dates, limits of liability and the schedule of Forms and Endorsements.
2. A copy of either: (a) the endorsement naming Owner elected officials, officers, employees, agents, and volunteers and any other entities required by the Contract Documents as Additional Insured(s), and stating that coverage is primary and non-contributory, showing the policy number, and signed by an authorized representative of the insurance company on Form CG2010 (ISO) or equivalent; or (b) the blanket additional insured policy provision.
3. A copy of an endorsement stating that the coverage provided by this policy to the Owner or any other named insured shall not be canceled, not renewed or materially changed without providing at least thirty (30) days prior written Notice to the Owner.
4. The certificate(s) shall not contain the following or similar wording regarding cancellation notification to the Owner. "Failure to mail such Notice shall impose no obligation or liability of any kind upon the company."

5. The certificate(s) shall not contain the phrase “endeavor to”, or any substantially similar phrase, regarding issuance of written Notice of cancellation of the policies prior to their expiration dates.
6. The Description of Operations in the certificate must read as: “All policies of insurance, except workers compensation, are endorsed to name the City of Everett, its elected officials, officers, employees, agents, and volunteers as additional insured(s). All such insurance is primary as respects the City of Everett, and any other insurance maintained by the City of Everett is excess and not contributing. The City of Everett will be given at least thirty (30) days prior written notice of any cancellation, non-renewal, or other material change in any insurance policy.”

Within ten (10) days upon Owner’s written request, the Contractor shall deliver to the Owner certified copies of all policies of insurance and the receipts for payment of premiums thereon. The Owner acknowledges that Contractor may pay its premium on a monthly basis, and may not be able to provide complete evidence of payment of premiums until the final premium is paid.

### **15.3.14 Coverages and Limits**

The insurance shall provide the minimum coverages and limits set forth below. Owner does not warrant or represent that such coverages and limits are appropriate or adequate to protect the Contractor. Providing coverage in these stated minimum limits shall not be construed to relieve the Contractor from liability in excess of such limits. All deductibles must be disclosed and are subject to approval by the Owner. The cost of any claim payments falling within the deductible shall be the sole responsibility of the Contractor.

#### **15.3.14.1 CGL**

A policy of Commercial General Liability Insurance, written on an insurance industry standard occurrence form: (CG 00 01) or equivalent, including all the usual coverage known as:

- Per Project aggregate endorsement (CG2503)
- Premises/Operations Liability
- Products/Completed Operations – for a period of one year following Final Acceptance.
- Personal/Advertising Injury
- Contractual Liability
- Independent Contractors Liability
- Stop Gap or Employers Contingent Liability
- Explosion, Collapse, or Underground (XCU), (as applicable)\*
- Liquor Liability/Host Liquor Liability (as applicable)\*
- Fire Damage Legal
- Blasting (as applicable)\*

\*These coverages are only required when the Contractor’s Work under this agreement includes exposures to which these specified coverage respond.

If the Contract requires working over water, the following additional coverages are required:

- a. Watercraft, owned and non-owned
- b. U.S. Harborworkers’/Longshoremen and Jones Act

**15.3.14.2 Builders' Risk**

The Contractor shall procure and maintain during the life of the Contract, or until acceptance of the project by Owner, whichever is longer, "All Risk" Builders Risk or Installation Floater Insurance at least as broad as ISO form number CP0020 (Builders Risk Coverage Form) with ISO form number CP0030 (Causes of Loss – Special Form) including coverage for collapse, theft, off-site storage and property in transit. The coverage shall insure for direct physical loss to property of the entire construction project, for 100% of the replacement value thereof and include earthquake. The policy shall be endorsed to cover the interests, as they may appear, of the Owner, Contractor and subcontractors of all tiers with the Owner and sub-contractors listed as a Named Insured. In the event of a loss to any or all of the work and/or materials therein and/or to be provided at any time prior to the final close-out of the Contract and acceptance of the project by the Owner, the Contractor shall promptly reconstruct, repair, replace or restore all work and/or materials so destroyed. Nothing herein provided for shall in any way excuse the Contractor or its surety from the obligation of furnishing all the required materials and completing the work in full compliance with the terms of the Contract.

**15.3.14.3 Other Coverages**

Other additional coverages that may be required will be listed in the Specifications.

**15.3.14.4 Limits**

Such policy(ies) must provide the following minimum limits:

**Bodily Injury and Property Damage -**

\$ 5,000,000	General Aggregate
\$ 2,000,000	Products & Completed Operations Aggregate
\$ 2,000,000	Personal & Advertising Injury
\$ 2,000,000	Each Occurrence
\$ 100,000	Fire Damage

**Stop Gap Employers Liability**

\$ 1,000,000	Each Accident
\$ 1,000,000	Disease - Policy Limit
\$ 1,000,000	Disease - Each Employee

A stop gap policy limit of \$500,000 will be acceptable if, and only if, the Contractor Excess or Umbrella Liability policy required by **15.3.14.6 Excess or Umbrella Liability** provides coverage over the stop gap policy.

**15.3.14.5 Automobile**

Commercial Automobile Liability: as specified by Insurance Services Office, form number CA 0001, Symbol 1 (any auto), with an MCS 90 endorsement and a CA 9948 endorsement attached if "pollutants" as defined in exclusion 11 of the commercial auto policy are to be transported. Such policy(ies) must provide coverage with a combined single limit of not less than \$1,000,000 for each accident.

**15.3.14.6 Excess or Umbrella Liability**

The limits stated in this section **15.3.14** may be satisfied by a combination of liability and, if necessary, commercial umbrella/excess policies.

**15.3.14.7 Pollution Liability**

A policy providing coverage for claims involving remediation, disposal, or other handling of pollutants arising out of Contractor's operations for others; contractor's site (owned); arising from the transportation of hazardous materials; or involving remediation, abatement, repair, maintenance or other work with lead-based paint or materials containing asbestos.

Such Pollution Liability policy shall provide at least \$2,000,000 per occurrence coverage for Bodily Injury and Property Damage.

**15.3.14.8 Worker's Compensation**

A policy of Worker's Compensation, as required by the Industrial Insurance Laws of the State of Washington. As respects Workers' Compensation insurance in the state of Washington, Contractor shall secure its liability for industrial injury to its employees in accordance with the provisions of RCW Title 51. If Contractor is qualified as a self-insurer in accordance with RCW 51.14, Contractor shall so certify by letter signed by a corporate officer indicating that it is a qualified self insured, and setting forth the limits of any policy of excess insurance covering its employees.

**15.3.15 Self-Insurance**

At its sole option and in its sole discretion, Owner may accept Contractor's self-insurance for a liability coverage in lieu of insurance from an insurer. Contractor must provide a letter from its Corporate Risk Manager, or appropriate Finance Officer representing and warranting the following minimum information: whether the self-insurance program is actuarially funded; the fund limits; any excess declaration pages to meet the Contract requirements; a description of how Contractor would protect and defend the Owner as an Additional Insured in their Self-Insured layer; and claims-handling directions in the event of a claim. Any amounts due to, sought by, or paid to third party claimants shall be the sole responsibility of the Contractor, irrespective of whether such amount falls wholly within the level or amount of the Contractor's self-insured retention.

**16. LAWS, REGULATIONS AND PERMITS****16.1 GENERAL**

The Contractor shall give the Notices required by law and comply with all laws, ordinances, rules and regulations pertaining to the conduct of the Work. The Contractor shall indemnify, defend, and save harmless the City (including its agents, officers, and employees) against any claims that may arise because the Contractor (or any employee of the Contractor or Subcontractor or material person) violated a legal requirement. The Contractor shall be liable for violations of same in connection with Work provided by the Contractor; and Contractor shall cooperate with all governmental entities regarding inspection of the Work and compliance with such requirements. If the Contractor observes that the Drawings, Specifications or other portions of the Contract Documents are at variance with any laws, ordinances, rules or regulations, he or she shall promptly notify the Owner's Representative in writing of such variance. The Owner will promptly review the matter and, if necessary, take appropriate action. Contractor agrees not to perform Work it knows, or in the exercise of ordinary care should know, to be contrary to any laws, ordinances, rules or regulations.

**16.2 PERMITS AND LICENSES**

Unless otherwise specified, permits and licenses from governmental agencies, which are necessary only for and during the prosecution of the Work and the subsequent guarantee period, shall be secured by the Contractor and paid for by the Owner. Permits and licenses of

regulatory agencies that are necessary to be maintained after expiration of the guarantee period will be secured and paid for by the Owner.

The City of Everett Utilities Department has reviewed and commented on the Drawings in this Contract.

If an erosion control plan is required, the Contractor shall submit an erosion control plan that depicts the best management practices that will be followed for erosion control. The Contractor may use the plans in this Contract. The fee for this permit will be waived by the City of Everett.

Electrical permits can be obtained at:

City of Everett  
3200 Cedar Street - 2<sup>nd</sup> Floor  
Everett, WA 98201  
Phone: 425/257-8800

### **16.3 PATENTS AND ROYALTIES**

Costs involved in fees, royalties, or claims for any patented invention, article, process or method that may be used upon or in a manner connected with the Work under this Contract or with use of completed Work by the Owner shall be paid by the Contractor. The Contractor and its sureties shall protect and hold the Owner, Owner's Representative, and Owner's Representative, together with its officers, agents, and employees, harmless from any and all loss, defense cost, and expenses and against any and all demands made for such fees or claims brought or made by the holder of any invention or patent. Before final payment is made on the account of this Contract, the Contractor shall, if requested by the Owner, furnish acceptable proof of a proper release from all such fees or claims.

Should the Contractor, its agent, employee or any of them be enjoined from furnishing or using any invention, article, material or plans supplied or required to be supplied or used under this Contract, Contractor shall promptly pay such royalties and secure requisite licenses; or, subject to acceptance by Owner, substitute other articles, materials, or appliances in lieu thereof that are of equal efficiency, quality, finish, suitability and market value to those planned or required under the Contract. Descriptive information of these substitutions shall be submitted to the Owner's Representative for determination of general conformance to the design concept and the construction Contract. Should Owner elect to refuse the substitution, Contractor agrees to pay such royalties and secure such valid licenses as may be requisite for the Owner, its officers, agents and employees or any of them, to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof.

## **17. AUDITS**

### **17.1 GENERAL**

The Contractor's records relating to this Project, including, but not limited to, wage, payroll, and cost records, shall be open to inspection or audit by representatives of the Owner during the Project and for a period of not less than six years after the date of Final Acceptance of the Contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that Project records of Subcontractors, Suppliers, and lower tier Subcontractors, including, but not limited to, the wage, payroll, and cost records, shall be retained and open to similar inspection or audit for the same period of time. The audit may be performed by employees or representatives of the Owner or by an auditor chosen by the Owner. The Contractor, Subcontractors, or lower tier Subcontractors shall provide adequate facilities,

reasonably acceptable to auditor, for the audit during normal business hours. The Contractor, Subcontractors, or lower tier Subcontractors shall make a good faith effort to cooperate with the auditors. If an audit is to be commenced more than sixty (60) days after the Final Acceptance date of the Contract, the Contractor will be given twenty (20) days' notice of the time when the audit is to begin. If any litigation, claim, or audit arising out of, in connection with, or related to this Contract is initiated, the Project records shall be retained until the later of (a) completion of litigation, claim, or audit or (b) six years after the date of Final Acceptance.

## **17.2 CLAIMS**

All Contract Claims filed against the Owner shall be subject to audit at any time following the filing of the Contract Claim. Failure of the Contractor, Subcontractors, or lower tier Subcontractors to maintain and retain sufficient records to allow the auditors to verify all or a portion of the Contract Claim or to permit the auditor access to the books and records of the Contractor, Subcontractors, or lower tier Subcontractors shall constitute a waiver of a Contract Claim and shall bar any recovery thereunder.

## **17.3 REQUIRED DOCUMENTATION FOR AUDITS**

As a minimum, the auditors shall have available to them the following documents:

- Daily time sheets and supervisor's daily reports.
- Collective Bargaining Agreements.
- Insurance, welfare, and benefit records.
- Payroll registers.
- Earnings records.
- Payroll tax forms.
- Material invoices and requisitions.
- Material cost distribution worksheet.
- Equipment records (list of company equipment, rates, etc.)
- Vendors', rental agencies', Subcontractors' and lower tier Subcontractors' invoices.
- Contracts between the Contractor and each of its Subcontractors, and all lower tier Subcontractor contracts and Supplier contracts.
- Subcontractors' and lower tier Subcontractors' payment certificates.
- Canceled checks (payroll and vendors).
- Job cost reports, including monthly totals.
- Job payroll ledger.
- General ledger.
- Cash disbursements journal.
- Financial statements for all years reflecting the operations on this Contract. In addition, the Owner may require, if it deems appropriate, additional financial statements for the 3 years preceding execution of the Contract and 3 years following Final Acceptance of the Contract.
- Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others.

If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents which support the amount of damages as to each Contract Claim.

Worksheets or software used to prepare the Contract Claim establishing the cost components for items of the Contract Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals.

Worksheets, software, and all other documents used by the Contractor to prepare its Bid. The employees or representatives of the Owner may audit these documents. The Contractor and its Subcontractors shall provide adequate facilities acceptable to the Owner for the audit during normal business hours. The Contractor and all Subcontractors shall cooperate with the Owner's auditors.

Correspondence, notes, and memoranda.

Job diaries.

## **18. MISCELLANEOUS**

### **18.1 CONSTRUCTION**

Contractor acknowledges that it has read the Contract Documents, understands them and agrees to be bound by them.

### **18.2 APPLICABLE LAW AND CHOICE OF FORUM**

This Contract and the parties' obligations hereunder shall be governed, construed, and enforced in accordance with the laws of the State of Washington. The parties agree that Snohomish County, in the State of Washington, shall be the proper forum for any action.

### **18.3 SEVERABILITY**

In the event that any provision of the Contract Documents is held invalid, void, illegal or unenforceable, the remainder of the Contract Documents shall not be impaired or affected thereby, and each term, provision, and part shall continue in full force and effect.

### **18.4 HEADINGS FOR CONVENIENCE.**

The section and subsection headings used herein are for referral and convenience only, and shall not be used to construe or interpret the Contract Documents.

### **18.5 WAIVER**

No waiver of one right or remedy shall act as a waiver of any other right or remedy or as a subsequent waiver of the same right or remedy. The waiver by either party of any term or condition of this Contract shall not be deemed to constitute a continuing waiver thereof nor of any further or additional right that such party may hold under this Contract.

### **18.6 CITY OF EVERETT BUSINESS LICENSE**

Contractor agrees to obtain a City of Everett business license prior to performing any Work pursuant to this Contract.



**18.7 COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS**

Contractor shall comply with and obey all federal, state and local laws, regulations, and ordinances applicable to the operation of its business and to its performance of Work hereunder. If, and to the extent, this Contract receives financial assistance from federal, state or private agencies, Contractor shall comply with all terms and conditions prescribed for third party contracts in the grant and all said terms and conditions shall be deemed incorporated in the Contract Documents. Terms and conditions of any such grant take precedence over conflicting terms and conditions in the Contract Documents.

**Title VI Assurance**

- a. The Contractor, with regard to the Work performed during the Contract, shall not discriminate on the grounds of race, color, sex or national origin in the selection and retention of Subcontractors, including procurement of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in such discrimination, including discrimination in employment practices.
- b. In all solicitations either by competitive bidding or negotiations made by the Contractor for Work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential Subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this Contract.
- c. The Contractor shall provide all information and reports required by federal regulations applicable to this Contract. The Contractor shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Owner to be pertinent to ascertain compliance with applicable federal regulations. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Owner, and shall set forth what efforts it has made to obtain the information.
- d. In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Owner shall impose such Contract sanctions as it, or the Owner's funding agencies, may determine to be appropriate, including, but not limited to: (a) withholding of payments to the Contractor until the Contractor complies, and (b) termination or suspension of the Contract, in whole or in part.
- e. The Contractor shall include the provisions of paragraphs (a) through (e) in every subcontract, including contracts for procurement and leases of equipment, unless exempt by applicable federal regulations or directives issued pursuant thereto. The Contractor shall take such action, including sanctions for noncompliance, with respect to any Subcontractor as the Owner or relevant federal agency may direct so as to enforce such provisions. Provided, however, in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or Supplier as a result of the foregoing direction, the Contractor may request that the Owner or the United States to enter into such litigation to protect their respective interests.

**18.8 COMPLETE AGREEMENT**

These Contract Documents contain the complete and integrated understanding and agreement between the parties and supersedes any understanding, agreement or negotiation, whether oral or written, not set forth herein.

**18.9 SUCCESSORS BOUND**

The grants, covenants, provisions and claims, rights, powers, privileges and liabilities contained in the Contract Documents shall be read and held as made by and with, and granted to and imposed upon, the Contractor and the Owner and their respective heirs, executors, administrators, successors and assigns.

**18.10 EFFECTIVE DATE**

When duly executed by both the Owner and Contractor, this Contract shall be effective as of the date the Contract (Section 005213) is signed by the Mayor of the City of Everett. There is no contract formed until the Effective Date.

**18.11 CONTRACTOR REGISTRATION**

Contractor represents and warrants it is a contractor duly registered and in good standing with the Washington State Department of Labor and Industries.

**END OF SECTION 00 7200**



**SECTION 00 7343 - WAGE RATE REQUIREMENTS****1.1 SPECIFICATION REFERENCE**

- A. Section 00 7200 - GENERAL CONDITIONS, Part 7.1 "Wages of Employees".

**1.2 WORK LOCATION**

- A. All Work performed within Snohomish County, WA.

**1.3 PREVAILING WAGE REQUIREMENTS**

- A. Contractor agrees to comply with all state and federal laws relating to the employment of labor and wage rates to be paid. The hourly wages to be paid to laborers, workers, or mechanics shall be not less than the prevailing rate of wage for an hour's work in the same trade or occupation in Snohomish County.
1. Washington State Prevailing Wage Rates for Snohomish County, effective 4/30/2024; Benefit Code Key, effective 4/30/2024 are, by reference, made a part of this Contract.
  2. Prevailing wage rates can be accessed at the following URL: <http://www.lni.wa.gov/TradesLicensing/PrevWage/WageRates/default.asp>
  3. Printed copies of the current prevailing wage forms are available upon request.
- B. In the preparation of its Bid, based on these Specifications, the Bidder is solely responsible to
1. Use the schedule in effect at the time of the Bid Opening Date and time,
  2. Determine the appropriate labor classification(s); and
  3. Utilize the appropriate and correct prevailing wage and benefit rate(s).
- C. No payment will be made on this Contract until the Contractor and each Subcontractor has submitted a "Statement of Intent to Pay Prevailing Wages", form F700-029-000, which has been approved by the industrial statistician of the Department of Labor and Industries.
- D. No final payment or release of retainage will be made until the Contractor and each Subcontractor has submitted an "Affidavit of Wages Paid", form F700-007-000, which has been certified by the industrial statistician of the Department of Labor and Industries.
- E. Post the prevailing rate of wage statement in a location readily visible to workers at the job site, or as allowed by RCW 39.12.020. The "Statement of Intent to Pay Prevailing Wages" shall include:
1. Contractor's registration certificate number and
  2. Prevailing rate of wage for each classification of workers entitled to prevailing wages under RCW 36.12.020 and the estimated number of workers in each classification.

**END OF SECTION 00 7343**



**SECTION 00 7373 - APPRENTICE UTILIZATION****1. APPRENTICE UTILIZATION REQUIREMENT**

- 1.1. Contractor shall require an Apprentice Utilization Rate of not less than fifteen percent (15%).
- 1.2. Contractor shall monitor Project compliance with this apprenticeship utilization requirement, and provide copies to the City when and as requested, the following documentation concerning the requirements of this Section:
  - 1.2.1. Records of its efforts to comply in good faith with the apprentice utilization requirement, including without limitation, documentation of its outreach efforts to encourage participation by Apprentices in the Project;
  - 1.2.2. The name and registration number of each Apprentice who works on the Project site;
  - 1.2.3. The number of Apprentices and the number of labor hours worked by them on the Project site, categorized by trade or craft; and
  - 1.2.4. The number of journey level workers and the number of labor hours worked by them on the Project site, categorized by trade or craft.
- 1.3. Contractor is not required to exceed the apprenticeship utilization requirements established by this Section.

**2. ADJUSTMENTS TO THE APPRENTICE UTILIZATION RATE**

- 2.1. If the Contractor determines it will be unable to meet the Apprentice Utilization Rate identified in Section 1.1, it must request, in writing, that the City modify the requirement. The City may adjust the Apprenticeship Utilization Rate if the Contractor establishes, to the satisfaction of the City, the existence of one or more of the following:
  - 2.1.1. The demonstrated lack of availability of Apprentices in specified geographic areas;
  - 2.1.2. A disproportionately high ratio of material costs to labor hours, which does not make feasible the Apprenticeship Utilization Rate;
  - 2.1.3. Contractor demonstrated a good faith effort to comply with the requirements of RCW 39.04.320; or
  - 2.1.4. Other criteria the City deems appropriate, which are subject to review by the office of the governor or the City Council.
- 2.2. The City shall evaluate the request, and if appropriate, authorize the modification of the Apprentice Utilization Rate. If the City determines that a modification is not justified, the City shall communicate the decision in writing to the Contractor.

### **3. INCENTIVES, PENALTIES, MONITORING AND ENFORCEMENT**

- 3.1 The City provides the following the monetary incentive amounts for meeting the apprentice utilization requirements, and the monetary penalty amounts for failing to meet the apprentice utilization requirements on the Project.
- 3.1.1 The monetary incentive for meeting the apprentice utilization requirement on this Project is \$1,000.
- 3.1.2 The monetary penalty for failing to meet the apprentice utilization requirement on this Project is equal to the number of hours of shortfall of required apprentice hours (after adjustment, if any, under Section 2 above) multiplied by the applicable published wage of a Step 1 apprentice laborer. The penalty will not exceed \$100,000. Payment of this amount is in addition to all other remedies the City may have under the Contract Documents or applicable law. Payment of this penalty does not relieve the Contractor of any obligation under this Section.
- 3.2 The Contractor must include in its Bid the cost value associated with meeting the goals of this Section. The City is not in a position within existing resources to identify this expected cost value. No claim for additional compensation will be allowed that is based upon a lack of knowledge of this Section or based on making incorrect cost assumptions regarding this Section.
- 3.3 The City will report the Apprentice Utilization Rate by the Contractor and any Subcontractors to the Department of Labor and Industries by Final Acceptance.
- 3.4 The City or its designee will monitor the apprentice utilization data provided by the Contractor and its Subcontractors. Progress payments may be withheld if the Contractor fails to comply with this Section and evidences a lack of good faith in so doing.
- 3.5 The City may make routine visits to the Project site for the purpose of confirming the use of Apprentices. The Contractor should be aware that various third parties might make visits to the Project site for the purpose of confirming the use of Apprentices. Said third party visitors will be required to abide by the Contractor's work rules and safety plan.

### **4. APPRENTICE UTILIZATION REPORTING**

- 4.1 Upon the City's request, Contractor and its Subcontractors shall report apprentice utilization data, including without limitation, through the Department of Labor & Industries' Prevailing Wage & Intent Affidavit System. The City may collect data on a monthly basis, beginning with the first day of work for each apprentice. Submittals are due at the end of the first month after the Contract start date specified in the Notice to Proceed, and at monthly intervals thereafter as specified above.
- 4.2 The Contractor and its Subcontractors shall submit such other information as may be requested by the City to verify compliance with the apprentice utilization requirement outlined in this Section, including but not limited to, apprentice utilization plans and/or reports as promulgated by the Department of Enterprise Services, the Department of Labor & Industries, or the City. The City reserves the right to add, delete, or change, as necessary, information it requires from Contractor and its Subcontractors.

**5. DEFINITIONS**

- 5.1 **Apprentice:** An apprentice enrolled or registered in an apprenticeship training program approved or recognized by the Washington State Apprenticeship and Training Council.
- 5.2 **Apprentice(ship) Utilization Rate:** The percentage of Labor Hours, including Contractor and Subcontractor hours, performed by Apprentices on the Project.
- 5.3 **Labor Hours:** The total number of hours worked by workers receiving an hourly wage who are directly employed by the Contractor or a Subcontractor of any tier on the Project and who are subject to state or federal prevailing wage requirements.

Other capitalized terms are as defined elsewhere in the Contract Documents.

**END OF SECTION**





## **SECTION 01\_11\_00**

### **SUMMARY OF WORK**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. This section contains summary of the work in this Contract and other known work in the vicinity of the Contract work.
- B. The work to be performed under this Contract consists of furnishing all tools, equipment, materials, supplies, and manufactured articles; furnishing all labor, transportation, and services, including fuel, power, and essential communications; and performing all work or other operations required for the fulfillment of the Contract, in strict accordance with the Contract Documents. Provide work complete. Provide all work, materials, and services not expressly indicated in the Contract Documents that may be necessary for the complete and proper construction of the work and administration of the contract.

##### **1.02 THE WORK**

- A. The Work of this Contract includes:
  - 1. Installation, operation, and removal of temporary sewage bypass pumping and piping systems.
  - 2. Rehabilitation of approximately 2,450 linear feet of reinforced 36-inch concrete pipe along 20th Street between Grand Avenue and Broadway Avenue.
  - 3. Rehabilitation of approximately 470 linear feet of 10-inch and 150 linear feet of 8-inch concrete pipe at Mill Street and Winter Street.
  - 4. Rehabilitation of approximately 135 linear feet of 24-inch corrugated metal pipe at 1525 East Marine View Drive. Rehabilitation work at this location shall be completed first before all other Project locations
  - 5. Rehabilitation of 26 manholes.
  - 6. Pavement demolition and restoration.
- B. Accomplishment of work in the Contract Documents shall meet all requirements of the Contract including timeframes specified by Section 01\_14\_00 - Work Restrictions.
- C. The above description is not intended to be complete. The work to be completed is provided for in the Contract Documents. The summary in this Section is not intended to relieve the Contractor of the responsibility for reading and understanding the Contract Documents.
- D. Federal, State and Local Laws, Statutes and Regulations are not individually referenced. This provision incorporates by reference the latest version of statutes, laws and regulations. In case of conflict between the requirements of the specifications and requirements of the statutes and regulations, the Contractor shall bring them to the attention of the Project Representative. Lacking a specific

response, the more stringent shall control. In no case can this contract be interpreted to override statutes and regulations of governing authorities.

- E. National and industry codes cited, such as IBC, NEC, NFPA, shall include amendments and supplements by the authority having jurisdiction whether stated or not.

### **1.03 LOCATION OF PROJECT**

- A. The Work is located in the City of Everett, Washington. The limits of work are located in:
  - 1. 20th Street between Grand Avenue and Broadway Avenue.
  - 2. Mill Street and Winter Street.
  - 3. East of 1525 East Marine View Drive (BNSF Right-of-Way).
  - 4. Various manhole locations across the City.

### **1.04 OWNER FURNISHED EQUIPMENT**

- A. Owner will furnish:
  - 1. None.

### **1.05 SPECIFICATION LANGUAGE**

- A. Specifications are written mostly in imperative and streamlined form. Unless indicated otherwise, this imperative language is directed to the Contractor. Additionally, the words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases:
- B. Examples:
  - 1. Aggregate: ASTM C33.
  - 2. Adhesive: spread with notched trowel.
- C. Individual Specification sections may include a reference to other sections. Specification sections referenced are intended only to assist in identifying associated work and are not intended and shall not be considered to be all inclusive. The Contractor is responsible for performing all the work in the Contract Documents whether referenced in the specific specifications or not.
- D. Whenever there is wording stating that an item is "as specified", "as shown", or "as indicated", the reference is to all the Contract Documents. Stating "as specified", "as shown", or "as indicated" does not refer necessarily to a Drawing or Specification, but it refers to either.

### **1.06 ACTIVITIES BY OTHERS**

- A. Owner, utilities, and others may perform activities within Site while the Work is in progress:
  - 1. Schedule the Work with Owner, utilities, and others to minimize mutual interference.

- B. The Contractor shall coordinate with the utility companies and provide the necessary materials and labor as specified in Section 26\_05\_03 - Utility Coordination.
- C. Cooperate with others to minimize interference and delays:
  - 1. When cooperation fails, submit recommendations and perform Work in coordination with work of others.
- D. When the Work depends on proper execution or results upon work performed by others, inspect and promptly report apparent discrepancies or defects in work performed by others:
  - 1. Assume responsibility for work performed by others, except for defects reported as specified in this paragraph and defects, which may become apparent in work performed by others after execution of the Work.

#### **1.07 COORDINATION OF WORK**

- A. Maintain overall coordination of the Work:
  - 1. Coordination with the personnel Naval Station Everett for the work at 20th Street.
  - 2. Coordination with BNSF and surrounding businesses for the work at 1525 E Marine View Drive.
- B. Obtain construction schedules for each subcontractor and require each subcontractor to maintain schedules and coordinate modifications.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 01\_11\_02**

### **CONTRACT DOCUMENT LANGUAGE**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section Includes: Explanation of arrangement, language, reference standards, and format.

##### **1.02 REFERENCES**

- A. Construction Specifications Institute (CSI):
  - 1. MasterFormat™.
  - 2. SectionFormat™.
  - 3. PageFormat™.

##### **1.03 PROJECT MANUAL ARRANGEMENT**

- A. Document and Section numbers used in Project Manual, and Project Manual arrangement are in accordance with CSI MasterFormat™, except where departures have been deemed necessary.
- B. Sections are written in CSI SectionFormat™, Three-Part Section Format, except where departures have been deemed necessary.
- C. Page format for Sections in the Project Manual is in PageFormat™, except where departures have been deemed necessary.

##### **1.04 CONTRACT DOCUMENT LANGUAGE**

- A. Specification Section Paragraphs entitled "Section Includes" summarize briefly what is generally included in the section.
  - 1. Requirements of Contract Documents are not limited by "Section Includes" paragraphs.
- B. Specifications have been partially streamlined by intentionally omitting words and phrases, such as "the Contractor shall," "in conformity therewith," "shall be" following "as indicated," "a," "an," "the" and "all."
  - 1. Assume missing portions by inference.
- C. Phrase "by Engineer" modifies words such as "accepted," "directed," "selected," "inspected," and "permitted," when they are unmodified.
- D. Phrase "to Engineer" modifies words such as "submit," "report," and "satisfactory," when they are unmodified.

- E. Colons (:) are used to introduce a list of particulars, an appositive, an amplification, or an illustrative quotation:
  - 1. When used as an appositive after designation of product, colons are used in place of words "shall be."
- F. Word "provide" means to manufacture, fabricate, deliver, furnish, install, complete, assemble, erect in place, test, or render ready for use or operation, including necessary related material, labor, appurtenances, services, and incidentals.
- G. Words "Contractor shall" are implied when direction is stated in imperative mood.
- H. Term "products" includes materials and equipment as specified in Section 01\_60\_01 - Product Requirements.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

**SECTION 01\_14\_00**  
**WORK RESTRICTIONS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for sequencing and scheduling the Work affected by existing site and facility, work restrictions, and coordination between construction operations and plant operations.

**1.02 GENERAL CONSTRAINTS ON WORK AND SCHEDULING OF WORK**

- A. Achieve Substantial Completion 150 working days after the effective date of Notice to Proceed.
- B. Achieve Physical Completion within the time specified by the Owner and stated in the Certificate of Substantial Completion per the Agreement Form in Section 005213 of these Specifications and the General Conditions in Section 007200.
- C. The use of City fire hydrants is not acceptable during the CIPP installation process due to the UV curing. Should the Contractor want to use water for other uses, the Contractor may request it from the City. A Temporary Hydrant Permit is required prior to hydrant use. The Contractor shall submit a water use plan for City review and approval. The plan must include proposed water withdrawal rates, volumes, timing, and proposed disposal method. The Contractor is responsible for all other necessary equipment.

**1.03 CONSTRUCTION CONSTRAINTS**

- A. Pipe and manhole lining work will use UV curing for liner installation.
- B. Pipe lining work (surface preparation, pipe lining, leak grouting, and any other tasks required to perform the in-pipe Work) shall be completed by October 31, 2024.
- C. Limit work to approved work areas as shown on the Drawings, unless additional areas are approved by the City.
- D. Contractor shall restore each site before moving to the next site by removing the respective temporary bypass system and restoring the site to like original condition.
- E. Contractor shall adhere to BNSF requirements for staging and pipe and manhole rehabilitation for 1525 East Marine View Drive Site. Contractor will coordinate with both BNSF and the City Project Manager for on-site work.



- F. Contractor to complete the 1525 East Marine View Drive 24-inch corrugated metal pipe first, before any of the other sites in the Project.
- G. Contractor shall not use the 30-inch influent pipe at SMH1995B12 for in-line storage.

#### **1.04 HOURS OF WORK**

- A. Unless otherwise specified, conform with applicable jurisdictions and other pertinent ordinances regarding limitations on work hours or specific parts of the work:
  - 1. Request work hour variations in writing and obtain written approval from the City and/or Owner prior to initiating work hours outside of the hours allowed by this Contract.
  - 2. Work outside of the scheduled work hours shall be submitted and requires approval by the City 72 hours prior to the start of such work.
  - 3. Standard work hours are weekdays from 7:00 AM to 6:00 PM and weekend days from 9:00 AM to 6:00 PM.

#### **1.05 UTILITIES**

- A. Provide advance notice to and utilize services of "811" for location and marking of underground utilities operated by utility agencies other than the City.
- B. Maintain electrical, telephone, water, gas, sanitary facilities, and other utilities within existing facilities in service. Provide temporary utilities when necessary.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION

## ATTACHMENT A- READINESS CHECKLIST



**READINESS CHECKLIST**  
(5 days prior to work)

Checklist provided as a guide but is not all inclusive.

1. Confirm all parts and materials are on site: \_\_\_\_\_  
\_\_\_\_\_
2. Review work plan: \_\_\_\_\_  
\_\_\_\_\_
3. Review contingency plan: \_\_\_\_\_  
\_\_\_\_\_



## ATTACHMENT B - SAFETY CHECKLIST



## SAFETY CHECKLIST

(Just prior to commencing work)

Checklist provided as a guide but is not all inclusive.

1. Location awareness:
  - a. Emergency exits: \_\_\_\_\_
  - b. Emergency shower and eyewash: \_\_\_\_\_
  - c. Telephones and phone numbers: \_\_\_\_\_
  - d. Shut-off valve: \_\_\_\_\_
  - e. Electrical disconnects: \_\_\_\_\_
2. Inspect work area:
  - a. Take time to survey the area you are working in. Ensure that what you want to do will work. Do you have enough clearance? Is your footing secure? Do you have adequate lighting and ventilation? Are surrounding utilities out of the way for you to perform your work?
3. SDS (Safety Data Sheets):
  - a. Understand the chemicals and substances in the area you are working in by reading the SDS.
4. Lockout/Tagout Procedure:
  - a. Lockout/tagout energy sources before beginning work.
  - b. Make sure all valves associated with the work are locked out and tagged out on each side of the penetration.
  - c. Make sure the lines are depressurized.
5. Overhead work:
  - a. Use appropriate personal protective equipment; i.e., safety harness, lifeline, etc.
  - b. Select appropriate tie-off points; i.e., structurally adequate, not a pipe or conduit, etc.
  - c. Spotter assigned and in position.
  - d. Pipe rack access; i.e., check design capacity, protective decking or scaffolding in place, exposed valves or electrical switches identified and protected.
6. Safety equipment:
  - a. Shepherd's hook.
  - b. ARC flash protection.
  - c. Fire extinguisher.
  - d. Other: \_\_\_\_\_
7. Accidents:
  - a. Should accidents occur, do not shut off and do not attempt to correct the situation unless you are absolutely positive that your action will correct the problem and not adversely affect other people or equipment.
8. Review process start-up documents:
  - a. In the event the system is shutdown, the Control Center should have a working knowledge of the process start-up procedures in order to deal effectively with unforeseen events.
9. Evacuation procedures:
  - a. Do not obstruct evacuation routes.
  - b. Take time to survey the area for evacuation routes.





**SECTION 01\_20\_20**  
**MEASUREMENT AND PAYMENT**

**PART 1    GENERAL**

**1.01    SUMMARY**

- A. Section includes:
  - 1. Procedures for measurement and payment of Work under this Contract for lump sum items and unit prices.

**1.02    LUMP SUM ITEMS**

- A. Item 1: Mobilization:
  - 1. Measurement:
    - a. Shall follow WSDOT Section 1-09.7- Mobilization.
  - 2. Payment:
    - a. Lump sum.
- B. Item 2: Temporary Erosion and Sediment Control:
  - 1. Measurement:
    - a. Includes all labor and materials required for erosion and sediment control and storm water pollution prevention as specified in Section 01\_56\_17 - Erosion and Sediment Control as indicated on the drawings.
    - b. Measurement for payment shall be by percent complete.
  - 2. Payment:
    - a. Lump sum.
- C. Item 3: Project Temporary Traffic Control:
  - 1. Measurement:
    - a. Includes labor and materials required for management including but not limited to temporary striping, signage, delineators, K-rails, cones, labor, flagmen, temporary fence, and equipment necessary for traffic control during the course of the work.
    - b. Creating, submitting, receiving approved traffic control plan (TCP), and implementation of the approved TCP per Section 01\_55\_26 - Traffic Control.
    - c. Measurement for payment shall be per Section 01\_55\_26 - Traffic Control.
    - d. Measurement shall be percent complete.
  - 2. Payment:
    - a. Lump sum.
- B. Item 4: Temporary Sewage Bypassing System:
  - 1. Measurement:
    - a. Includes labor and material required by Section 33\_05\_11 - Temporary Bypass Pumping for temporary bypass of all flows around the work area

including but not limited to temporary piping, protection of temporary piping, temporary power, fuel, temporary pumps, secondary containment, continuous monitoring of bypass pumps, vactor truck pumping, and notification to private residences for service interruptions.

- b. Trench safety systems shall be included and requirements as specified in Section 31\_50\_00 - Excavation Support and Protection and as indicated on the drawings, including all labor and materials.
  - c. Curb, Gutter, and Sidewalk Replacement resulting from temporary bypass activities is to be included this item. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
  - d. Pavement Replacement resulting from temporary bypass activities is to be included in this item and includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included.
  - e. Excavation and backfill of trenches for temporary bypass piping is to be included in this item and includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, and backfilling excavations.
  - f. Measurement for payment shall be by percent complete.
2. Payment:
- a. Lump sum.
- C. Item 11: Force Account:
- 1. Measurement:
    - a. Includes minor changes as defined per Section 1-04.4(1) in the Standard Specifications.
    - b. Total amount of this item shall not exceed \$50,000.
  - 2. Payment:
    - a. Lump Sum.
- D. Item 12: Record Drawings:
- 1. Measurement:
    - a. Includes all labor and materials to generate record drawings as detailed of the Standard Specifications, Section 1-05.18 - Record Drawings.
  - 2. Payment:
    - a. Lump Sum.
    - b. Payment for this item will be made on a prorated monthly basis for work completed in accordance with this section up to 50 percent of the lump sum bid. The final 50 percent of the lump sum item will be paid upon

submittal and approval of the completed Record Drawings set prepared in conformance with these Special Provisions.

- c. A minimum bid amount has been entered in the Bid Proposal for this item. The Contractor must bid at least that amount.

### 1.03 UNIT PRICE ITEMS

#### A. Measurement of quantities:

1. Work paid at a unit price times number of units measured will be measured by Project Manager in accordance with United States Standard Measures:
  - a. 1 ton shall consist of 2,000 pounds avoirdupois.
2. Provide and pay for accurate scales:
  - a. Use platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed.
  - b. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed.
  - c. Have scales inspected and certified as often as necessary to ascertain accuracy.
  - d. Furnish weigh slips and daily summary weigh sheets to Project Manager.
  - e. When material is shipped by rail, certified car weights will be acceptable, provided that not more than the actual weight of material will be paid, without consideration of minimum car weight used for assessing freight tariff:
    - 1) Car weight will not be acceptable for materials passing through mixing plants.
  - f. Daily, or at shorter intervals when necessary to ensure accuracy, weigh empty trucks used to haul material paid by weight:
    - 1) Provide such trucks with plain, unique, permanent, legible identification marks.
3. Reinforcing steel, steel shapes, castings, and similar items paid by weight will be measured by handbook weights for the type and quantity indicated for the Work.

#### B. Item 5: 36-inch Cured-In-Place-Pipe (CIPP) Rehabilitation:

1. Measurement:
  - a. Includes all labor and materials for installation of such lining system as specified in Section 33\_01\_30.71 - Cured-In-Place Pipe Rehabilitation – Full Structural (Gravity) including, but not limited to, cleaning of existing pipe, spot repairing significant pipe defects such as root intrusion, broken pipe, and active infiltration between SMH1995B12 to SMH2095D13, internal CCTV inspection following cleaning, confirmation of pipe size, removal and replacement of manhole cones needed for access, lining existing pipe, end seals, the reinstatement of service laterals, post lining internal CCTV inspections, epoxy grouting for transition at manholes, cleanup and other appurtenant work and materials.
  - b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.

- c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
    - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
    - e. Measurement for payment shall be based on the unit price per linear feet of such liner material installed as determined by measurement along the horizontal centerline of the existing pipe from wall of the manhole to wall of the manhole.
  - 2. Payment:
    - a. Per linear foot.
- C. Item 6: 10-inch Cured-In-Place-Pipe (CIPP) Rehabilitation:
- 1. Measurement:
    - a. Includes all labor and materials for installation of such lining system as specified in Section 33\_01\_30.71 - Cured-In-Place Pipe Rehabilitation – Full Structural (Gravity) including, but not limited to, cleaning of existing pipe, spot repairing significant pipe defects such as root intrusion, broken pipe, and active infiltration between SMH1975R07 to SMH1795R08, internal CCTV inspection following cleaning, confirmation of pipe size, removal and replacement of manhole cones needed for access, lining existing pipe, end seals, the reinstatement of service laterals, post lining internal CCTV inspections, epoxy grouting for transition at manholes, cleanup and other appurtenant work and materials.
    - b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.
    - c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
    - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or

- removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
- e. Measurement for payment shall be based on the unit price per linear feet of such liner material installed as determined by measurement along the horizontal centerline of the existing pipe from wall of the manhole to wall of the manhole.
- 2. Payment:
  - a. Per linear foot.
- D. Item 7: 8-inch Cured-In-Place-Pipe (CIPP) Rehabilitation:
  - 1. Measurement:
    - a. Includes all labor and materials for installation of such lining system as specified in Section 33\_01\_30.71 - Cured-In-Place Pipe Rehabilitation – Full Structural (Gravity) including, but not limited to, cleaning of existing pipe, spot repairing significant pipe defects such as root intrusion, broken pipe, and active infiltration between SMH795R08 to SMH1795R11, internal CCTV inspection following cleaning, confirmation of pipe size, removal and replacement of manhole cones needed for access, lining existing pipe, end seals, the reinstatement of service laterals, post lining internal CCTV inspections, epoxy grouting for transition at manholes, cleanup and other appurtenant work and materials.
    - b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.
    - c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
    - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
    - e. Measurement for payment shall be based on the unit price per linear feet of such liner material installed as determined by measurement along the horizontal centerline of the existing pipe from wall of the manhole to wall of the manhole.
  - 2. Payment:
    - a. Per linear foot.
- E. Item 8: 24-inch Cured-In-Place-Pipe (CIPP) Rehabilitation:
  - 1. Measurement:
    - a. Includes all labor and materials for installation of such lining system as specified in Section 33\_01\_30.71 - Cured-In-Place Pipe Rehabilitation – Full Structural (Gravity) including, but not limited to, cleaning of existing

pipe, spot repairing significant pipe defects such as root intrusion, broken pipe, and active infiltration between SMH1795S21 to SMH1795S23, internal CCTV inspection following cleaning, confirmation of pipe size, removal and replacement of manhole cones needed for access, lining existing pipe, end seals, the reinstatement of service laterals, post lining internal CCTV inspections, epoxy grouting for transition at manholes, cleanup and other appurtenant work and materials.

- b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.
  - c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
  - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
  - e. Measurement for payment shall be based on the unit price per linear feet of such liner material installed as determined by measurement along the horizontal centerline of the existing pipe from wall of the manhole to wall of the manhole.
2. Payment:
- a. Per linear foot.

F. Item 9: Standard 48-inch Cured-in-Place Manhole Rehabilitation:

- 1. Measurement:
  - a. Includes all labor and materials for installation of such lining system including, but not limited to, cleaning of existing manhole, internal CCTV inspection following cleaning, lining of existing manhole, the reinstatement of service laterals, post lining internal CCTV inspections, cleanup and other appurtenant work and materials.
  - b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.

- c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
    - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
    - e. Measurement for payment shall be based on the unit price per vertical feet of such liner material installed as determined by measurement along the vertical centerline of the existing manhole from the bench of the manhole to the manhole rim.
  - 2. Payment:
    - a. Per vertical foot.
- G. Item 10: 96-inch Cured-in-Place Manhole Rehabilitation:
- 1. Measurement:
    - a. Includes all labor and materials for installation of such lining system including, but not limited to, cleaning of existing manhole, internal CCTV inspection following cleaning, lining of existing manhole, the reinstatement of service laterals, post lining internal CCTV inspections, cleanup and other appurtenant work and materials.
    - b. Includes all labor and materials required for trenching, excavations, and backfill per Section 31\_00\_00 - Earthwork and 31\_23\_35 - Trenching, including but not limited to excavation, hauling excavated material, disposal of excavated material, hauling backfill material to Work site, aggregates for backfill, compaction, and backfilling excavations.
    - c. Includes all labor and materials for pavement replacement per Sections 31\_05\_15 - Soils and Aggregates for Earthwork, 32\_01\_15 - Pavement Restoration and Rehabilitation, and 32\_12\_15 - Hot Mix Asphalt, including required aggregates, asphalt, formwork, and other appurtenant work and materials. Driveways will be included in this item.
    - d. Curb, Gutter, and Sidewalk Replacement resulting from this item will be included. Any curb, gutter, and sidewalk damage not related to the installation of the temporary bypass system shall be incidental to the Project. Curb, gutter, and Sidewalk replacement includes all labor and materials for replacement of curb, gutter, and sidewalk damaged and/or removed during construction, including required aggregates, concrete, formwork, and all other appurtenant work and materials.
    - e. Measurement for payment shall be based on the unit price per vertical feet of such liner material installed as determined by measurement along the vertical centerline of the existing manhole from the bench of the manhole to the manhole rim.
  - 2. Payment:
    - a. Per vertical foot.



**PART 2    PRODUCTS (NOT USED)**

**PART 3    EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01\_26\_00**

### **CONTRACT MODIFICATION PROCEDURES**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section Includes:
  - 1. Administrative and procedural requirements for executing a change in the Work.

##### **1.02 PRELIMINARY REQUIREMENTS**

- A. Change Order Cost Basis Summary Form:
  - 1. Submit a sample to Project Manager for review within 15 calendar days following Notice to Proceed.
    - a. Items will be reviewed and their value, percentage, or calculation method mutually agreed to by the Contractor and Owner prior to executing a Change Order on the Project.
  - 2. Used by the Contractor for pricing each Change Order required for additions, deletions, or revisions in the Work.
  - 3. Include the following information:
    - a. Agreed upon markups, percentages, and procedures for calculating all surcharges, etc. associated with the Cost of the Change Order Work.
    - b. References for unit price information and special unit price information.
    - c. Attachments with the following information:
      - 1) Certified labor rates breakdown.
      - 2) Equipment rates.
      - 3) Bond and insurance rates (PI&I).

##### **1.03 REQUEST FOR INFORMATION OR INTERPRETATION (RFI)**

- A. Contractor may issue RFIs to request interpretation of the documents or to request for information that may be missing.
- B. General Instructions:
  - 1. Number RFIs consecutively.
    - a. Add a consecutive letter to the RFI number on modified submittals of the same RFI (i.e., RFI 4B).
  - 2. Provide RFI for 1 item.
    - a. There may be exceptions when multiple items are so functionally related that expediency indicates review of the group of items as a whole.
    - b. RFIs with multiple items will be rejected without review.

3. Contractor sign and date RFIs indicating review and approval.
  - a. Contractor's signature indicates that they have satisfied RFI review responsibilities and constitutes Contractor's written approval of RFI.
  - b. RFIs without Contractor's signature will be returned to the Contractor unreviewed. Subsequent submittal of this information will be counted as the first resubmittal.
- C. Project Manager will render a written clarification, interpretation, or decision on the issue submitted or initiate an amendment or supplement to the Contract within 21 days.
  1. In the event the Contractor identifies an RFI as critical to the progress of the project, Project Manager will make every effort to reduce the RFI response time.

#### **1.04 PRELIMINARY PROCEDURES**

- A. Owner or Project Manager may initiate changes by submitting a Request for Proposal (RFP) to Contractor including the following information:
  1. Detailed description of the Change, Products, and location of the change in the Project.
  2. Supplementary or revised drawings or specifications.
  3. Projected time span for making the change, and a specific statement if overtime work is authorized.
  4. A specific period of time during which the requested price will be considered valid.
  5. Such request is for information only, and is not an instruction to execute the changes, or to stop work in progress.
- B. Contractor may initiate changes by submitting a Change Proposal to Project Manager containing the following:
  1. Description of proposed changes.
  2. Reason for making changes.
  3. Specific period of time during which requested price will be considered valid.
  4. Effect on Total Contract Cost and/or Contract Time.
  5. Documentation supporting any change in Total Contract Cost and/or Contract Time, as appropriate.

#### **1.05 WORK CHANGE DIRECTIVE AUTHORIZATION**

- A. In lieu of a Request for Proposal (RFP), Project Manager may issue a Work Change Directive Authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate method of determining any change in the Contract Sum and/or the Contract Time, as appropriate.

- C. Owner and Project Manager will sign and date the Work Change Directive Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor may sign and date the Work Change Directive Authorization to indicate agreement with the terms.

## **1.06 DOCUMENTATION OF CHANGE PROPOSALS**

- A. Change proposal:
  - 1. Support with sufficient substantiating data to allow Project Manager to evaluate the quotation.
    - a. Lump sum.
    - b. Unit prices: Use previously established unit prices.
    - c. Time-and-material/force account basis:
      - 1) Name of the Owner's authorized agent who ordered the work, and date of the order.
      - 2) Dates and times work was performed, and by whom.
      - 3) Time record, summary of hours worked, and hourly rates paid.
      - 4) Receipts and invoices for:
        - a) Equipment used, listing dates and times of use.
        - b) Products used, listing of quantities.
        - c) Subcontracts.
  - 2. Provide additional data to support time and cost computations:
    - a. Labor required.
    - b. Equipment required.
    - c. Products required:
      - 1) Recommended source of purchase and unit cost.
      - 2) Quantities required.
    - d. Taxes, insurance, and bonds.
    - e. Credit for work deleted from Contract, similarly documented.
    - f. Overhead and profit.
    - g. Justification for change to Contract Time.

## **1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS**

- A. Project Manager will prepare each Change Order and Field Order.
- B. Change Orders:
  - 1. Will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
  - 2. Will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
  - 3. Recommendation of Change Proposal is indicated by Project Manager signature.
  - 4. Upon signature and execution by Owner, the Change Proposal becomes a Change Order altering the Contract Time and Total Contract Cost, as indicated.
    - a. Owner's Representative will transmit one signed copy each to Contractor and Project Manager.

5. Contractor may only request payment for changes in the Work against an approved Change Order.
  6. If either Project Manager or Owner's Representative disapproves the Change Proposal, the reason for disapproval will be stated.
    - a. A request for a revised proposal or cancellation of the proposal will be shown.
- C. Field Orders:
1. Order minor changes in the Work without changes in Contract Price or Contract Times.

#### **1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER**

- A. Content of Change Orders will be based on, either:
1. Project Manager Proposal Request and Contractor's responsive Change Proposal as mutually agreed between Owner and Contractor.
  2. Contractor's Change Proposal for a change, as recommended by Project Manager.
- B. Owner and Project Manager will sign and date the Change Order to establish the change in Contract Sum and in Contract Time and serve as authorization for the Contractor to proceed with the changes.
- C. Contractor will sign and date the Change Order to indicate agreement with the terms.

#### **1.09 UNIT PRICE CHANGE ORDER**

- A. Content of Change Orders will be based on, either:
1. Project Manager definition of the scope of the required changes.
  2. Contractor's Change Proposal for a change, recommended by Project Manager.
  3. Survey of completed work.
- B. The amounts of the unit prices to be:
1. Those stated in the Contract.
  2. Those mutually agreed upon between Owner and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
1. Owner and Project Manager will sign and date the Change Order as authorization for Contractor to proceed with the changes.
  2. Contractor will sign and date the Change Order to indicate agreement with the terms.
- D. When quantities of the items cannot be determined prior to start of the work:
1. Project Manager or Owner will issue a Work Change Directive authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.

2. At completion of the change, Project Manager will determine the cost of such work based on the unit prices and quantities used.
  3. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
- E. Owner and Project Manager will sign and date the Change Order to establish the change in Contract Sum and in Contract Time and serve as authorization for the Contractor to proceed with the changes.
  - F. Contractor will sign and date the Change Order to indicate their agreement with the terms.

#### **1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK CHANGE DIRECTIVE AUTHORIZATION**

- A. Project Manager will issue a Work Change Directive for the Owner's signature authorizing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as specified in this Section.
- C. Project Manager will determine the allowable cost of such work, as provided in the Contract Documents.
- D. Owner and Project Manager will sign and date the Change Order to establish the change in Contract Sum and in Contract Time and serve as authorization for the Contractor to proceed with the changes.
- E. Contractor will sign and date the Change Order to indicate their agreement.

#### **1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS**

- A. Periodically revise Schedule of Values and Applications for Payment forms to record each Change Order as a separate item of Work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise subschedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

### **PART 2 PRODUCTS (NOT USED)**

### **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 01\_29\_77**

### **APPLICATIONS FOR PAYMENT**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Procedures for preparation and submittal of Applications for Payment.
- B. Contractor shall follow the City's General Conditions Section 9 - Measurement and Payment unless otherwise noted in this Section.

##### **1.02 FORMAT**

- A. Develop satisfactory spreadsheet-type form generated by downloading cost data from the Progress Schedule.
  - 1. Submit payment requests and attach spreadsheet with cost data related to Progress Schedule.
- B. Fill in information required on form.
- C. When Change Orders are executed, add Change Orders at end of listing of scheduled activities:
  - 1. Identify change order by number and description.
  - 2. Provide cost of change order in appropriate column.
- D. After completing, submit Application for Payment.
- E. Project Manager will review application for accuracy. When accurate, Project Manager will transmit application to Owner for processing of payment.
- F. Execute application with signature of responsible officer of Contractor.

##### **1.03 SUBSTANTIATING DATA**

- A. Provide Substantiating Data identifying:
  - 1. Project.
  - 2. Application number and date.
  - 3. Cost flow summary.
  - 4. Updated schedule of values.
  - 5. Progress schedule.
  - 6. Detailed list of enclosures.
  - 7. Stored products log.
  - 8. Equipment log.
  - 9. Submit "certified" payroll, if applicable.
  - 10. Record (as-built) documents.
  - 11. Photos and videos from current pay period.
  - 12. Applicable unconditional waiver and release on progress payment for previous payment made by Owner.



#### **1.04 SUBMITTALS**

- A. Submit Application for Payment and Substantiating Data with cover letter.

#### **1.05 PAYMENT REQUESTS**

- A. Prepare progress payment requests on a monthly basis. Base requests on the breakdowns of costs for each scheduled activity and the percentage of completion for each activity.
- B. Indicate total dollar amount of work planned for every month of the project. Equate sum of monthly amounts to Lump Sum Contract Price.
- C. Generate Progress Payment request forms by downloading cost data from the schedule information to a spreadsheet type format.
- D. Identify each activity on the Progress Schedule that has a cost associated with it, the cost for each activity, the estimated percent complete for each activity, and the value of work completed for both the payment period and job to date.
- E. Prepare summary of cost information for each Major Item of Work listed in the Schedule of Values. Identify the value of work completed for both the payment period and job to date.
- F. Payment period:
  - 1. Pay Estimates are prepared every four weeks with a "Contractor Turn in Date", followed a week later by the "Inspector Turn in Date".
  - 2. The Construction Manager will review and submit for processing and approval.
  - 3. The Construction Manager, Project Manager, and Public Works Director finalize and sign the Pay Estimate.

#### **1.06 COST SUMMARIES**

- A. Prepare Summary of Cost Information for each Major Item of Work listed in the Schedule of Values. Identify the Value of Work Completed for both the payment period and job to date.
- B. Cash flow summary: Prepare cash flow summary, indicating total dollar amount of work planned for each month of the project. Equate sum of monthly amounts to Lump Sum contract price.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01\_31\_19**

### **PROJECT MEETINGS**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for conducting conferences and meetings for the purposes of addressing issues related to the Work, reviewing and coordinating progress of the Work and other matters of common interest, and includes the following:
    - a. Qualifications of Meeting Participants.
    - b. Basic Meeting Requirements.
    - c. Pre-construction Conference.
    - d. Pre-construction Safety Conference.
    - e. Pre-submittal Conference.
    - f. Web Based Construction Document Management Software Training.
    - g. Progress Meetings.
    - h. Schedule Update Meetings.
    - i. Quality Control Meetings.
    - j. Pre-Installation Meetings.
    - k. Maintenance of Plant Operations (MOPO) Meetings.
    - l. Commissioning Coordination Meetings.
    - m. Instrumentation and Control Coordination Meetings.
    - n. Close-out Meeting.
    - o. Post Construction Meeting.

##### **1.02 QUALIFICATIONS OF MEETING PARTICIPANTS**

- A. Representatives of entities participating in meetings shall be qualified and authorized to act on behalf of entity each represents.

##### **1.03 BASIC MEETING REQUIREMENTS**

- A. Attendees:
  - 1. Meeting leader shall require attendance of parties directly affecting, or affected by, Work being discussed at the meeting.
- B. Location:
  - 1. In location convenient for most invitees.
- C. Notification:
  - 1. Meeting leader shall notify attendees of meeting, including an agenda, a minimum of 7 days prior to meeting.

- D. Agenda:
  - 1. Meeting leader shall prepare copies of the agenda for participants and distribute at the meeting.
  - 2. Minimum requirements:
    - a. Meeting purpose.
    - b. Review minutes of previous meeting.
    - c. Safety and security.
    - d. Discuss issues.
    - e. Action items.
    - f. Next meeting.
- E. Meeting minutes:
  - 1. Meeting leader shall prepare draft minutes and send to attendees for comment within 3 days.
  - 2. Meeting leader shall incorporate comments from attendees and submit final meeting minutes to attendees within 7 days of receipt of comments.

#### **1.04 PRE-CONSTRUCTION CONFERENCE**

- A. Construction manager leads the meeting.
- B. Timing:
  - 1. Upon issuance of Notice to Proceed, or earlier when mutually agreeable.
- C. Required attendees:
  - 1. Contractor's project manager and superintendent, Owner, Project Manager, representatives of utilities, major subcontractors and others involved in performance of the Work, and others necessary to the agenda.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. To establish working understanding between parties and to discuss Construction Schedule, Shop Drawings and other Submittals, cost breakdown of major lump sum items, processing of Submittals and applications for payment, and other subjects pertinent to execution of the Work.
  - 2. Adequacy of distribution of Contract Documents.
  - 3. Distribution and discussion of list of major subcontractors and suppliers.
  - 4. Proposed progress schedules and critical construction sequencing.
  - 5. Major equipment deliveries and priorities.
  - 6. Project coordination.
  - 7. Designation of responsible personnel.
  - 8. Procedures and processing of:
    - a. Field decisions.
    - b. Proposal requests.
    - c. Submittals - separate meeting.
    - d. Change Orders.
    - e. Request for Information/Interpretations.
    - f. Applications for Payment.
    - g. Record documents.

9. Use of premises:
  - a. Office, construction, and storage areas.
  - b. Owner's requirements.
10. Construction facilities, controls, and construction aids.
11. Temporary utilities.
12. Safety and first aid procedures.
13. Security procedures.
14. Housekeeping procedures.
15. Safety and security.
16. Review proposed photographer Submittal.
17. Action items.
18. Next meeting.

## **1.05 PRE-CONSTRUCTION SCHEDULING MEETING**

- A. Construction manager leads the meeting.
- B. Timing:
  1. Within 7 days of Notice to Proceed, or earlier when mutually agreeable.
- C. Required attendees:
  1. Contractor's project manager, superintendent, scheduler, Owner, Project Manager, and others necessary to the agenda.
- D. Agenda minimum requirements:
  1. Meeting purpose:
    - a. To establish the format and features of the Construction Schedule.
  2. Schedule preparation.
  3. Reporting requirements.
  4. Updates and revision procedures.
  5. Schedule delay analysis procedures.
  6. Schedule methodology.
  7. Planned sequence of operations.
  8. Cost and labor loading methodology.
  9. Proposed activity coding structure as specified in Section 01\_32\_21 - Schedules and Reports.
  10. Naming convention: Name schedule files with the year, month and day of the data date, revision identifier, and a description of the schedule.
    - a. Example 1: 2021\_07\_30 rev 1 draft baseline schedule.xer.
    - b. Example 2: 2021\_09\_30 rev 2 sep final update.xer.
  11. Action items.
  12. Next meeting.

## **1.06 PRE-CONSTRUCTION SAFETY CONFERENCE**

- A. Construction manager leads the meeting.
- B. Timing:
  1. Upon issuance of Notice to Proceed, or earlier when mutually agreeable.

- C. Required attendees:
  - 1. Contractor's project manager, safety representative, and superintendent; Owner, Project Manager, representatives of utilities, major subcontractors and others involved in performance of the Work, and others necessary to the agenda.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. To establish safety procedures and identify lead participants.
  - 2. Review minutes of previous meeting.
  - 3. Safety and first aid procedures.
  - 4. Review of Experience Modification Rating for Contractor and each Subcontractor.
  - 5. Security procedures.
  - 6. Housekeeping procedures.
  - 7. Safety and security.
  - 8. Action items.
  - 9. Next meeting.

#### **1.07 WEB BASED CONSTRUCTION DOCUMENT MANAGEMENT SOFTWARE TRAINING**

- A. Contractor can submit a written request to the Project Manager to waive the training based on staff having sufficient familiarity with the software and its complete usage. Construction manager will lead the meeting.
- B. Timing:
  - 1. Upon issuance of Notice to Proceed, or earlier when mutually agreeable.
  - 2. Duration minimum: 2 hours.
- C. Required attendees:
  - 1. Mandatory attendance.
    - a. Contractor's project manager.
    - b. Contractor's field superintendent.
    - c. Contractor's project engineer.
  - 2. Other attendees:
    - a. Owner, Project Manager, Contractor's quality control manager, Contractor's project scheduler and any other persons involved with preparing and transmitting documents.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Train construction team on the use of the web-based document management system software.
  - 2. Safety.
  - 3. General Items.
  - 4. Contractor functions.
  - 5. Owner functions.
  - 6. Project Manager functions.
  - 7. Action items.

## **1.08 PROGRESS MEETINGS**

- A. Construction manager will lead the meeting.
- B. Timing:
  - 1. Hold meetings throughout progress of the Work at maximum weekly intervals.
- C. Required attendees:
  - 1. Owner, Project Manager, Contractor, Contractor's project manager, superintendent, quality control manager, project scheduler, major subcontractors and suppliers as appropriate to the agenda topics for each meeting.
  - 2. Additional invitees:
    - a. Owner utility companies when the Work affects their interests, and others necessary to the agenda.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Provide the status of the Work.
  - 2. Review minutes of previous meeting.
  - 3. Safety and security.
  - 4. Construction schedule summary.
  - 5. Review of 6 weeks schedule.
    - a. Contractor shall provide printed hard copies for each attendee.
  - 6. Review of off-site fabrication and delivery schedules.
  - 7. Review of Submittals schedule and status of Submittals.
  - 8. Request for information (RFI's) status.
  - 9. MOP's/shutdown coordination.
  - 10. Change order management status.
  - 11. Maintenance of quality standards (QA/QC).
  - 12. Field observations, problems, and conflicts.
  - 13. Commissioning.
  - 14. Partnering recognition status (optional).
  - 15. General items.
  - 16. Action items.
  - 17. Next meeting.

## **1.09 SCHEDULE UPDATE MEETINGS**

- A. Contractor leads the meeting.
- B. Timing:
  - 1. Hold meetings throughout progress of the Work at maximum monthly intervals.
- C. Required attendees:
  - 1. Owner, Project Manager, Contractor, Contractor's project manager, general superintendent, project scheduler, major subcontractors and suppliers as appropriate to the agenda topics for each meeting.
  - 2. Additional invitees:
    - a. Owner utility companies when the Work affects their interests and others necessary to the agenda.

- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Identify and troubleshoot scheduling issues in a collaborative environment.
    - b. Provide further detail on Work status.
  - 2. Review minutes of previous meeting.
  - 3. Review Monthly Schedule, (Actual Progress and Variance).
    - a. "Activities Started/Completed" this period.
    - b. "Activities Started/Completed" "Variance" Baseline vs. current.
    - c. "Added/Deleted Activities".
    - d. "Revised Activity Descriptions".
    - e. Any significant Proposed Logic Changes.
  - 4. Review milestone "Substantial Completion" Schedule:
    - a. "Critical" Activities - "Critical Area, Float and Vital Statistics".
  - 5. Review "Cumulative and Monthly Costs" graph.
  - 6. Review "Budgeted Cost" indicating the Current Project Budgeted Cost.
  - 7. Safety and security.
  - 8. Action items.
  - 9. Next meeting.

#### **1.10 PRE-INSTALLATION MEETINGS**

- A. Contractor leads the meeting.
- B. Timing:
  - 1. When specified in Technical Sections or requested by Project Manager, before commencing Work of specific section.
- C. Required attendees:
  - 1. Owner, Project Manager, Contractor, Contractor's project manager, general superintendent, project scheduler, major subcontractors including electrical instrumentation, and suppliers as appropriate to the agenda topics for each meeting.
  - 2. Additional invitees:
    - a. Owner utility companies when the Work affects their interests and others necessary to the agenda.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Review conditions of installation, preparation, and installation procedures.
    - b. Review coordination with related work.
  - 2. Review minutes of previous meeting.
  - 3. Safety and security.
  - 4. Action items.
  - 5. Next meeting.

#### **1.11 QUALITY CONTROL MEETINGS**

- A. Contractor leads the meeting.
- B. Timing:
  - 1. Hold meetings throughout progress of the Work at maximum weekly intervals.

- C. Required attendees:
  - 1. Project Manager, Construction manager and staff, Contractor's quality control manager, and staff.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Update Contractor's efforts to comply with quality requirements in the Contract Documents.
  - 2. Review minutes of previous meeting.
  - 3. Review of Work progress and schedule.
  - 4. Review of out-of-compliance inspection or test results.
  - 5. Field observations, problems, and decisions.
  - 6. Review of offsite fabrication and delivery schedules.
  - 7. Planned progress during succeeding work period.
  - 8. Coordination of required inspections and tests.
  - 9. Review 6-week schedule report with upcoming inspections and special tests.
  - 10. Maintenance of quality and work standards.
  - 11. Other business relating to Work.
  - 12. Safety and security.
  - 13. Action items.
  - 14. Next meeting.

#### **1.12 CLOSE-OUT MEETING**

- A. Construction manager leads the meeting.
- B. Timing:
  - 1. After punch list items are completed.
- C. Required attendees:
  - 1. Owner, Project Manager, Contractor, Contractor's project manager, and superintendent.
- D. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Coordinate close-out activities.
  - 2. Review minutes of previous meeting.
  - 3. Review punch list completion.
  - 4. Transfer of record documents.
  - 5. Finalize payment.
  - 6. Safety and security.
  - 7. Action items.
  - 8. Next meeting.

#### **1.13 POST CONSTRUCTION MEETING**

- A. Construction manager leads the meeting.
- B. Timing:
  - 1. About 3 months after date of Substantial Completion.



- C. Location:
  - 1. Meet in Owner's office or other mutually agreed upon place.
- D. Required attendees:
  - 1. Project Manager, Contractor, appropriate manufacturers, and installers of major units of constructions, affected Subcontractors, and Owner's operations and maintenance staff.
- E. Agenda minimum requirements:
  - 1. Meeting purpose:
    - a. Review Project for compliance with the Contract Documents.
  - 2. Inspect the Work and draft list of items to be completed or corrected.
  - 3. Review service and maintenance contracts and take appropriate corrective action when necessary.
  - 4. Complete or correct defective work and may extend correction period.
  - 5. Safety and security.
  - 6. Action items.
  - 7. Next meeting.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

**SECTION 01\_32\_21**  
**SCHEDULES AND REPORTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Schedules and reports.

**1.02 TERMINOLOGY**

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
  - 1. Baseline schedule: A planned and approved timetable projection that illustrates the project execution strategy, key deliverables, planned activity dates and milestones.
  - 2. Critical path: The longest sequence of dependent tasks in a project.
  - 3. Near critical path: The longest path after the critical path.
  - 4. Weather day: The Contractor being prevented or inhibited from performing at least 4 hours of work on the critical path due to weather conditions.

**1.03 SCHEDULING FORMAT**

- A. Utilize critical path method (CPM) format.
- B. Provide a cost and labor loaded Schedule.
- C. Project Manager approval of the format is required.

**1.04 SCHEDULE PREPARATION**

- A. Preparation and submittal of Progress Schedule represents Contractor's intention to execute the Work within specified time and constraints.
- B. All costs associated with Schedule requirements are included in the Contract Price.
- C. During preparation of the preliminary Progress Schedule, the Project Manager will facilitate Contractor's efforts by answering questions regarding sequencing issues, scheduling constraints, interface points, and dependency relationships.
- D. Prepare Schedule utilizing precedence diagramming method (PDM).
- E. Prepare Schedule utilizing activity durations in terms of working days.
  - 1. Do not exceed a 15 working day duration on activities except concrete curing, submittal review, and equipment fabrication and deliveries.

2. Where duration of continuous work exceeds 15 working days, subdivide activities by location, stationing, or other sub-element of the Work.
  3. Coordinate holidays to be observed with the Owner and incorporate them into the Schedule as non-working days.
- F. Failure to include an activity required for execution of the Work does not excuse Contractor from completing the Work and portions thereof within specified times and at price specified in Contract.
1. Contract requirements are not waived by failure of Contractor to include required Schedule constraints, sequences, or milestones in Schedule.
  2. Contract requirements are not waived by Owner's acceptance of the Schedule. In the event of conflict between accepted Schedule and Contract requirements, terms of Contract govern at all times, unless requirements are waived in writing by the Owner.
- G. Reference Schedule to working days beginning with Notice to Proceed as Contract Time as Day "1".
- H. Baseline Schedule and project completion:
1. Should Contractor submit a Baseline Schedule showing project completion more than 20 working days prior to Contract completion date, Owner may issue Change Order, at no cost to Owner, revising time of performance of Work and Contract completion date to match Contractor's Schedule completion date.
  2. Adjust accordingly any Contract milestone dates.
- I. Imposed dates and hidden logic are prohibited.
- J. Interim milestone dates, operational constraints:
1. In event there are interim milestone dates and/or operational constraints set forth in Contract, show them on Schedule.
  2. Do not use zero total float constraint or mandatory finish date on such Contract requirements.
- K. Contract float is for the mutual benefit of both Owner and Contractor.
1. Changes to the Project that can be accomplished within this available period of float may be made by Owner without extending the Contract Time by utilizing float.
  2. Time extensions will not be granted nor delay damages owed until Work extends beyond currently accepted Contract completion date.
  3. Likewise, Contractor may utilize float to offset delays other than delays caused by the Owner.
  4. Mutual use of float can continue until all available float shown by Schedule has been utilized by either Owner or Contractor, or both. At that time, extensions of the Contract Time will be granted by Owner for valid Owner-caused or third party-caused delays which affect the planned completion date and which have been properly documented and demonstrated by Contractor.
  5. Non-sequestering of float: Pursuant to float sharing requirements of Contract, Schedule submittals can be rejected for use of float suppression techniques such as preferential sequencing or logic, special lead or lag logic restraints, extended activity durations, or imposed dates.

- L. Resource loading and leveling:
  - 1. Input labor data on each schedule activity.
  - 2. Manpower data consists of the man-hours estimated to perform each task, categorized by trade.
  - 3. Provide leveled manpower requirements.
    - a. Availability of the resources drive activity duration.
- M. Cost loading: All schedules:
  - 1. Only on-site construction activities.
  - 2. The sum total of all cost loaded activities equal to the current value of the Contract, including change orders, at all times.
  - 3. Payment for mobilization or payment for materials or equipment delivered to the site, not yet incorporated into the Work.
  - 4. Payments will not be made until the updated Schedule of Values is accepted.
- N. Schedule logic:
  - 1. Assembled to show order in which Contractor proposes to carry out Work, indicate restrictions of access, availability of Work areas, and availability and use of manpower, materials, and equipment.
  - 2. Form basis for assembly of schedule logic on the following criteria:
    - a. Which activities must be completed before subsequent activities can be started?
    - b. Which activities can be performed concurrently?
    - c. Which activities must be started immediately following completed activities?
    - d. What major facility, equipment, or manpower restrictions are required for sequencing these activities?
- O. Major subcontractor, parallel prime contractor sign off:
  - 1. Provide written confirmation of concurrence from all major subcontractors and independent prime contractors on site with all Schedule submittals.
  - 2. Term "major subcontractor" as used in this Section means any subcontractor, at any tier, with a subcontract worth 5 percent or more of the total cost of the Work.
- P. Schedule windows for Owner-furnished, Contractor-installed equipment or materials:
  - 1. Immediately after Award of Contract, obtain from Project Manager anticipated delivery dates of Owner furnished equipment or materials.
  - 2. Show these dates in the Schedule in same manner indicated by the Project Manager.

## **1.05 SCHEDULER**

- A. Designate, in writing within 5 calendar days after Notice of Award, the person responsible for preparation, maintenance, updating, and revision of all schedules.
- B. Scheduler shall have the authority to update Schedule on behalf of the Contractor.

- C. Qualifications:
  - 1. A minimum of 5 years verifiable experience in preparation of construction schedules for projects of similar value, size, and complexity.
  - 2. Knowledge of critical path method (CPM) scheduling utilizing the specified software.
- D. References:
  - 1. Submit written reference of 3 project Owners who have personal experience with this scheduler on previous projects.
  - 2. Identify name, address, telephone number, project name, and cost.
- E. Scheduler:
  - 1. Dedicated [full][half] time to this Project, located on-site.
  - 2. Scheduler will attend all project meetings called for as specified in Section 01\_31\_19 - Project Meetings.

## **1.06 SUBMITTAL REQUIREMENTS**

- A. Preliminary and Baseline Progress Schedule.
- B. Preliminary and Baseline Schedule of Values.
- C. Preliminary and Baseline Schedule of Submittals.
- D. On a monthly basis, updated Schedules as specified.
- E. Final Schedules update as specified.
- F. Revised Schedules and time impact analyses as specified.
- G. Submit Schedules in the media and number of copies as follows:
  - 1. PDF format and in other formats specified in this Section.
  - 2. Two sets of CPM Schedule data electronic files in a native backed-up file format.

## **1.07 GANTT CHART**

- A. Produce a clear, legible, and accurate calendar based, time scaled, and graphical network diagram.
  - 1. Group activities related to the same physical areas of the Work. Produce the network diagram based upon the early start of all activities.
- B. Include for each activity, the description, activity number, estimated duration in working days, total float, and all activity relationship lines.
- C. Illustrate order and interdependence of activities and sequence in which Work is planned to be accomplished.
  - 1. Incorporate the basic concept of the precedence diagram network method to show how the start of 1 activity is dependent upon the start or completion of preceding activities and its completion restricts the start of following activities.

- D. Provide Progress Schedule showing the critical path for the Project.
- E. Provide report of Near Critical Path activities for the Project, when required by the Project Manager.
- F. Delineate the specified Contract Times and identify the planned completion of the Work as a milestone.
  - 1. Show the time period between the planned and Contract completion dates, if any, as an activity identified as Project float.
- G. Identify system shutdown dates, system tie-in dates, specified interim completion or milestone dates and contract completion dates as milestones.
- H. Include, in addition to construction activities:
  - 1. Submission dates and review periods for major equipment submittals, shoring submittals, and indicator pile program:
    - a. Shoring reviews: Allow 4-week review period for each shoring submittal.
  - 2. Any activity by the Owner or the Project Manager that may affect progress or required completion dates.
  - 3. Equipment and long-lead material deliveries over 8 weeks.
  - 4. Approvals required by regulatory agencies or other third parties.
- I. Produce electronic network diagram on 22-inch by 34-inch sheets with grid coordinate system on the border of all sheets utilizing alpha and numeric designations.
- J. Identify the execution of the following:
  - 1. Mobilization.
  - 2. All required Submittals and Submittal review times showing 30 calendar day duration for such activities and equal amount of time for resubmittal reviews.
  - 3. Equipment and materials procurement/fabrication/delivery.
  - 4. Excavation.
  - 5. Shoring design and submission of detailed shoring submittals. Identify submission as a milestone, if needed.
  - 6. Shoring review, shoring materials procurement, shoring installation, and shoring removal, if needed.
  - 7. Backfill and compaction.
  - 8. Grading, subbase, base, paving, and curb and gutters.
  - 9. Concrete, including installation of forms and reinforcement, placement of concrete, curing, stripping, finishing, and patching.
  - 10. Trenching, pipe laying, and trench backfill and compaction.
  - 11. Piping, fittings, and appurtenances, including identification of ordering and fabrication lead time, layout, installation and testing.
  - 12. Valves, gates, and operators, including identification of order lead-time, installation, and testing.
  - 13. Temporary bypass system delivery, installation, and testing.
  - 14. Cured-in-place pipe liner delivery, installation, and inspection.
  - 15. Cured-in-place manhole liner delivery, installation, and inspection.
  - 16. Substantial completion.
  - 17. Punch list work.
  - 18. Demobilization.

## **1.08 PRELIMINARY SCHEDULE**

- A. Procedure:
  - 1. Submit proposed Preliminary Schedule within 14 calendar days after Notice to Proceed.
  - 2. Meet with Project Manager within 7 calendar days after receipt of Preliminary Schedule to review and make necessary adjustments.
  - 3. Submit revised Preliminary Schedule within 5 calendar days after meeting.
  - 4. Update Preliminary Schedule monthly until the Baseline Schedule is accepted.
- B. Format:
  - 1. Simplified Gantt chart.
- C. Activities:
  - 1. Define activities to be completed in the first 90 calendar days of Work.
  - 2. Actualize activities performed during the first 90 days into the first monthly Schedule update.

## **1.09 WORK WITHIN THE FIRST 90 DAYS**

- A. Proceed with Work after Preliminary Schedule and Preliminary Schedule of Values have been accepted by Owner.
- B. Submittal and acceptance of Preliminary Schedule and Preliminary Schedule of Values is condition precedent to making of progress payments as specified in Section 01\_29\_77 - Applications for Payment and payments for mobilization costs otherwise provided for in the Contract.

## **1.10 SCHEDULE OF SUBMITTALS**

- A. Schedule of Submittals shall include Submittals required in the Contract Documents but not limited to test plans, training plans, test procedures, operation and maintenance manuals, Shop Drawings, samples, record documents, and specifically required certificates, warranties, and service agreements.
- B. Preliminary Schedule of Submittals:
  - 1. Due date: After Preliminary Schedule has been submitted and accepted by the Owner.
  - 2. Format:
    - a. Include Submittals anticipated in the first 90 calendar days after award of Contract using early start dates.
    - b. Indicate week and month anticipated for submittal to Project Manager.
    - c. Indicate "Priority" Submittals where review time can impact Contractor's schedule.
      - 1) "Priority" indication will not alter review times specified in Section 01\_33\_00 - Submittal Procedures.
      - 2) Project Manager will endeavor to provide early review of "Priority" Submittals where possible.
  - 3. Submittal of Preliminary Schedule of Submittals shall be a condition precedent to Owner making progress payments during the first 90 calendar days after award of Contract.

- C. Final Schedule of Submittals:
  - 1. Due date: 30 days after Baseline Schedule has been submitted and accepted by Owner.
  - 2. Format:
    - a. Include Submittals using early start dates.
    - b. Include all Submittals, including those required in the Preliminary Schedule of Submittals.
    - c. Indicate week and month anticipated for submittal to Project Manager.
    - d. Indicate "Priority" submittals where review time can impact Contractor's schedule.
      - 1) "Priority" indication will not alter review times specified in Section 01\_33\_00 - Submittal Procedures.
      - 2) Project Manager will endeavor to provide early review of "Priority" Submittals where possible.
  - 3. Submittal of final Schedule of Submittals shall be a condition precedent to Owner making progress payments after the first 90 calendar days after Notice to Proceed.
- D. Provide updated Schedule of Submittals with updated schedules if Schedule revisions change listing and timing of Submittals.

#### **1.11 BASELINE PROGRESS SCHEDULE AND BASELINE SCHEDULE OF VALUES**

- A. Due date: No more than 45 calendar days after Notice to Proceed.
- B. Format:
  - 1. Progress Schedule: Show sequence and interdependence of all activities required for complete performance of all Work, beginning with date of Notice to Proceed and concluding with date of final completion of Contract.
- C. Acceptance of the Baseline Progress Schedule and Baseline Schedule of Values by the Owner is a condition precedent to making payments as specified in Section 01\_29\_77 - Applications for Payment after the first 90 calendar days after Notice to Proceed.

#### **1.12 SUMMARY SCHEDULE**

- A. Due date: At weekly progress meetings and after each Schedule update or Schedule revision.
- B. Format:
  - 1. Consolidate groups of activities associated with Major Items of Work shown on Baseline Schedule.
  - 2. Intended to give an overall indication of the Project Schedule without a large amount of detail.

#### **1.13 COST FLOW SUMMARY**

- A. Due date: After Baseline Schedule has been submitted and accepted by the Owner, submit on a monthly basis as specified in Section 01\_29\_77 - Applications for Payment.



- B. Format:
  - 1. Tabular and graphic report showing anticipated earnings each month of the Contract period.
  - 2. Base tabulation on the summation of the cost-loaded activities each month.
  - 3. Show planned amounts.
  - 4. Show actual earned amounts and anticipated remaining earnings.
  - 5. Spreadsheet format of all schedule activities showing cost and percentage completion during the current month for which payment is sought.

#### **1.14 PROGRESS SCHEDULE**

- A. Due date: Submit on a monthly basis as specified in Section 01\_29\_77 - Applications for Payment.

#### **1.15 WEEKLY SCHEDULE**

- A. Due date: At every weekly progress meeting.
- B. Format:
  - 1. Contractor and Project Manager must agree on the format.
  - 2. 6-week Schedule showing the activities completed during the previous week and the Contractor's schedule of activities for following 5 weeks.
  - 3. Use the logic and conform to the status of the current Progress Schedule when producing a weekly Schedule in CPM schedule or a bar chart format.
    - a. In the event that the weekly Schedule no longer conforms to the current Schedule, Contractor may be required to revise the Schedule as specified in this Section.
  - 4. Activity designations used in the weekly Schedule must be consistent with those used in the Baseline Schedule and the monthly Schedule updates.

#### **1.16 LABOR HISTOGRAM**

- A. Due date:
  - 1. With progress payments after Baseline Schedule has been submitted and accepted by Owner.
- B. Format:
  - 1. Labor histogram depicting total craft manpower and craft manpower for Contractor's own labor forces and those of each subcontractor.
  - 2. Submit in electronic format.

#### **1.17 EQUIPMENT SCHEDULE**

- A. Due date: With any progress payment after Baseline Schedule has been submitted and accepted by Owner if it includes payment for equipment.
- B. Format:
  - 1. Tabular report listing each major piece of construction equipment to be used in performing the Work.

2. Include major equipment for Contractor and each subcontractor.
  3. Submit electronically in Excel format with 1 paper copy.
- C. Progress payments after the first 90 calendar days after Notice to Proceed will not be made until equipment schedule is provided.

#### **1.18 PRE-CONSTRUCTION SCHEDULING MEETING**

- A. As specified in Section 01\_31\_19 - Project Meetings.

#### **1.19 REVIEW AND ACCEPTANCE OF SCHEDULES**

- A. Project Manager will review preliminary Schedules, Schedule updates, Schedule revisions, and time impact analyses to ascertain compliance with specified project constraints, compliance with milestone dates, durations and sequence, accurate inter-relationships, and completeness.
- B. Project Manager and Owner will issue written comments following completion of review of baseline Schedules within 21 calendar days after receipt.
- C. Written comments on review of Schedule updates and Schedule revisions and time impact analyses will be returned to Contractor within 14 calendar days after receipt by Project Manager.
- D. Revise and resubmit Schedules in accordance with Project Manager comments within 7 calendar days after receipt of such comments or request joint meeting to resolve objections.
- E. If the Project Manager requests a meeting, the Contractor and all major subcontractors shall participate.
1. Revise and resubmit Schedule within 7 calendar days after meeting.
- F. Use accepted Schedules for planning, organizing, and directing the Work and for reporting progress.
- G. Project Manager Submittal review response:
1. When Schedules reflects the Owner's and Contractor's agreement of project approach and sequence, Schedules will be accepted by the Owner.
  2. Project Manager Submittal review response for Schedule Submittals will be "Receipt Acknowledged - Filed for Record".
  3. Acceptance of the Schedules by the Owner is for general conformance with the Contract Documents and for the Owner's planning information and does not relieve the Contractor of sole responsibility for planning, coordinating, and executing the Work within the Contract completion dates.
    - a. Omissions and errors in the accepted Schedules shall not excuse performance less than that required by the Contract Documents.
    - b. Acceptance by the Owner in no way constitutes an evaluation or validation of the Contractor's plan, sequence or means, methods, and techniques of construction.

## 1.20 SCHEDULE UPDATES

- A. Any update:
  - 1. Prepare update using most recent accepted version of Schedule including:
    - a. Actual start dates of activities that have been started.
    - b. Actual finish dates of activities that have been completed.
    - c. Percentage of completion of activities that have been started but not finished.
    - d. Actual dates on which milestones were achieved.
    - e. Update activities by inputting percent complete figures with actual dates.
    - f. Use retained logic in preparing Schedule updates.
    - g. When necessary, input remaining durations for activities whose finish dates cannot be calculated accurately with a percent complete figure only.
    - h. Revisions to the Schedule may be included that have been previously approved as specified.
- B. Monthly updates:
  - 1. Submit written narrative report in conjunction with each Schedule update, including descriptions of the following:
    - a. Activities added to or deleted from the Schedule are to adhere to cost and other resource loading requirements.
      - 1) Identify added activities in manner distinctly different from original activity designations.
    - b. Changes in sequence or estimated duration of activities.
    - c. Current or anticipated problems and delays affecting progress, impact of these problems and delays and measures taken to mitigate impact.
    - d. Assumptions made and activities affected by incorporating change order work into the Schedule.
    - e. Include a response in writing to each of the Project Manager comments or questions from the previous month's schedule review and number responses consistent with the Project Manager numbering.
  - 2. Submit updated Schedule and materials specified under Submittal of Progress Schedules 5 calendar days before the monthly schedule update meeting.
  - 3. Since monthly Schedule update is the application for progress payment required as specified in Section 01\_29\_77 - Applications for Payment, submittal and acceptance of the monthly Schedule update is a condition precedent to the making of any progress payments.
- C. Weekly progress meeting:
  - 1. Update the Schedule prior to weekly progress meeting.
    - a. Identify overall progress of each major item of work in the summary schedule.
    - b. If there are significant changes to the Schedule, submit a written report at the weekly progress meeting.
  - 2. Should monthly Schedule update show project completion earlier than current Contract completion date, show early completion time as schedule activity, identified as "Project Float".
  - 3. Should monthly Schedule update show Project completion later than current Contract completion date, prepare and submit a Schedule revision.

## **1.21 REVISIONS TO SCHEDULES**

- A. Submit revised Schedules within 5 days:
  - 1. When delay in completion of any activity or group of activities indicates an overrun of the Contract Time or milestone dates by 20 working days or 5 percent of the remaining duration, whichever is less.
  - 2. When delays in Submittals, deliveries, or work stoppages are encountered making necessary the replanning or rescheduling of activities.
  - 3. When the Schedule does not represent the actual progress of activities.
  - 4. When any change to the sequence of activities, the completion date for major portions of the Work, or when changes occur which affect the critical path.
  - 5. When Contract modification necessitates Schedule revision, submit schedule analysis of Change Order work with cost proposal.
- B. Create a separate Submittal for Schedule revisions.
  - 1. Comply with Schedule updates as specified in this Section.
  - 2. Do not submit with Schedule updates.
- C. Schedule revisions will not be reflected in the Schedule until after the revision is accepted by the Owner.
  - 1. This includes Schedule revisions submitted for the purpose of mitigating a Contractor-caused project delay (Recovery Schedule).

## **1.22 ADJUSTMENT OF CONTRACT TIME OR PRICE**

- A. Contract Time will be adjusted only for causes specified in Contract Documents.
- B. If the Contractor believes that the Owner has impacted its work such that the Project completion date will be delayed, the Contractor must submit proof, in the form of a time impact analysis demonstrating the delay to the critical path.
- C. Time impact analysis:
  - 1. Use the accepted Schedule update that is current relative to the time frame of the delay event (change order, third party delay, or other Owner-caused delay). Represent the delay event in the Schedule by:
    - a. Inserting new activities associated with the delay event into the Schedule.
    - b. Revising activity logic.
    - c. Revising activity durations.
  - 2. If the Progress Schedule's critical path and completion date are impacted as a result of adding this delay event to the Progress Schedule, a time extension equal to the magnitude of the impact may be warranted.
  - 3. The time impact analysis Submittal must include the following information:
    - a. A fragment of the portion of the Schedule affected by the delay event.
    - b. A narrative explanation of the delay issue and how it impacted the Schedule.
    - c. A schedule file used to perform the time impact analysis.
- D. When a delay to the Project as a whole can be avoided by revising preferential sequencing or logic and the Contractor chooses not to implement the revisions, the Contractor will be entitled to a time extension and no compensation for extended overhead.

- E. Indicate clearly that the Contractor has used, in full, all project float available for the Work involved in the request, including any float that may exist between the Contractor's planned completion date and the Contract completion date.
  - 1. Utilize the latest version of the Schedule update accepted at the time of the alleged delay, and all other relevant information, to determine the adjustment of the Contract Time.
- F. Adjustment of the Contract Times will be granted only when the Contract float has been fully utilized and only when the revised date of completion of the Work has been pushed beyond the Contract completion date.
  - 1. Adjustment of the Contract Times will be made only for the number of days that the planned completion of the work has been extended.
- G. Actual delays in activities which do not affect the Critical Path Work or which do not move the Contractor's planned completion date beyond the Contract completion date will not be the basis for an adjustment to the Contract Time.
- H. If completion of the project occurs within the specified Contract Time, the Contractor is not entitled to job-site or home office overhead beyond the Contractor's originally planned occupancy of the site.
- I. Notify Project Manager of a request for Contract Time adjustment.
  - 1. Submit request as specified in the Contract Documents.
  - 2. In cases where the Contractor does not submit a request for Contract Time adjustment for a specific change order, delay, or Contractor request within the specified period of time, then it is mutually agreed that the particular change order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.
- J. Project Manager will, within 30 calendar days after receipt of a Contract Time adjustment, request any supporting evidence, review the facts, and advise the Contractor in writing.
  - 1. Include the new Progress Schedule data, if accepted by the Owner, in the next monthly Schedule update.
  - 2. When the Owner has not yet made a final determination as to the adjustment of the Contract Time, and the parties are unable to agree as to the amount of the adjustment to be reflected in the Progress Schedule, reflect that amount of time adjustment in the Progress Schedule as the Project Manager may accept as appropriate for such interim purpose.
  - 3. It is understood and agreed that any such interim acceptance by the Project Manager shall not be binding and shall be made only for the purpose of continuing to schedule the Work, until such time as a final determination as to any adjustment of the Contract Time acceptable to the Project Manager has been made.
  - 4. Revise the Progress Schedule prepared thereafter in accordance with the final decision.

### **1.23 WEATHER DAY ALLOWANCE**

- A. Allowance:
  - 1. Include as a separate identifiable activity on the critical path, an activity labeled "Weather Day Allowance".
- B. Actual Weather Day:
  - 1. Insert a weather delay activity in the critical path to reflect actual weather day occurrences when weather days are experienced and accepted by the Project Manager.
  - 2. Reduce duration of Weather Day Allowance activity as weather delays are experienced and inserted into the Schedule. Remaining weather days in the Weather Day Allowance at completion of the Project is considered float.
  - 3. Provide a written notice to the Project Manager of the occurrence of a weather day within 2 days after the onset of such weather and describe in reasonable detail the type of weather encountered and the Work interfered with or interrupted.
    - a. A Schedule update will not suffice as a written notice.
    - b. Project Manager will determine if the Weather Day constitutes a use of a portion of the Weather Day Allowance.
    - c. After use of all the Weather Day Allowance, the Project Manager will determine if the Contractor is entitled to an extension of the Contract Time due to weather conditions.

### **1.24 FINAL SCHEDULE**

- A. The final Schedule update becomes the As-Built Schedule.
  - 1. The As-Built Schedule reflects the exact manner in which the project was constructed by reflecting actual start and completion dates for all activities accomplished on the project.
  - 2. Contractor's Project Manager and scheduler sign and certify the As-Built Schedule as being an accurate record of the way the project was actually constructed.
- B. Retainage will not be released until the final Schedule update is provided.

## **PART 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 01\_32\_34**

### **PHOTOGRAPHIC AND VIDEOGRAPHIC DOCUMENTATION**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for photographs and videos.
- B. The purpose of the photographs and videos is to document the condition of the facilities prior to the Contractor beginning work at the Project site, the progress of the Work, and the Project site after Substantial Completion of the Work.
- C. The scope of the photographic and videographic documentation shall be the sole responsibility of the Contractor but shall be acceptable to the Project Manager.

##### **1.02 SUBMITTALS**

- A. Photographer qualifications.
- B. Pre-construction photographs and videos: Submit prior to beginning work at the Project site or prior to the Preconstruction Conference specified in Section 01\_31\_19 - Project Meetings, whichever occurs earlier.
- C. Construction photographs and videos: Submit with each application for payment.
- D. Post-construction photographs and videos: Submit with project closeout documents as specified in Section 01\_77\_00 - Closeout Procedures.

##### **1.03 PHOTOGRAPHER**

- A. Photographer qualified and equipped to photograph either interior or exterior exposures, with lenses ranging from wide angle to telephoto.
- B. Submit example work of previous photographs and video recording meeting the requirements of this Section.
  - 1. Provide to Project Manager no later than the pre-construction conference.
  - 2. Provide photographs used for site examination.
  - 3. Provide video of site examination.
  - 4. Provide samples that used same camera and lighting equipment proposed for the Work.
  - 5. Project Manager will review work examples to determine if the quality of the images is acceptable.
  - 6. Contractor is responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.
  - 7. Do not commence Work prior to approval of the material by the Project Manager.
  - 8. Once accepted, the standard report material shall serve as a standard for the remaining work.



#### **1.04 KEY PLAN**

- A. Submit key plan of Project site with notation of vantage points marked for location and direction of each photograph.
- B. Include the same label information as the corresponding set of photographs.

#### **1.05 PHOTOGRAPHS**

- A. Provide prints of each photograph for each area of Work.
- B. Provide a digital copy of each photograph for each area of Work.
  - 1. Monthly: Indexed digital flash drive.
  - 2. Project record documents:
    - a. Catalog and index prints in chronological sequence.
    - b. Include typed table of contents.

#### **1.06 PRE-CONSTRUCTION PHOTOGRAPHS AND VIDEOS**

- A. Provide photographs and video of the condition entire site including each area of Work prior to the start of Work.
  - 1. Areas to be photographed and videoed shall include the site of the Work and all existing facilities, either on or adjoining the Project site, including the interior of existing structures that could be damaged as a result of the Contractor's Work.
  - 2. Include general condition, structures, vegetation, staging, storing, working, parking areas and excavation areas.

#### **1.07 CONSTRUCTION PHOTOGRAPHS AND VIDEOS**

- A. Provide photographs and videos of construction in each area of Work throughout progress of Work including a key plan designating where each photograph was taken.
- B. Take site and interior photographs and videos from differing directions of building demolition, pre-excavation, footing excavation, soil testing, utility crossings, installation of bypass piping, excavation of access pits, installation of lining system in pipes, rehabilitation of manholes, building modifications, utilities, electrical and instrumentation modifications, and other applicable activities indicating relative progress of the work.
- C. Take photos a maximum of 7 calendar days prior to Submittal.

#### **1.08 POST-CONSTRUCTION PHOTOGRAPHS AND VIDEOS**

- A. Provide photographs of the entire site including each area of Work at the completion of Work.
  - 1. Include general condition, structures, vegetation, staging, storing, working, parking areas and excavation areas.
  - 2. Take photos and video from same points in same direction as pre-construction examination.
- B. Submittal of photos and videos is a condition of final payment.

## 2.01 MEDIA

1. Flash drive compatible with current Microsoft Windows.
2. Provide photos as individual, indexed JPG files with the following characteristics:
  - a. Compression shall be set to preserve quality over file size.
  - b. Highest resolution JPG images shall be submitted. Resizing to a smaller size when high resolution JPGs are available shall not be permitted.
  - c. JPG image resolution shall be 5 megapixels at 2,400 by 1,800 or higher.
  - d. Images shall have rectangular, clean images. Artistic borders, beveling, drop shadows, etc., are not permitted.
3. Identification: On photograph, provide the following information:
  - a. Name of project.
  - b. Date stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
  - c. Description of vantage point, indicating location and direction by compass point.

1. Video quality shall be 720p HD or greater in MPG, AVCHD, AVI, or MP4 format.
2. Digital color video format.
3. Provide audio portion of the composite video sufficiently free from electrical interference and background noise to provide complete intelligibility of oral report.
4. Identification: On each copy provide a label with the following information:
  - a. Name of project.
  - b. Date video was recorded.
5. Submit 1 copy of each video within 7 days of recording.
6. Display continuous running time.
7. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.

END OF SECTION



## **SECTION 01\_35\_44**

### **HAZARDOUS MATERIAL PROCEDURES**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Procedures required when encountering hazardous materials at the Work site.

##### **1.02 REFERENCES**

- A. Occupational Safety and Health Administration (OSHA).
- B. United States Code of Federal Regulation (CFR):
  - 1. Title 29 - Labor:
    - a. 1926.62 - Lead.
  - 2. Title 40 - Protection of Environment:
    - a. 261 - Identification and Listing of Hazardous Waste.

##### **1.03 SUBMITTALS**

- A. Submit laboratory reports, hazardous material removal plans, and certifications.
- B. Submit the following work plan:
  - 1. Removal and Legal Disposal of Asbestos Cement Pipe Plan.
    - a. Work plan shall include, but not be limited, to the following:
      - 1) Schedule of work.
      - 2) Security measures for work and disposal area.
      - 3) Staff training: Contractor shall provide at least one competent person who is capable of identifying asbestos hazards at the job site for the entire duration of the AC pipe removal and disposal operation.
      - 4) Trenching and removal of pipe procedure.

##### **1.04 DEFINITIONS**

- A. Adequately Wet: Penetration of the pipe wall with liquid to prevent release of particulates.
- B. Asbestos Cement Pipe: Also commonly referred to as AC Transite Pipe, AC pipe or ACP. Pipe that is generally composed of cement and asbestos fibers.
- C. Competent Person: A trained worker who is capable of identifying existing and predictable asbestos hazards, perform exposure assessment and monitoring, is qualified to train other workers, and has the authority to take immediate corrective action to eliminate a hazardous exposure.

- D. Non-friable Asbestos - Containing Material (NACM): Material containing more than 1 percent asbestos, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- E. Regulated Asbestos - Containing Material (RACM): Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder in the course of work.

#### **1.05 OPERATING DIGESTERS**

- A. Observe safety precautions in vicinity of operating digesters which contain digester gases, including methane, hydrogen sulfide, and carbon dioxide.

#### **1.06 HAZARDOUS MATERIALS PROCEDURES**

- A. Hazardous materials are those defined by 40 CFR and State specific codes.
- B. When hazardous materials have been found:
  - 1. Prepare and initiate implementation of plan of action.
  - 2. Notify such agencies as are required to be notified by laws and regulations within the times stipulated by such laws and regulations.
  - 3. Designate a Certified Industrial Hygienist to issue pertinent instructions and recommendations for protection of workers and other affected persons' health and safety.
  - 4. Identify and contact subcontractors and licensed personnel qualified to undertake storage, removal, transportation, disposal, and other remedial work required by, and in accordance with, laws and regulations.
- C. Forward to Project Manager, copies of reports, permits, receipts, and other documentation related to remedial work.
- D. Assume responsibility for worker health and safety, including health and safety of subcontractors and their workers.
  - 1. Instruct workers on recognition and reporting of materials that may be hazardous.
- E. File requests for adjustments to Contract Times and Contract Price due to the finding of Hazardous Materials in the Work site in accordance with Contract Documents.
  - 1. Minimize delays by continuing performance of the Work in areas not affected by hazardous materials operations.
- F. When hazardous materials have been found:
  - 1. Prepare and initiate implementation of plan of action.
  - 2. Notify immediately Owner, Project Manager, and other affected persons.
  - 3. Notify such agencies as are required to be notified by laws and regulations with the times stipulated by such laws and regulations.

4. Designate a Certified Industrial Hygienist to issue pertinent instructions and recommendations for protection of workers and other affected persons' health and safety.
5. Identify and contact subcontractors and licensed personnel qualified to undertake storage, removal, transportation, disposal, and other remedial work required by, and in accordance with, laws and regulations.

#### **1.07 ASBESTOS MATERIALS**

- A. It is the specific intent of these Contract Documents to exclude from the Work any and all products or materials containing asbestos. No products containing asbestos shall be incorporated in the Work.
- B. Removal of existing ACM shall be performed by a firm that is registered by OSHA and certified by the State Contractors Licensing Board and shall be a Licensed Abatement Contractor in the state where the project is located.
- C. Submit 10 copies of plan for the removal, containment, and disposal of ACM.
- D. Submit 6 copies of abatement license of ACM removal contractor.

### **PART 2 PRODUCTS**

#### **2.01 ASBESTOS CEMENT PIPE (ACP)**

- A. The pipe to be removed from the ground has been in service for approximately 45 years.
  1. The manufacturer and exact composition of the pipe to be removed is unknown.
  2. ACP is generally manufactured using portland cement or pozzolan cement and asbestos fiber.
  3. Common pipe lengths: 3 feet 3 inches, 6 feet 6 inches, 9 feet 9 inches, and 13 feet 0 inches.
- B. Pipe fittings. Separate from pipe brass, galvanized pipe, copper, cast iron, galvanized pipe or steel fittings and dispose of separately.

### **PART 3 EXECUTION**

#### **3.01 ASBESTOS MATERIALS**

- A. Notifications:
  1. Notify 24 hours prior to performing asbestos material removal operations.
  2. Contractor shall notify Owner 3 working days in advance of commencing asbestos material removal operations.

- B. Work area:
  - 1. Establish a regulated work area, using at a minimum, construction warning tape to establish limits of work area for the asbestos material removal.
  - 2. On site stockpiling or storage of asbestos material designated for disposal shall not be allowed.
- C. Safety:
  - 1. Conduct an Initial Exposure Assessment (IEA).
  - 2. Provide a hand/face wash station.
- D. Worker qualifications:
  - 1. Asbestos removal shall be performed by employees trained in wet methods, vacuum cleaners with HEPA filters to collect debris and prompt cleanup.
- E. Legal disposal:
  - 1. Legal disposal of asbestos material is the Owner's responsibility.
  - 2. Contractor shall transport the asbestos material to the location designated by the Owner.

### **3.02 EXCAVATION OF AC PIPE**

- A. Machine excavates to expose asbestos cement pipe.
- B. Hand excavates areas under pipe where breaks are planned.
- C. Pipe shall be pre-wetted prior to any breaks being made.
- D. Pipe shall be snapped using mechanical snapping methods.

### **3.03 AC PIPE REMOVAL**

- A. All required pipe breaking operations shall require adequate pre-wetting with potable water.
- B. The Contractor shall make every effort to minimize the number of pipe breaks. Wherever possible, the pipe should be removed by pulling the pipe out of the pipe joint collars.
- C. Remove sections of AC pipe intact at joint collars by mechanical snapping methods between collars.
- D. Wet and containerize waste materials as removed from the trench. Use lifting straps and methods that do not further damage the pipe.
- E. Sections of AC pipe that become cut, have broken edges or have any friable surface shall be wet at exposed fractures and immediately wrapped.
  - 1. The pipe ends shall be sealed completely using a minimum 6-mil poly film wrap, which is securely fastened, taped to completely enclose the pipe and ACP appurtenances and shall have conspicuous, legible labeling that has the following or equivalent labeling: CAUTION: CONTAINS ASBESTOS FIBERS. BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM.

- F. AC Pipe sections shall not be left exposed in public view, either in trench or in disposal area.
- G. All connecting parts of pipe, rubber gaskets, and pipe couplings shall be discarded with pipe.
- H. AC pipe from this project only, shall be placed in the bin designated.

END OF SECTION





## **SECTION 01\_35\_61**

### **WORK WITHIN PUBLIC RIGHT-OF-WAY**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for maintenance, support, protection, relocation, reconstruction and adjusting-to-grade, restoration, construction of temporary and new facilities, and abandonment of existing utilities affected by construction work within the public right-of-way.

##### **1.02 TERMINOLOGY**

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
  - 1. Trenching:
    - a. Open trench:
      - 1) General: Includes excavation, pipe laying, backfilling, and pavement replacement.
    - b. Any excavated areas shall be considered as "open trench" until all pavement replacement has been made, or until all trenches outside of pavement replacement areas have been backfilled and compacted in accordance with these Contract Documents.
  - 2. Utility:
    - a. For the purpose of this Section, utility means any public or private service, such as electric light and power systems; gas distribution systems; telephone, telegraph, cable television and other communication services; water distribution; storm drain and sanitary sewer services; police and fire communication systems; street lighting and traffic signs and signals; parking meters; and steam distribution systems.

##### **1.03 SUBMITTALS**

- A. Traffic control plan: Submit detailed traffic control plan for acceptance by jurisdictional agency.

#### **PART 2 PRODUCTS**

##### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Trenching:
  - 1. Except where otherwise specified, indicated on the Drawings, or accepted in writing by the Project Manager, the maximum length of open trench, where construction is in any stage of completion, shall not exceed the linear footage as set forth below. Descriptions under following area designations are general

in nature and may be amended in writing by the Project Manager due to particular or peculiar field conditions:

- a. Business district areas - maximum 100 linear feet: Store front areas.
  - b. Commercial areas - maximum 400 linear feet: Industrial, shopping centers, churches, schools, hotels, motels, markets, gas stations, government and private office buildings, hospitals, fire and police stations, and nursing homes.
  - c. Residential areas - maximum 1 block or 600 linear feet, whichever is the least: Single and multi-family residences, apartments, and condominiums.
  - d. Undeveloped areas - maximum 1,000 linear feet: Parks, golf courses, farms, undeveloped subdivided land.
2. Completely backfill trenches across streets and install temporary or permanent pavement as soon as possible after pipe laying.
- B. Site conditions:
1. Use substantial steel plates with adequate trench bracing to bridge across trenches at street and alley crossings, commercial driveways, and residential driveways where trench backfill and temporary patch have not been completed during regular working hours.
  2. Provide safe and convenient passage for pedestrians.
  3. Maintain access to fire stations, fire hydrant, and hospitals at all times.
  4. Provide traffic control devices, barricades, and signage as required by the regulating agency.

### **PART 3 EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01\_41\_00**

### **REGULATORY REQUIREMENTS**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Regulatory authorities and codes.

##### **1.02 AUTHORITIES HAVING JURISDICTION (AHJ)**

- A. Public Works Department: City of Everett.
- B. Planning Department: City of Everett.

##### **1.03 APPLICABLE CODES**

- A. Washington State Building Codes Council (SBCC), Washington Administrative Code (WAC), Title 51 – Department of Commerce, Building Code Council:
  - 1. Building code:
    - a. International Building Code (IBC), 2021.
    - b. Washington State Amendments to the 2021 IBC (Chapter 51-50 WAC).
  - 2. Electrical code:
    - a. National Fire Protection Association (NFPA), NFPA 70: National Electrical Code (NEC), 2023.
  - 3. Energy code:
    - a. International Energy Conservation Code (IECC), 2021.
    - b. Washington State Amendments to the 2021 IECC (Chapter 51-11C WAC).
    - c. Washington State Energy Code, Commercial Provisions.
  - 4. Fire code:
    - a. International Fire Code (IFC), 2021.
    - b. Washington State Amendments to the 2021 IFC (Chapter 51-54A WAC).
  - 5. Mechanical code:
    - a. International Mechanical Code (IMC), 2021.
    - b. Washington State Amendments to the 2021 IMC (Chapter 51-52 WAC).
  - 6. Plumbing code:
    - a. International Plumbing Code (IPC), 2021.
    - b. Washington State Amendments to the 2021 UPC (Chapter 51-56 WAC).

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 01\_45\_00**

### **QUALITY CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Quality control and control of installation.
  - 2. Tolerances.
  - 3. References.
  - 4. Mock-up requirements.
  - 5. Authority and duties of Owner's representative or inspector.
  - 6. Sampling and testing.
  - 7. Testing and inspection services.
  - 8. Contractor's responsibilities.

##### **1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Project Manager before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- H. When specified, products will be tested and inspected either at point of origin or at Work site:
  - 1. Notify Project Manager in writing well in advance of when products will be ready for testing and inspection at point of origin.
  - 2. Do not construe that satisfactory tests and inspections at point of origin is final acceptance of products. Satisfactory tests or inspections at point of origin do not preclude retesting or re-inspection at Work site.
- I. Do not ship products which require testing and inspection at point of origin prior to testing and inspection.

### **1.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. When Manufacturers' tolerances conflict with Contract Documents, request clarification from Project Manager before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **1.04 REFERENCES**

- A. ASTM International (ASTM):
  - 1. E329 - Standard for Agencies Engaged in Construction Inspection, Testing or Special Inspection.
- B. National Institute of Standards and Technology (NIST).

### **1.05 PRODUCT REQUIREMENTS**

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Project Manager before proceeding.

### **1.06 MOCK-UP REQUIREMENTS**

- A. Tests will be performed under provisions identified in this Section and identified in respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be comparison standard for remaining Work.
- D. Where mock-up has been accepted by Project Manager and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Project Manager.

## **1.07 AUTHORITY AND DUTIES OF OWNER'S REPRESENTATIVE OR INSPECTOR**

- A. Owner's Project Representative employed or retained by Owner is authorized to inspect the Work.
- B. Inspections may extend to entire or part of the Work and to preparation, fabrication, and manufacture of products for the Work.
- C. Deficiencies or defects in the Work which have been observed will be called to Contractor's attention.
- D. Inspector will not:
  - 1. Alter or waive provisions of Contract Documents.
  - 2. Inspect Contractor's means, methods, techniques, sequences, or procedures for construction.
  - 3. Accept portions of the Work, issue instructions contrary to intent of Contract Documents, or act as foreman for Contractor. Supervise, control, or direct Contractor's safety precautions or programs; or inspect for safety conditions on Work site, or of persons thereon, whether Contractor's employees or others.
- E. Inspector will:
  - 1. Conduct on-site observations of the Work in progress to assist Project Manager Project Manager in determining when the Work is, in general, proceeding in accordance with Contract Documents.
  - 2. Report to Project Manager whenever Inspector believes that Work is faulty, defective, does not conform to Contract Documents, or has been damaged; or whenever there is defective material or equipment; or whenever Inspector believes the Work should be uncovered for observation or requires special procedures.

## **1.08 SAMPLING AND TESTING**

- A. General:
  - 1. Prior to delivery and incorporation in the Work, submit listing of sources of materials, when specified in sections where materials are specified.
  - 2. When specified in sections where products are specified:
    - a. Submit sufficient quantities of representative samples of character and quality required of materials to be used in the Work for testing or examination.
    - b. Test materials in accordance with standards of national technical organizations.
- B. Sampling:
  - 1. Furnish specimens of materials when requested.
  - 2. Do not use materials which are required to be tested until testing indicates satisfactory compliance with specified requirements.
  - 3. Specimens of materials will be taken for testing whenever necessary to determine quality of material.
  - 4. Assist Project Manager in preparation of test specimens at site of work, such as soil samples and concrete test cylinders.



## 1.09 TESTING AND INSPECTION SERVICES

- A. Contractor will employ and pay for specified services of an independent firm to perform Contractor quality control testing as required in the technical specifications for various work and materials.
- B. Owner will employ and pay for specified services of an "Owner's independent testing firm" certified to perform testing and inspection as required in the technical specifications for various work and materials or stipulated in Section 01\_45\_24 - Regulatory Quality Assurance to confirm Contractor's compliance with Contract Documents.
- C. The Owner's independent testing firm will perform tests, inspections and other services specified in individual specification sections and as required by Owner and requested by the Project Manager.
- D. The qualifications of laboratory that will perform the testing, contracted by the Owner or by the Contractor, shall be as follows:
  - 1. Has authorization to operate in the state where the project is located.
  - 2. Meets "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories.
  - 3. Meets requirements of ASTM E329.
  - 4. Laboratory Staff: Maintain full time specialist on staff to review services.
  - 5. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to NIST or accepted values of natural physical constants.
  - 6. Will submit copy of report of inspection of facilities made by Materials Reference Laboratory of NIST during most recent tour of inspection, with memorandum of remedies of deficiencies reported by inspection.
- E. Testing, inspections, and source quality control may occur on or off project site. Perform off-site testing inspections and source quality control as required by Project Manager or Owner.
- F. Contractor shall cooperate with Owner's independent testing firm, furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
  - 1. Notify Project Manager and Owner's independent testing firm 48 hours prior to expected time for operations requiring testing.
  - 2. Make arrangements with Owner's independent testing firm and pay for additional samples and tests required for Contractor's use.
- G. Limitations of authority of testing Laboratory: Owner's independent testing firm or Laboratory is not authorized to:
  - 1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency or laboratory may not approve or accept any portion of the Work.
  - 3. Agency or laboratory may not assume duties of Contractor.
  - 4. Agency or laboratory has no authority to stop the Work.

- H. Testing and employment of an Owner's independent testing firm or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- I. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same Owner's independent testing firm on instructions by Project Manager. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
- J. The Owner's independent testing firm responsibilities will include:
  - 1. Test samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at site. Cooperate with Project Manager and Contractor in performance of services.
  - 3. Perform specified sampling and testing of products in accordance with specified standards.
  - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 5. Promptly notify Project Manager and Contractor of observed irregularities or non-conformance of Work or products.
  - 6. Perform additional tests required by Project Manager.
  - 7. Attend preconstruction meetings and progress meetings when requested.
- K. Owner's independent testing firm individual test reports:
  - 1. After each test, Owner's independent testing firm will promptly submit electronically report to Project Manager and to Contractor.
  - 2. Test reports shall include at least the following information:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in Project.
    - g. Type of inspection or test.
    - h. Date of test.
    - i. Certified test results stamped and signed by a registered Project Manager in the state where the project is located.
    - j. Summary of conformance with Contract Documents.
    - k. When requested by Project Manager, the Owner's independent testing firm will provide interpretation of test results.

#### **1.10 CONTRACTOR'S RESPONSIBILITIES**

- A. Cooperate with Owner's independent testing firm or laboratory personnel and provide access to construction and manufacturing operations.
- B. Secure and deliver to Owner's independent testing firm or laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.

- C. Provide to Owner's independent testing firm or laboratory and Project Manager preliminary mix design proposed to be used for concrete, and other materials mixes which require control by testing laboratory.
- D. Submit product test reports electronically.
- E. Furnish incidental labor and facilities:
  - 1. To provide access to construction to be tested.
  - 2. To obtain and handle samples at Work site or at source of product to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- F. Notify Owner's independent testing firm or laboratory 48 hours in advance of when observations, inspections and testing is needed for laboratory to schedule and perform in accordance with their notice of response time.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01\_55\_26**

### **PROJECT TEMPORARY TRAFFIC CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Traffic control requirements to keep streets and traffic ways open for the passage of vehicles and pedestrians during the construction period.

##### **1.02 SUBMITTALS**

- A. Approved and signed copies of:
  - 1. Traffic control plan (TCP).

##### **1.03 AUTHORITIES HAVING JURISDICTION (AHJ)**

- A. City of Everett.

##### **1.04 MEASUREMENT AND PAYMENT**

- A. Contractor is responsible for costs associated with permits, plans, implementation, and maintenance as specified in Section 01\_20\_20 - Measurement and Payment.
- B. Payment will be lump sum.

##### **1.05 TRAFFIC CONTROL PLAN (TCP)**

- A. Submit a TCP for City approval following all requirements and procedures in the Standard Specifications Section 1-10.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 01\_56\_17**

### **EROSION AND SEDIMENT CONTROL**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Installation of erosion and sediment control catch basins.
- B. Purpose of control fences is to contain pollutants from overland flow.

##### **1.02 UNIT PRICES**

- A. Measure and pay for catch basin inserts are lump sum. Limits of construction site are indicated on the Drawings.

##### **1.03 SUBMITTALS**

- A. Manufacturer's catalog sheets and other product data on geotextile fabric.

##### **1.04 REFERENCES**

- A. ASTM International (ASTM):
  - 1. D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>).
  - 2. D4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus.
  - 3. D4491- Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
  - 4. D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
  - 5. D4833 - Standard Test Method for Index Puncture Resistance of Geomembranes, and Related Products.
  - 6. D5665- Standard Specification for Thermoplastic Fabrics Used in Cold-Applied Roofing and Waterproofing.
  - 7. D6459 - Standard Test Method for Determination of Rolled Erosion Control Product (RECP) Performance in Protecting Hillslopes from Rainfall-Induced Erosion.
  - 8. D6475 - Standard Test Method for Measuring Mass per Unit Area of Erosion Control Blankets.
  - 9. D6525 - Standard Test Method for Measuring Nominal Thickness of Rolled Erosion Control Products.
  - 10. D6567 - Standard Test Method for Measuring the Light Penetration of a Rolled Erosion Control Product (RECP).
  - 11. D6818 - Standard Test Method for Ultimate Tensile Properties of Rolled Erosion Control Products.

## **PART 2 PRODUCTS**

### **2.01 FILTER FABRIC**

- A. Provide woven or nonwoven geotextile filter fabric made of either polypropylene, polyethylene, ethylene, or polyamide material.
- B. Geotextile fabric:
  - 1. Grab strength of 100 pounds per square inch in any principal direction in accordance with ASTM D4632.
  - 2. Puncture strength exceeding 115 pounds per square inch in accordance with ASTM D4833.
  - 3. Equivalent opening size between 50 and 140 for soils with more than 15 percent by weight passing No. 200 sieve and between 20 and 50 for soil with less than 15 percent by weight passing No. 200 sieve.
  - 4. Maximum water flow rate of 40 gallons per minute per square feet in accordance with ASTM D4491.
- C. Filter fabric material shall contain ultraviolet inhibitors and stabilizers to provide expected usable life comparable to anticipated construction period.
  - 1. Ultraviolet stability shall exceed 70 percent after 500 hours of exposure in accordance with ASTM D4355.
- D. Manufacturers: The following or equal:
  - 1. Mirafi, Inc.

### **2.02 CATCH BASIN INSERTS**

- A. Prefabricated units specifically designed for storm drain inlet protection.
- B. Remain securely attached to the drainage structure when fully loaded with sediment and debris.
- C. Lifting handle for removal.
- D. Overflow to prevent ponding.

## **PART 3 EXECUTION**

### **3.01 PREPARATION AND INSTALLATION**

- A. Provide erosion and sediment control systems at locations as indicated on the Drawings.
  - 1. Construct in accordance with requirements as indicated on the Drawings and of type indicated as specified in this Section.
- B. No clearing, grubbing or rough cutting permitted until erosion and sediment control systems are in place, other than site work specifically directed by Project Manager to allow soil testing and surveying.

- C. Maintain existing erosion and sediment control systems located within Project site until acceptance of Project or until directed by Project Manager to remove and discard existing system.
- D. Regularly inspect and repair or replace damaged components of erosion and sediment control systems as specified in this Section.
  - 1. Unless otherwise directed, maintain erosion and sediment control systems until Project area stabilization is accepted by the Authority.
  - 2. Remove erosion and sediment control systems promptly when directed by Project Manager.
  - 3. Discard removed materials off site.
- E. Remove and dispose sediment deposits at designated spoil site for Project.
  - 1. If a Project spoil site is not indicated on the Drawings, dispose of sediment off site at location not in or adjacent to stream or floodplain.
  - 2. Assume responsibility for off-site disposal.
  - 3. Spread sediment evenly throughout site, compacted and stabilized.
  - 4. Prevent sediment from flushing into a stream or drainage way.
  - 5. If sediment has been contaminated, dispose of in accordance with existing federal, state, and local rules and regulations.
- F. Unless otherwise indicated, compact embankments, excavations, and trenches by mechanically blading, tamping, and rolling soil in maximum of 8-inch layers.
  - 1. Compaction density shall be at a minimum of 90 percent Standard Proctor ASTM D698 density.
  - 2. Make at least 1 test per 500 cubic yards of embankment.
- G. Prohibit equipment and vehicles from maneuvering on areas outside of dedicated rights-of-way and easements for construction.
  - 1. Immediately repair damage caused by construction traffic to erosion and sediment control.

### **3.02 GENERAL CONSTRUCTION METHODS**

- A. Provide erosion and sedimentation control systems as indicated on the Drawings.
  - 1. Install erosion and sedimentation control systems in manner that surface runoff shall percolate through system in sheet flow fashion and allow retention and accumulation of sediment.
- B. Inspect erosion and sedimentation control systems after each rainfall, daily during periods of prolonged rainfall, and at minimum once each week.
  - 1. Repair or replace damaged sections immediately.
  - 2. Remove sediment deposits when silt reaches depth 1/3 height of fence or 6 inches, whichever is less.

### **3.03 SITE PREPARATION FOR CATCH BASIN INSERTS**

- A. Protect catch basin inlets to drainage system from sediment influx by installing and maintaining inlet protection.



- B. Install at all locations indicated on the Drawings, ESC Plan, and where inspection deems necessary.
- C. Install according to manufacturer's recommendations.
- D. Install in existing catch basins prior to any earth disturbing activity uphill of the catch basin.
- E. Install new catch basins prior to allowing any water to flow into the catch basin.

END OF SECTION

**SECTION 01\_60\_01**  
**PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
1. Requirements for tangible materials, raw or manufactured, that become part of the project.

**1.02 TERMINOLOGY**

- A. The words and terms listed below, are not defined terms that require initial capital letters, but, when this Section is referenced in other Specifications, have the indicated meaning.
1. Calculations:
    - a. Documentation of the process of transforming the design and prescriptive criteria into a design meeting the performance criteria.
  2. Certificates:
    - a. An official document that attests a fact is in accordance with the Contract Documents.
  3. Manufacturer's Certificate of Source Testing:
    - a. Form used to confirm that the applicable source tests have been performed and the results conform to the Contract Documents. The form template is provided at the end of this Section.
  4. Manufacturer's instructions:
    - a. Stipulations, directions, and/or recommendations issued by the manufacturer of the product addressing handling, storage, installation, protection, erection, and/or application of the product.
  5. Products:
    - a. Raw materials, finished goods, equipment, systems, and shop fabrications that will become part of the Work.
  6. Product data:
    - a. Information about the product, which is typically found in the manufacturer's catalogs or on their web site, including data sheets, bulletins, layout drawings, exploded views, and brochures.
  7. Samples:
    - a. As defined in the General Conditions and Supplementary Conditions.
    - b. Full-size actual products or pieces of products intended to illustrate the products to be incorporated into the project. Sample submittals are often necessary for such characteristics as colors, textures, and other appearance issues.
  8. Shop Drawings:
    - a. As defined in the General Conditions and Supplementary Conditions.

- b. Shop Drawings are prepared specifically for the project to illustrate details, dimensions, and other data necessary for satisfactory fabrication or construction.
  - c. Shop Drawings could include graphic line-type drawings and single-line diagrams.
- 9. Source Quality Control:
  - a. Testing and inspections at the location of fabrication or assembly.
    - 1) Includes Factory Acceptance Testing (FAT), Factory Testing, and Source Testing.
  - b. Test reports including the following information:
    - 1) Test description.
    - 2) List of equipment used.
    - 3) Name of the person conducting the test.
    - 4) Date and time the test was conducted.
    - 5) Ambient temperature and weather conditions.
    - 6) Raw data collected.
    - 7) Calculated results.
    - 8) Clear statement if the test passed or failed the requirements stated in Contract Documents.
    - 9) Signature of the person responsible for the test.
- 10. Special tools:
  - a. Special wrenches, gauges, circuit setters, and other similar devices required for the proper operation or maintenance of a system that would not normally be in the Owner's tool kit and that have been specifically made for use on a product for assembly, disassembly, repair, or maintenance.
- 11. Submittals:
  - a. As defined in the General Conditions and Supplementary Conditions.
  - b. Samples, product data, Shop Drawings, and other materials that demonstrate how Contractor intends to conform to the Contract Documents.

### 1.03 QUALITY CONTROL

- A. Manufacturer to provide permanent quality control department and laboratory facility capable of performing inspections and testing as required by the Contract Documents.
  - 1. Material testing, inspection procedures, and manufacturing process are subject to inspection by Project Manager.
  - 2. Contractor shall notify Project Manager in writing of the manufacturing start date not less than 14 days prior to the start of manufacturer of project pipe.
  - 3. Perform manufacturer's tests and inspections required by the referenced standards and as specified in this Section including the following:
    - a. Provide the Manufacturer's Certificate of Source Testing.
    - b. Calibration within last 12 months for equipment such as scales, measuring devices and calibration tools used in the manufacturing of pipe as required by ISO 9001.
      - 1) Each device used in the manufacturer of pipe is required to have a tag recording date of last calibration.
      - 2) Provide calibration certificate.
      - 3) Devices are subject to inspection by Project Manager.

## **1.04 SERVICES OF MANUFACTURER'S REPRESENTATIVES**

- A. Qualification of manufacturer's representative as specified in the Contract Documents Technical Sections include the following:
  - 1. Authorized representative of the manufacturer, factory trained and experienced in the technical applications and installation of respective products with full authority by the product manufacturer to issue the certifications required of the manufacturer.
  - 2. Competent, experienced technical representative of the product manufacturer for installation.
  - 3. Additional qualifications may be specified in the individual sections.
  - 4. No substitute representatives will be allowed until written approval by Owner and Project Manager has been obtained.
- B. Completion of manufacturer on-site services: Project Manager approval required.
  - 1. Manufacturer's representative will advise aspects of installation, including, but not limited to:
    - a. Handling.
    - b. Storing.
    - c. Cleaning and inspecting.
    - d. Coating and lining repairs.
    - e. Tapping.
    - f. General construction methods.
- C. Manufacturer is responsible for determining the time required to perform the specified services.
  - 1. No additional costs associated with performing the required services will be approved.
  - 2. Manufacturer required to schedule services in accordance with the Contractor's project schedule up to and including making multiple trips to project site when there are separate milestones associated with installation of each occurrence of manufacturer's product.
- D. Manufacturer's on-site services as specified in the Contract Documents include the following:
  - 1. Assistance during Construction.
  - 2. Provide 1 copy of daily manufacturer's representative's field notes and data to Project Manager.
  - 3. Other requirements as specified in the Contract Documents.

## **1.05 GENERAL TEST REQUIREMENTS**

- A. Testing prerequisites:
  - 1. Prior to testing, verify equipment protective devices and safety devices have been installed, calibrated, and tested.
- B. Acceptable test definition:
  - 1. Demonstrate the product performance meets the requirements stated in the Contract Documents.
    - a. When the product fails to meet the specified requirements, perform additional, more detailed, testing to determine the cause, correct, repair,

or replace the causative components and repeat the testing that revealed the deficiency.

- C. Test Plan requirements:
1. As specified in this Section and other Technical Sections.
  2. Prepared by Contractor as a result of discussions and planning emerging from regularly conducted meetings for test planning.
  3. Define the following items for each Test:
    - a. Purpose of the test.
    - b. Identification of each item of equipment/system, including system designation, location, tag number, control loop identifier, etc.
    - c. Description of the pass/fail criteria that will be used.
    - d. Listing of pertinent reference documents (Contract Documents and industry standards or sections applicable to the testing).
    - e. Credentials of test personnel.
    - f. Test equipment:
      - 1) Product data.
      - 2) Appropriate calibration records.
      - 3) Drawings or photographs of test stands and/or test apparatus.
    - g. Duration: Determine test durations with Owner's input.
    - h. Detailed step-by-step test procedures.
      - 1) Setup.
      - 2) Level of detail shall be sufficient for any witness with a rudimentary technical aptitude to be able to follow the steps and develop confidence that the tests were being performed as planned.
      - 3) Include all steps in the procedures.
      - 4) Define temporary systems (pumps, piping, etc.), shutdown requirements for existing systems.
      - 5) Furnish labor, power, tools, equipment, instruments, and services required for and incidental to completing testing activities.
    - i. Test forms: Include, but not limited to, the following information:
      - 1) Name of product to be tested.
      - 2) Test date.
      - 3) Names of persons conducting the test.
      - 4) Names of persons witnessing the test, where applicable.
      - 5) Test data.
      - 6) Applicable project requirements.
      - 7) Check offs for each completed test or test step.
      - 8) Place for signature of person conducting tests and for the witnessing person, as applicable.
- D. Submit Test Plan.
1. Submit forms as specified in the Technical Sections.
  2. Submit a copy of the Test Plan at least 21 days before any scheduled test date.
  3. Project Manager approval of Test Plan required prior to beginning testing.
- E. Request proposed test dates.
1. Notify the Project Manager of the scheduled tests a minimum of 15 days before the date of the test.

F. Implement approved Test Plans.

G. Submit Test Report.

## **1.06 SOURCE TESTING**

A. As specified in Section 01\_45\_00 - Quality Control.

B. Also referred to as factory testing or factory acceptance testing (FAT).

C. Source Test Plan:

1. As specified in this Section and other Technical Sections.
2. Purpose: Test products for proper performance at point of manufacture or assembly as specified in the Technical Sections.
3. Source testing requirements as specified in Technical Sections.
  - a. Non-witnessed:
    - 1) Provide completed Attachment A - Manufacturer's Certificate of Source Testing.
  - b. Witnessed:
    - 1) 2 Owner's representative and 2 Project Manager representative present during testing, unless otherwise specified.
    - 2) Provide completed Attachment A - Manufacturer's Certificate of Source Testing.
4. Duration: Define.
5. Contractor is responsible for providing fuel, chemicals, and other consumables needed for Source Testing.

D. Contractor is responsible for witness trip costs associated with Owner's representatives and Project Manager representative.

1. Include costs for at least the following:
  - a. Transportation:
    - 1) Travel on commercial airline to and from site including related fees.
    - 2) Rental car to and from airport, hotel, and test site including related fees.
  - b. Hotel/Meals:
    - 1) Hotel costs at a facility with an American Automobile Association 4-star rating or higher equivalent for single occupancy room per person per day.
    - 2) Meal allowance based on government per diem guidelines per location.
  - c. Witness labor costs:
    - 1) The greater of \$200 per hour or \$1,600 per day.
2. If Source Test is not ready when the witnesses arrive or if the Source Test fails, the witnesses will return home with Contractor responsible for costs associated with the trip including costs described above.
  - a. Contractor is responsible for rescheduling the Source Test and witnesses' costs associated with the second trip including costs described above.
  - b. Contractor is responsible for witnesses' costs associated with retests including costs described above.

## **1.07 INSTALLATION VERIFICATION**

- A. Installation Verification Plan:
  - 1. Purpose:
    - a. Has been properly installed, adjusted, and aligned.
    - b. Is free of any stresses imposed by connecting piping or anchor bolts.
    - c. Is able to be operated as necessary for Functional Testing.
  - 2. Field test backfill, welded joints, alignment and grade, and pipeline pressure as specified in the Technical Sections.
  - 3. Duration: Define.
  - 4. Coordinate Installation Verification with restrictions and requirements as specified in Section 01\_14\_00 - Work Restrictions.

## **1.08 FUNCTIONAL TESTING**

- A. Functional Test Plan:
  - 1. Purpose: Test piping system to verify conformance with the Contract Documents.
  - 2. Duration: Define.
  - 3. Perform testing in the presence of the Project Manager.
  - 4. Contractor is responsible for providing fuel, chemicals, and other consumables needed.
  - 5. Coordinate Functional Testing with restrictions and requirements as specified in Section 01\_14\_00 - Work Restrictions.

## **1.09 SHIPMENT**

- A. Prepare products for shipment by:
  - 1. Tagging or marking to agree with delivery schedule or Shop Drawings.
  - 2. Including complete packing lists and bills of material with each shipment.
  - 3. Packaging products to facilitate handling and protection against damage during transit, handling, and storage.
  - 4. Securely attach special instructions for proper field handling, storage, and installation to each piece of equipment before packaging and shipment.
- B. Transport products by methods that avoid product damage.
- C. Deliver products in undamaged condition in manufacturer's unopened containers or packaging.

## **1.10 DELIVERY AND HANDLING**

- A. Handle product in accordance with manufacturer's instructions.
- B. Deliver products in undamaged condition in manufacturer's unopened containers or packaging.
- C. Provide construction equipment and personnel to handle products by methods in accordance with manufacturer's instructions.

- D. Upon delivery, promptly inspect shipments:
  - 1. Verify compliance with Contract Documents, correct quantities, and undamaged condition of products.
  - 2. Acceptance of shipment does not constitute final acceptance of product.

## 1.11 STORAGE

- A. Immediately store and protect products until installed in Work.
- B. Store products with seals and legible labels intact.
- C. Protect painted or coated surfaces against impact, abrasion, discoloration, and damage.
- D. Storage of spare parts, maintenance products, special tools.
  - 1. Immediately store in accordance with the manufacturer's instructions.
  - 2. Store spare parts, maintenance products, and special tools in enclosed, weather-proof, and lighted facility during the construction period.
  - 3. Protect parts subject to deterioration, such as ferrous metal items and electrical components with appropriate lubricants, desiccants, or hermetic sealing.
  - 4. Store large items individually:
    - a. Weight: Greater than 50 pounds.
    - b. Size: Greater than 24 inches wide by 18 inches high by 36 inches long.
    - c. Clearly labeled:
      - 1) Equipment tag number.
      - 2) Equipment manufacturer.
      - 3) Subassembly component, if appropriate.
  - 5. Store smaller items in spare parts boxes:
    - a. Weight: Less than 50 pounds.
    - b. Size: Less than 24 inches wide by 18 inches high by 36 inches long.
    - c. Clearly labeled:
      - 1) Equipment tag number.
      - 2) Equipment manufacturer.
      - 3) Subassembly component, if appropriate.
  - 6. Spare parts and special tools box:
    - a. Box material: Waterproof, corrosion resistant.
    - b. Hinged cover with locking hasp:
    - c. Inventory list taped to underside of cover.
      - 1) Clearly labeled:
        - a) "Spare Parts and/or Special Tools".
        - b) Equipment tag number.
        - c) Equipment manufacturer.
        - d) Subassembly component, if appropriate.
- E. Exterior storage of fabricated products:
  - 1. Place on aboveground supports that allow for drainage.
  - 2. Cover products subject to deterioration with impervious sheet covering.
  - 3. Provide ventilation to prevent condensation under covering.
- F. Store moisture sensitive products in watertight enclosures.



- G. Store loose granular materials on solid surfaces in well-drained area.
  - 1. Prevent materials mixing with foreign matter.
  - 2. Provide access for inspection.
- H. When needed and approved by the Project Manager, offsite storage location shall be within 20 miles of the project site.
  - 1. Provide proof of insurance coverage for products stored offsite.
- I. Payment will not be made for product and materials improperly stored or stored without providing Project Manager with the manufacturer's instructions for storage.

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. Provide products as Project Manager has approved by the Submittal process or by other written documents.
- B. Provide products by same manufacturer when units are of similar nature, unless otherwise specified.
- C. Provide like parts of duplicate units that are interchangeable.
- D. Provide equipment or product that has not been in service prior to delivery, except as required by tests.
- E. Provide products produced by manufacturers regularly engaged in the production of these products.
- F. Provide products that bear approvals and labels as specified such as Factory Mutual (FM), Underwriters Laboratory (UL), or National Sanitation Foundation (NSF International) that are acceptable to the Authority Having Jurisdiction.

### **2.02 MATERIAL**

- A. Dissimilar metals:
  - 1. Separate contacting surfaces with dielectric material.
  - 2. Neoprene, bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other materials as specified.
- B. Edge grinding:
  - 1. Sharp projections of cut or sheared edges of ferrous metals which are not to be welded shall be ground to a radius required to ensure satisfactory paint adherence.
- C. Use anti-galling compound on threads of stainless steel fasteners during factory assembly.
- D. Provide anti-galling compound with stainless steel fasteners shipped for field assembly.

- E. Aluminum in contact with concrete or masonry: Apply epoxy mastic as specified in Section 09\_96\_01 - High-Performance Coatings, coating system EPX-M-5.
- F. Pipes:
  - 1. Provide new pipe manufactured for the following:
    - a. Piping 24-inch diameter and larger.
    - b. AWWA C200 steel piping.
  - 2. Piping provided from manufacturers/distributors inventory is subject to the following condition:
    - a. Provide proof pipe manufactured more than 6 months prior to delivery was stored properly and the material and/or coating was not subjected to ultraviolet (UV) degradation.
  - 3. Mark each length of pipe in accordance with applicable standards.

## **2.03 PRODUCT SELECTION**

- A. When products are specified without named manufacturers, provide products that meet or exceed the Specifications.
- B. When products are specified with names of manufacturers but no model numbers or catalog designations, provide products by one of named manufacturers that meet or exceed specifications.
- C. When products are specified with names of manufacturers and model numbers or catalog designations, provide products with model numbers or catalog designations by one of the named manufacturers.
- D. When products are specified with names of manufacturers, but with brand or trade names, model numbers, or catalog designations by one manufacturer only, provide:
  - 1. Products specified by brand or trade name, model number, or catalog designation.
  - 2. Products by another named manufacturers proven, in accordance with requirements for an "or equal", including Project Manager approval, to meet or exceed quality, appearance and performance of specified brand or trade name, model number, or catalog designation.
- E. When products are specified with only one manufacturer followed by "or Equal," provide:
  - 1. Products meeting or exceeding Specifications by specified manufacturer.
  - 2. Project Manager deemed "or equal" evidenced by an approved Shop Drawing or other written communication.
- F. When products are specified by naming 2 or more manufacturers with 1 manufacturer as a "Basis of Design":
  - 1. Any of the named manufacturers can be submitted.
  - 2. If the product submitted is not by the named "Basis of Design" product and requires a change in the scope (dimensions, configuration, physical properties, etc.), schedule (longer lead time), or budget, the Contractor must submit a substitution request.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Inspect equipment or product prior to product installation.
- B. Repaint or recoat damaged painted or coated surfaces.
- C. Use anti-galling compound on stainless steel threads used for field assembly.

### **3.02 PROTECTION AFTER INSTALLATION**

- A. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
  - 1. Remove covering when no longer needed.
  - 2. Replace corroded, damaged, or deteriorated product before acceptance of the project.

END OF SECTION

## ATTACHMENT A - MANUFACTURER'S CERTIFICATE OF SOURCE TESTING



## MANUFACTURER'S CERTIFICATE OF SOURCE TESTING

OWNER \_\_\_\_\_ EQPT/SYSTEM \_\_\_\_\_  
PROJECT NAME \_\_\_\_\_ EQPT TAG NO. \_\_\_\_\_  
PROJECT NO. \_\_\_\_\_ EQPT SERIAL NO. \_\_\_\_\_  
SPECIFICATION NO. \_\_\_\_\_  
SPECIFICATION TITLE \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I hereby certify Source Testing has been performed on the above-referenced product as defined in the Contract Documents, and the results conform to the Contract Document requirements. Testing data is attached.

Date of Execution: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Authorized Representative Name (*print*): \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signature)

If applicable, Witness Name (*print*): \_\_\_\_\_

\_\_\_\_\_  
(Witness Signature)



**SECTION 01\_77\_00**  
**CLOSEOUT PROCEDURES**

**PART 1    GENERAL**

**1.01    SUMMARY**

- A.    Section includes: Contract closeout requirements.

**1.02    REFERENCES**

- A.    American Water Works Association (AWWA).

**1.03    FINAL CLEANING**

- A.    Perform final cleaning prior to inspections for Substantial Completion.
- B.    Remove and dispose of waste and dust in the Project Area.
- C.    Remove all temporary equipment used for the Project.

**1.04    WASTE DISPOSAL**

- A.    Arrange for and dispose of surplus materials, waste products, and debris off-site:
  - 1.    Prior to making disposal on private property, obtain written permission from Owner of such property.
- B.    Do not fill ditches, washes, or drainage ways which may create drainage problems.
- C.    Do not create unsightly or unsanitary nuisances during disposal operations.
- D.    Maintain disposal site in safe condition and good appearance.
- E.    Complete leveling and cleanup prior to Final Completion of the Work.

**1.05    TOUCH-UP AND REPAIR**

- A.    Touch-up or repair finished surfaces on structures, equipment, fixtures, and installations that have been damaged prior to inspection for Substantial Completion.
- B.    Refinish or replace entire surfaces which cannot be touched-up or repaired satisfactorily.

**1.06    CLOSEOUT DOCUMENTS**

- A.    Submit the following Closeout Submittals before Substantial Completion:
  - 1.    Punch list of items to be completed or corrected with the request for issuance of Substantial Completion.
  - 2.    Evidence of Compliance with Requirements of Governing Authorities.



3. Project Record Documents.
  4. Approved Operation and Maintenance Manuals.
  5. Approved Warranties and Bonds.
  6. Keys and Keying Schedule.
  7. Completed contract requirements for commissioning and process start-up.
- B. Submit the following Closeout Submittals before final completion of the Work and at least 7 days prior to submitting Application for Final Payment:
1. Punch list of items have been completed and Project Manager and Owner are satisfied that all deficiencies are corrected.
  2. Evidence of Payment and Release of Liens or Stop Payment Notices as outlined in Conditions of the Contract.
  3. Release of claims as outlined in Conditions of the Contract.
  4. Submit certification of insurance for products and completed operations, as specified in the General Conditions.
  5. Final statement of accounting.
  6. Submit Final (As-Built) Schedule as specified in Section 01\_32\_21 - Schedules and Reports.

## 1.07 PROJECT RECORD DOCUMENTS

- A. Maintain at Project site, available to Owner and Project Manager, 1 copy of the Contract Documents, shop drawings, and other submittals in good order:
1. Mark and record field changes and detailed information contained in submittals and change orders.
  2. Record actual depths, horizontal and vertical location of underground pipes, duct banks, and other buried utilities. Reference dimensions to permanent surface features.
  3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
  4. Identify location of spare conduits including beginning, ending, and routing through pull boxes and manholes. Record spare conductors, including number and size, within spare conduits and filled conduits.
  5. Provide schedules, lists, layout drawings, and wiring diagrams.
  6. Make annotations in electronic format conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments	Blue
Dimensions:	Graphite

- B. Maintain documents separate from those used for construction:
1. Label documents "RECORD DOCUMENTS."
- C. Keep documents current:
1. Record required information at the time the material and equipment is installed and before permanently concealing.
  2. Project Manager will review Record Documents weekly to ascertain that changes have been recorded.

- D. Affix civil engineer's or professional land surveyor's signature and registration number to Record Drawings to certify accuracy of information shown.
- E. Deliver Record Documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- F. Record Documents will be reviewed monthly to determine the percent complete for the monthly pay application.
- G. Updated Record Documents are a condition for Project Manager recommendation for progress payment.
- H. Final Schedule Submittal as specified in Section 01\_32\_21 - Schedules and Reports.

#### **1.08 MAINTENANCE SERVICE**

- A. Maintenance service as specified in technical specifications.

#### **1.09 SUBSTANTIAL COMPLETION**

- A. Obtain Certificate of Substantial Completion.

#### **1.10 FINAL COMPLETION**

- A. When Contractor considers the Work is complete, submit written certification that:
  - 1. Work has been completed in accordance with the Contract Documents:
  - 2. Punch list items have been completed or corrected.
  - 3. Work is ready for final inspection.
- B. Project Manager will make an inspection to verify the status of completion with reasonable promptness.
- C. Should the Project Manager consider that the Work is incomplete or defective:
  - 1. Project Manager will promptly notify the Contractor in writing, listing the incomplete or defective work.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to the Project Manager that the Work is complete.
  - 3. Project Manager shall re-inspect the Work.

#### **1.11 FINAL ADJUSTMENT OF ACCOUNTS**

- A. Submit a final statement of accounting to the Project Manager at least 7 days prior to final Application for Payment.
- B. Statement shall reflect all adjustments to the Contract amount.
  - 1. The original Contract amount.
  - 2. Additions and deductions resulting from:
    - a. Change Orders.
    - b. Units installed and unit prices.
    - c. Set-offs for uncorrected or incomplete Work.

- d. Set-offs for liquidated damages.
    - e. Set-offs for reinspection payments.
    - f. Extended engineering and/or inspection services and inspection overtime.
    - g. Excessive shop drawings review cost by the Project Manager.
    - h. Other adjustments.
  - 3. Total Contract amount, as adjusted.
  - 4. Previous payments.
  - 5. Remaining payment due.
- C. Project Manager will prepare a final Change Order reflecting approved adjustments to the Contract amount which were not previously made by Change Orders.

#### **1.12 FINAL APPLICATION FOR PAYMENT**

- A. Contractor shall submit the final Application for Payment reflecting the agreed upon information provided in the final statement of accounting.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION

**SECTION 01\_78\_36**  
**WARRANTIES AND BONDS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Warranty and bonds requirements.

**1.02 SUBMITTALS**

- A. For each item of material or equipment furnished under the Contract:
  - 1. Submit manufacturer's warranty prior to fabrication and shipment of the item from the manufacturer's facility.
  - 2. Submit manufacturer's special warranty when specified.
- B. Provide consolidated warranties and bonds within 15 calendar days of Substantial Completion.
  - 1. Contents:
    - a. Organize warranty and bond documents:
      - 1) Include Table of Contents organized by Specification Section number and the name of the product or work item.
    - b. Include each required warranty and bond in proper form, with full information, certified by manufacturer as required, and properly executed by Contractor, or subcontractor, supplier, or manufacturer.
    - c. Provide name, address, phone number, and point of contact of manufacturer, supplier, and installer, as applicable.
  - 2. Hardcopy format:
    - a. Submit 2 copies.
    - b. Assemble in 3 D-side ring binders with durable cover.
    - c. Identify each binder on the front and spine with typed or printed title "Warranties and Bonds"; Project Name or Title, and the Name Address and Telephone Number of the Contractor.
  - 3. Electronic copy in PDF format:
    - a. Submit 1 copy.

**1.03 OWNER'S RIGHTS**

- A. Owner reserves the right to reject warranties.
- B. Owner reserves the right to refuse to accept Work for the project if the required warranties have not been provided.

#### **1.04 RELATIONSHIP TO GENERAL WARRANTY AND CORRECTION PERIOD**

- A. Warranties specified for materials and equipment shall be in addition to, and run concurrent with, both Contractor's general warranty and the correction period requirements.
- B. Disclaimers and limitations in specific materials and equipment warranties do not limit Contractor's general warranty, nor does such affect or limit Contractor's performance obligations under the correction period.

#### **1.05 MANUFACTURER'S 1 YEAR WARRANTY MINIMUM REQUIREMENTS**

- A. Written warranty issued by item's manufacturer.
- B. Project-specific information, properly executed by product manufacturer, and expressly states that its provisions are for the benefit of the Contractor.
- C. Covers all costs associated with the correction of the defect, including, but not limited to, removal of defective parts, new parts, labor, and shipping.
- D. Provides a timely response to correct the defect.
  - 1. Manufacturer shall provide, in a timely fashion, temporary equipment as necessary to replace warranted items requiring repair or replacement, when warranted items are in use and are critical to the treatment process, as defined by Owner.
- E. Warranty commence running on the date of substantial completion.
  - 1. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit warranty within 10 calendar days after acceptance, listing date of acceptance as beginning of warranty period.
- F. Duration of warranty: 1 year.

#### **1.06 MANUFACTURER'S SPECIAL WARRANTY**

- A. Manufacturer's special warranty is a written warranty published by the manufacturer which includes the requirements as specified in the Technical Section.
  - 1. Project-specific information and requirements.
  - 2. Properly executed by product manufacturer.
  - 3. Expressly states that its provisions are for the benefit of the Contractor or Owner.
  - 4. Manufacturer's special warranties commence on the date that the associated item is certified by Project Manager as substantially complete.
  - 5. Cured-in-Place Pipe (CIPP) liner require a special bonded warranty as specified in Sections 33\_01\_30.71, 1.07 – Warranty.
  - 6. Cured-in-Place Manhole (CIPM) liners require a special bonded warranty as specified in 33\_05\_61.13, 1.07 – Warranty.

## **1.07 WARRANTY WORK**

- A. Contractor's responsibilities:
  - 1. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the product, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with Contractor.
- B. Replacement cost:
  - 1. Upon determination that work covered by warranty has failed, replace or rebuild the work to an acceptable condition complying with requirement of the Contract Documents.
    - a. Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether Owner has benefited from the use of the work through a portion of its anticipated useful service life.
- C. Related damages and losses:
  - 1. When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- D. Owner's recourse:
  - 1. Written warranties are in addition to implied warranties, and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitation on time in which Owner can enforce such other duties, obligations, rights, or remedies.
- E. Reinstatement of warranty:
  - 1. When work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement.
    - a. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

## **1.08 IMPLIED WARRANTIES**

- A. Warranty of title and intellectual rights:
  - 1. Except as may be otherwise indicated in the Contract Documents, implied warranty of title required by Laws and Regulations is applicable to the Work and to materials and equipment incorporated therein.
  - 2. Provisions on intellectual rights, including patent fees and royalties, are in the General Conditions, as may be modified by the Supplementary Conditions.
- B. Implied warranties: Duration in accordance with Laws and Regulations.

## **1.09 BONDS**

- A. Equipment bond and other bond requirements as specified in the Technical Sections.
- B. Bonds commence running on the date of substantial completion.
  - 1. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit warranty within 10 calendar days after acceptance, listing date of acceptance as beginning of bond period.

## **PART 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 03\_63\_01**

### **EPOXIES**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Epoxy.
  - 2. Epoxy gel.
  - 3. Epoxy bonding agent.

##### **1.02 REFERENCES**

- A. ASTM International (ASTM):
  - 1. C881 - Standard Specification for Epoxy-Resin-Base Systems for Concrete.
  - 2. C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.
  - 3. D638 - Standard Test Method for Tensile Properties of Plastics.
  - 4. D695 - Standard Test Method for Compressive Properties of Rigid Plastics.

##### **1.03 SUBMITTALS**

- A. General: Submit as specified in Section 01\_33\_00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's data completely describing epoxy materials:
  - 1. Submit evidence of conformance to ASTM C881. Include manufacturer's designations of Type Grade, Class, and Color.
  - 2. Submit documentation that materials meet or exceed the specified strength and performance characteristics. Indicate test methods and test results.
- C. Quality control Submittals:
  - 1. Manufacturer's installation instructions.

#### **PART 2 PRODUCTS**

##### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Performance requirements:
  - 1. Provide epoxy materials that are new.
  - 2. Store and use products within limitations set forth by manufacturer.
  - 3. Perform and conduct work of this Section in neat orderly manner.



## 2.02 MATERIALS

### A. General:

1. Moisture tolerant, water-insensitive, two-component epoxy resin adhesive material containing 100 percent solids, and meeting or exceeding the performance properties specified when tested in accordance with the standards specified.

### B. Epoxy: Low viscosity product in accordance with ASTM C881; Types I, II, and IV; Grade 1; Class C, except as modified in this Section.

1. Manufacturers: One of the following, or equal:
  - a. Dayton Superior, Unitex Pro-Poxy 100.
  - b. Master Builders Solutions/Sika, MasterInject 1380.
  - c. Sika Corporation, Sikadur 35 Hi-Mod LV.
2. Required properties:

Table 1. Material Properties - Epoxy		
Property	Test Method	Required Results ("neat")
Tensile Strength (7-day)	ASTM D638	7,000 pounds per square inch, minimum.
Compressive Yield Strength (7-day)	ASTM D695	10,000 pounds per square inch, minimum.
Bond Strength (hardened concrete to hardened concrete after 2-day cure)	ASTM C882	1,000 pounds per square inch, minimum. Concrete failure before failure of epoxy.
Viscosity (mixed)		250 to 550 centipoise
<u>Notes:</u> (1) Testing results are for materials installed and cured at a temperature between 72 and 78 degrees Fahrenheit for 7 days, unless otherwise noted.		

### C. Epoxy gel: Non-sagging product in accordance with ASTM C881, Types I and IV, Grade 3, Class C.

1. Manufacturers: One of the following, or equal:
  - a. Dayton Superior, Sure Anchor J50.
  - b. Master Builders Solutions/Sika, MasterEmaco ADH 327.
  - c. Sika Corp., Sikadur 31, Hi-Mod Gel.
2. Required properties:

Table 2. Material Properties - Epoxy Gel		
Property	Test Method	Required Results ("neat")
Tensile Strength (7-day)	ASTM D638	2,000 pounds per square inch, minimum.
Compressive Yield Strength (7-day)	ASTM D695	8,000 pounds per square inch, minimum.
Bond Strength (14-day)	ASTM C882	1,500 pounds per square inch, minimum.
<u>Notes:</u> (1) Testing results are for materials installed and cured at a temperature between 72 and 78 degrees Fahrenheit for 7 days, unless otherwise noted.		

- D. Epoxy bonding agent: Non-sagging product in accordance with ASTM C881, Type II, Grade 2, Class C
1. Manufacturers: One of the following, or equal:
    - a. Dayton Superior, Sure Bond J58.
    - b. Master Builders Solutions/Sika, MasterEmaco ADH 326.
    - c. Sika Chemical Corp., Sikadur 32 Hi-Mod LPL.
  2. Required properties:

<b>Table 3. Material Properties - Epoxy Bonding Agent</b>		
<b>Property</b>	<b>Test Method</b>	<b>Required Results</b>
Tensile Strength (7-day)	ASTM D638	3,300 pounds per square inch, minimum.
Compressive Yield Strength (7-day)	ASTM D695	8,300 pounds per square inch, minimum.
Bond Strength (14-days)	ASTM C882	1,800 pounds per square inch, minimum. Concrete failure before failure of epoxy bonding agent.
Pot Life	-	Minimum 60 minutes at 77 degrees Fahrenheit.
<b>Notes:</b> (1) Testing results are for materials installed and cured at a temperature between 72 and 78 degrees Fahrenheit for 7 days, unless otherwise noted.		

3. If increased contact time is required for concrete placement, epoxy resin/Portland cement bonding agent, as specified in Section 03\_63\_02 - Epoxy Resin/Portland Cement Bonding Agent, may be used instead of epoxy bonding agent.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install and cure epoxy materials in accordance with manufacturer's installation instructions.
- B. Epoxy:
  1. Apply in accordance with manufacturer's installation instructions.
- C. Epoxy gel:
  1. Apply in accordance with manufacturer's installation instructions.
  2. Use for vertical or overhead work, or where high viscosity epoxy is required.
  3. Epoxy gel used for vertical or overhead work may be used for horizontal work.
- D. Epoxy bonding agent:
  1. Apply in accordance with manufacturer's installation instructions.
  2. Will not be required for filling form tie holes or for normal finishing and patching of similar sized small defects.

END OF SECTION



## SECTION 09\_96\_01

### HIGH-PERFORMANCE COATINGS

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#### ATTACHMENT A - SCHEDULE OF SURFACES TO BE COATED

#### ATTACHMENT B - COATING DETAIL SHEETS

## **PART 1    GENERAL**

### **1.01    SUMMARY**

- A. Section includes:
  - 1. Coatings, including coating systems, surface preparation, application requirements, and quality control requirements.

### **1.02    REFERENCES**

- A. Abbreviations:
  - 1. CMU - Concrete masonry units.
  - 2. CSA - Coating system applicator. Specialty subcontractor retained by the Contractor to install the coating systems specified in this Section.
  - 3. CSM - Coating system manufacturer.
  - 4. CTR - Coating system manufacturer's technical representative.
  - 5. DFT - Dry-film thickness. Thickness of cured film, usually expressed in mils (0.001 inch).
  - 6. VOC - Volatile organic compound. Portion of the coating that is a compound of carbon, is photochemically reactive, and evaporates during drying or curing; expressed in grams per liter (g/l) or pounds per gallon (lb/gal). VOC is determined by EPA Method 24.
  - 7. WFT - Wet film thickness. Coating thickness as measured immediately after application. Usually expressed in mils (0.001 inch).
- B. Standards:
  - 1. ASTM International (ASTM):
    - a. D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
    - b. D2200 - Standard Practice for Use of Pictorial Surface Preparation Standards and Guides for Painting Steel Surfaces.
    - c. D3359 - Standard Test Methods for Rating Adhesion by Tape Test.
    - d. D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
    - e. D4262 - Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
    - f. D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
    - g. D4285 - Standard Test Method for Indicating Oil or Water in Compressed Air.
    - h. D4414 - Standard Practice for Measurement of Wet Film Thickness by Notch Gages.
    - i. D4417 - Standard Test Methods for Field Measurement of Surface Profile of Blast-Cleaned Steel.
    - j. D4541 - Standard Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
    - k. D4787 - Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates.
    - l. D5162 - Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates.

- m. D7234 - Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.
- n. E337 - Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures).
- o. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- p. F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-situ Probes.
- 2. International Concrete Repair Institute (ICRI):
  - a. 310.2 - Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.
- 3. NACE International (NACE):
  - a. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
  - b. SP0188 - Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
- 4. National Association of Pipe Fabricators (NAPF):
  - a. 500-03 - Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.
- 5. NSF International (NSF):
  - a. 61 - Drinking Water System Components - Health Effects.
- 6. Occupational Safety and Health Administration (OSHA).
- 7. Society of Protective Coatings (SSPC):
  - a. Glossary - SSPC Protective Coatings Glossary.
  - b. Guide 6 - Guide for Containing Surface Preparation Debris Generated during Paint Removal Operations.
  - c. PA 1 - Shop, Field, and Maintenance Painting of Steel.
  - d. PA 2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements.
  - e. PA 9 - Measurement of Dry Coating Thickness Using Ultrasonic Gages.
  - f. QP 1 - Standard Procedure for Evaluating the Qualifications of Industrial/Marine Painting Contractors.
  - g. SP 1 - Solvent Cleaning.
  - h. SP 3 - Power Tool Cleaning.
  - i. SP 5 - White Metal Blast Cleaning.
  - j. SP 10 - Near-White Metal Blast Cleaning.
  - k. SP 11 - Power Tools Cleaning to Bare Metal.
  - l. SP 13 - Surface Preparation of Concrete.
  - m. SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
  - n. SP COM - Surface Preparation Commentary.
  - o. SP VIS 1 - Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning.
  - p. SP WJ-1 - Waterjet Cleaning of Metals—Clean to Bare Substrate.
  - q. SP WJ-2 - Waterjet Cleaning of Metals—Very Thorough Cleaning.
  - r. SP WJ-3 - Waterjet Cleaning of Metals—Thorough Cleaning.
  - s. SP WJ-4 - Waterjet Cleaning of Metals—Light Cleaning.

### 1.03 TERMINOLOGY

- A. Definitions used in this Section are in accordance with definitions referenced in ASTM D16, ASTM D3960, and SSPC Glossary of Definitions.
- B. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
1. Abrasive: Material used for blast cleaning, such as sand, grit, or shot.
  2. Abrasive Blast Cleaning: Cleaning/surface preparation by abrasive propelled at high speed.
  3. Anchor Pattern: Profile or texture of prepared surface(s).
  4. Biogenic Sulfide Corrosion: Corrosion caused by sulfuric acid formed when *Thiobacillus* bacteria metabolizes hydrogen sulfide.
  5. Bug Holes: Small cavities resulting when air bubbles are entrapped in the surface of formed concrete during placement and consolidation.
  6. Coating/Paint/Lining Thickness: Total thickness of primer, intermediate, and/or finish coats after drying or curing.
  7. Dew point: Temperature a given air/water vapor mixture starts to condense.
  8. Dry to Recoat: Time interval between material application and its ability to receive the next coat.
  9. Dry to Touch: Time interval between material application and its ability to tolerate a light touch without coating damage.
  10. Drying Time: Time interval between application and material curing.
  11. Exposed Surface: Any indoor or outdoor surface not buried or encased.
  12. Feather Edging: Reducing coating thickness at its edge to blend with existing surrounding coating.
  13. Feathering: Tapering off a wet edge with a comparatively dry brush.
  14. Ferrous: Cast iron, ductile iron, wrought iron, and all steel alloys except stainless steel.
  15. Field Coat: Application of a surface coating system at the work site.
  16. Finish Coat: Final coat in a paint system, including texture, color, smoothness of surface, and other properties affecting appearance.
  17. Hold Point: A defined point, specified in this Section, at which work shall be halted for inspection.
  18. Holiday: A discontinuity, skip, void, or pinhole in coating or coating system film that exposes the substrate.
  19. Honeycomb: Segregated and porous surface of hardened concrete due to insufficient consolidation.
  20. Hydroblast: High or ultra-high-pressure water jet surface preparation.
  21. Immersed/Immersion: A service condition in which substrate is submerged, is immediately above liquids, or is subject to frequent wetting, splashing, or washdown.
  22. Incompatibility: One coating's inability to overlay another coating or surface as evidenced by bleeding, poor bonding, or lifting of old coating; inability of a coating to bond to a substrate.
  23. Laitance: A thin, weak, brittle layer of cement and aggregate fines on a concrete surface.
  24. Mil: 0.001 inch.
  25. Overspray: Dry spray, particularly paint bonded to an unintended surface.
  26. Pinhole: A small diameter discontinuity in a coating or coating system film, created by offgassing from a void in a concrete or masonry substrate causing

- a void between coats or exposing the substrate. Usually caused by coating application while temperature is rising.
27. Pot Life: Time interval after components are mixed and coating can be satisfactorily applied.
  28. Prime Coat: First full paint coat applied to a surface when using a multicoat system. Primers adhere to a new substrate, protect the substrate, and promote adhesion of subsequent coats of paint. The prime coat on metal surfaces is the first full coat and does not include solvent wash, grease emulsifiers, or other pretreatment applications.
  29. Resurfacer/Resurfacing Material: A layer of cementitious and/or resin-based material used to fill or otherwise restore surface continuity to worn or damaged concrete surfaces.
  30. Shelf Life: Maximum storage time a material may be stored without losing its usefulness.
  31. Shop Coat: 1 or more coats applied in an off-site shop or plant before shipment to work site where field or finishing coat(s) are applied.
  32. Spreading Rate: Area covered by a unit volume of paint at a specific thickness.
  33. Stripe Coat: A separate brush coat of paint applied to all weld seams, pits, nuts/bolts/washers, and edges. This coat shall not be applied until previous coats have cured. Once applied, the coat shall be allowed to cure before subsequent coats are applied.
  34. System: Protective film with 1 or more coats applied in a predetermined order, including surface preparation and quality control requirements.
  35. Thick Film Coating System: A coating system applied with a minimum dry film thickness of 25 mils.
  36. Tie Coat: An intermediate coat that bonds different types of paint material, improving succeeding coat adhesion.
  37. Touch-Up Painting: Application of paint on previously painted surfaces to repair marks, scratches, and deteriorated or damaged areas to restore the appearance and performance of the coating.
  38. Water Blast: An alternative to air abrasive blast cleaning that can be used with or without abrasive injection. Water cleaning at pressures up to 5,000 pounds per square inch is called low-pressure water cleaning or power washing. High-pressure water cleaning uses water pressures between 5,000 and 10,000 pounds per square inch. Water jetting is water blasting with added abrasive at pressures between 10,000 and 25,000 pounds per square inch. Ultra-high-pressure water jetting is water blasting at pressures above 25,000 pounds per square inch.
  39. Weld Splatter: Beads of non-structural weld metal that adhere to the surrounding surface, removed as part of surface preparation.

#### **1.04 SUBMITTALS**

- A. As specified in Section 01\_33\_00 - Submittal Procedures, submit the following:
  1. Schedule of proposed coating materials.
  2. Schedule of surfaces to be coated with each coating material.
  3. Dehumidification and heating plan.
  4. Product data:
    - a. Physical properties of coatings, including the following:
      - 1) Solids content.
      - 2) Ingredient analysis.



- 3) VOC content.
- 4) Temperature resistance.
- 5) Typical exposures and limitations.
- 6) Manufacturer's standard color chips.
- b. Compliance with regulatory requirements:
  - 1) VOC limitations.
  - 2) Lead compounds and polychlorinated biphenyls.
  - 3) Abrasives and abrasive blast cleaning techniques and disposal.
  - 4) Methods for tenting blasting areas and methods to protect existing equipment from dust and debris.
  - 5) NSF certification of coatings for potable water supply systems.
- c. CSM's current printed recommendations and product datasheets for coating systems, including:
  - 1) Surface preparation recommendations.
  - 2) Primer type.
  - 3) Maximum dry and wet-mil thickness per coat and number of coats.
    - a) Coating coverage worksheets.
  - 4) Minimum and maximum curing time between coats, including atmospheric conditions for each.
  - 5) Curing time before submergence in liquid.
  - 6) Thinner to be used for each coating.
  - 7) Ventilation requirements.
  - 8) Minimum and maximum atmospheric conditions during which the paint shall be applied.
  - 9) Allowable application methods.
  - 10) Maximum allowable substrate moisture content.
  - 11) Maximum shelf life.
  - 12) Requirements for transportation and storage.
  - 13) Mixing instructions.
  - 14) Shelf life.
  - 15) Material Pot life.
  - 16) Precautions for applications free of defects.
  - 17) Method of application.
  - 18) Drying time of each coat, including prime coat.
  - 19) Compatible prime coats.
  - 20) Limits of ambient conditions during and after application.
  - 21) Required protection from sun, wind, and other conditions.
  - 22) Touch-up requirements and limitations.
  - 23) Minimum adhesion of each system submitted in accordance with ASTM D4541 and ASTM D7234.
- d. Samples: Include 8-inch square drawdowns or brushouts of topcoat finish when requested. Identify each sample as to finish, formula, color name and number, sheen name, and gloss units.
- e. Affidavits signed by an officer of the CSM's corporation attesting to full compliance of each coating system component with current federal, state, and local air pollution control regulations and requirements.
- f. List of cleaning and thinner solutions allowed by the CSMs.
- g. Storage requirements, including temperature, humidity, and ventilation for Coating System Materials as recommended by the CSMs.

- h. Thick film coating systems (greater than 25 mils):
    - 1) CSM's detailed written instructions for coating system treatment and graphic details for coating system terminations in coated structures, including pipe penetrations, metal embedments, gate frames, and other terminations encountered.
    - 2) Include detail treatment for coating system at concrete joints.
    - 3) Manufacturer's Representative's (CTR) Field Reports.
- 5. Quality assurance Submittals:
  - a. Quality assurance plan.
  - b. Qualifications of CSA, including:
    - 1) List of Similar Projects.
      - a) Name and address of project.
      - b) Year of installation.
      - c) Year placed in operation.
      - d) Point of contact: Name and phone number.
    - 2) Provide a minimum of 5 project references, each including contact name, address, and telephone number where similar coating work has been performed by their company in the past 5 years.
  - c. CSA Reports:
    - 1) Written daily quality control inspection reports.
  - d. CTR Reports:
    - 1) Reports on visits to project site to view and approve surface preparation of structures to be coated.
    - 2) Reports on visits to project site to observe and approve coating application procedures.
    - 3) Reports on visits to coating plants to observe and approve surface preparation and coating application on shop-coated items.

## **1.05 QUALITY ASSURANCE**

- A. CSA qualifications:
  - 1. Minimum of 5 years of experience applying specified type or types of coatings under conditions similar to those of the Work:
    - a. Provide qualifications of applicator and references listing 5 similar projects completed in the past 5 years.
  - 2. SSPC-QP 1 certified.
  - 3. Manufacturer-approved applicator when manufacturer has approved applicator program or when required in these specifications.
- B. CTR qualifications:
  - 1. Certification, one of the following:
    - a. NACE Level 2 or 3 Certified Coating Inspector.
    - b. SSPC Level 3 Protective Coatings Inspector.
  - 2. Minimum of 5 years of experience evaluating application of manufacturer's coatings under conditions similar to those of the Work:
    - a. Provide CTR qualifications and references listing 5 similar projects completed in the past 5 years.

- C. Regulatory requirements: Comply with governing agencies' regulations by using coatings in accordance with to their VOC limits.
  - 1. Lead-based coatings are not permitted.
  - 2. Do not use coal-tar epoxy in contact with drinking water or exposed to ultraviolet radiation.
- D. Certification:
  - 1. Certify that applicable pigments resist deterioration when exposed to hydrogen sulfide and other sewage gases.
  - 2. Product data shall designate coating as being suitable for wastewater service.
- E. Pre-installation conference: Conduct as specified in Section 01\_31\_19 - Project Meetings.
  - 1. Coordinate Hold Point schedule.
- F. Field samples:
  - 1. Prepare and coat a minimum 100-square-foot area of each system between corners or limits such as control or construction joints.
  - 2. Approved field sample may be part of the Work.
- G. Obtain approval before coating other surfaces. Use products by same manufacturer for prime coats, intermediate coats, and finish coats on same surface, unless specified otherwise.
- H. CSM services:
  - 1. CSA shall arrange for CTR to attend pre-installation conferences.
  - 2. Visit the project site periodically to consult on and inspect specified surface preparation and application Hold Points.
  - 3. Visit coating plants to observe and approve surface preparation procedures and coating application of items to be shop primed and coated.
  - 4. CTR shall provide written inspection reports.
- I. Quality control requirements:
  - 1. Contractor shall be responsible for the workmanship and quality of the coating system installation.
    - a. Inspections by Owner, Project Manager, CSA, or CTR will not relieve or limit Contractor's responsibilities.
  - 2. In accordance with this specification's requirements and the standards referenced in this Section. Changes in the coating system application requirements will be allowed only with the Project Manager's written acceptance.
  - 3. Specially trained crews with experience applying the specified coating system coating are required for:
    - a. Coating application using plural component spray equipment or other specialty equipment.
    - b. Coating with specialty linings for severe service conditions, including floor coatings, and with linings for corrosive headspaces or secondary containment areas.
  - 4. CTR shall specially train personnel for coating systems as specified in Attachment B - Coating Detail Sheets.
    - a. CSM shall approve personnel in writing applying the coating system.

5. Do not use contaminated, outdated, diluted materials, and/or materials from previously opened containers.
6. Identify inspection access points used by Owner's or Project Manager's personnel.
7. Provide ventilation, ingress, egress, or other means as necessary for Owner's or Project Manager's personnel to safely access the work areas.
8. Conduct and continually inspect work so the coating system is installed as specified. CSM shall provide written directions to correct coating work not in accordance with the specifications or is otherwise unacceptable.
9. Provide written daily reports summarizing test data, work progress, surfaces covered, ambient conditions, quality control inspection test findings, and other information pertinent to the coating system application.
  - a. Determine relative humidity in accordance with ASTM E337. Confirm other conditions, such as proper protective measures for surfaces not to be coated and safety requirements for personnel.
    - 1) Measure daily at shift's beginning and end and at intervals not to exceed 4 hours during the shift.
    - 2) Determine the acceptability of weather and/or environmental conditions within the structure in accordance with the CSM's requirements.
  - b. Monitoring surface preparation: Spot check cleanliness, surface profile, and surface pH testing at least 3 times daily. Check each surface at least once. In accordance with:
    - 1) ASTM D4262.
    - 2) ASTM D4263.
    - 3) ASTM D4417.
    - 4) ICRI 310.2 requirements.
    - 5) SSPC Surface Preparation Standards.
  - c. Confirm that compressed air used for surface preparation or blow-down cleaning is free of oil and moisture.
  - d. Monitor surface preparation daily at shift's beginning and end and at intervals not to exceed 4 hours during the shift.
  - e. Do not apply coatings when environmental conditions are outside of the CSM's published limits.
  - f. Monitoring coatings application: Continuously inspect, measure, and record the wet film thickness and general film quality (visual inspection) for runs, sags, pinholes, holidays, etc., during coating.
    - 1) Perform WFT measurements in accordance with ASTM D4414.
  - g. Post cure evaluation: Measure and inspect the overall dry film thickness on all surfaces.
    - 1) Conduct a DFT survey and perform adhesion testing, holiday detection, or cure testing as required in this Section and/or the CSM's written instructions.
    - 2) Perform applicable tests in accordance with ASTM D4541, ASTM D4787, ASTM D5162, ASTM D7234, SSPC-PA 1, SSPC-PA 2, SSPC-PA 9, and other pertinent standards and recommended practices.

J. Inspection at Hold Points:

1. Conduct inspections at Hold Points during the coating system application and record the results.

2. Coordinate Hold Points with the Project Manager so the Project Manager can observe Contractor's inspections on a scheduled basis.
3. Provide the Project Manager a minimum of 24 hours of notice before conducting Hold Point Inspections.
4. Hold Points shall be as follows:
  - a. Conditions before surface preparation: Before starting surface preparation, observe, record, and confirm that oil, grease, and/or soluble salts are gone from the surface.
  - b. Post surface preparation: After completing surface preparation, measure and inspect for cleanliness and proper surface profile as specified in this Section and in the CSM's written instructions.
  - c. Coatings application: At the beginning of any coating system application, measure, record, and confirm acceptability of surface and ambient air temperature and humidity. Inspect applicator's equipment for serviceability and suitability for coatings application.
  - d. Post application inspection: Identify defects in application work on all surfaces, including pinholes, holidays, excessive runs or sags, inadequate or excessive film thickness, and other problems.
  - e. Follow-up corrective actions and final inspection: Measure and re-inspect corrective coating work performed to repair defects at prior Hold Points and repeat until the surface condition is acceptable. Conduct final visual inspection with follow-up tests, such as holiday detection, adhesion tests, and DFT surveys.
  - f. Coatings application: At the beginning of coating system application, measure, record, and confirm acceptability of surface and ambient air temperature and humidity. Inspect applicator's equipment for serviceability and suitability for coatings application.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, and handle products as specified in Section 01\_60\_00 - Product Requirements.
- B. Immediately remove unspecified and unapproved coatings from Project site.
- C. Deliver new labeled, unopened containers:
  1. Do not deliver materials after manufacturer's expiration date or over 12 months from manufacturing date, whichever is more stringent. Store materials in well-ventilated enclosed structures and protect from weather and excessive heat or cold in accordance with the CSM's recommendations.
    - a. Store flammable materials in accordance with federal, state, and local requirements.
    - b. Store rags and cleanup materials appropriately to prevent fire and spontaneous combustion.
  2. Store and dispose of hazardous waste in accordance with federal, state, and local requirements. This requirement specifically applies to waste solvents and coatings.
  3. Container labels shall show the following:
    - a. Brand name or product title.
    - b. CSM's batch number.
    - c. CSM's manufacture date.

- d. CSM's name.
  - e. Generic material type.
  - f. Application and mixing instructions.
  - g. Hazardous material identification label.
  - h. Shelf life expiration date.
  - i. Color.
  - j. Mixing and reducing instructions.
4. Clearly mark containers to indicate safety hazards associated with the use of or exposure to materials.

## 1.07 PROJECT CONDITIONS

- A. Apply coatings to dry surfaces.
- 1. Surface moisture: Comply with manufacturer's requirements or as specified in this Section.
    - a. Plaster and gypsum wallboard: 12 percent.
    - b. Masonry and concrete block: 12 percent.
    - c. Interior located wood: 15 percent.
    - d. Concrete floors: Moisture vapor transmission rate of no more than 3.0 pounds per 1,000 square feet per 24 hours in accordance with ASTM F1869 or relative humidity no greater than 80 percent if tested in accordance with ASTM F2170 unless the CSM's recommendations are more restrictive.
    - e. Concrete structures: Negative results from Plastic Sheet Test in accordance with ASTM D4263, and maximum of 80 percent relative humidity in accordance with ASTM F2170.
- B. Do not apply coatings when the following conditions exist. If such conditions exist, provide containment, covers, environmental controls, and other necessary measures.
- 1. During rainy, misty, or damp weather, or to surfaces with frost or condensation.
  - 2. When the surface temperature is below 10 degrees Fahrenheit above the dew point.
  - 3. When ambient or surface temperature:
    - a. Is less than 55 degrees Fahrenheit unless manufacturer allows a lower temperature.
    - b. Is less than 65 degrees Fahrenheit for clear finishes unless manufacturer allows a lower temperature.
    - c. Exceeds 90 degrees Fahrenheit unless manufacturer allows a higher temperature.
    - d. Exceeds manufacturer's recommendation.
  - 4. When relative humidity is higher than 85 percent.
  - 5. Under dusty or adverse environmental conditions.
  - 6. When light on surfaces measures less than 15 foot-candles.
  - 7. When wind speed exceeds 15 miles per hour.

- C. Apply coating only under evaporation conditions rather than condensation.
  - 1. Use dehumidification equipment, fans, and/or heaters inside enclosed areas to maintain required atmospheric and surface temperature requirements for proper coating application and cure.
  - 2. Measure and record relative humidity and air and surface temperatures at the start and end of each shift to confirm proper humidity and temperature levels inside the work area.
    - a. Submit test results.
- D. Continuously ventilate, dehumidify, and heat enclosed spaces with high humidity during surface preparation, coating application, and curing.
  - 1. Maintain minimum air temperature of 55 degrees Fahrenheit and 10 degrees Fahrenheit above the dew point.
  - 2. Maintain dew point of at least 10 degrees Fahrenheit less than the temperature of the coldest part of the structure where work is performed.
  - 3. Reduce dew point temperature in conditioned space by at least 10 degrees Fahrenheit within 20 minutes.
  - 4. Seal work areas and maintain positive pressure per dehumidification equipment supplier's recommendations.
  - 5. Maintain these conditions before, during, and after application to ensure proper adhesion and cure of coatings for no less than:
    - a. Entire curing period.
    - b. 8 hours after coating.
- E. Systems:
  - 1. Site electrical power availability as specified in Section 01\_50\_00 - Temporary Facilities and Controls.
  - 2. Internal combustion engine generators may be used.
    - a. Obtain required permits and provide air pollution and noise control devices on equipment as required by permitting agencies require.
    - b. Comply with state, federal, and local fire and explosion protection measures when locating and operating generator.
    - c. Locate engine generator outside hazardous classified areas in accordance with NFPA 820.
    - d. Provide daily fuel service for generator for duration of use.
  - 3. Dehumidification:
    - a. Provide desiccant or refrigeration drying.
    - b. Use only desiccant types with a rotary desiccant wheel capable of continuous operation.
    - c. Liquid, granular, or loose lithium chloride drying systems are not acceptable.
  - 4. Heating:
    - a. Use electric, indirect combustion, or steam coil.
    - b. Direct-fired combustion heaters are not acceptable heat sources during abrasive blasting, coating application, or coating cure.

- 5. Filters:
    - a. Use a filtration system for dust removal designed to not interfere with dehumidification equipment's ability to control dew point and relative humidity inside the reservoir.
    - b. Do not allow air from the working area or dust filtration equipment to recirculate through their dehumidifier during coating application or when solvent vapors are present.
  - 6. Design and Submittals:
    - a. Prepare and submit dehumidification and heating plan, including all equipment and operating procedures.
    - b. Suppliers of services and equipment shall have at least 3 years of experience in similar applications.
- F. Provide containment and ventilation system components in accordance with SSPC-Guide 6, Level 3 and as required for hazardous materials.

## **1.08 MAINTENANCE**

- A. Provide table of products applied organized by surface type. List coating manufacturer, color, color formulation, distributor name, telephone number, and address.
- B. Provide extra materials:
  - 1. Minimum 1 gallon of each type and color of coating applied or provide additional quantities if specified in the Contract Documents:
    - a. Deliver unopened factory-labeled cans when manufacturer packages material in gallon cans.
    - b. Deliver material in new gallon containers, properly sealed and identified with permanently affixed, durable, printed labels indicating brand, type, and color, when manufacturer does not package material in gallon cans, deliver.

## **1.09 CTR RESPONSIBILITIES**

- A. General:
  - 1. Attend pre-installation conference.
  - 2. Perform onsite application training.
  - 3. Periodically inspect coating system application.
- B. Coating system installation training:
  - 1. Provide a minimum of 8 hours of classroom and off-site training for application personnel and supervisory personnel in one of the following ways:
    - a. Train a minimum of 2 supervisory personnel and 2 application personnel.
    - b. Submit a letter from the CSM stating that CSM approves the supervisory and application personnel, listed by name and responsibility, and no additional training is required.
  - 2. CTR can train up to 14 application personnel and 3 supervisory personnel at a time.



3. Minimum training requirements:
    - a. Explain in detail the mixing, application, curing, and termination requirements.
    - b. Provide hands-on demonstration of coating system mixing.
    - c. Explain in detail the ambient condition requirements for temperature and humidity.
    - d. Explain in detail the surface preparation requirements.
    - e. Explain in detail the re-coat times, cure times, and related ambient condition requirements.
    - f. Write a letter stating that training was satisfactorily completed by the personnel, listed by name and responsibility.
  4. Provide special training as specified in the Coating Detail Sheets.
- C. Coating system inspection:
1. CTR inspection is in addition to the CSA's inspection as specified in this Section.
  2. Be on-site to oversee:
    - a. Coating application at least once a week.
    - b. End of surface preparation.
    - c. During coating application.
    - d. Post-cure inspection.
  3. Routinely inspect and verify in writing that application personnel have successfully performed surface preparation, filler/surfacer application, coating system application, and Quality Control Inspection in accordance with this Section and to warrantable quality.
  4. Perform the following activities to confirm conformance with the specifications:
    - a. Inspect ambient conditions during coating system installation at Hold Points for conformance with the specified requirements.
    - b. Inspect each coated surface type and coating system applied to verify the following:
      - 1) Cleanliness.
      - 2) Surface pH for concrete substrates.
      - 3) Confirm surface preparation of substrates where coating system will terminate or will be applied for conformance to the specified application criteria.
    - c. Verify surface profile of substrates by completing the following:
      - 1) Inspect preparation and application of coating detail treatment at terminations, transitions, metal embedments in concrete, and joints and cracks in substrates.
      - 2) Inspect application of filler/surfacer materials for concrete and masonry substrates.
      - 3) Verify proper mixing of coating materials.
      - 4) Inspect application of primers and finish coats, including wet and dry film thickness.
      - 5) Inspect coating systems for proper cure times and conditions.
    - d. Review adhesion testing of cured coating systems.
    - e. Review coating system continuity testing.
    - f. Inspect and record representative-localized repairs.
    - g. Conduct final review of completed coating system installation.
    - h. Prepare and submit site visit reports after each site visit to document that the coating work is in accordance with the CSM's Recommendations.

- D. Final report:
  - 1. Prepare a final report, after coating work ends, summarizing each day's test data, observations, drawings, and photographs.
    - a. Include substrate conditions, ambient conditions, and application procedures observed during the CTR's site visits.
    - b. Include a statement that completed work was performed in accordance with the requirements of the CSM's recommendations.

## PART 2 PRODUCTS

### 2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Coating materials shall be formulated for environments encountered in water and wastewater treatment processes.
- B. Coating materials that come in contact with water distributed as potable water shall be certified in accordance with NSF 61.

### 2.02 MATERIALS

- A. General:
  - 1. Product requirements: As specified in Section 01\_60\_00 - Product Requirements.

### 2.03 COATING SYSTEMS IDENTIFICATION

- A. Naming conventions: Coating Systems Identifications contain the elements defined in Table 1.

Table 1. Coating System Identification Elements						
First Element	-	Second Element	-	Third Element	-	Fourth Element (optional)
3 or 4 alpha characters		1-3 alpha characters		1 number		3 or 4 alpha characters
Coating Type		Substrate		System Number		Additional Substrate or Special Condition
Example: EPX	-	C	-	6	-	BSC

- 1. First element identifies the coating type using the following abbreviations:
  - a. ACR: Acrylic.
  - b. CTE: Coal tar epoxy.
  - c. ELA: Elastomeric acrylic.
  - d. EPU: Epoxy-polyurethane.
  - e. EPX: Epoxy.
  - f. POL: Polyurethane.
  - g. SIL: Silicone.
  - h. SILX: Siloxane or silane.
  - i. VE: Vinyl ester.

2. Second element identifies the substrate using the following abbreviations:
  - a. C: Concrete or masonry.
  - b. F: Concrete flooring.
  - c. FRP: Fiber-reinforced plastic.
  - d. GM: Galvanized metal.
  - e. M: Metal.
  - f. PVC: Polyvinyl chloride, chlorinated polyvinyl chloride.
3. Third element identifies the sequential system number.
  - a. For example, EPX-C-2 is the second standard epoxy coating system for concrete substrates.
4. Fourth element is optional and identifies the additional substrate or special condition with the following abbreviations:
  - a. PWS: Potable water service applications (NSF-61 approved).
  - b. BSC: Biogenic sulfide corrosion-resistant applications in wastewater.
  - c. BG: Below grade or buried.
  - d. OZ: Organic zinc primer, epoxy polyurethane system.
  - e. SC: Secondary containment.

## **2.04 PRODUCTS FOR COATING SYSTEMS**

- A. Products: As specified in Attachment B - Coating Detail Sheets.
- B. Cleaning solvents:
  1. Requirements for solvent wash, solvent wipe, or cleaner used, including, but not limited to, those used for surface preparation in accordance with SSPC-SP 1:
    - a. Emulsifying type.
    - b. Containing no phosphates.
    - c. Biodegradable.
    - d. Does not damage zinc.
    - e. Compatible with the specified primer.
    - f. Complying with applicable air-quality control board requirements.
  2. Use clean white cloths and clean fluids in solvent cleaning.

## **PART 3 EXECUTION**

### **3.01 GENERAL PROTECTION REQUIREMENTS**

- A. Protect adjacent coated surfaces from coatings and damage associated with coating work. Repair damage resulting from inadequate or unsuitable protection.
- B. Use drop cloths and other coverings to protect adjacent surfaces not to be coated against spatter and droppings.
- C. Mask off surfaces of items not to be coated or remove items from area.
- D. Furnish and deploy sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being coated and, in particular, surfaces within storage and preparation areas.

- E. Place coating waste, cloths, and material that may pose a fire hazard in closed metal containers and remove daily from site.
- F. Remove electrical plates, surface hardware, fittings, and fasteners before coating application.
  - 1. Carefully store, clean, and replace items after completing coating in each area.
  - 2. Do not use solvent or degreasers to clean hardware that may remove permanent lacquer finishes.
- G. Erect and maintain protective enclosures in accordance with SSPC-Guide 6.
- H. Protect the following surfaces from abrasive blasting by masking or by other means:
  - 1. Threaded portions of valve and gate stems, grease fittings, and identification plates.
  - 2. Machined surfaces for sliding contact.
  - 3. Surfaces to be assembled against gaskets.
  - 4. Surfaces of shafting where sprockets will be fit.
  - 5. Surfaces of shafting where bearings will be fit.
  - 6. Machined bronze surfaces, including slide gates.
  - 7. Cadmium-plated items, except cadmium-plated, zinc-plated, or sherardized fasteners used to assemble equipment requiring abrasive blasting.
  - 8. Galvanized items, unless scheduled to be coated.
- I. Protect installed equipment, mechanical drives, and adjacent coated equipment from abrasive blasting to prevent damage caused by spent abrasive blast media, dust, or dirt entering such equipment.
- J. Schedule cleaning and coating to keep dust and spray from the cleaning process from falling on wet, newly coated surfaces.
  - 1. Whenever possible, coordinate with other trades and complete surface preparation and coating work before installing hardware, hardware accessories, nameplates, data tags, electrical fixtures, and similar uncoated items that will be in contact with coated surfaces. Mask machined surfaces, sprinkler heads, and other small items that will not be coated.
  - 2. After completing coating, reinstall removed items.
  - 3. Disconnect and move equipment adjacent to walls to clean and coat equipment and walls. Replace and reconnect equipment after coating.

### **3.02 GENERAL SURFACE PREPARATION REQUIREMENTS**

- A. Prepare surfaces in accordance with CSM's instructions unless more stringent requirements are specified in this Section.
- B. Coating detail sheets in Attachment B - Coating Detail Sheets include additional surface preparation requirements.
- C. Follow more stringent requirement if information conflicts.

- D. Where required by the Owner's representative, a NACE International certified coatings inspector, provided by the Contractor, will inspect and approve surfaces to be coated before applying a coating.
  - 1. CSA shall coordinate coating inspections.
    - a. Identify coating inspection Hold Points during the pre-installation conference.
    - b. Provide at least 2 days' notice before inspection.
  - 2. Correct surface defects identified by the inspector at no additional cost to the Owner.

### **3.03 CLEANING OF NEW AND PREVIOUSLY COATED OR NEW SURFACES**

- A. Utilize cleaning agent to remove soluble salts, such as chlorides, from concrete and metal surfaces:
  - 1. Cleaning agent: Biodegradable non-flammable and containing no VOC.
  - 2. Manufacturers: The following or equal:
    - a. CHLOR\*RID International, Inc.
      - 1) Complete soluble salt removal with steam or warm water cleaning.
  - 3. Steam clean and degrease surfaces to be coated to remove oils and grease.
  - 4. Clean surfaces with decontamination agent in conjunction with abrasive blast cleaning, steam cleaning, high-pressure washing, or hand washing, as approved by the CTR and the Project Manager.
  - 5. Fill voids to provide surface using cement mortar.
  - 6. Complete final surface preparation before applying new coating system in strict accordance with CSM's printed instructions.

### **3.04 BLAST CLEANING**

- A. Surface preparation requirements:
  - 1. Do not reuse spent blast abrasive.
  - 2. Ensure that filter compressed air used for blast cleaning is free of condensed water and oil.
    - a. Clean moisture traps at least once every 4 hours or more frequently, as required, to prevent moisture from entering the abrasive blasting equipment air supply.
    - b. Check blast air for moisture and oil after each cleaning in accordance with ASTM D4285.
  - 3. Install oil separators just downstream of compressor discharge valves and at the discharge point of blast pot discharges. Check separators on the same frequency as the moisture traps.
  - 4. Keep regulators, gauges, filters, and separators on compressor air lines to blasting nozzles operational at all times.
  - 5. Install an air dryer or desiccant filter drying unit to dry the compressed air before blast pot connections. Use and maintain the dryer throughout surface preparation work.
  - 6. Use a venturi-type, or other high velocity-type, abrasive blast nozzles supplied with at least 100 pounds per square inch gauge air pressure at the nozzle and enough volume to obtain appropriate blast cleaning production rates and surface cleanliness.
  - 7. Provide airborne particulate evacuation and filtering that meets OSHA safety standards. Maintain optimal visibility both to clean and provide the specified

surface profile and to allow inspection of the substrate during surface preparation work.

8. If prepared and cleaned metallic substrates become contaminated between final surface preparation work and coating system application, or if the prepared substrate darkens or changes color, re-clean by water blasting, or abrasive blast cleaning as appropriate until the specified degree of cleanliness is restored.

B. Water jetting or water blasting:

1. Use water jetting or water blasting for recoating or relining where an adequate surface profile exists.
2. Perform water jetting or water blasting in accordance with SSPC-SP 13 and SSPC-WJ-1, WJ-2, WJ-3, WJ-4.

### **3.05 PREPARATION REQUIREMENTS FOR CONCRETE SURFACES**

A. Cure for at least 28 days before coating.

B. Remove degraded concrete using abrasive blast cleaning or high or ultra-high-pressure water jetting, chipping, or other abrading tools until achieving a sound, clean substrate. Remove bruised or cracked concrete.

C. Prepare substrate cracks and areas requiring resurfacing; perform detail treatment, including, but not limited to, terminating edges in accordance with the CSM's recommendations, and as indicated on the Drawings.

1. Prepare concrete surfaces in accordance with SSPC-SP 13.

D. Prepare concrete surfaces in accordance with SSPC-SP 13.

1. Inspect concrete surfaces to select appropriate surface preparation method to provide a suitable substrate for the specified coating system.
2. Use blast cleaning or other means to expose the complete perimeter of air voids or bug holes. Do not leave shelled over, hidden air voids beneath the exposed concrete surface.
3. Repair concrete defects and physical damage.
4. Clean concrete surfaces of dust, mortar, formwork, fins, loose concrete particles, form release materials, oil, and grease.
5. Fill voids to provide surface as specified in Section 03\_35\_29 - Concrete Finishes.

E. Provide clean substrate visually free of calcium sulfate, loose, coarse, or fine aggregate, laitance, loose hydrated cement paste, and otherwise harmful substances.

1. Confirm concrete surface minimum pH of 9.0 with surface pH testing.
2. If after surface preparation the surface pH remains below 9.0, perform additional water blasting, cleaning, or abrasive blast cleaning until additional pH testing indicates an acceptable pH level.

F. Prepare concrete surface for coating in accordance with SSPC-SP 13.

1. Provide ICRI 310.2 minimum No. 3 concrete surface profile (CSP) or as specified on Coating Detail Sheets.
2. Evaluate profile of the prepared concrete using ICRI 310.2 surface profile replicas.

- G. Blast clean cementitious repair mortars or grouts to the same profile and degree of cleanliness requirements required for concrete substrates.
- H. Blast clean polymer-based surfacers or waterborne modified cementitious surfaces only if they have exceeded the CSM's recommended recoat time.
- I. Vacuum concrete surfaces before coating application, leaving a dust free, sound concrete substrate.
  - 1. Thoroughly clean concrete surfaces to be coated to remove loose dirt and spent abrasive.
  - 2. Remove debris produced by blast cleaning from the structures to be coated, and legally dispose of it off-site.
- J. Test moisture content of concrete to be coated:
  - 1. Conduct ASTM D4263 plastic sheet test at least once for every 500 square feet of surface area to be coated.
    - a. Any moisture on plastic sheet after test period constitutes a non-acceptable test, and the concrete must be dried further.
  - 2. Conduct ASTM F1869 test at least once for every 1,000 square feet of concrete floor surface area to be coated.
  - 3. Conduct ASTM F2170 one relative humidity moisture test at least once for each 500 square feet of non-floor concrete surface area where the opposite side is exposed to soil or water.
    - a. Waterproof surfaces exposed to soil or water where specified in Section 07\_11\_00 - Dampproofing.
  - 4. Comply with specified minimum moisture content and CSM's written recommendations for moisture vapor transmission rates or relative humidity values.
- K. Masonry surfaces:
  - 1. Cure for at least 28 days before coating.
  - 2. Prepare masonry surfaces to remove chalk, laitance, loose dirt, dried mortar splatter, dust, peeling, or loose existing coatings, or otherwise deleterious substances to leave a clean, sound substrate.
  - 3. Wash and scrub masonry surfaces with clear water. Do not use muriatic acid.
  - 4. Seal or fill masonry surfaces with a sealer or block filler compatible with the specified primer after cleaning.
  - 5. Confirm that masonry surfaces are dry before coating application.
    - a. If using pressure washing or low-pressure water blast cleaning for preparation, allow the masonry to dry for at least 5 days under dry weather conditions or until the minimum ambient temperature is 70 degrees Fahrenheit before coating.

### **3.06 APPLICATION REQUIREMENTS**

- A. Apply coatings in accordance with manufacturer's instructions.
- B. Empty aboveground piping to be coated of contents when applying coatings.

- C. Mechanical equipment shop primed by the manufacturer.
  - 1. Pumps and valves: Shop coat with manufacturer's highest quality coating system meeting the project specifications.
    - a. Provide CTR shop coating reports.
  - 2. Non-immersed equipment: Touch up shop primer, and coat in the field with specified coating system after installation.
    - a. If project requires equipment removal and reinstallation, complete touch-up coating after final installation.
  - 3. Immersed equipment not shop coated: Remove shop primer before surface preparation and field apply coating.
- D. Verify surface preparation immediately before applying coating in accordance with SSPC-SP COM and the SSPC visual standard for the specified surface preparation method.
- E. Allow surfaces to dry, except where coating manufacturer requires surface wetting before coating.
- F. Wash coat and prime sherardized, aluminum, copper, and bronze surfaces, or prime with manufacturer's recommended special primer.
- G. Do not apply coatings to a surface until it has been prepared as specified.
- H. Use equipment designed to apply materials specified.
  - 1. Use compressors with moisture traps and filters that remove water and oils from the air.
    - a. Perform a paper blotter test at the Project Manager's request to verify air is sufficiently free of oil and moisture. Do not allow the amount of oil and moisture to exceed CSM-recommended amount.
  - 2. Equip spray equipment with properly sized mechanical agitators, pressure gauges, pressure regulators, and spray nozzles.
- I. Where 2 or more coats are required, tint prime coat intermediate coats as necessary to distinguish each coating and to help indicate coverage.
  - 1. Do not use color additives with chromium, lead or lead compounds that hydrogen sulfide, other corrosive gases, might destroy or alter. Apply the specified number of coats.
- J. Apply coating by brush, roller, trowel, or spray unless a specific application method is required by coating manufacturer's instructions or these Specifications.
  - 1. Apply primer or first coat by brush to power tool cleaned ferrous surfaces.
  - 2. Brush or spray-apply coats for blast-cleaned ferrous surfaces and subsequent coats for non-blast cleaned ferrous surfaces.
  - 3. After prime coat dries, mark, repair, and retest pinholes and holidays before intermediate or top coats are applied.
- K. Spray application:
  - 1. With a brush, stripe coat edges, welds, corners, nuts, bolts, and difficult-to-reach areas, as necessary, before spray application to ensure specified coating thickness along edges.



2. When using spray application, apply each coat to thickness no greater than recommended in coating manufacturer's instructions.
  3. Use airless spray method unless air spray method is required by CSM's instruction or these Specifications.
  4. Conduct spray coating under controlled conditions. Protect adjacent construction and property from coating mist, fumes, or overspray.
- L. Lightly sand and thoroughly clean surfaces to receive high-gloss finishes unless CSM instructs otherwise.
- M. Remove dust on coatings between coats.
- N. Shop and field coats:
1. Prime coat: Shop-apply or field-apply prime coats as specified. Use shop-applied primer compatible with the specified field coating system and apply at the minimum dry film thickness recommended by the finish coat CSM.
    - a. Provide datasheets identifying the shop primer to on-site coating application personnel.
    - b. Perform adhesion tests on the shop primer.
    - c. Remove and recoat damaged, deteriorated, and poorly applied shop coatings.
    - d. If shop primer coat meets this Section's requirements, spot prime exposed metal of shop-primed surfaces before spray applying primer over the entire surface.
  2. Field coats: Apply field coats with 1 or more prime coats and finish coats to build up coating to dry film thickness specified for the coating system.
    - a. Do not apply finish coats until other work in the area is complete and previous coats are inspected.
  3. Adhesion confirmation: Perform adhesion tests after proper coating cure in accordance with ASTM D3359. Demonstrate that:
    - a. Prime coat adheres to the substrate.
    - b. Coatings adhere to the prime and intermediate coats.
      - 1) Coating 5 mils or more DFT: Achieve adhesion test result of 5A on immersed surfaces and 4A or better on other surfaces.
      - 2) Coating less than 5 mils DFT: Achieve adhesion test results of 5B on immersed surfaces and 4B or better on other surfaces.
- O. Brush, roll, trowel, or spray and back roll coats for concrete and masonry.
- P. Plural component coating application:
1. Premix contents of component drums if required by the CSM each day.
  2. Before starting application:
    - a. Verify gauges are working properly.
    - b. Complete ratio checks.
    - c. Sample the mix on plastic sheeting to ensure set time is appropriate and complete.
    - d. Label and retain spray samples. Submit to Project Manager when requested.

Q. Drying and recoating:

1. Provide fans, heating devices, or other means to prevent condensate or dew on substrate surface or between coats and during curing after applying the last coat.
2. Allow each coat to cure or dry thoroughly, in accordance with if required in CSM's printed instructions, before recoating.
3. Use CSM's printed instructions and the requirements specified in this Section to determine minimum required drying time.
  - a. Do not allow excessive drying time or exposure, which may impair bond between coats.
  - b. Recoat coatings within time limits recommended by CSM.
  - c. If time limits are exceeded, abrasive blast clean and de-gloss clean before applying another coat.
4. If limitations on time between abrasive blasting and coating are not met before attaching components to surfaces that cannot be abrasive blasted, coat components before attachment.
5. Ensure primer and intermediate coats of coating are unscarred and completely integral when applying each succeeding coat.
6. Touch up suction spots between coats and apply additional coats where required to produce finished surface of solid, even color, free of defects.
7. Leave no holidays. Repair holidays in accordance with the requirements on pertinent Coating Detail Sheets or as recommended by the CSM.
8. Sand and feather into a smooth transition and recoat scratched, contaminated, or otherwise damaged coating surfaces so repairs are invisible to the naked eye.
9. For submerged service or highly corrosive headspace service, provide a letter to the Project Manager stating that the lining system is fully cured and ready to be placed into service.

R. Workmanship:

1. Ensure that coated surfaces are free from runs, drips, ridges, waves, laps, and brush marks. Coats shall be applied to produce a smooth, even film of uniform thickness completely coating corners and crevices.
2. Coat surfaces without drops, overspray, dry spray, excessive runs, ridges, waves, holidays, laps, or brush marks.
3. Remove splatter and droppings after coating work is completed.
4. Evenly apply each coat of material and sharply cut to a line created with masking tape or other suitable materials.
5. Avoid over spraying or spattering paint on surfaces not to be coated. Protect glass, hardware, floors, roofs, vehicles, and other adjacent areas and installations by taping, drop cloths, or other suitable measures.
6. When coating complex steel shapes, stripe coat welds, edges of structural steel shapes, metal cut-outs, pits in steel surfaces, or rough surfaces with the primer before overall coating system application.
  - a. Brush apply stripe coat to ensure proper coverage.
  - b. Do not stripe coat with spray or roller.
7. Ensure that finish coat, including repairs, has a uniform color and gloss.

S. Coating properties, mixing, and thinning:

1. Thin prime coat and apply as recommended by the CSM. Thinned coating must comply with prevailing air pollution control regulations.

2. If maximum recoat time is exceeded, prepare surface with solvent washing, light abrasive blasting, or other procedures in accordance with CSM's instructions.
  3. Allow adequate drying time between coats as instructed by the CSM, adjusted as necessary for the site conditions.
  4. Ensure that coatings, when applied, provide a satisfactory film and a smooth even surface. Lightly sand glossy undercoats to provide a surface suitable for proper application and adhesion of subsequent coats. Thoroughly stir and strain coating materials during application and maintain uniform consistency.
  5. Mix coatings with 2 or more components in accordance with CSM's instructions.
  6. Where necessary to suit conditions of the surface, temperature, weather, and method of application, thin the coating in accordance with CSM's recommendations.
    - a. Ensure that volatile organic content (VOC) of the thinned coating complies with prevailing air pollution control regulations.
    - b. Thin coatings to only what is necessary to obtain proper application characteristics.
    - c. Use a thinner recommended by the CSM.
- T. Film thickness and continuity:
1. Apply coating to the specified thicknesses.
    - a. Apply additional coats when necessary to achieve specified thicknesses, especially at edges and corners.
  2. Verify WFT of the coating system first coat and after applying each subsequent coat.
  3. Do not allow the minimum thickness at any point to deviate more than 25 percent from the required average.
  4. Do not allow the surface area covered per gallon of coating for various types of surfaces to exceed those recommended by the CSM.
    - a. Provide coating coverage worksheets listing the maximum and minimum coverage for each unit volume of coating for concrete surfaces.
  5. Apply additional coats to achieve the specified dry film thickness if brush or roller application methods cannot achieve the specified film thicknesses per coat.
- U. Protecting coated surfaces:
1. Do not handle, work on, or otherwise disturb coated items until the coating is completely dry and hard.
  2. After installation, recoat shop-coated surfaces with specified coating system as necessary to match surrounding surfaces, and to coordinate with the specified color identification requirements.
- V. Special requirements:
1. Before erection, apply all but the final finish coat to interior surfaces of roof plates, roof rafters and supports, pipe hangers, piping in contact with hangers, and contact surfaces inaccessible after assembly. Apply final coat after erection.
  2. Coat structural slip-critical connections and high strength bolts and nuts after erection.
  3. Areas damaged during erection:
    - a. Prepare surface for spot repairs as specified for the coating system.
    - b. Recoat with prime coat before applying subsequent coats.
    - c. Touch up surfaces after installation.
    - d. Clean and dry surfaces to be coated at time of application.

4. Coat underside of equipment bases and supports not galvanized with at least 2 coats of primer specified before setting the equipment in place.
5. Coat aluminum in contact with concrete.

### **3.07 APPLICATION REQUIREMENTS FOR CONCRETE COATING SYSTEMS**

- A. Apply filler/surfacer as recommended by CSM to fill bug holes and air voids in concrete or block texture in CMU, leaving a uniformly filled surface that does not produce blowholes or outgassing causing the coating system to pinhole.
  1. Allow filler/surfacers to cure sufficiently before applying prime coat as required by the CSM. Use the CSM-recommended drying time between coats.
- B. Apply surfacer or filler and let dry before coating application.
  1. Use the drying time between filler/surfacer and coating system specified by the CSM for the site conditions.
    - a. Let concrete substrate dry before applying filler/surfacers or coating system materials.
  2. If the maximum recoat time is exceeded, prepare surfaces by solvent washing, light abrasive blasting, and other procedures in accordance with CSM's instructions.
  3. Apply a complete parge coat of the specified filler/surfacer material over the entire substrate before applying the coating system.
    - a. Scrub filler/surfacer into the substrate to completely fill open air voids and bug holes.
    - b. Completely cover the substrate, unless otherwise specified, above such filled voids by 1/8 inch of thickness.
    - c. Provide relatively flat, uniformly even surface before coating application.
  4. Secondary containment: Place surfacer or filler 1/16-inch thick above concrete plane to create a monolithic surface free of pinholes.
    - a. Floor surfaces: Broadcast with aggregate to create a non-slip surface texture.
    - b. Remove excess aggregates and apply base coat to encapsulate embedded non-slip aggregate.
- C. Concrete substrate temperatures:
  1. Apply filler/surfacers and the coating system when temperatures are falling, typically late afternoon or evening.
    - a. Do not coat concrete with rising concrete substrate surface temperatures or substrates in direct sunlight, to minimize outgassing from the substrate and formation of pinholes, and/or blistering.
  2. Should bubbles, pinholes, or other discontinuities form in the applied coating system material, they shall be repaired.
    - a. Should discontinuities develop in the filler/surfacer material or in the first coat of the coating material, repair them before the next coat.
    - b. When discontinuities occur, open the air void behind or beneath the discontinuities and completely fill with specified coating material. Then, abrade the coated area around the discontinuities repair reapply coating over that area.

- D. Perform application detail work in accordance with these Specifications, the CSM's current written recommendations, and Drawings, whichever is stricter.
- E. Concrete coating systems application requirements:
  - 1. Concrete coating minimum dry film thickness excludes parge coat, block filler, and sealer.

### **3.08 COATING SYSTEM SCHEDULE**

- A. Attachment A - Schedule of Surfaces to be Coated specifies surfaces to be coated in the field with the coating systems required.

### **3.09 SURFACES NOT REQUIRING COATING**

- A. Stainless steel piping, valves, pipe supports, instrument sunshades.
- B. Sliding surfaces on expansion joints, motor and pump shafts, machined surfaces at bearings and seals, grease fittings, etc.
- C. Galvanized structural steel framing, galvanized roof decking, galvanized pipe supports.
- D. Copper and brass pipe, fittings, valves, etc.
- E. Bronze valves, bearings, bushings, and fasteners.
- F. Corrosion resistant special alloys: Inconel, Alloy 20, Hastelloy, etc.
- G. Exterior concrete.
- H. Plastic surfaces except coat PVC, CPVC, and other plastic piping system exposed to sunlight.
- I. Buried piping that is encased in concrete or cement mortar.

### **3.10 QUALITY CONTROL**

- A. Owner-provided inspection or inspection by others does not limit the Contractor's or CSA's responsibilities for quality workmanship or quality control as specified or as required by the CSM's instructions. Owner inspection is in addition to any inspection required of the Contractor.
- B. Owner may perform, or contract with an inspection agency to perform, quality control inspection and testing of the coating work covered by this Section. These inspections may include the following:
  - 1. Inspect materials upon receipt to ensure that the CSM supplied them.
  - 2. Verify that specified storage conditions for the coating system materials, solvents, and abrasives are provided.
  - 3. Inspect and record findings for substrate cleanliness.
  - 4. Inspect and record pH of concrete and metal substrates.
  - 5. Inspect and record substrate profile (anchor pattern).
  - 6. Measure and record ambient air and substrate temperature.

7. Measure and record relative humidity.
  8. Check for substrate moisture in concrete.
  9. Verify that mixing of coating system materials is in accordance with CSM's instructions.
  10. Inspect, confirm, and record that coating system materials' "pot life" is not exceeded during installation. Inspect to verify that recoat limitations for coating materials are not exceeded.
  11. Perform adhesion testing.
  12. Measure and record the coating system's thickness.
  13. Verify proper curing of the coating system in accordance with the CSM's instructions.
  14. Holiday or continuity testing in accordance with NACE SP0188 for coatings that will be immersed or exposed to aggressively corrosive conditions.
- C. Perform holiday testing in accordance with NACE SP0188 to identify holidays or pinholes needing repair for coating over 100 percent of surfaces:
1. Coated steel that will be immersed or exposed to aggressively corrosive conditions.
  2. Coated concrete.
  3. Perform holiday tests after proper application and coating system cure.

### **3.11 CORRECTIVE MEASURES**

- A. Repair pinholes or holidays identified by Holiday Testing as follows:
1. Remove the coating system with a grinder or other suitable power tool.
  2. Remove coating system at pinholes and holidays at least 2 inches diameter around the defect back to expose substrate.
  3. Concrete voids: Chip back to expose entire cavity in all directions.
    - a. Completely fill void with approved filler/surfacer material using a putty knife or other suitable tool and strike off. Cure in accordance with CSM's recommendations.
  4. Aggressively abrade or sand the intact coating system surface at least 3 inches beyond the removal area in all directions to produce a uniform 6- to 8-mil profile in the intact coating system.
  5. Vacuum the prepared area to remove dust, dirt, etc., leaving clean, sound surfaces.
  6. Tape to mask the periphery of the prepared intact coating area to prevent coating repair application onto the prepared area.
  7. Apply the coating system with enough coats to achieve the specified finish coat thickness over the defect and coating removal area. Feather the coating onto the abraded coated surfaces around the removal area to avoid a lip and to achieve a neat repair outline.
  8. Follow curing time between coats as specified by CSM for the site conditions. Solvent wash and abrasive blast in accordance with CSM's instructions if the maximum recoat time is exceeded.
  9. Apply coating at specified dry film thickness.

### **3.12 CLEANUP**

- A. Remove surplus materials, protective coverings, and accumulated rubbish after completing coating. Thoroughly clean surfaces and repair overspray or other coating-related damage.

### **3.13 FINAL INSPECTION**

- A. Conduct final inspection of coating system work to determine whether it meets specifications requirements.
- B. Conduct subsequent final inspection with the Project Manager to ensure Work is in accordance with Contract Documents requirements.
- C. Mark any rework required.
  - 1. Re-clean and repair, as specified, at no additional cost to the Owner.

END OF SECTION

## ATTACHMENT A - SCHEDULE OF SURFACES TO BE COATED





ATTACHMENT A  
Schedule of Surfaces to be Coated

- A. The following schedule is incomplete. Coat unlisted surfaces with same coating system as similar listed surfaces. Contact Engineer for clarification.

EPX-C-6-BSC	Manhole Surfaces
POL-C-1-BSC	Manhole Surfaces
Notes:	
<p>1: Non-immersed ferrous metal surfaces include:</p> <ul style="list-style-type: none"><li>a. Doors, doorframes, ventilators, louvers, grilles, exposed sheet metal, and flashing.</li><li>b. Pipe, valves, pipe hangers, supports and saddles, conduit, cable tray hangers, and supports.</li><li>c. Motors and motor accessory equipment.</li><li>d. Drive gear, drive housing, coupling housings, and miscellaneous gear drive equipment.</li><li>e. Valve and gate operators and stands.</li><li>f. Structural steel.</li><li>g. Crane and hoist rails.</li><li>h. Exterior of tanks and other containment vessels.</li><li>i. Mechanical equipment supports, drive units, and accessories.</li><li>j. Bare electrical equipment: boxes, exposed conduit, and accessories.</li><li>k. Pumps not submerged.</li><li>l. Other miscellaneous metals.</li></ul> <p>2: Immersed ferrous metal surfaces include:</p> <ul style="list-style-type: none"><li>a. Interior surfaces of ferrous metal tanks.</li><li>b. Field priming of ferrous metal surfaces with defective shop-prime coat; including non-submerged service.</li><li>c. Bell rings, underside of manhole covers and frames.</li><li>d. Sump pumps, including underside of base plates and submerged suction and discharge piping.</li><li>e. Exterior of submerged piping and valves other than stainless steel or PVC piping.</li><li>f. Submerged pipe supports and hangers.</li><li>g. Stem guides.</li><li>h. Other submerged iron and steel metal unless specified otherwise.</li></ul>	



**ATTACHMENT B - COATING DETAIL SHEETS**



Attachment B			
Coating Detail Sheet			
Coating System	EPX-C-6-BSC		
Coating Material	Blended Amine Cured Epoxy		
Substrate	Concrete		
Products: One of the following or equal:	Primer	Intermediate Coat	Finish Coat
Carboline	Plasite 5371	Plasite 4500S	Plasite 4500S
International Paint	Enviroline 222	Enviroline 222	Enviroline 222
Neopoxy	NPR-5305	NPR-5300	NPR-5300
Sauereisen	Sewergard 210T	Sewergard 210G	Sewergard 210G
Sherwin Williams	Duraplate 6100 filled	Duraplate 6100	Duraplate 6100
Tnemec	Series 434	Series 435	Series 435
Service Condition	Immersed, non-potable; non-immersed, corrosive environment, biogenic sulfide corrosion, new or existing construction. Waterproofing in accordance with 07900(07_10_00) - Joint Sealants for exterior of buried tanks.		
Surface Preparation			
General	Prepare surfaces as specified in this Section and as follows.		
Concrete	<p>Apply concrete surfacer, as required, after surface preparation is accepted to provide a smooth surface. Completely fill all bugholes with the same material. Brush blast clean after adequate cure per CSM's instructions to produce a uniform anchor pattern.</p> <p>Let concrete substrate cure under warm conditions (minimum of 75 degrees F) for at least 5 days before coating application if using wet abrasive or water jet surface preparation.</p> <p>Sawcut 1/4" minimum deep groove and provide coating termination and transition details as shown on the drawings and in accordance with CSM's standard details including terminations, transitions at corners, cracks, pipe penetrations, terminations at metal embedments, and other details.</p> <p>Vacuum all surfaces to be coated after surface preparation and curing to remove all loose dirt, dust, or other loose materials.</p>		
Existing Concrete	<p>Prepare as for new concrete. Apply a filler material and coat with surfacer to restore the substrate to a smooth surface suitable for coating.</p> <p>Refer to Section 09968(09_96_08) - Concrete Repair and Coating</p>		
Surface Profile			
Concrete	ICRI CSP 5.		
Existing Coated Concrete	ICRI CSP 5.		
System Thickness (Dry Film)			
Surfacer	Completely cover the substrate above filled voids by 1/8 inch (125 mils) of thickness.		
Total	60 mils dry film in addition to the parge coat.		
Primer	One coat at CSM's recommended dry film thickness.		
Intermediate and Finish Coats	Each coat at CSM's recommended DFT to specified system thickness.		
Application			
Special CTR Training	Required.		

Attachment B			
Coating Detail Sheet			
Coating System	POL-C-1-BSC		
Coating Material	Hybrid Polyurethane		
Substrate	Concrete or dense masonry		
Products: One of the following or equal:	Primer	Intermediate Coat	Finish Coat
Carboline	Reactamine 760	Reactamine 760	Reactamine 760
Global Eco Technologies	Endura-Flex EF 1200P	Endura-Flex EF 1988	Endura-Flex EF 1988
International Paint	Interseal 670HS LTC Buff	Polibrid 705	Polibrid 705
Sherwin Williams	Macropoxy 5500	Polycote 115	Polycote 115
Service Condition	Interior or exterior, Immersed, non-potable; non-immersed, corrosive environment, biogenic sulfide corrosion, new or existing construction. Waterproofing in accordance with <b>[Section 07110(07_11_00) - Dampproofing][Section 07130(07_13_00) - Sheet Waterproofing]</b> for exterior of buried tanks.		
Surface Preparation			
General	Prepare surfaces as specified in this Section and as follows.		
Concrete	<p>Apply concrete surfacer, as required, after surface is accepted to provide a smooth surface. Completely fill all bugholes with the same material. Brush blast clean after adequate cure per CSM's instructions to produce a uniform anchor pattern.</p> <p>Let concrete substrate cure under warm conditions (minimum of 75 degrees F) for at least 5 days before coating application if using wet abrasive or water jet surface preparation.</p> <p>Sawcut 1/4" minimum deep groove and provide coating termination and transition details as shown on the drawings and in accordance with CSM's standard details including terminations, transitions at corners, cracks, pipe penetrations, terminations at metal embedments, and other details.</p> <p>Vacuum all surfaces to be coated after surface preparation and curing to remove all loose dirt, dust, or other loose materials.</p>		
Existing Coated Concrete	Prepare as for new concrete. Apply a filler material and coat with surfacer to restore the substrate to a smooth surface suitable for coating. Refer to Section 09968(09_96_08)		
Masonry	Prepare as for new concrete. Apply a skim coat of a surfacer or filler material to provide a smooth surface suitable for coating.		
Surface Profile			
Concrete	ICRI CSP 5.		
Existing Coated Concrete	ICRI CSP 5.		
Masonry	ICRI CSP 3.		
System Thickness (Dry Film)			
Total	125 mils in addition to the surfacer.		
Primer	2-4 mils		
Intermediate and Finish Coats	Each coat at CSM's recommended DFT to specified system thickness.		
Application			
Special CTR Training	Required.		

**SECTION 26\_05\_03**  
**UTILITY COORDINATION**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Coordination with the utility companies to provide service.
  - 2. Contractor's responsibilities for connecting to utilities and providing utility service to the facilities.
  - 3. Descriptions of utility services required.
- B. Utility contacts:
  - 1. Electric Utility:
    - a. Snohomish Public Utility District
    - b. Phone number: 425-783-1000.
  - 2. Telecommunications Utility:
    - a. Xfinity.
    - b. Phone number: 425-654-1287
  - 3. Gas utility:
    - a. Puget Sound Energy.
    - b. Phone number: 1-888-225-5773.
  - 4. Stormwater Drainage Utility:
    - a. City of Everett.
    - b. Phone number: 425-257-8832.
  - 5. Water Utility:
    - a. City of Everett.
    - b. Phone number: 425-257-8832

**1.02 REFERENCES**

- A. Underwriters' Laboratories, Inc. (UL).

**1.03 SUBMITTALS**

- A. Furnish Submittals as specified in Section 01\_33\_00 - Submittal Procedures.
- B. Certification:
  - 1. Submit certification that the intended installation has been coordinated with the utility companies.
  - 2. Include a narrative description of the utility's requirements and points of connection, names and telephone numbers for contacts at the utilities.



#### **1.04 QUALITY ASSURANCE**

- A. Materials and equipment used in performance of Electrical Work shall be listed or labeled by UL, or other equivalent recognized independent testing laboratory, for the class of service intended.

#### **1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Scheduling:
  - 1. General:
    - a. Before start of Site Work, make arrangements for temporary telephone and electrical service as required.
  - 2. Electrical systems:
    - a. Before bidding, contact the utilities to determine the Work and materials that will be required from the Contractor, and all fees and permits that will be required so that all utility systems furnished by the Contractor will be included in the bid.
    - b. Coordinate Work with the Project Manager to minimize downtime of existing operating equipment and electrical distribution systems and to preclude unsafe operation:
      - 1) Notify Owner 10 days before power interruptions.
      - 2) Coordinate downtime with Owner and local electric utility.
    - c. Before commencing Work, coordinate electric service entrance requirements with local electric utility to ensure that the installation will be complete as specified in these Contract Documents:
      - 1) Ensure power transformer size, electrical characteristics, and location are consistent with the design and service voltage provided by the electric utility coordinated with other trades.
      - 2) Arrange for utility revenue meter.
    - d. During the construction of the Project, the existing electrical service must remain fully functional in order to supply uninterrupted electrical power to Project Area.
  - 3. Before commencing Site Work, coordinate underground conduit installations with other Work to eliminate conflicts and avoid interferences with other underground systems.

#### **1.06 WARRANTY**

- A. As specified in Section 01\_78\_36 - Warranties and Bonds.

## **PART 2 PRODUCTS**

### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Electrical service:
  - 1. Provide all Work and materials and bear all costs for providing temporary construction power and the permanent electrical service, including, but not limited to:
    - a. All Work and materials not provided by the electric utility.
- B. General:
  - 1. Coordinate and obtain inspections and final installation approval from the serving utilities and other authorities having jurisdiction.

### **2.02 MATERIALS**

- A. Provide materials in accordance with the applicable requirements of the utilities and as specified in these Specifications.

### **2.03 EQUIPMENT**

- A. Provide equipment in accordance with the applicable requirements of the utilities and as specified in these Specifications.

## **PART 3 EXECUTION (NOT USED)**

END OF SECTION



## **SECTION 31\_00\_00**

### **EARTHWORK**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Loosening, excavating, filling, grading, borrow, hauling, preparing subgrade, compacting in final location, wetting and drying, and operations pertaining to site grading for buildings, basins, reservoirs, boxes, roads, and other facilities.
  - 2. Backfilling and compacting under and around structures.
  - 3. Backfilling and compacting above buried structures.

##### **1.02 REFERENCES**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Current Edition.
- C. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. Standard Specifications for Highway Bridges.
- D. ASTM International (ASTM):
  - 1. D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>).
  - 2. D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand Cone Method.
  - 3. D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>).
  - 4. D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

##### **1.03 DEFINITIONS**

- A. Backfill Adjacent to Structure: Backfill within volume bounded by the exterior surfaces of structure, the surface of undisturbed soil in the excavation around structure, and finish grade around structure.
- B. Embankments: Dikes, levees, berms, and similar facilities.
- C. Excavation: Consists of loosening, removing, loading, transporting, depositing, and compacting in final location, wet and dry materials, necessary to be removed for purposes of construction of structures, ditches, grading, roads, and such other purposes as are indicated on the Drawings.

#### **1.04 SUBMITTALS**

- A. Copy of Property Owner's Agreement allowing placement of surplus soil material on their property.
- B. Testing lab: Submit Contractor's proposed testing laboratory capabilities and equipment.
- C. Test reports:
  - 1. Submit certified test reports of tests specified to be performed by the Contractor.

#### **1.05 QUALITY ASSURANCE**

- A. Initial compaction demonstration:
  - 1. Adequacy of compaction equipment and procedures: Demonstrate adequacy of compaction equipment and procedures before exceeding any of following amounts of earthwork quantities:
    - a. 50 cubic yards of backfill adjacent to structures.
    - b. 100 cubic yards of embankment work.
    - c. 100 cubic yards of fill.
    - d. 50 cubic yards of roadway base material.
    - e. 100 cubic yards of road fill.
  - 2. Compaction sequence requirements: Until specified degree of compaction on previously specified amounts of earthwork is achieved, do not perform additional earthwork of the same kind.
  - 3. After satisfactory conclusion of initial compaction demonstration and at any time during construction, provide confirmation tests as specified under "FIELD QUALITY CONTROL."
- B. Contractor shall perform work related to this Section in accordance with the approved Stormwater Pollution Prevention Plan (SWPPP).

#### **1.06 SEQUENCING AND SCHEDULING**

- A. Schedule earthwork operations to meet requirements specified in this Section for excavation and uses of excavated material.
- B. If necessary, stockpile excavated material in order to use it at specified locations.
- C. Excavation, backfilling, and filling: Perform excavation, backfilling, and filling during construction in manner and sequence that provides drainage at all times.

## **PART 2 PRODUCTS**

### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Performance requirements:
  - 1. Where mud or other soft or unstable material is encountered, remove such material and refill space with stabilization material. Wrap stabilization material with stabilization fabric.
  - 2. Obtain acceptable import material from other sources if surplus obtained within Project site does not conform to specified requirements or are not sufficient in quantity.
  - 3. No extra compensation will be made for hauling of fill materials nor for water required for compaction.

### **2.02 MATERIALS**

- A. Water for compacting: Use water from source acceptable to Project Manager.
- B. Soil and rock materials:
  - 1. General:
    - a. Provide Gravel Back Fill for Pipe Bedding, Structural Fill/Backfill, Sand, Crushed Surfacing Top Course, and Crushed Surfacing Base Course where specified or indicated on the Drawings.
  - 2. Gravel Back Fill for Pipe Bedding: As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork.
  - 3. Structural Fill/Backfill: As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork.
  - 4. Sand: As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork.
  - 5. Crushed Surfacing Top Course (CSTC): As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork.
  - 6. Crushed Surfacing Base Course (CSBC): As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of conditions:
  - 1. Character and quantity of material:
    - a. Verify character and quantity of rock, gravel, sand, silt, water, and other inorganic or organic materials to be encountered in work to be performed.
    - b. Determine gradation, shrinkage, and swelling of soil, and suitability of material for use intended in work to be performed.
    - c. Determine quantity of material, and cost thereof, required for construction of backfills, cuts, embankments, excavations, fills, and roadway fills, whether from onsite excavations or imported materials. Include in cost of work to be performed.
    - d. Include wasting of excess material, if required, in cost of work to be performed.

## 3.02 PREPARATION

### A. Backfills:

1. After clearing and excavation are completed, scarify entire areas that underlie backfills or structures to a depth of 6 inches and until surface is free of ruts, hummocks, and other features that would prevent uniform compaction by equipment to be used.
2. Recompect scarified areas to density specified before placing backfill material or concrete.
3. If foundation areas have soft soils, do not scarify the top 6 inches prior to compaction. Remove loose material using hand equipment or with a flat-edged backhoe bucket. Do not remold and weaken the remaining soil by operating heavy equipment on final bottom elevation of excavation.
4. If foundation areas have cemented rock, cobbles, or boulders, do not scarify the top 6 inches prior to compaction. Moisten the native soil and compact the coarse fill as specified in this Section.
5. Do not place backfill against walls until:
  - a. Walls have been cast full height of structure and concrete has reached the specified strength.
  - b. Connecting slabs and beams have been cast, and concrete has reached the specified strength.
6. Do not place backfill on top of buried structures until:
  - a. Concrete has reached full strength.
7. Prior to backfilling:
  - a. Remove forms.
  - b. Clean trash and debris from the excavation site.
8. After inspection of foundation, walls, and pipes, place backfill symmetrically around structures to prevent eccentric loading of structures.
9. Place material on top of structure to prevent excessive point loading that exceeds the loading capacity of the structure.
  - a. Contractor is responsible for damage to structures due to improper backfilling and compaction.

### B. Fills:

1. After clearing is completed, scarify entire areas that underlie fill sections or structures to a depth of 6 inches and until surface is free of ruts, hummocks, and other features that would prevent uniform compaction by equipment to be used.
2. Recompect scarified areas to density specified for compacted fills before placing of fill material or concrete.
3. If fill areas have cemented rock, cobbles, or boulders, do not scarify the top 6 inches prior to compaction. Moisten the native soil and compact the coarse fill as specified in this Section.

### C. Roadway fills:

1. After clearing is completed, scarify entire areas that underlie roadway fills to a depth of 6 inches and until surface is free of ruts, hummocks, and other features that would prevent uniform compaction by equipment to be used.

2. Recompact scarified areas to density specified for roadway fills before placing of roadway fill material.
  3. If roadway fill areas have cemented rock, cobbles, or boulders, do not scarify the top 6 inches prior to compaction. Moisten the native soil and compact the coarse fill as specified in this Section.
- D. Sloped surfaces for fill or foundations:
1. Foundations for fill having slopes in excess of 1 vertical to 4 horizontal:
    - a. Bench or terrace to adequately key existing ground and fill built thereon.
  2. Slopes of original hillsides and old fills: Bench minimum of 10 feet horizontally as fill is placed.
  3. Provision of new benches:
    - a. Start new bench wherever vertical cut of next lower bench intersects existing grade.
    - b. Recompact material thus cut out along with new embankment material at no additional cost to the Owner.

### **3.03 INSTALLATION**

- A. General:
1. Dispose of excavated materials that are not required or are unsuitable for fill and backfill in lawful manner.
  2. Dispose of surplus material on private property only when written permission agreement is furnished by owner of property. Submit copies of such agreements.
  3. Rocks, broken concrete, or other solid materials larger than 4 inches in greatest dimension: Remove from project site at no additional cost to the Owner.
  4. Stabilization of subgrade: Provide materials used, or perform work required, to stabilize subgrade so it can withstand loads that may be placed upon it by Contractor's equipment.
- B. Compaction:
1. Provide specified compaction for backfills, cuts, embankments, fills, roadway fills, and other earthwork.
  2. Perform confirmation tests to verify and confirm that work has complied, and is complying at all times, with compaction requirements specified in this Section for initial compaction demonstration and field quality control testing.
  3. In-place density of compacted backfills, cuts, embankments, fills, and roadway fills determined in accordance with ASTM D1556, or with ASTM D6938.
  4. Maximum density, laboratory compaction: Soil maximum density and optimum water content when tested in accordance with ASTM D1557.
  5. To prevent damage to structures due to backfilling operations, place backfill with equipment that does not exceed AASHTO Standard Specifications for Highway Bridges, H-20 vehicle loading, within a distance from the face of the structure of not less than 1/2 the depth of backfill. The depth of backfill is the distance between the level being compacted and the bottom of the excavation. Outside this distance, heavier compaction equipment may be used.
  6. Compact to percentage of maximum density as follows:
    - a. Backfill adjacent to structures: 95 percent.
    - b. Backfilling voids: 95 percent.



- c. Other areas: 95 percent.
  - d. Under present and future structures: 95 percent.
  - e. Under roadways, parking and storage areas, curbs, and sidewalks: 95 percent.
  - f. Upper 6 inches of cuts: 95 percent.
  - g. Fills: 95 percent.
- C. Dewatering: As specified in Section 31\_23\_19 - Dewatering.
- D. Excavation:
- 1. Blasting: Not permitted.
  - 2. Excavations for trenching: As specified in Section 31\_23\_35 - Trenching.
  - 3. Excavations for structures:
    - a. Provide excavations conforming to dimensions and elevations indicated on the Drawings for each structure.
    - b. After clearing is complete, excavate for the structure, down to the elevation indicated on the Drawings. Unless directed by Project Manager, do not carry excavations below elevation indicated on the Drawings.
    - c. Where soil is encountered having unsuitable bearing value, Project Manager may direct in writing that excavation be carried to elevations below those indicated on the Drawings.
    - d. Excavation width:
      - 1) Extend excavations at least 3 feet clear from walls and foundations of structures to allow for placing and removal of forms, installation of services, and inspection.
      - 2) Do not undercut slopes.
    - e. Difficulty of excavation: No extra compensation will be made for removal of rock or any other material due to difficulty of excavation.
  - 4. Excavation of ditches and gutters:
    - a. Cut ditches and gutters accurately to cross sections and grades indicated on the Drawings.
    - b. Take care not to excavate ditches and gutters below grades indicated on the Drawings.
    - c. Backfill excessive ditch and gutter excavations to grade with suitable material acceptable to the Project Manager.
    - d. Do not deposit any material within 3 feet of edge of ditch unless otherwise indicated on the Drawings.
  - 5. Necessary over excavation:
    - a. Where it becomes necessary to excavate beyond normal lines of excavation in order to remove boulders or other interfering objects, backfill voids remaining after removal as specified in backfilling of voids below, or as acceptable to the Project Manager.
    - b. Backfill voids with material acceptable to the Project Manager:
      - 1) With acceptance of the Project Manager, backfill with one of the following:
        - a) Aggregate base course.
        - b) Controlled low-strength material.

- E. Materials for backfills, embankments, fills, and roadway fills:
1. General:
    - a. Obtain import material from other sources if surplus materials from cuts and excavations obtained from within Project site do not conform to specified requirements or are not sufficient in quantity for construction of Project.
  2. Backfills:
    - a. Backfill adjacent to structures, slabs, or walls: imported material meeting the requirements of unless otherwise specified or indicated on the Drawings.
    - b. Backfill material under concrete structures: Aggregate base course material, except in areas where controlled low-strength material or concrete encasement are indicated on the Drawings.
    - c. Extend backfill in any area under concrete structures from undisturbed soil or rock to the bottom aggregate base course material layer.
  3. Embankments:

Select material or imported material meeting the requirements of select material, unless otherwise specified or indicated on the Drawings.
  4. Fills:
    - a. Imported material meeting the requirements of select material, unless otherwise specified or indicated on the Drawings.
    - b. Extend fill in any area under concrete structures from undisturbed soil or rock to the bottom aggregate base course material layer.
  5. Roadway fills: One of the following, unless otherwise specified or indicated on the Drawings:
    - a. Aggregate base course material.
    - b. Select material or imported material meeting the requirements of select material.
- F. Placement:
1. General:
    - a. Lines and grades:
      - 1) Construct backfills, embankments, fills, and road fills, at locations and to lines and grades indicated on the Drawings.
      - 2) Overbuild permanent fill slopes by at least 1 foot and then cut to final grade to provide adequate compaction of the remaining fill.
  2. Backfills:
    - a. Place loose material in successive layers that do not exceed 8 inches in depth after compaction.
    - b. Bring each layer to a moisture content between optimum moisture content and 3 percent above optimum moisture content before compacting.
    - c. Defective compacted backfills: Remove and recompact.
  3. Fills:
    - a. Place loose material in successive layers that do not exceed 8 inches in depth after compaction.
    - b. Bring each layer to a moisture content between optimum moisture content and 3 percent above optimum moisture content before compacting.
    - c. Defective compacted fills: Remove and recompact.

4. Coarse fill:
  - a. When materials are coarsely graded so that performance of field density tests are impossible:
    - 1) Placement and compaction: Place material in lifts so as to obtain compacted thickness of 6 inches and roll with pneumatic roller or power roller.
    - 2) Moisture content: Provide moisture content of fraction of material passing 3/4-inch sieve within plus or minus 2.0 percent of optimum moisture as determined in accordance with ASTM D1557, Method C.
5. Embankments:
  - a. Place loose material in successive layers that do not exceed 8 inches in depth after compaction.
  - b. Bring each layer to a moisture content between optimum moisture content and 3 percent above optimum moisture content before compacting.
  - c. Defective compacted embankments: Remove and recompact.
6. Roadway fills:
  - a. Place loose material in successive layers that do not exceed 8 inches in depth after compaction.
  - b. Bring each layer to a moisture content between optimum moisture content and 3 percent above optimum moisture content before compacting.
  - c. Defective compacted roadway fills: Remove and recompact.

### 3.04 FIELD QUALITY CONTROL

- A. Confirmation tests:
  1. Contractor's responsibilities:
    - a. Adequacy of compaction equipment and procedures:
      - 1) Demonstrate adequacy of compaction equipment and procedures.
      - 2) At each test location include tests for each type or class of backfill from bedding to finish grade.
    - b. Compaction sequence requirements:
      - 1) Do not perform additional earthwork of the same kind until specified degree of compaction has been demonstrated.
    - c. Cost of confirmation tests: Paid for by the Contractor.
    - d. Qualifications of Contractor's testing laboratory: Acceptable to Project Manager.
    - e. Copies of confirmation test reports: Submit promptly to the Project Manager.
  2. Frequency of confirmation testing:
    - a. Cost of confirmation tests:
      - 1) Paid for by the Contractor.
    - b. Qualifications of Contractor's testing laboratory:
      - 1) Perform confirmation testing by soils testing laboratory acceptable to the Project Manager. Copies of confirmation test reports: Submit promptly to the Project Manager.

B. Tolerances:

1. Finish grading of backfills, cuts, embankments, fills, and roadway fills:
  - a. Perform fine grading under concrete structures such that finish surfaces are never above the grade or cross section indicated on the Drawings and are never more than 0.10 feet below.
  - b. Provide finish surface for areas outside of structures that are within 0.10 feet of grade or cross section indicated on the Drawings.
2. Unlined channels and basins:
  - a. In both cut and fill, and levee and access road side slopes in cut: Vertical tolerance of none above and 3 inches below grade indicated on the Drawings on bottom and side slopes.
  - b. On top surface of levee and access road in both cut and fill, and levee and access road side slopes in fill: Vertical tolerance of none below and 3 inches above grade indicated on the Drawings.
3. Areas which are not under structures, concrete, asphalt, roads, pavements, sidewalks, dikes, and similar facilities:
  - a. Provide finish graded surfaces of either undisturbed soil, or cohesive material not less than 6 inches deep.
  - b. Intent of proceeding is to avoid sandy or gravelly areas.
4. Finish grading of surfaces:
  - a. Reasonably smooth, compacted, and free from irregular surface changes.
  - b. Provide degree of finish that is ordinarily obtainable from blade grader operations, except as otherwise specified.
  - c. Uniformly grade areas that are not under concrete.
  - d. Finish ditches and gutters so that they drain readily.

C. Compliance tests:

1. Frequency of testing: Periodic compliance tests will be made by the Project Manager to verify that compaction is meeting requirements previously specified.

### **3.05 ADJUSTING**

A. Finish grades of excavations, backfills, and fills:

1. Repair and reestablish grades to required elevations and slopes due to any settlement or erosion that may occur from action of the elements or any other cause prior to final acceptance.

### **3.06 PROTECTION**

A. Finish grades of backfills, cuts, excavations, and fills:

1. Protect newly graded areas from erosion and deterioration by action of the elements.

B. Ditches and gutters:

1. Maintain ditches and gutters free from detrimental quantities of debris that might inhibit drainage until final acceptance.

END OF SECTION



## **SECTION 31\_05\_15**

### **SOILS AND AGGREGATES FOR EARTHWORK**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Material requirements for soils and aggregates.
- B. The WSDOT/APWA Standard Specifications shall apply unless otherwise stated in this Section.

##### **1.02 REFERENCE**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Current Edition.

##### **1.03 SUBMITTALS**

- A. Product data:
  - 1. Material source.
  - 2. Gradation.
  - 3. Testing data.
- B. Quality control for aggregate base course:
  - 1. Test reports: Reports for tests required by Sections of Standard Specifications.
  - 2. Certificates of Compliance: Certificates as required by Sections of Standard Specifications.

##### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Storage and protection: Protect from segregation and excessive moisture during delivery, storage, and handling.

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS - GENERAL**

- A. General:
  - 1. Provide material having maximum particle size not exceeding 4 inches and that is free of trash, lumber, debris, leaves, grass, roots, stumps, and other organic matter.

2. Materials derived from processing demolished or removed asphalt concrete are not acceptable.
3. Comply with soil and aggregate material requirements in the Standard Specifications., unless specified otherwise.

B. Gravel borrow:

1. Crushed, processed, or naturally occurring granular material.
2. Free from wood waste and other extraneous materials.
3. The gradation for Gravel Borrow in Section 9-03.14 of the WSDOT/APWA Standard Specifications is superseded by the following:

Sieve Size	Percentage Passing
3-inch	100
2-inch	85-100
1-1/4 inch	75-100
No. 4	30-70
No. 40	0-25
No. 200	5 maximum
Sand Equivalent	50 minimum

4. Materials derived from processing demolished or removed asphalt concrete are not acceptable.

C. Foundation Material Class A:

1. Foundation Material Class A shall meet the requirements of Section 9-03.17 of the WSDOT/APWA Standard Specifications.

D. Non-shrink Cement Sand Grout:

1. Non-shrink cement sand grout shall be proportioned as follows:
  - a. 1 part high early strength (H.E.S.) cement.
  - b. 2 parts clean fine-grained sand by weight and well-mixed with sufficient water to obtain a stiff consistency.
2. Unpolished aluminum powder shall be added to the dry cement in the proportion of one heaping teaspoonful per sack of cement no more than 30 minutes before the grout mixture reaches its final in-place position.
3. The required strength of the non-shrink concrete or grout shall be  $f_c=4,000$  psi and be verified by the cube strength test. The strength shall be confirmed by Schmidt hammering of the pads.
4. Prior to placing the grout, the contact surface shall be thoroughly cleaned, roughened, and wetted with water. The grout shall be covered with burlap sacks after the initial concrete set and wetted at regular intervals until the required strength is obtained.

E. Crushed Surfacing:

1. Manufactured from ledge rock, talus, or gravel.
2. Uniform in quality and substantially free from wood, roots, bark, and other extraneous material.
3. Comply with Standard Specification 9-03.9(3).

- F. Controlled Density Fill (CDF):
1. CDF shall conform to the following specifications:
    - a. Portland Cement: Type I-II AASHTO M85.
    - b. Mineral Filler Admixtures: pozzolans or fly ash (ASTM C-618, Class F).
    - c. Aggregate: Washed Coarse Sand.
  2. CDF shall be used in the following proportions for 1 cubic yard. Batch weights may vary depending on specific weights of aggregates:
    - a. Portland Cement: 50 pounds per cubic yard.
    - b. Fly Ash: 250 pounds per cubic yard.
    - c. Washed Coarse Sand (SSD): 3,200 pounds per cubic yard.
    - d. Water: 50 gallons per cubic yard (Max)
  3. Add sufficient water to provide a 6 inch to 8 inch slump delivered in place at the job site.
- G. Manhole Construction:
1. Structural fill:
    - a. Meet Standard Specifications 9-03.14(3) or otherwise recommended by the manhole manufacturer.
    - b. Shall be backfilled within 2 feet of the ground surface in paved areas where compaction to 95 percent of maximum dry density (MDD) per ASTM D1557.
    - c. Shall be placed in 8 to 12-inch loose lifts, or a thickness to achieve required compaction.
    - d. If placed greater than 2 feet below the ground surface shall be compacted to at least 90 percent of the MDD.
  2. On-site material will not be reused as structural fill.

## **2.02 SOURCE QUALITY CONTROL**

- A. Source quality control testing shall be as required by the Standard Specifications.

## **PART 3 EXECUTION (NOT USED)**

END OF SECTION





## **SECTION 31\_23\_35**

### **TRENCHING**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Trench excavation and trench backfill for pipelines, manholes, vaults, and appurtenances.
- B. The WSDOT/APWA Standard Specifications shall apply unless otherwise stated in this Section.

##### **1.02 REFERENCES**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Most Current Edition.

##### **1.03 SUBMITTALS**

- A. As specified in Section 01\_33\_00 - Submittal Procedures.
- B. Product data on soils and aggregates.
  - 1. Material source.
  - 2. Gradation.
  - 3. Test data to demonstrate compliance with requirements as specified in this Section.
- C. Confirmation testing:
  - 1. Certification of Contractor's testing laboratory.
  - 2. Record copy report for tests performed by Contractor's testing laboratory.

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS**

- A. As specified in Section 31\_05\_15 - Soils and Aggregates for Earthwork or as stated in this Section.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Where trench excavation equals or exceeds a depth of 4 feet, the developer/contractor shall provide, construct, maintain and remove, as required, safety systems that meet the requirements of the Washington Industrial Safety and Health Act, RCW 49.17, including WAC 296-155. The trench safety systems shall be designed by a qualified person and meet accepted engineering requirements (see WAC 296-155-660).

### **3.02 TRENCH EXCAVATION**

- A. Excavate bottom of trench to depth indicated on the Drawings.
- B. The length of trench excavation in advance of pipe laying shall be kept to a minimum and in no case shall exceed 150 feet unless specifically authorized by the City Project Manager. The maximum permissible trench width between the foundation level to the top of the pipe shall be 40 inches for pipe 15 inches or smaller inside diameter; or 1-1/2 I.D. plus 18 inches for pipe 18 inches or larger. If the maximum trench width is exceeded without written authorization of the City Engineer, the developer/contractor will be required to provide pipe of higher strength classification or to provide a higher class of bedding, as required by the City Project Manager. Compaction.

### **3.03 TRENCH BACKFILL**

- A. Trench backfill shall be spread in layers and compacted by mechanical tampers of the impact type approved by the City Project Manager. The backfill material shall be placed in successive layers with the first layer not to exceed 2 feet above the pipe, and the following layers not exceeding 12 inches in loose thickness with each layer being compacted to the density specified below:
  - 1. Improved areas such as street and sidewalks shall be compacted to 90% of maximum dry density to within 3 feet of subgrade. The last 3 feet shall be compacted to 95% of maximum dry density.
  - 2. Unimproved area or landscape areas shall be compacted to 90% of maximum dry density.
- B. Suitable native material excavated during trenching shall be used for trench backfill unless notified by the City Project Manager that the native material is unsuitable. The City Project Manager his or her representative will examine excavated native material at the time of excavation to determine its suitability for use as backfill. Native material will be considered suitable for trench backfill if it is:
  - 1. Capable of attaining the degree of compaction specified in Section 3-9.4 Compaction.
  - 2. Within reasonable tolerance of optimum moisture content.
  - 3. Reasonably free of organic material, clay, frozen lumps, rocks or other deleterious matter.

- C. Unsuitable backfill material shall be removed from the site and hauled to an approved disposal site. The City Project Manager shall be provided with the location of all disposal sites to be used and also copies of the permits and approvals for such disposal sites.
- D. Imported material shall meet the requirements of Gravel Borrow as specified in Section 31\_05\_15 or Crushed Surfacing Top Course as specified in Section 9-03.3(3) of the WSDOT/APWA Standard Specifications and Section 3-20.5 of these Standards.

### **3.04 TRENCHING LONGITUDINAL TO ROADWAY**

- A. Sewer, water and storm lines that are within the roadway section and longitudinal to the roadway shall be backfilled with native material or Gravel Borrow as approved by the City Project Manager to the pavement patch level or subgrade, whichever applies. All other utility cuts such as gas, telephone, power, and cable TV shall be backfilled with controlled density fill.

### **3.05 TRENCHING TRANSVERSE TO ROADWAY**

- A. Utility trenching that crosses transversely to the roadway alignment will generally not be permitted unless it can be shown that alternatives such as jacking, auguring or tunneling are not feasible or unless the utility can be installed just prior to reconstruction or an overlay of the road. Should an open cut be approved, the trench shall be backfilled with controlled density fill. When high ground water levels are encountered, relief drains shall be installed at 15 feet intervals to prevent damming. The relief drains shall be 3 inch PVC and placed at a minimum 3 feet from finished grade or as otherwise approved by the City Project Manager.

### **3.06 FIELD QUALITY CONTROL**

- A. Provide field quality control for the Work as specified in Section 01\_45\_00 - Quality Control.
- B. Confirmation tests: As specified in Section 31\_00\_00 - Earthwork.
  - 1. Minimum frequency of confirmation testing:
    - a. At each test location include tests for each type or class of backfill from bedding to finished grade.
    - b. For trenches: 1 location every 150 linear feet.
    - c. In open fields: 2 locations every 1,000 linear feet or 1 location every 200 cubic yards.
    - d. Along dirt or gravel road or off traveled right-of-way: 1 location at every 500 linear feet.
    - e. Crossing paved roads: 1 location at each crossing.
    - f. Under pavement cuts or within 2 feet of pavement edges: 1 location every 400 linear feet.

- C. Compliance tests:
1. Make periodic compliance tests to verify that compaction is meeting requirements as specified in this Section.
  2. Perform remedial work if compaction test fails to meet specified requirements using one of the following methods:
    - a. Remove and replace backfill at the proper density.
    - b. Other means acceptable to the City Project Manager.
  3. Retesting:
    - a. Costs of retesting: Contractor is responsible for the costs of retesting required to confirm and verify that remedial work has brought compaction within specified requirements.
    - b. Contractor's confirmation tests during performance of remedial work:
      - 1) Performance: Perform tests in manner acceptable to the Engineer.
      - 2) Frequency: Double amount specified for initial confirmation tests.

END OF SECTION

**SECTION 31\_50\_00**  
**TRENCH SAFETY SYSTEMS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for designing, providing, maintaining, and removing excavation support and protection.

**1.02 REFERENCES**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Current Edition.

**1.03 SUBMITTALS**

- A. Shop Drawings and calculations:
  - 1. Calculations for different load, support, and other conditions that occur during the sequence of installation of shoring, construction of facilities protected by shoring, and sequence of removal of shoring.
  - 2. Sketches showing the condition at various stages of installation and removal of shoring.
  - 3. Show on plan shoring, structures, pipelines, and other improvements located near shoring.
  - 4. When utilities penetrate shoring, show location of penetrations on elevation of sides of shoring.
  - 5. Show details for ground support and sealing around utility penetrations.
  - 6. Indicate method used for installing driven shoring.
- B. Control points and schedule of measurements:
  - 1. Submit location and details of control points and method and schedule of measurements.
  - 2. Survey data.
- C. Detailed sequence of installation and removal of shoring:
  - 1. Consider effects of ground settlement in sequence of installation and removal of shoring.
  - 2. Provide sketches showing conditions at various stages in sequence of installation and removal of shoring.

- D. Furnish Submittals for excavation support and protection as complete package and include items required in this Section:
  - 1. Incomplete Submittals will not be reviewed and will be returned for resubmittal as complete package.

#### **1.04 SEQUENCING**

- A. Do not begin construction of any shoring or excavation operations until:
  - 1. Submittals for shoring and dewatering have been accepted.
  - 2. Control points as specified in this Section and on existing structures and other improvements as needed have been established and surveyed to document initial elevations and locations.
  - 3. Materials necessary for installation are on site.
- B. Furnish Submittals a minimum of 60 days prior to scheduled date to begin excavation work.

### **PART 2 PRODUCTS**

#### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Where trench excavation equals or exceeds a depth of 4 feet, the developer/contractor shall provide, construct, maintain and remove, as required, safety systems that meet the requirements of the Washington Industrial Safety and Health Act, RCW 49.17, including WAC 296-155. The trench safety systems shall be designed by a qualified person and meet accepted engineering requirements (see WAC 296-155-660).

### **PART 3 EXECUTION**

#### **3.01 CONSTRUCTION**

- A. Installation of shoring:
  - 1. Install means for providing safe and stable excavations as indicated in Submittals.
- B. Removal of shoring:
  - 1. Except for slurry walls, and similar shoring systems, remove shoring by completion of Work.
  - 2. Select shoring system and method of removal, which will minimize soil that sticks to shoring from creating voids and causing settlement.
  - 3. To prevent settlement caused by pulling shoring, fill voids with pressure injected grout:
    - a. Inject grout starting at bottom of void and progressively fill void to grade.
    - b. Minimize length of shoring removed ahead of grouting operation and limit time void is left ungrouted to prevent void from closing up before being grouted.
  - 4. Pressure preservative treated wood lagging may be left in place if acceptable to the Project Manager.

- C. Control points:
  - 1. Establish control points on shoring and on structures and other improvements in vicinity of excavation for measurement of horizontal and vertical movement:
    - a. Set control points on shoring support system:
      - 1) Set points at distances not exceeding 25 feet at each support level.
  - 2. Promptly upon completion of construction of control points survey control points. Submit copy of field notes with measurement.
  - 3. Perform horizontal and vertical survey and measurement of control points at least once every week.
    - a. Field notes shall show current measurement and change in measurement from first measurement taken.
  - 4. Set control points on corners of existing structures and on curbs, manholes, and other improvements.
  - 5. Provide plumb bobs with horizontal targets indicating original position of plumb bobs in relation to shoring at control points.
- D. Maintenance:
  - 1. Where loss of soil occurs, plug gap in shoring and replace lost soil with fill material acceptable to the Project Manager.
  - 2. Where measurements and observations indicate possibility of failure or excessive movement of excavation support, determined in accordance with general engineering design practice, take appropriate action immediately.

END OF SECTION





## **SECTION 32\_01\_15**

### **PAVEMENT RESTORATION AND REHABILITATION**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Resurfacing roads and paved surfaces in which surface is removed or damaged by installation of new work.
- B. The WSDOT/APWA Standard Specifications shall apply unless otherwise stated in this Section.

##### **1.02 REFERENCES**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Most Current Edition.

##### **1.03 SUBMITTALS**

- A. Mix designs:
  - 1. Prior to placement of asphalt concrete, submit full details, including design and calculations for the asphalt concrete mix proposed.
  - 2. Submit gradation of aggregate base.
  - 3. Submit proposed mix design of portland cement concrete.

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS**

- A. Aggregate base course: As specified in Section 31\_05\_15 - Soil and for Earthwork.
- B. Asphalt concrete pavement patch shall be HMA Class 1/2-inch PG 64-22 meeting the requirements of Standard Specifications Section 5-04.
- C. Portland cement concrete replacement material: materials meeting the requirement of Standard Specifications Section 5-05.

##### **2.02 EQUIPMENT**

- A. Roads, pavements, parking areas, and walks:
  - 1. Equipment requirements: Good condition, capable of performing work intended in satisfactory manner.

- B. Cement Concrete Pavement Resurfaced with Asphalt Concrete:
1. Streets which have cement concrete pavements surfaced with asphalt concrete shall be patched as shown on Standard Drawing 326.
  2. The cement concrete portion of the patch shall be Class 4000, HES. The thickness shall be 1 inch thicker than the existing concrete base or 6 inches, whichever is greater. The top surface of the concrete patch shall match the top surface of the existing concrete base; in no case shall the top of the concrete be higher than the top of the existing concrete base. Brush finishing will not be required. Joints shall be placed to match existing or as directed by the Project Manager.
  3. Asphalt concrete plant mix shall not be placed until 3 days after the cement concrete base has been placed or otherwise permitted by the Project Manager. The asphalt concrete plant mix shall not be placed until the concrete base has received a tack coat of CRS-2 at a rate of 0.12 to 0.20 gallons per square yard. The edges of the existing asphalt and castings shall also be painted with the tack coat. The asphalt concrete pavement shall then be placed, leveled, and compacted to conform to the surface of the existing asphalt pavement. Immediately, thereafter, all joints between the new and original asphalt pavement shall be painted with CSS-1 asphalt emulsion and covered with dry sand before the asphalt solidifies.
  4. Asphalt shall be compacted to 92 percent of maximum density as determined by WSDOT Test Method 705.
- C. Asphalt Concrete on Granular Base:
1. After the Crushed Surfacing Top Course subgrade has been leveled and compacted, asphalt concrete pavement shall be placed to a thickness of 1 inch greater than the existing asphalt pavement depth or to a minimum of 3 inches, whichever is greater. Asphalt shall be compacted to 92 percent of maximum density as determined by WSDOT Test Method 705.
- D. Temporary Pavement Patching:
1. The contractor shall furnish, place and maintain temporary pavement patching, at locations as directed by the Project Manager, until such time as a permanent patch of permanent paving can be made.
  2. Temporary pavement patch shall consist of a 2 inch thick course asphalt concrete pavement over a 4 inch course of Crushed Surfacing Top Course. The crushed surfacing shall be compacted to 96 percent maximum density as determined by one of the methods described in Section 3-14.7(1) of these Specifications. Asphalt shall be compacted to 90% of maximum density as determined by WSDOT Test Method 705.
  3. Temporary asphalt patching shall be required where roadway or walk is needed for vehicular or pedestrian traffic, during the construction period, until permanent pavement and sidewalks can be constructed.
  4. In the event that the temporary surface subsides after the initial placement, additional asphalt concrete pavement and Crushed Surfacing shall be applied to maintain the surface.

## **PART 3 EXECUTION**

### **3.01 CONSTRUCTION REQUIREMENTS**

#### **A. General:**

1. Pavement patching shall be scheduled to accommodate the demands of traffic and shall be performed as rapidly as possible to provide maximum safety and convenience to public traffic.
2. The placing and compaction of the trench backfill and the preparation and compaction of the subgrade shall be in accordance with the various applicable sections of the WSDOT/APWA Standard Specifications except as modified by these Specifications.
3. Before the pavement patch is to be constructed the pavement shall be saw cut so that the marginal edges of the patch will form a rectangular shape with straight edges and vertical faces.
4. Signs, barricades, lights and other warning devices shall be installed per the requirements of the "Manual on Uniform Traffic Control Devices" and they shall be maintained 24 hours a day until the patching work is completed and ready for traffic. Pavement removal and temporary asphalt replacement:
5. Take appropriate precautions during pavement repair and replacement efforts to prevent clogging of adjacent permeable materials.
6. Compaction of the subgrade shall be completed prior to the required patching. Subgrade compaction shall be to 95% as determined by one of the following methods:
  - a. ASTM D1556 (sand cone method).
  - b. ASTM D2167 (rubber balloon method).
  - c. ASTM D2922 (nuclear method).

#### **B. Cement Concrete Pavement:**

1. After the Crushed Surfacing Top Course subgrade for the pavement has been constructed and compacted to line and grade, the cement concrete pavement patch shall be placed and struck off to a thickness of 1 inch greater than the existing pavement or 8 inch minimum, whichever is greater. All work shall be in accordance with Section 5-05 of the WSDOT/APWA Standard Specifications, except as modified by these Specifications and Standard Drawings 315, 316, or 317.
2. Through joints and dummy joints shall be placed to match existing or as directed by the Project Manager. The surface of the concrete patch shall be finished and brushed with a fiber brush. Approved curing compound shall be placed on the finished concrete immediately after finishing

#### **C. Curb, gutter, and sidewalk replacement:**

1. Where any concrete curb, gutter, or sidewalk has been removed or displaced, replace to nearest construction joints with new Class A curb, gutter, or sidewalk to same dimensions and finish as original construction that was removed:
  - a. Provide expansion joints of same spacing and thickness as original construction.

### **3.02 FIELD QUALITY CONTROL**

- A. Tests:
  - 1. Asphalt concrete as specified in Standard Specifications Section 5-04.
  - 2. Concrete as specified in Standard Specifications Section 5-05.
- B. Inspection:
  - 1. Asphalt concrete:
    - a. Lay 10-foot straightedge parallel to centerline of trench when the trenches run parallel to street, and across pavement replacement when trench crosses street at angle.
    - b. Remove and correct any deviation in cut pavement replacement greater than 1/4 inch in 10 feet.
  - 2. Portland cement concrete replacement pavement:
    - a. Lay 10-foot straightedge either across pavement replacement or longitudinal with centerline of gutter or ditch.
    - b. Remove and correct any deviation in cut pavement replacement greater than 1/4 inch in 10 feet.

END OF SECTION

**SECTION 32\_12\_15**  
**ASPHALTIC CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section specifies requirements for one or more layers of plant-mixed hot mix asphalt (HMA) on prepared foundations or base in accordance with this Section and in conformity with the lines, grades, thicknesses, and typical cross-sections indicated in the Drawings.
- B. This Section includes references to portions of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction (WSDOT Standard Specifications) and Washington State Department of Transportation Standard Plans (WSDOT Standard Plans). Such references are to define the technical standards to be met for this Section; only the technical standards are referenced. Administrative provisions (such as Measurement and Payment) of the WSDOT Standard Specifications or WSDOT Standard Plans shall not apply to this Contract in any instance.
- C. References to Engineer in the WSDOT Standard Specifications shall mean Project Representative.

**1.02 REFERENCES**

- A. This Section incorporates by reference the latest revisions of the embedded standard referenced herein. In case of conflict between the requirements of this Section and those of a listed document, the requirements of this Section shall prevail:
  - 1. City of Everett:
    - a. Volume I: Design and Construction Specifications, Current Edition.
  - 2. Washington State Department of Transportation:
    - a. Washington State Department of Transportation Standard Specifications For Road, Bridge, and Municipal Construction, newest edition.
    - b. Washington State Department of Transportation Standard Plans For Municipal Construction, newest edition.
    - c. WSDOT Standard Operating Procedure (SOP) 732, newest edition.
    - d. WSDOT Materials Manual M 46-01, newest edition.

**1.03 SUBMITTALS**

- A. Procedures: Section 01\_33\_00 - Submittal Procedures.
- B. Mix Design submittal as required per WSDOT Standard Specifications for materials in this Section.
- C. Product data and gradation for aggregate for Materials in this Section.

## **PART 2    PRODUCTS**

### **2.01    MATERIALS**

- A.    HMA per WSDOT Standard Specification 5-04.2.
- B.    Materials for Ballasting and Crushed Surfacing per WSDOT Standard Specification 4-04.2.
- C.    Use of Substitute Materials per WSDOT Standard Specification 5-04.2(1).
- D.    Tack Coat shall be CSS-1 or CSS-1h emulsified asphalt per WSDOT Standard Specification 5-04.
- E.    Surface Sealant (Fog Seal) shall be CSS-1 or CSS-1h emulsified asphalt per WSDOT Standard Specification 9-02.1(6).
- F.    Anti-Stripping Additive per WSDOT Standard Specification 9-02.4.
- G.    Temporary Pavement Patch Material shall be per WSDOT Standard Specification 5-04.2 (Hot Mix).
- H.    Temporary Pavement Markings per WSDOT Standard Specification 8-23.

### **2.02    EQUIPMENT**

- A.    Mixing Plant per WSDOT Standard Specifications 5-04.3(3)A.
- B.    Hauling Equipment per WSDOT Standard Specification 5-04.3(3)B.
- C.    Paving and Related Equipment per WSDOT Standard Specification 5-04.3(3)C.
- D.    Tack Coat Distributor Equipment:
  - 1.    The distributor equipment shall be capable of distributing a uniform tack coat in controlled amounts.
  - 2.    The distributor shall have a capacity of not less than 1,000 gallons, and shall be so designed, equipped, maintained, and operated that asphalt Material of an even heat shall be uniformly applied at the required rate.
  - 3.    The power for operating the pressure pump shall be supplied by a power unit which provides a uniform spray from each of the nozzles across the spray bar and extensions.
  - 4.    In addition, the distributor shall be equipped with the following:
    - a.    Thermometer to indicate the temperature of the tack coat material.
    - b.    Thermometer installed permanently in the tank to indicate temperatures at all times.
    - c.    Hand operated spray equipment for use only on inaccessible and irregularly shaped areas.
    - d.    10-foot spray bar with extensions.

- 5. Pressure pump and gauge, and volume gauge so located as to be observed easily by County inspection staff from the ground:
    - a. Tachometer to control accurately the speed and spread of asphalt.
  - 6. The Project Representative may allow hand operated spray equipment separate from the distributor equipment for inaccessible and irregularly shaped areas if the Contractor can demonstrate acceptable tack coat application.
- E. Compaction Rollers per WSDOT Standard Specification 5-04.3(9)A.
  - F. Smoothness Testing Equipment per WSDOT Standard Specification 5-04.3(13).
  - G. Equipment for Ballasting and Crushed Surfacing per Section 31\_05\_15.

## **2.03 MIXES**

- A. HMA shall be composed of asphalt binder and mineral materials as may be required, mixed in the proportions specified to provide a homogeneous, stable, and workable mixture.
- B. HMA Mix Design per WSDOT Standard Specification 5-04.2(1):
  - 1. HMA (CL 1/2-inch), PG 64-22 for Wearing Course.
  - 2. HMA (CL 1-inch), PG 64-22 for Leveling Course.
- C. HMA Driveway per WSDOT Standard Specification 5-04.3(16):
  - 1. HMA (CL 1/2-inch), PG 64-22.

## **2.04 FABRICATION/MIXING**

- A. Heating of Asphalt Binder per WSDOT Standard Specification 5-04.3(3)A.
- B. HMA Mixing Process per WSDOT Standard Specification 5-04.3(6).
- C. Anti-Stripping Additive per WSDOT Standard Specification 5-04.3(6).

## **2.05 SOURCE QUALITY CONTROL**

- A. As required per WSDOT Standard Specifications for testing of materials in this Section.

# **PART 3 EXECUTION**

## **3.01 SUBGRADE AND BASE COURSE PREPARATION**

- A. Subgrade preparation per WSDOT Standard Specification 2-06:
  - 1. Exception: Includes all survey and survey staking.
- B. Gravel Base per WSDOT Standard Specification 4-02.
- C. Ballast and Crushed Surfacing Course shall be placed per WSDOT Standard Specification 4-04.



### **3.02 PREPARATION**

- A. Preparation of Street Surfaces per WSDOT Standard Specification 5-04.3(4).
- B. Utility adjustments per WSDOT Standard Specification 1-05.14 and 7-05.3(1).

### **3.03 INSTALLATION:**

- A. The limits of flexible pavement replacement shall comply with the relevant City's standard details provided in the drawings.
- B. Spreading and Finishing per WSDOT Standard Specification 5-04.3(7).
- C. Applying Tack Coat per WSDOT Standard Specification 5-04.3(4).
- D. HMA Compaction per WSDOT Standard Specification 5-04.3(10)A.
- E. HMA Joints per WSDOT Standard Specification 5-04.3(12).
- F. Weather Limitation per WSDOT Standard Specification 5-04.3(1).
- G. Paving and Planing Under Traffic per WSDOT Standard Specification 5-04.3(2).
- H. Crack Sealing of Pavement Surfaces per WSDOT Standard Specification 5-04.3(4)A.
- I. Surface Sealing (fog seal) of pavement surfaces per WSDOT Standard Specification 5-04.3(15).
- J. Road Approaches and sidewalks per WSDOT Standard Specification 5-04.3(16).
- K. Temporary Pavement Patching:
  - 1. Temporary Pavement Patch Material shall be in accordance with Section 2.01.
  - 2. Furnish, place and maintain a 4-inch minimum compacted thickness of Temporary Pavement Patch material over open cuts. Such temporary asphalt patching will be required where vehicular or pedestrian traffic must be accommodated and permanent pavement patching cannot be placed immediately. Trench backfill shall be compacted as specified in Section 31\_23\_35 - Trenching.
  - 3. Temporary Pavement Patch material shall be compacted and leveled to coincide with adjacent surfaces.
  - 4. In the event that the temporary surface subsides after the initial placement, additional Temporary Pavement Patch material shall be placed over the subsided material as necessary to maintain a surface level with existing pavement. Maintain such temporary patching in a timely manner.
  - 5. Prior to final restoration of the pavement remove the Temporary Pavement Patch material and such underlying material as may exist, clean the exposed face of the existing pavement to remain, and restore the pavement.
- L. Temporary Pavement Markings per WSDOT Standard Specifications 5-02.

### **3.04 FIELD QUALITY CONTROL**

- A. Acceptance of prepared subgrade and compaction testing per WSDOT Standard Specification 2-06.3 and 2-03.3(14).
- B. Acceptance of tack coat application method and rate per WSDOT Standard Specification 5-04.3(4).
- C. HMA Mixture Acceptance per WSDOT Standard Specification 5-04.3(9).
- D. Aggregate Acceptance prior to mixing HMA per WSDOT Standard Specification 5-04.3(8).
- E. HMA Mixture Acceptance per WSDOT Standard Specification 5-04.3(9)D.
- F. HMA Compaction Acceptance per WSDOT Standard Specification 5-04.3(10).
- G. Surface Smoothness per WSDOT Standard Specification 5-04.3(13).

END OF SECTION



## **SECTION 32\_16\_14**

### **CONCRETE CURBS, GUTTERS, AND SIDEWALKS**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Concrete curbs, gutters, sidewalks, driveways, access ramps, and alley intersections.
- B. Performance requirements: Construct various types of concrete curb, gutter, sidewalk, driveways and alley intersections to dimensions and details indicated on the Drawings.

##### **1.02 REFERENCES**

- A. City of Everett:
  - 1. Volume I: Design and Construction Specifications, Current Edition.
- B. Washington State Department of Transportation (WSDOT):
  - 1. Standard Specifications, Most Current Edition.

##### **1.03 SUBMITTALS**

- A. Product data: Submit data completely describing products.
- B. Samples: Submit samples when requested.

#### **PART 2 PRODUCTS**

##### **2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Performance requirements: Construct various types of concrete curb, gutter, sidewalk, driveways and alley intersections to dimensions and details indicated on the Drawings.

##### **2.02 MATERIALS**

- A. Cement Concrete Sidewalks:
  - 1. Materials shall meet the requirements of the following section of the WSDOT/APWA Standard Specifications:
    - a. Cement Concrete Sidewalks: Standard Section 8-14.
    - b. Portland Cement: Standard Section 9-01.
    - c. Aggregates: Standard Section: 9-03.
    - d. Premolded Joint Filler: Standard Section 9-04.
    - e. Concrete Curing Materials and Admixtures: Standard Section 9-23.
  - 2. Slump of concrete mix shall not exceed 3-1/2 inches. Lamp black coloring agent for matching the color of newly constructed cement concrete sidewalks

to the color of adjacent existing cement concrete sidewalks shall be added to the concrete during mixing in an amount not to exceed 1-1/2 pounds per cubic yard of concrete. No lamp black shall be used in curb ramps. The use of Calcium Chloride as an admixture is prohibited.

**B. Curb and Gutter:**

1. Materials shall meet the requirements of the following Sections of the WSDOT/APWA Standard Specifications:
  - a. Portland Cement: Standard Section 9-01.
  - b. Aggregates: Standard Section 9-03.
  - c. Reinforcing Steel: Standard Section 9-07.
  - d. Premolded Joint Filler: Standard Section 9-04.
  - e. Curing Compounds: Standard Section 9-23.
2. The Portland Cement Concrete shall meet the requirements of Sections 5-05 of the WSDOT/APWA Standard Specifications. Concrete mix for curbs shall be Class 3000. Slump of the concrete shall not exceed 3-1/2 inches.
3. All new curb and gutter shall be placed over not less than 4 inches of Crushed Surfacing Base Course compacted to 95 percent maximum density.
4. Forms may be of wood or metal at the option of the contractor, provided that the forms as set will result in a curb, or curb and gutter of the specified thickness, cross section, grade and alignment shown on the drawings and City of Standard Drawing 307.

**C. Cement Concrete Driveways**

1. Materials shall meet the requirements of the following sections of WSDOT/APWA Standard Specifications:
  - a. Cement Concrete Driveway Entrances: Standard Section 8-06.
  - b. Portland Cement: Standard Section 9-01.
  - c. Fine Aggregate: Standard Section 9-03.
  - d. Coarse Aggregate: Standard Section 9-03.
  - e. Joint Materials: Standard Section 9-04.
  - f. Curing and Admixtures: Standard Section 9-23.
2. The concrete mix shall be as specified for Class 3000 and the slump of the concrete shall not exceed 3 inches. A minimum of 4 inches of Crushes Surfacing Base Course shall be compacted to 95 percent maximum density prior to any placement of concrete.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

**A. Verification of conditions:**

1. Verify field conditions, including subgrade condition and interferences, before beginning construction.

### **3.02 PREPARATION**

**A. Concrete Cement Sidewalks:**

1. The curb and gutter section shall be placed prior to the placement of the sidewalk section unless otherwise directed by the Project Manager.

2. Subgrade shall be approved by the public works inspector prior to concrete being placed. Generally, 1/4-inch V-grooves deep are to be placed on 5 feet centers, but at the discretion of the inspector this may be changed to make for a better match with the surrounding area. Expansion joints shall be placed to match those placed in curbs if new sidewalk is poured adjacent a curb and gutter, in all other cases the maximum spacing on expansion joints shall be 30 feet center to center. Dummy joints shall be 1/2 inch by 1-1/2 inch on 15 foot centers. Through joints shall be 1/2 inch by 4 inches.
  3. A minimum distance of 3 feet is required from the face of curb to any obstruction on or within the sidewalk unless otherwise noted. It is expected there will be sufficient suitable native material excavated from various portions of the improvement to fill low areas in the sidewalk subgrade and planting strip area when needed.
  4. Where there is insufficient suitable native material on the project site, the contractor shall furnish, place and compact Gravel Borrow. All sidewalks shall be constructed over a minimum 4 inches of Crushed Surfacing Base Course meeting the requirements of Section 3-02 of the Standard Specifications and Sections 9-03.9(3) of the WSDOT/APWA Standard Specifications compacted to 95 percent of maximum density.
- B. Curb and Gutter
1. The standard curb and gutter section used in Everett shall be Type A-1 per Standard Drawing 307. No new curb and gutter is to be placed until forms have been checked and approved for line, grade and compaction by the public works inspector.
- C. Cement Concrete Driveways
1. No driveway approach shall project beyond the extension of the side property line to the curb unless the owner of the adjacent property is a co-signer of the driveway permit.
  2. There must be at least 20 feet of full height curb between driveways serving any one property frontage.
  3. The City Project Manager shall have the authority to restrict the number, size, and location of access driveways.
  4. There must be at least 6 feet of full height curb between driveways on adjacent lots.
  5. Driveway locations, lengths, etc. are further clarified in the Everett Municipal Code and must conform accordingly. In critical on-street parking areas, additional off-street parking space(s) are required for the on-street spaces eliminated by any driveway(s).
  6. Driveway aprons shall be constructed per Standard Drawings 315, 316, or 317 as applicable. The minimum thickness of the driveway apron shall be 6 inches, placed over a minimum of 4 inches of Crushed Surfacing Base Course compacted to 95 percent maximum density over a compacted subgrade. In all cases, subgrade and rock grade shall be approved by the public works inspector prior to concrete being placed. Driveway aprons over 15 feet wide shall have an expansion joint placed in the center of the apron.
  7. In locations where a new driveway is to be constructed and sidewalk and curb and gutter is already existing, it must be totally removed and replaced to driveway standards. It is not permissible to "knock-off" existing curb and install driveway apron, the total curb and gutter section must be removed, either by

saw cutting or to the nearest expansion joint, and replaced to driveway standards.

8. New driveways installed in areas where curb and gutter improvements are not existing, and not required to be installed, shall be paved from the existing edge of pavement to the property line regardless of whether the remainder of the driveway on the private property is paved.
9. In areas not fully improved with curbs and sidewalks, the elevation of the driveway at the point where it crosses the property line shall not be more than 3 inches higher than the elevation of the centerline of the existing paved street if driveway is rising on the private property side and no lower than level with the elevation of the centerline of the existing street if the driveway is going down on the private property side.

### 3.03 INSTALLATION

#### A. Cement Concrete Sidewalks:

1. Forms and Fine Grading:
  - a. Wood forms shall be 2-inch by 4-inch (nominal) in lengths of not less than 10 feet. Steel forms may be used upon approval of the Project Manager. Forms shall be staked to a true line and grade. A subgrade template shall then be set upon the forms and the fine grading completed so that the subgrade will be a minimum of 3-5/8 inches below the top of the forms. Forms shall be provided around all street name sign posts and traffic sign posts that are placed in concrete areas. Forms used for this purpose shall be 1 foot square or 1 foot minimum diameter cutout, as approved by the Project Manager.
2. Placing and Finishing Concrete:
  - a. The concrete shall be spread uniformly between the forms and thoroughly compacted with a steel shod strike-board. Through joints and dummy joints shall be located and constructed in accordance with the Standard Drawings. In construction of through joints, the premolded joint filler shall be adequately supported until the concrete is placed on both sides of the joint.
  - b. Whenever castings are located in the sidewalk area, joints shall be installed at the casting location to control cracking of the sidewalk. If spacing of joints or scoring is such that installation of joint material would be unsuitable, the contractor shall install rebar to strengthen the sidewalk section.
  - c. Dummy joints shall be formed by first cutting a groove in the concrete with a tee bar of a depth equal to, but not greater than the joint filler material, and then working the premolded joint filler into the groove. Premolded joint filler for both through and dummy joints shall be positioned in true alignment at right angles to the line of the sidewalk and be normal to and flush with the surface. Where the sidewalk will be contiguous with the curb, it shall be constructed with a thickened edge as shown on Standard Drawings 312 and 313.
  - d. After the concrete has been thoroughly compacted and leveled, it shall be floated with wood floats and finished at the proper time with a metal float.
  - e. The surface shall be brushed with a fiber hair brush of an approved type in a transverse direction except that at driveway and alley crossings it shall be brushed longitudinally. The placing and finishing of all sidewalk

- shall be performed under the control of the Project Manager, and the tools used shall meet with his approval.
- f. After brush finish, the edges of the sidewalk and all joints shall be lightly edged again with an edging tool to give it a finished appearance.
    - 1) The surface finish and joint pattern may vary at the direction of the Project Manager in order to match existing sidewalk.
- 3. Curing and Projection:
    - a. The curing materials and procedures specified in Section 5-05.3(13) of the WSDOT/APWA Standard Specifications shall prevail, except that white pigment curing compounds shall not be used on sidewalks.
    - b. The contractor shall have readily available sufficient protective covering, such as waterproof paper or plastic membrane, to cover the pour of an entire day in event of rain or other unsuitable weather.
    - c. The sidewalk shall be protected against damage or defacement of any kind until it has been accepted by the Project Manager. Sidewalk which is not acceptable to the Project Manager because of damage or defacement, shall be removed and replaced by the contractor.
  - 4. Curing and Hot Weather:
    - a. In periods of low humidity, drying winds, or high temperatures, a fog spray shall be applied to concrete as soon after placement as conditions warrant in order to prevent the formation of shrinkage cracks. The spray shall be continued until conditions permit the application of a liquid curing membrane or other during media. The Project Manager shall make the decision when the use of a fog spray is necessary.
  - 5. Cold Weather Work:
    - a. When the air temperature is expected to reach the freezing point during the day or night, the concrete shall be protected from freezing. The contractor shall provide a sufficient supply of straw, hay, grass, earth, blankets, or other suitable blanketing material and spread it over the pavement to a sufficient depth to prevent freezing of the concrete. The contractor shall be responsible for the quality and strength of the concrete thus cured. Any concrete injured by frost action or freezing shall be removed and replaced at the contractor's expense in accordance with these Specifications.
  - 6. Through and Contraction Joints
    - a. Standard locations for through joints for sidewalks are:
      - 1) At street margins produced and at 30 foot intervals.
      - 2) To separate concrete driveway, stairways, curb ramps and their landings from sidewalks.
      - 3) Around the vertical barrel of fire hydrants, around utility poles and large diameter underground utility cover castings when located in the sidewalk area.
      - 4) Longitudinally between concrete walks, curbs, paved planting strips and solid masonry or concrete walls where they abut.
      - 5) To match as nearly as possible, the through joints in the adjacent pavement and curb when sidewalk abuts to curb.
    - b. Transverse contractions joints (dummy joints) shall be constructed with premolded material 3/8 inch wide by 2 inches depth, and set at 15 foot intervals, or as decided by the Project Manager. At no time will dummy joint spacing exceed 15 feet.



- c. Transverse and longitudinal through joints as shown on Standard Drawings 312, and 315 through 317 shall be 3/8 inch thickness premolded non-extruding joint material, cut to a width equal to the full depth of the concrete where located, plus 1/2 inch. When installed, they shall be placed with top edge 1/8 inch below the finished surface of the concrete, in a perpendicular plane to the surface and with the bottom edge embedded in the subgrade. All joints shall be in straight alignment, except where placed in curved locations.
- d. Construction joints for sidewalks shall conform to the applicable requirements for through joints. The top edge shall be 1/8 inch below the finished surface of the sidewalk. At no time will joint spacing exceed 15 feet.

B. Curb and Gutter:

1. Placing Concrete

- a. The subgrade shall be properly compacted and brought to specified grade before placing concrete. The subgrade shall be thoroughly dampened immediately prior to the placement of concrete. Concrete shall be spaded and tamped thoroughly into the forms to provide a dense, compacted concrete free of rock pockets. The exposed surfaces shall be floated, finished and brushed longitudinally with a fiber hair brush approved by the Project Manager.
- b. The rate of concrete placement shall not exceed the rate at which the various placing and finishing operations can be performed in accordance with these Specifications.
- c. If concrete is to be placed by the extruded method, the contractor shall demonstrate to the satisfaction of the Project Manager that the machine is capable of placing a dense, uniformly compacted concrete to exact section, line and grade.

2. Curing

- a. Transparent curing compounds shall be applied to all exposed surfaces immediately after finishing. Transparent curing compounds shall contain a color dye of sufficient strength to render the film distinctly visible on the concrete for a minimum period of 4 hours after application.
- b. The contractor shall have readily available sufficient protective covering, such as waterproof paper or plastic membrane, to cover the pour of an entire day in event of rain or other unsuitable weather.
- c. Additional requirements for curing in hot weather shall be as specified in Section 3.03A4 of this Section. Additional requirements for curing in cold weather may be found in Section 3.03A5 of this Section.

C. Cement Concrete Driveways

1. Excavation and Subgrade:

- a. Where directed by the Project Manager, unsuitable material in the subgrade shall be removed to a specific depth and backfilled with select material such as Gravel Borrow conforming to Section 32\_05\_15.
- b. Before any concrete is placed, the contractor shall bring the subgrade to the required line, grade, and cross section. The contractor shall maintain the subgrade in the required condition until the concrete is placed. Compaction shall be to 95 percent standard density.

2. Forms and Fine Grading
  - a. Forms for the straight sections of the driveway or alley return shall have a minimum thickness of 2 inches and be equal to the nominal depth of the concrete. Plywood or 1 inch lumber may be used on radii. All forms shall be securely staked and blocked to true line and grade.
  - b. A template shall be set upon the forms and the subgrade shall be fine graded to conform to the required section. The subgrade shall then be compacted to the approval of the Project Manager. Prior to placement of the concrete, the subgrade shall be thoroughly dampened.
3. Placing and Finishing
  - a. The concrete shall be spread uniformly between the forms and thoroughly compacted with an approved type of strike-board. Through joints and contraction joints shall be located and constructed in accordance with the Standard Drawings. In the construction of through joints, the premolded joint filler shall be adequately supported until the concrete is placed on both sides of the joint.
  - b. Contraction joints (dummy joints) shall be formed with a tee bar by first cutting a groove in the concrete to a depth equal to, but not greater than the joint filler material and then working the premolded joint filler into the groove. Premolded joint filler for both through and dummy joints shall be positioned in true alignment and at right angles to the center line of the driveway or alley return.
  - c. After the concrete has been thoroughly compacted and leveled, it shall be floated with wood floats and finished at the proper time with a metal float. Joints shall be edged with 1/4 inch radius edger and the driveway or alley return edges shall be tooled with 1/2 inch radius edger.
  - d. The surface shall be brushed in a transverse direction in relation to the center line of the driveway or alley return with a fiber hair brush of approved type.
4. Curing and Protection
  - a. The curing materials and procedures specified in Sections 5-05 and 9-23 of the WSDOT/APWA Standard Specifications.. The driveway and the alley return shall be protected against damage or defacement of any kind until acceptance by the Owner. Any driveway or alley return not acceptable, in the opinion of the Project Manager because of damage or defacement, shall be removed and be replaced by the contractor.
  - b. Before placing any concrete, the contractor shall have on the job site enough protective paper to cover the pour of an entire day, in event of rain or other unsuitable weather conditions.

### **3.04 FIELD QUALITY CONTROL**

- A. Tests:
  1. Curbs and gutters:
    - a. Test face, top, back, and flow line with 10 foot straightedge or curve template longitudinally along surface.
    - b. Correct deviations in excess of 1/4 inch.
  2. Gutters:
    - a. Frequency of testing: When required by the Project Manager, where gutters have slope of 0.8 foot per 100 feet or less, or where unusual or special conditions cast doubt on capability of gutters to drain.

- b. Test method: Establish flow in length of gutter to be tested by supplying water from hydrant, tank truck, or other source.
- c. Required results:
  - 1) 1 hour after supply of water is shut off, inspect gutter for evidence of ponding or improper shape.
  - 2) In event water is found ponded in gutter to depth greater than 1/2 inch, or on adjacent asphalt pavement, correct defect or defects in manner acceptable to the Project Manager without additional cost to the Contract.

### **3.05 ADJUSTING**

- A. Repair portions of concrete damaged while stripping forms or, when damage is severe, replace such work at no additional cost to the Contract. Evidence of repairs shall not be noticeable in the finished product.
- B. Remove and replace sections of work deficient in depth or not conforming to requirements indicated on the Drawings and specified in the Specifications at no additional cost to the Contract. Removal and replacement shall be the complete section between 2 joints.

END OF SECTION

**SECTION 32\_17\_23**  
**PAVEMENT MARKINGS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes: Pavement marking requirements for striping, text, and graphics; traffic signs.

**1.02 SUBMITTALS**

- A. Product data.
- B. Manufacturer's instructions.

**1.03 QUALITY ASSURANCE**

- A. Applicator qualifications: Minimum 5 years of experience of applying traffic markings with satisfactory performance record.
- B. Regulatory requirements: Comply with applicable requirements of governmental agencies having jurisdiction, including airborne emissions and industrial waste disposal requirements.

**1.04 PROJECT CONDITIONS**

- A. Apply pavement marking paint when:
  - 1. Pavement is clean and thoroughly dry.
  - 2. Ambient temperature is above 40 degrees Fahrenheit.
  - 3. Precipitation is not expected within 12 hours of completion of application.

**PART 2 PRODUCTS**

**2.01 PAVEMENT MARKING PAINT**

- A. Manufacturers: One of the following or equal:
  - 1. Dunn-Edwards Corp.
  - 2. Glidden Co.
  - 3. Sherwin Williams Co.
- B. Materials:
  - 1. Pavement marking paint, latex based: One of the following or equal:
    - a. Dunn-Edwards: No. W 801, Vin-L-Stripe, epoxy-modified acrylic-latex based paint.
    - b. Glidden: 63240 Series, UltraHide Latex Traffic Paint.
    - c. Sherwin Williams: Set fast acrylic water borne traffic marking paint.

2. Pavement marking paint, alkyd based: One of the following or equal:
  - a. Glidden: 63220 Series, UltraHide Traffic Paint.
  - b. Sherwin Williams: ProMar Alkyd Traffic Marking Paint.]
3. Masonry conditioner: The following or equal:
  - a. Sherwin Williams: B46WZ1000, Masonry Conditioner.
4. Colors:
  - a. Text: White.
  - b. Parking dividers: White.
  - c. No parking zone markings: Yellow.
  - d. No parking curb: Red.
  - e. Handicap zone markings: Blue and white.
  - f. Accessible parking dividers and accessible route: Yellow.
  - g. Directional arrows: White.
  - h. Driving lane dividers: White.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Remove dirt, oil, grease, and other materials which may affect paint adhesion.
- B. Apply masonry conditioner on weathered or sandblasted surfaces, brick, or stucco.

### **3.02 APPLICATION**

- A. Apply paint to obtain thickness recommended by paint manufacturer.
- B. Paint traffic control markings, including striping, directional arrows, cross walks and lettering, and handicap striping and symbols as indicated on the Drawings and in accordance with local governing agency's standards. Use stencils for arrows, lettering, and symbols.

END OF SECTION

## **SECTION 33\_01\_30.12**

### **CCTV INSPECTION OF SEWER PIPELINES**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes:
  - 1. Requirements for internal television inspection of the existing sewer pipelines before abandonment of existing pipe, condition assessment projects, rehabilitation projects, and after installation of new pipe.

##### **1.02 SUBMITTALS**

- A. Submittals as specified in Section 01\_33\_00 - Submittal Procedures.
  - 1. An example of this work consisting of 1 DVD or CD of previous sewer inspection work complete with audio commentary and inspection log(s).
    - a. Submitted DVD or CD shall show operational and structural defects in sewers that are of the same size as the sewers in this project.
    - b. Video footage and inspection logs will be reviewed to determine if the quality of the CCTV image is acceptable and if defects were properly identified and documented.
    - c. Samples shall be with the same camera and lighting equipment proposed for the work.
  - 2. Contractor shall be responsible for modifications to their equipment and/or inspection procedures to achieve report material of acceptable quality.
    - a. No work shall commence prior to approval of the material by the Project Manager.
    - b. Once accepted, the report material shall serve as a standard for the remaining work.
  - 3. Video footage shall be on a medium that is not re-recordable. Maintain a copy of inspection documentation (DVDs/CDs, databases, and logs) for the duration of the work and warranty period.
- B. After completing work, submit to the Project Manager:
  - 1. 1 copy of the finished DVDs/CDs with a separate DVD/CD for each of the existing sewer pipelines after cleaning.
    - a. Project Manager will review the video footage, not for accuracy of content, but to make sure that the required information is provided and the recording is of acceptable quality.
    - b. If the Project Manager determines that the DVD is defective or not of adequate quality, the Contractor shall CCTV inspect again at the Contractor's expense.

2. 1 copy of the finished DVDs/CDs including the CCTV inspection database meeting the following requirements:
  - a. Digital video format capabilities and requirements:
    - 1) Digital video files (Inspection Videos) shall be captured and/or recorded in the MPEG 1, 2, or 4 formats, or as specified by the Owner.
      - a) Video capture files shall be in MPEG format with linking to the database file(s) (Inspection Observations).
      - b) "Link" of the video capture file to the database observation file is required and each observation shall record the name of the video file and the frame number referencing the time in the video when the inspection was made.
      - c) Inspection observation(s) shall link to the video record in real-time.
      - d) Video shall include the following at a minimum:
        - (1) Date and time inspected.
        - (2) Line segment being inspected.
        - (3) Project Name & Project Number.
        - (4) Segment Location (Address).
        - (5) Footage location from Manhole.
        - (6) Defect Code and/or Type and Severity Rating.
        - (7) Use Owner manhole numbering system. If Owners do not have manhole numbers assigned to these manholes, number from upstream to downstream, keeping in order for entire alignment surveyed.
    - 2) A main, lateral, or node inspection may have one or many linked video files. Video recording can be paused and then restarted without generating a new file.
  - b. Image (photos) capture format capabilities and requirements:
    - 1) Inspection image files (pictures) shall have the ability to be exported to Industry Standard formats to include JPEG, BMP, and TIFF formats and be transferable by disk, DVD, and/or external hard drive to an external personal computer utilizing standard viewers and printers.
    - 2) Video image capture module shall be capable of collecting multiple color video frames of the defects found during inspection and then linked to the inspection reports. There shall not be a limitation to the number of pictures allowed per observation.
  - c. Database structure and requirements:
    - 1) Inspection database shall include an asset-based architecture which allows multiple inspections to be performed and retained as a historical record for the same physical location (asset). "Project-based" database architecture shall store and immediately show inspection history for each asset.
  - d. Functional requirements of the software:
    - 1) NASSCO PACP 4.2 certified and conform to its pipeline assessment procedures.
    - 2) Export to a PACP 4.2 (mdb) format.
    - 3) Use the Owner's GIS pipe and manhole layers as the base layer for creating the inspection database.

### **1.03 QUALITY CONTROL**

- A. Quality control as specified in Section 01\_45\_00 - Quality Control.

## **PART 2 PRODUCTS**

### **2.01 TELEVISION INSPECTION CAMERA(S)**

- A. Camera(s) shall be intrinsically safe and shall be operative in 100 percent humidity conditions. Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewer.

### **2.02 VIDEO RECORDING MEDIUM**

- A. Record and store video footage meeting the following requirements:
  - 1. DVD/CD recordings of sewer line inspections shall be made in high quality MPG Format on DVD/CD -R/+R disks formatted for use with PC systems.
  - 2. Audio portion of the composite DVD/CD shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report.

### **2.03 FOOTAGE COUNTER**

- A. A footage counter device, which measures the distance traveled by the camera in the sewer, shall be accurate to within 2 feet in 1,000 feet.

### **2.04 VIDEO TITLING**

- A. Video equipment shall include genlocking capabilities to the extent that computer generated data, (i.e., footage, date, size, address and location, etc.) as determined by the Project Manager can be overlaid onto the video, and both indicated on the television monitor and permanently recorded on the inspection videotape.

### **2.05 FLOW IN SEWERS**

- A. During CCTV inspections, provide temporary dry conditions in the sewer pipelines.
  - 1. Comply with bypassing requirements as specified in Section 33\_05\_11 - Temporary Bypass Pumping, if required.

## **PART 3 EXECUTION**

### **3.01 INSPECTION METHODS**

- A. Verbal commentary:
  - 1. Record on the audio track of the CD/DVD narrative of the location, upstream and downstream control points, date, and time of the inspection.



- B. Access:
  - 1. Project Manager shall have access to observe the monitor and other operations at all times. The system of cabling employed to transport the camera and transmit its signal shall not obstruct the camera's view.
- C. Inspection rate:
  - 1. Camera shall be pulled through the sewer in either direction, but inspections at each location shall be in the same direction. Maximum rate of travel shall be 30 feet per minute when recording.
  - 2. Camera must come to a complete stop when documenting defects.
- D. Image perspective:
  - 1. Camera image shall be down the center axis of the pipe when the camera is in motion.
    - a. Provide a 360-degree view of the pipe interior.
    - b. Points of interest shall be inspected and videotaped and shall include, but not be limited to, defects, encrustations, mineral deposits, debris, sediment, any location determined not to be clean, etc.
- E. Sewer identification:
  - 1. Inspection documentation shall include the sewer location.
- F. Project Manager approval:
  - 1. Project Manager will review DVDs/CDs and logs to ensure compliance with the requirements listed in this Specification and Contract Documents. If the sewer line is determined not to be adequately cleaned, as required in this Section, it shall be re-cleaned and CCTV inspected by the Contractor at no additional cost to the Owner.

END OF SECTION

## **SECTION 33\_01\_30.71**

### **CURED-IN-PLACE PIPE REHABILITATION - FULL STRUCTURAL (GRAVITY)**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. This Work consists of the supply and installation of full segment rehabilitation using cured-in-place pipe (CIPP) in existing circular sewers, CIPP end and connection sealing including all labor, materials, and equipment necessary to complete the work where indicated on the Plans.
- B. CIPP installation will take place prior to all manhole lining work. Lined-through manholes shall be opened prior to manhole coating Work.
- C. Service connections are defined as the interface of the lateral with the sewer main. Service connection sealing is not intended to be a lateral liner. No lateral Work is included in the portion of the Work for CIPP.
- D. Incidental Work to remove and replace manhole cones, risers, frame and cover, and concrete collars as necessary for the installation of the CIPP will be considered as part of the CIPP Work.

##### **1.02 REFERENCES**

- A. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. HS20 - Vehicle Loading Standards.
- B. ASTM International (ASTM):
  - 1. D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents.
  - 2. D638 - Standard Test Method for Tensile Properties of Plastics.
  - 3. D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - 4. D2990 - Standard Test Methods for Tensile, Compressive, Flexural Creep and Creep Rupture of Plastics.
  - 5. D3567 - Standard Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings.
  - 6. D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
  - 7. D5813 - Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems.
  - 8. F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin Impregnated Tube.
  - 9. F2019 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP)

Cured-in-Place Thermosetting Resin Pipe (CIPP) Using the UV-light Curing Method.

10. F2164 - Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure.

### **1.03 TERMINOLOGY**

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
  1. CIPP: Cured-in-place pipe liners for rehabilitation of existing sewers manhole to manhole.

### **1.04 SUBMITTALS**

- A. Submit as specified in Section 01\_33\_00 - Submittal Procedures.
  1. Document 00\_45\_14.06 - CIPP Rehabilitation Qualification Form.
- B. Certification showing the Contractor is currently licensed by the appropriate licensor to perform CIPP installation.
- C. Shop Drawings detailing short- and long-term properties with supporting test data of component materials and composite materials.
- D. CIPP manufacturer recommendations for material storage and temperature control, handling, insertion, installation, curing, trimming and finishing, and QA/QC procedures.
- E. CIPP manufacturer recommendations for material storage and temperature control, handling, insertion, installation, curing, trimming and finishing, and QA/QC procedures.
- F. Resin manufacturer's recommended heating requirements.
- G. Calculations of required minimum thickness for the CIPP in each pipe reach based on the internal inspection data and the CIPP manufacturer's specifications based on field verification of sizes and prior to ordering any material.
- H. CIPP end and connection sealing materials and methods to be used to reinstate connecting sewers.
- I. Detailed method for addressing CIPP sampling requirements including location and size of each sample, method of removal.
- J. CCTV Inspection reports.
- K. Certification stating CIPP tube has been manufactured in accordance with ASTM F1216 and resin is suitable for its intended use.
  1. Not applicable for CIPPSL.
- L. CIPP liner test reports.
- M. Warranties.

## **1.05 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

- A. Exercise adequate care during transportation, handling, and installation to prevent tearing, cutting, or otherwise damaging the CIPP material.
  - 1. Repair or replace damaged CIPP material in accordance with the manufacturer's recommendations and approval by the Project Manager before proceeding.

## **1.06 QUALIFICATIONS**

- A. Installer:
  - 1. Must have experience in CIPP lining sewers of a similar diameter and length as the proposed project.
    - a. Provide evidence of CIPP installer experience by submitting Document 00451F - Cured-in-Place Pipe Rehabilitation Qualification Form.
- B. Superintendent:
  - 1. Provide evidence of CIPP superintendent experience on experience by submitting Document 00451F - Cured-in-Place Pipe Rehabilitation Qualification Form.
  - 2. At least 1 of the qualified, named superintendents must be present at jobsite during CIPP construction activities.
  - 3. Submit certification showing the Contractor is currently licensed by the appropriate licenser to perform CIPP installation.
    - a. Certification shall be provided to the Project Manager before any materials are delivered to the job site.

## **1.07 WARRANTY**

- A. Provide warranty as specified in Section 01\_78\_36 - Warranties and Bonds.
- B. Special warranty:
  - 1. Provide a 5-year written bonded warranty for the full value of the Contract with a 3.5 percent inflation allowed per year after acceptance of the liner to cover the repairs resulting from liner failure within the warranty period, including new pipe, fittings, labor and incidentals, as well as any fines by the local, state, and federal environmental agencies.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. CIPP: One of the following, or equal:
  - 1. Insituform Technologies, Inc.
  - 2. SAERTEX-LINER MULTI.
  - 3. EnviroCure UV.

- B. CIPP end and connection sealing: One of the following, or equal:
  - 1. COSMIC, A/B Epoxy Paste (UV Cure sectional liners).
  - 2. Neopoxy.
- C. Lateral connection sealing system: The following or equal:
  - 1. Top Hat.

## 2.02 DESCRIPTION

- A. Work consists of the installation of a cured-in-place pipe (CIPP) in existing gravity sewers and CIPP end and connection sealing including labor, materials, and equipment necessary to complete the Work.
  - 1. Design new CIPP as a fully structural pipe, not relying on the remaining strength of the host pipe to withstand long-term external loading and internal pressure.
- B. CIPP installation will take place prior to manhole coating work.
  - 1. Open lined-through manholes prior to manhole coating work.
- C. Service connections are defined as the interface of the lateral with the sewer main.
  - 1. Service connection sealing is not intended to be a lateral liner.
  - 2. No lateral work is included in the portion of the Work for CIPP.
- D. Incidental work to remove and replace manhole cones, risers, frame and cover, and concrete collars necessary for the installation of the CIPP will be considered as part of the CIPP work.

## 2.03 DESIGN CRITERIA

- A. Liner or sectional liner: Design in accordance with the procedures of ASTM F1216 and/or ASTM F2019.
  - 1. Material properties used in design calculations shall be long-term (time-corrected) values.
- B. Assume the following parameters for the gravity liner design in accordance with ASTM F1216 and ASTM F2019:
  - 1. Modulus of soil reaction,  $E' = 1000$  pounds per square inch.
  - 2. Groundwater depth equal 0 feet above top of pipe.
  - 3. Unit weight of soil: 120 pounds per cubic foot.
  - 4. Live load using an AASHTO HS20 vehicle loading.
  - 5. Inside diameter (ID) of host pipe: 8, 10, 24, 30, 36-inch, nominal ID.
  - 6. Host pipe material: Concrete pipe and corrugated metal pipe.
  - 7. Flow capacity: 32 million gallons per day (maximum). See flow requirements in Section 33\_05\_11 - Temporary Bypass Pumping.
  - 8. Length of host pipe: See Drawing G03 for lengths.
  - 9. CIPP shall be designed for fully deteriorated conditions.
  - 10. Safety factor of 2.0.
  - 11. Ovality factor of 2.0 percent.
  - 12. Fluid composition: Raw sewage.
  - 13. Service life minimum: 50 years.

- C. Recognize any non-uniform cross section and the liner bifurcation present at the spring line of the concrete pipe.
  - 1. Accounting for this condition by the use of an ovality reduction factor alone is unacceptable.
- D. Contractor shall be responsible for control of material and process variables to provide a finished CIPP possessing the minimum properties in accordance with ASTM F1216 and required in this Section.

## **2.04 COMPONENT CIPP PROPERTIES**

- A. CIPP fabric tubing:
  - 1. Free from tears, holes, cuts, foreign materials and other surface defects.
  - 2. Designed for use in gravity sanitary sewers.
  - 3. Designed in accordance with ASTM F2019.
  - 4. Fabricated to a size that, when installed, will tightly fit the internal circumference and length of the original sewer pipe.
    - a. Make allowance for circumferential stretching during the installation and shrinkage of resin during curing and aging.

## **2.05 CURED CIPP PROPERTIES**

- A. Physical properties of the cured CIPP:
  - 1. Minimum initial test values as defined in Table 1 of ASTM F1216 or ASTM F1743 and supplemented below for polyester resin.
    - a. Properties for the polyester or any other enhanced resins shall be substantiated with third party test data.
  - 2. Flexural strength: 4,500 pounds per square inch in accordance with ASTM D790, or 6,500 pounds per square inch for sectional liner.
  - 3. Flexural modulus: 300,000 pounds per square inch in accordance with ASTM D790, or 725,000 pounds per square inch for sectional liner.
  - 4. 50-year flexural creep modulus: 150,000 pounds per square inch in accordance with ASTM D2990.
    - a. If approved 10,000-hour tests are not available, use a minimum 50 percent reduction (50 percent retention) of Flexural Modulus of Elasticity in accordance with ASTM F1216 for formula calculations.
  - 5. Tensile strength: 9,000 pounds per square inch in accordance with ASTM D638 for sectional liner.

## **2.06 DIMENSIONS OF CIPP**

- A. Make allowances in determining the felt tube length and circumference for stretch during installation and shrinkage during curing and aging.
  - 1. Minimum length: That which continuously spans the distance from the center of the inlet manhole to the center of the outlet manhole.
  - 2. Verify the lengths in the field before the liner tube is cut and impregnated,.
  - 3. Individual installation runs may include 1 or more manhole-to-manhole sections, as authorized by the Project Manager.

- B. Existing sewer lines may be larger than their nominal size due to corrosion of the concrete pipe.
  - 1. It is the Contractor's responsibility to measure the actual inside diameter at different locations of the sewer to determine the appropriate size of CIPP liner.

## 2.07 WALL THICKNESS

- A. Felt tube:
  - 1. Size to the next standard 1.5 mm incremental thickness above the minimum calculated design thickness.
    - a. Size the gap thickness of the wetting out equipment to allow an excess of 5 to 10 percent resin to pass during impregnation, unless otherwise specified, to provide for excess resin migration.
    - b. Nominal CIPP thickness minimum: The calculated design thickness, in accordance with ASTM F1216, except where fabric layers overlap, in which case it may be in excess of this value.
  - 2. Nominal wall thickness at locations of voids in the existing pipe to be lined: Increased to provide the minimum design thickness taking into consideration stretch and expansion of the liner into the void area.
    - a. Determine void locations accurately during video inspection.

## 2.08 CHEMICAL RESISTANCE

- A. Cured pipe shall be resistant to a variety of chemical effluents in accordance with ASTM D543.
  - 1. Perform tests on finished and cured CIPP liner properties as specified.
  - 2. Previous test data will not be acceptable.
- B. Provide chemical resistance test results in accordance with ASTM D543 on samples of the cured liner material that are the same as that proposed for installation.
  - 1. Tests may be performed on the sample of the finished product prior to this Contract, provided a certified affidavit, signed by an officer of the company, is submitted stating the test results were performed on a sample that is the same as the product that will be used on this Project.
  - 2. Exposure minimum: 1 month at 73.4 degrees Fahrenheit.
  - 3. During this period, the CIPP test specimens should lose no more than 20 percent of their initial flexural strength and flexural modulus when tested in accordance with ASTM F1216, when subjected to the following solutions:

Chemical Solution	Concentration, percent
Tap Water (pH 6 to 9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

- C. Contractor shall be responsible for costs associated with the chemical resistance tests.
- D. Provide proof of meeting the requirements for the design specified to the Project Manager for approval at least 7 days prior to ordering any material.

## **2.09 CIPP END AND CONNECTION SEAL**

- A. CIPP end seal:
  - 1. Use epoxy sealant compatible with liner for end seal.
  - 2. Coat concrete or vitrified clay surfaces.
- B. Connection seal:
  - 1. Use epoxy sealant or lateral connection sealing system that is compatible with CIPP liner system for the connection seal.
- C. Sectional liners:
  - 1. Use an adhesive epoxy compound or mechanical seal to provide a watertight seal.
- D. CIPP end and connection sealing materials and methods to be used to reinstate connecting sewers.
- E. Provide method, procedure, or information to provide either an adhesive, watertight seal to the sewer or a watertight mechanical seal between the cured sectional liner and sewer pipe wall which will not prohibit the installation of future, structural liners, sewer cleaning equipment, and CCTV equipment.

## **PART 3 EXECUTION**

### **3.01 GENERAL REQUIREMENTS**

- A. Verify measurements and dimensions prior to manufacturing the liner.
- B. Examine pipe and fittings for cracks and other physical defects immediately before installation.
  - 1. Examine pipe ends with particular care.
  - 2. Remove defective pipe and fittings from site.
- C. Label outside of each CIPP liner tube by the liner manufacturer with the location of liner manufacturer, name of the project, liner thickness, liner diameter, liner length, and the location where it is to be installed.

### **3.02 HOST PIPE AND SITE PREPARATION**

- A. Bypass flow during the rehabilitation process as specified in Section 33\_05\_11 - Temporary Bypass Pumping.



- B. Host pipe cleaning:
  - 1. Field verify pipeline section lengths to be cleaned and lined.
  - 2. Evaluate confined space atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen in accordance with local, state, and federal safety regulations.
  - 3. Perform cleaning as specified in Section 31\_01\_35 - Sewer Pipe and Structure Cleaning.
  - 4. Carefully inspect sewer interior as specified in Section 33\_01\_30.12 - CCTV Inspection of Sewer Pipelines, to determine the location of conditions that may prevent proper installation of CIPP.
  - 5. Verify host pipe material and dimensions.
- C. Odor control:
  - 1. At each location within the Project, prior to diversion of flows, initiate the odor control measures submitted and approved in Section 33\_05\_11 - Temporary Bypass Pumping.
- D. Host pipe repair:
  - 1. Prior to insertion of the liner, take any remediation actions necessary to prepare the host pipe for insertion of the liner.
    - a. This will include removal of obstructions, intrusions, or smoothing of surfaces in order to ensure a proper fit and full expansion of the liner to the host pipe.
  - 2. Host pipe preparation recommendations shall be made by the Contractor after reviewing the CCTV.
- E. Structural defect repair:
  - 1. Grind down, grout, or otherwise repair sections of the existing host pipe which have shifted, dropped, or severely deteriorated (greater than 2-inch loss of diameter) to provide a smooth continuous surface which will not reduce the cross-sectional area of the interior of the relined pipe or reduce wall thickness to less than the minimum specified thickness.
  - 2. Recommendations for the repair method shall be made by the Contractor after reviewing the CCTV.
- F. Trimming intruding laterals:
  - 1. Trim intruding lateral so that the service connection is flush with the internal pipe wall.
    - a. Document lateral cutting by internal inspection methods.
    - b. Verify that existing pipe is not damaged during cutting operations.

### **3.03 CIPP TUBE INSTALLATION**

- A. Designate the location where the CIPP tube will be impregnated with resin ("wet-out").
  - 1. Project Manager approval of locations required.
  - 2. Allow the Project Manager to inspect the materials and "wet-out" procedure.

- B. If the “wet-out” location is not at project site, transport impregnated CIPP tube to site under controlled environmental conditions.
  - 1. Transport vehicles shall include a tamper resistant, sealed temperature recording device which records the temperature of the liner at times after leaving the wet-out site.
  - 2. Decide when to transport the resin impregnated CIPP tube and when to commence installation depending on prevailing weather conditions, so as to not jeopardize the installation or be detrimental to the long-term performance of the CIPP.
- C. Install liner by the inversion tube method.
- D. Lower resin-impregnated tube through an inversion tube and reducer, if needed.
  - 1. Install CIPP liner through existing manholes.
  - 2. No separate payment will be made for additional or enhanced access to facilitate the Contractor’s CIPP liner installation process.
- E. Monitor the exotherm temperature:
  - 1. By remote temperature sensors placed at the interface of the existing pipe and the CIPP for pipe meeting the following conditions:
    - a. CIPP liner thicknesses greater than 0.75 inch.
    - b. Where the existing pipe, soil, and groundwater combination is likely to provide a significant heat sink, affecting the temperature gradient across the CIPP liner material.
  - 2. Install a minimum of 2 temperature sensors.
    - a. Install 1 sensor at either end of the length being lined.
  - 3. Do not terminate curing process until the temperature sensor readings indicate that a satisfactory cure has been completed.
  - 4. Manage any extended cure times to not adversely affect the properties of the CIPP lining material.
  - 5. Curing process
  - 6. Follow a step cure using UV as recommended by the manufacturer and approved by the Project Manager.
    - a. Hold at the top step for an adequate length of time to ensure that the design physical properties are attained.
  - 7. Maximum rate of temperature rise and fall during heating and cooling: 2 degrees Fahrenheit per minute.
- F. Reinstatement of service laterals:
  - 1. Reinstall existing service connections after the curing is complete.
  - 2. Reinstall service laterals using only remote internal methods, prior to CIPP acceptance.
  - 3. Accurately locate and reinstall service connections after the CIPP installation and curing has been completed.
    - a. Where the CIPP liner does not create dimples at the service connections or in other ways indicate the locations, determine exact location from the internal inspection data.
  - 4. Reinstall service connections to a minimum of 95 percent of the original opening, matching the invert of the lateral.
- G. Seal the end points of the liner so that no leakage of fluids may infiltrate between the liner and the existing pipe.

- H. Apply either epoxy sealant or lateral connection sealing system, after CIPP acceptance, to completely seal area around opening of the liner and the connection.
  - 1. Installation of the connection seal shall not, in any way, damage or adversely affect the CIPP in any way.
  - 2. Repair or replace damaged CIPP liner at no additional cost to the Owner.
  - 3. Trim loose or hanging/intruding pipe connection seals to be flush with the internal pipe wall.
  - 4. Do not fold the hanging/intruding material.
- I. Inspect CIPP after installation as specified in this Section.

### **3.04 LINER INSTALLATION**

- A. Resin:
  - 1. Shall be in a state to resist wash off during transport/installation.
  - 2. Capable of being installed during wet and/or live flow conditions.
- B. Resin-impregnated tube:
  - 1. Factory-impregnated with resin (wet-out) by the material manufacturer.
  - 2. Folded or wrapped in accordance with manufacturer's instructions.
  - 3. Loaded on a pressure apparatus for transport and installation.
  - 4. Packed suitable for transport to the field for installation.
- C. Pressure apparatus:
  - 1. Either attached to a robotic device or pulled in by winch.
  - 2. Positioned with a television camera to the location of the defect.
  - 3. Include a bladder which shall inflate in the sewer, effectively seating the repair against the sewer pipe wall.
  - 4. Use air pressure to expand the resin impregnated sectional liner against the sewer pipe wall.
    - a. Supply air pressure through an air hose.
  - 5. Adjust pressure in accordance with manufacturer's requirements to hold the laminate against the sewer pipe wall.
  - 6. Care shall be taken during the installation to not over-stress the tube.
  - 7. After pull in is completed, hold recommended pressure is maintained on the impregnated tube for the duration of the curing process.
- D. Curing:
  - 1. Cure liner in place in accordance with the manufacturer's suggested resin technology, using either a polyester resin, vinyl ester resin, or epoxy-resin with a watertight seal comprised of either an adhesive epoxy compound or rubberized seal.
    - a. Curing method shall be compatible with resin selected.
    - b. Initial cure shall be deemed complete when the liner has been exposed to UV light, heat source, or held in place for the manufacturer's specified time period.
  - 2. Cool, if heat cured, the hardened liner before relieving the pressure in the pressure apparatus.
    - a. Care shall be taken to maintain proper pressure throughout the cure and cool-down period.

- E. Finished liner shall be free of dry spots, lifts, and delamination.
- F. Repair shall not inhibit the closed circuit television post video inspection of the sewer.
- G. Remove any frayed ends of the liner prior to acceptance.
- H. Maintain a visible, written log of activities in accordance with manufacturer's recommendations including time of insertion, bladder pressure and requirements, required cure time, actual cure time, and cool-down duration.

### **3.05 FINISHED PRODUCT**

- A. Provide finished CIPP continuous over the entire length of a manhole to manhole section of pipe, except for sectional liner point repairs.
- B. Remove or repair defects determined by the Project Manager as affecting the integrity or strength of CIPP or as adversely affecting the hydraulic capacity of pipe.
  - 1. Defects, including the following:
    - a. Foreign inclusions.
    - b. Dry spots.
    - c. Pinholes.
    - d. Delamination.
    - e. Lifts.
    - f. Seam separation.
    - g. Wrinkles:
      - 1) With the following conditions:
        - a) Cause a backwater of 1 inch or more.
        - b) Reduce the structural integrity of CIPP.
  - 2. At no additional cost to the Owner.
  - 3. Project Manager approval of repair method required.

### **3.06 CIPP LINER SAMPLING AND TESTING**

- A. Confirm fit and finish meets the visual classification standards in accordance with ASTM D5813.
- B. Secure confined plate samples and arrange for testing to confirm the CIPP flexural strength, tensile strength, flexural modulus, and thickness in accordance with the requirements of ASTM D5813, ASTM D638, ASTM D790, and ASTM D3567 for each liner installed.
- C. Prepare a sample of the installed CIPP liner for subsequent third-party testing of its physical properties.
  - 1. Sampling shall be performed for each separate installation of CIPP or 1 test per batch-order of sectional liner or 1 test per batch order of sectional liner not taken from actual live installation:
    - a. Example: Provide 1 sample from each pipeline reach where the liner is installed.
  - 2. Determine minimum wall thickness at a minimum of 3 locations on a cut section of the CIPP lining using a method of measurement accurate to the nearest 0.005 inch.

3. Prepare sample using the flat plate sampling method in accordance with ASTM F1216.
    - a. Sample size minimum: Large enough to provide 5 sample specimens each for short-term flexural (bending) properties in accordance with ASTM D790.
    - b. Clamp sample in a mold and place in the downtube during the curing of the CIPP tube.
    - c. Remove sample after water is removed from the cured pipe tube.
  4. Identify samples with date, project name, size, thickness, location, resin, and catalyst.
  5. Double bag and seal sample.
- D. Test cured sample by an independent testing laboratory as recommended by the CIPP liner manufacturer and approved by the Project Manager.
1. Short-term flexural (bending) properties in accordance with ASTM D790.
  2. Tensile properties in accordance with ASTM D638.
  3. Long-term properties in accordance with ASTM D2990.
  4. Contractor shall be responsible for any deviation from the specified physical properties and those evaluated through testing.
    - a. Failure to meet the specified physical properties shall result in the CIPP liner being considered defective work and shall be rejected.
  5. Contractor shall be responsible for costs associated with the testing of the liner physical properties.
- E. Where the structural design of the liner is premised on achieving adhesion or bond to the host pipe, secure confined samples and test them in accordance with ASTM D4541 for each liner installed.
- F. Where the function design of the liner requires achieving adhesion or bond to the host pipe for axial restraint, secure confined samples and test them in accordance with ASTM D4541 for every second liner installation.

### **3.07 ACCEPTANCE TESTING**

- A. Leakage testing in accordance with ASTM F2164 with the following exceptions:
1. No leakage test will be required for sectional liners.
  2. Test pressure maximum: 1.3 times the maximum surge pressure of the existing system or a minimum of 5 pounds per square inch.
  3. Stabilized pipe test duration: 2 hours.
- B. Wall thickness of samples shall be determined in accordance with ASTM D5813.
1. Maximum wall thickness at any point: 1-inch.
  2. In accordance with structural integrity and pressure rating requirements.
- C. Post-Lining Inspection video as specified in Section 33\_01\_30.12 - CCTV Inspection of Sewer Pipelines. Inspector must be NASSCO ITCP trained and certified.

### **3.08 SITE CLEAN-UP**

- A. Clean project area.
- B. Dispose of excess material and debris, not incorporated into the permanent installation, at off-site location approved by the Project Manager.
- C. Clean, repair, and refinish surfaces damaged by Contractor's activities to the original or required condition.

END OF SECTION



## **SECTION 33\_01\_35**

### **SEWER PIPE AND STRUCTURE CLEANING**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. Section includes: Requirements for cleaning of the sewers and sewer structures prior to CCTV inspection, Project Manager's inspections, and rehabilitation.

##### **1.02 SUBMITTALS**

- A. The following submittal shall be provided:
  - 1. A letter identifying the methods the Contractor plans to employ to remove sediment, debris, grease, scale, encrustations, and roots throughout the sewer to be lined and in the sewer structures to be repaired or coated. The letter shall include a detailed explanation of the cleaning process and a schedule of activities, references where the Contractor has used the identified cleaning method successfully in the past, and a list of the actions he plans to take to mitigate impact to the public during the cleaning operation.
- B. Traffic control shall be as specified in Section 01\_55\_26 - Traffic Control.
- C. Bypass sewer flow during the structure cleaning as necessary and as specified in Section 33\_05\_11 - Temporary Bypass Pumping.
- D. Copies of all disposal receipts shall be provided to the Owner.

#### **PART 2 PRODUCTS**

##### **2.01 CHEMICAL ADDITIVES**

- A. No chemicals shall be used without written approval of Project Manager. In no case shall any chemical additive be used which might be considered hazardous, or might be considered detrimental to organisms or equipment of a wastewater treatment plant, or detrimental to old or new pipe materials.

#### **PART 3 EXECUTION**

##### **3.01 GENERAL**

- A. Contractor shall at all times conduct its Work to prevent any blockage and minimize surcharging in the sewer manholes and connecting sewer pipelines. Damage to existing facilities as a result of Contractor's Work shall be promptly repaired at Contractor's expense.



### 3.02 CLEANING

- A. Cleaning shall remove all sediment, rocks, debris, roots, grease accumulations, and obstructions from the sewer to be lined and from the sewer structures to be coated. Cleaning of the sewer and structure interior surfaces shall remove all grease, scale, and encrustation so that no foreign intrusion shall cause imperfections in the lining (e.g., bumps, folds, dimples).
- B. Contractor shall also be responsible for any additional surface preparation including shotblasting; grinding, scarifying, or acid etching as necessary to clean structures to ensure proper installation of coating or lining system and any other repair work as specified in the Contract Documents.
- C. The entire structure interior including frame, walls, and bench shall be cleaned prior to rehabilitation using either abrasive blasting and/or high-pressure water blast as recommended by the lining or coating manufacturer, and approved by Project Manager, prior to installation of the liner or coating.
  - 1. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded, and free of contaminants.
  - 2. Air used for blast cleaning shall be sufficiently free of oil and moisture to not cause detrimental contamination of the surfaces to be lined.
  - 3. All concrete, brick, or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound, neutralized surface.
- D. All contaminants including oil, grease, incompatible existing linings or coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.
  - 1. Detergent water cleaning and hot water blasting may be necessary to remove oils, grease, or other hydrocarbon residues from the concrete.
  - 2. A mild chlorine solution shall be used to neutralize the surface to a pH of 7 in order to diminish microbiological bacteria growth prior to final rinse and lining or coating system.
- E. Surfaces to receive protective coating or lining system shall be cleaned and abraded to produce a sound concrete surface with adequate profile and porosity to provide a strong bond between the monolithic surfacing system and the substrate.
  - 1. The first procedure upon entering each structure will be to blast all specified surfaces by low-pressure water cleaning followed by a low-pressure application of trisodium phosphate (TSP).
  - 2. When all grease oil and loose contaminated debris has been removed, the surface will be acid etched with a 20 percent muriatic acid solution to clean and open the pores of the substrate.
  - 3. Surface will then be water blasted by the use of a hand held wand again, at 5,000-10,000 pounds per square inch using turbo tip nozzles.
  - 4. Wash water shall include a dilute solution of chlorine to diminish microbiological bacteria growth and to kill any bacteria residing on or in the surface.
  - 5. Surface will be rinsed with copious amounts of clean potable water and then tested at this point to ensure that the pH is within acceptable limits (not to exceed 8.5).

6. These tests will be performed with litmus paper on various areas within the structure.
  7. All test results will be retained for review by the Project Manager.
- F. Contractor shall take appropriate measures to prevent any sediment or debris from cleaning operations larger than U.S. #8 sieve to be deposited downstream in the sewer main.
1. Sedimentation deposited downstream, as determined by the Project Manager, shall be removed at no cost to Owner.
  2. Contractor shall be thoroughly familiar with all phases of sewer and structure cleaning for the completion of this Contract without causing a health hazard or damage to the sewage system, public and private properties.
- G. Contractor shall clean the sewer and structures so that there are no visible rocks, debris, roots, grease accumulation, and obstructions.
1. Contractor shall clean the pipe to verify proper installation of the sewer liner and the structures and to verify proper installation of coating system and repair work.
  2. Contractor shall clean all exposed rebar to remove all areas of corrosion down to solid steel.
- H. No more than 24 hours may elapse between the completion of sewer cleaning operations and commencement of liner installation.

### **3.03 DISPOSAL OF SEDIMENTS**

- A. Contractor shall be responsible for transporting and disposing, including all disposal fees, of any sediments and material removed from the sewer or structures.
- B. All sediment and debris removed from the sewer shall be disposed off-site in a lawful manner at a non-hazardous waste facility.
1. Hauling containers shall be watertight.
  2. On-site stockpiling of removed material will not be permitted.
- C. Contractor is responsible for obtaining all necessary permits, fees, and approval from all regulatory agencies required to perform the Work, including transport of sediments and testing. Off-site disposal of all material removed from the sewer shall be the Contractor's responsibility.

END OF SECTION



## **SECTION 33\_05\_11**

### **TEMPORARY SEWAGE BYPASSING SYSTEM**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. This Section describes the requirements for temporary bypass pumping of wastewater flows as needed to complete the Work.

##### **1.02 REFERENCES**

- A. American Water Works Association (AWWA):
  - 1. C110 – Ductile-Iron and Gray-Iron Fittings.
  - 2. C150 - Standard for Thickness Design of Ductile-Iron Pipe.
  - 3. C151 - Standard for Ductile-Iron Pipe, Centrifugally Cast.
- B. ASTM International (ASTM):
  - 1. B241 - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
  - 2. D3350 - Standard Specification for Polyethylene Plastic Pipe and Fittings Material
- C. National Fire Protection Association (NFPA):
  - 1. 820 - Standard for Fire Protection in Wastewater Treatment and Collection Facilities.

##### **1.03 REQUIREMENTS**

- A. Provide all services related to, but not limited to, mobilization, setup, around-the-clock operations and maintenance, demobilization, traffic control, permits, and all other materials, labor, and equipment to install, maintain, and operate a complete continuous pumping and transport system for wastewater 24 hours per day, 7 days per week, until the portion(s) of the Work have been completed to the satisfaction of the Project Manager.
- B. The means and methods of accomplishing and maintaining the temporary bypass pumping and associated facilities is the sole responsibility of Contractor.
- C. The temporary bypass pumping system shall be installed as a complete standalone system.
  - 1. Provide fuel, backup power supply, backup pumps, and storage tanks for operation of the system.
- D. The temporary bypass pumping operation shall be limited to the dry season (June 1st to September 30th) unless approved in writing by the Project Manager.
- E. The temporary bypass pumping shall be continuously monitored.

- F. Contractor shall be responsible for bypassing wastewater in a way that ensures that no wastewater is allowed to leak outside of the sanitary sewer system or the bypass pipelines.
  - 1. Bypass pumping shall be done in such a manner as not to damage private or public property, or create a nuisance or public menace.
  - 2. The pumped wastewater shall be in an enclosed pipe that is adequately protected from traffic, and shall be redirected into sanitary sewer system.
- G. No bypassing to the ground surface, receiving waters, storm drains, or bypassing that results in soil or groundwater contamination or any potential health hazards shall be permitted.
  - 1. Contractor shall adhere to all agency restrictions regarding the transport and conveyance of wastewater.
- H. Contractor shall be liable for all cleanup, damages, and resultant fines in the event of spills, leaks, or backups associated with bypass pumping activities, which includes commissioning, operation, and decommissioning of bypass pumping facilities.
- I. No interruption of wastewater flow shall be permitted throughout the duration of the project. Contractor is responsible for all sanitary sewer overflows during construction of this Work and bypass operations.
- J. Contractor will utilize staff and/or a subcontractor that has been directly responsible for completion of a CIPP and sewer replacement project that required the bypass pumping of wastewater flows.
- K. Contractor is responsible for coordinating the sequence of work between the CIPP lining installer and bypass pumping operations to ensure that the lining cures completely before bypass pumping operations is removed.
- L. Coordinate the placement of the bypass piping and pumping equipment with Project Manager. All bypass operations are to occur within the proposed bypass corridor shown on the bypass drawings. If the contractor requires an additional closure area or alternative route for the bypass piping, these variations shall be submitted and approved by the Project Manager.
- M. Where bypass pipelines are required to cross traffic lanes, and will be in place for more than 3 days, the piping and fittings shall be buried a minimum of 4 inches below the pavement surface and backfilled with temporary asphalt concrete surfacing or use an approved flow-through drivable apparatus approved by Project Manager.
  - 1. At no time shall traffic lanes be blocked or closed, unless specifically allowed in writing by Owner.
- N. No driveway access shall be blocked without the written authorization of the affected property owner. The contractor shall also maintain all pedestrian access at crosswalks.

- O. Lateral lines into manholes shall be bypassed from the next upstream structure in which no work is required or has been or is yet to be completed. If the structure upstream is private, Contractor shall notify Inspector and receive written approval from the owner prior to bypass operations.
- P. Lateral lines tying directly into the pipe shall be bypassed from the next upstream structure in which no work is required. Contractor shall notify Inspector and receive written approval from the owner prior to bypass operations:
  - 1. Only 1 pipe segment, and the associated laterals, may be affected at 1 time.
  - 2. Sewer service shall not be stopped.
  - 3. Sewer service shall be maintained to all customers.
  - 4. Contractor shall have an emergency plan to prevent a Sanitary Sewer Overflow.
  - 5. Contractor shall provide written notice to affected properties both 7 days and 24 hours prior to bypass work. The written notice shall list the date and times when sewer service will be affected and when it will be returned to normal service along with a phone number owners can call for information. Contractor to coordinate these efforts with District Public Information staff.
- Q. Where sewer laterals within private property will need to be dewatered in order to facilitate rehabilitation work, Contractor shall coordinate right-of-entry/right-of-access agreements with the property owner. For purposes of bypass pumping lateral flows, right of entry onto private property is not permitted without right-of-entry/right-of-access agreement, as specified in Section 01\_14\_00 - Work Restrictions:
  - 1. Laterals indicated on the Drawings are from the best-available records from Owner or provided by property owners.
  - 2. Not all laterals are indicated on the Drawings.
- R. Contractor is responsible to identify additional laterals not indicated on the Drawings that may require bypass pumping.
- S. After the Work is completed, flow shall be returned to the rehabilitated sewer and all temporary equipment removed.

#### **1.04 SUBMITTALS**

- A. Contractor shall submit a temporary bypass pumping plan as required to complete the Work to Project Manager and Owner, 30 days prior to bypass pipe installation, for review as specified in Section 01\_33\_00 - Submittal Procedures.
- B. The temporary bypass pumping plan submittal shall be satisfactory to Project Manager and Owner prior to Contractor commencing the bypass pumping operation.
  - 1. Contractor shall notify Project Manager and Owner 24 hours prior to commencing the bypass pumping operation.
- C. The temporary bypass pumping plan must provide for accessibility to pedestrians and vehicular traffic in accordance with Owner requirements.

- D. The temporary bypass pumping plan shall include the following at a minimum:
1. Drawings indicating the scheme and location of pumps, suction manhole(s), suction piping, discharge manhole(s), discharge piping, temporary sewer plugs, flow diversion structures, dams, odor control, and related materials and equipment for each of the bypass pumping sites:
    - a. Plan shall show location of all bypass pumping systems, including odor control, and shall discuss phasing, reuse, and movement of systems during construction as applicable.
    - b. Bypass pumping plan shall designate which system/setup will be used where and when as applicable.
    - c. Structures and equipment within the public right-of-way shall be identified as such on the plans.
  2. Number, type, capacity, and size of pumps, standby equipment, pipe material, pipe layout with pressure relief, and air/vacuum valves locations, and power requirements, if applicable.
  3. Design calculations of the system and selected equipment, including flow, TDH with static head including all friction and minor losses, and pump curves showing operating range of flow and TDH.
  4. Pipe thicknesses calculations. Calculations shall assume an H<sub>2</sub>S live loading at crossings.
  5. All exposed above ground pipelines shall have two feet of conspicuity reflective tape, or approved equal, applied to the outside of the pipeline exposed to traffic, spaced every 15 feet.
  6. Standby power generator size and location for electrically driven bypass pumps.
  7. Downstream Discharge Plan.
  8. Pipe thrust and restraint block sizes and locations.
  9. Temporary pipe supports and anchoring required:
    - a. Where the bypass corridor lies within a flood zone, buoyancy restraint is required.
    - b. Buoyancy calculations are required for buoyancy restraint design.
  10. Schedule that shows duration of temporary bypass pumping including milestones for installation, maintenance, and removal of equipment and accessories.
  11. Means and methods of installing, operating, monitoring, and maintaining the temporary bypass pumping shall be provided.
  12. Plan indicating bypass pumping line locations:
    - a. Plan shall include details showing methods used to protect and identify the bypass pumping lines through the length of the bypass corridor.
  13. Plans for access to bypass pumping locations.
  14. Detailed plans of a redundant backup system.
  15. Address access for pedestrians and vehicular traffic.
  16. Mechanical plan showing equipment, valves, pipe sizes and locations, pipe materials, dimensions, vehicle access (where applicable), pedestrian access (where applicable).
  17. Proposed type, catalog cut sheets, and location of collection system plugs.
  18. Emergency Response Plan. The emergency response plan must address containment, notification procedures, and equipment failure procedures. An emergency contact list with 24 hour phone numbers shall be submitted and updated as needed.
  19. Staffing Plan.

20. Spill prevention and cleanup plan.
21. Odor Control Plan.
22. Method of noise control.
23. Health and Safety Plan.
24. Catalog cut sheets for all pumping equipment including pump performance curves, all pipe and fittings, all valves, noise reduction equipment, odor control system, and health and safety plan.

## 1.05 QUALITY ASSURANCE

- A. Contractor's qualifications:
  1. Minimum 5 years of experience in performing substantially similar temporary bypass pumping operations.
  2. Submit list of at least 5 separate construction projects completed within the last 10 years that include the satisfactory setup, operation, and maintenance of a pumping and piping system used to bypass wastewater during construction similar to the specified Work.
- B. Fulfillment of the specified experience requirements shall be a condition of acceptance.

## PART 2 PRODUCTS

### 2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Contractor shall collect flow data and request existing flow data from Owner to determine the appropriate range of design flows.
- B. The existing flow conditions from the City's hydraulic model are provided below for reference only:

Site Name	Upstream Manhole	Downstream Manhole	Modeled Peak Flows (gpm)
20th Street	SMH1995B12	SMH2095D10	2,000 <sup>(1)</sup>
Mill - Winter Street	SMH1795R07	SMH1795R11	680
1525 E Marine View Drive	SMH1795S21	SMH1795S23	7,100
Notes:			
1. 2000 gpm is a flow is based off a 1,600 gpm provided flow from the Naval Station Everett.			

- B. Contractor shall contact the to confirm all proposed flow values prior to the Work.
- C. Stand alone manholes will require bypassing from the upstream manholes for the required manufacturer's cure time, cleaning, and inspection.



## **2.02 CAPACITY**

- A. Pumps, piping, and accessories shall be of adequate capacity and size to handle the range of wastewater flows from Modeled Peak Flow.
- B. All piping, fittings, and all accessories shall withstand 2 times the maximum pressure.
- C. Contractor shall maintain on site sufficient equipment and materials to ensure continuous and successful operation of the bypass system.
  - 1. Contractor shall have standby pump(s) incorporated into the system that provide 100-percent redundancy of the bypass system design Peak Flow.
    - a. The redundant pump(s) shall be plumbed, fueled, and available for operation in 10 minutes upon emergency backup.
  - 2. Contractor shall install sufficient bypass lines to provide 100 percent redundancy of the bypass system design Peak Flow.
    - a. The bypass lines and separate redundant lines shall be connected via a combined header that enables the shutdown and isolation of each individual line should a leak or rupture occur.
  - 3. Contractor shall maintain on site a sufficient number of valves, tees, elbows, connections, tools, pipe plugs, piping, and other parts or system hardware to ensure immediate repair or modification of any part of the bypass system as necessary.

## **2.03 BYPASS PUMPS**

- A. A minimum of 2 pumps shall be provided, each capable of transporting 100 percent of the peak flow.
- B. Pump capacity shall be sufficient to pump the anticipated peak hour flow with the largest pump out of service.
- C. Pumps shall be a packaged unit with a skid base or 2-wheel trailer.
- D. Pumps shall be fully automatic, self-priming, close-coupled centrifugal units that do not require use of foot valves or vacuum pumps for priming.
- E. Pumps shall utilize oil-lubricated mechanical seal.
- F. Pumps shall be capable of passing 3-inch diameter solids, rags, rocks, hair, and other debris encountered in municipal wastewater.
- G. Pumps shall be operated by diesel engine and include the following:
  - 1. Minimum 24-hour capacity diesel fuel tank as defined by fuel consumption during peak pumping rate.
  - 2. Fuel gauge with red warning light when tank approaches empty.
- H. Pumps shall be capable of dry operation for up to 5 hours to accommodate large fluctuations in flow.

- I. The system shall include the following features:
  - 1. START/STOP operation.
  - 2. Instrumentation and controls for operation and monitoring for each pump.
- J. All electrical equipment, instrumentation, and accessories shall be suitable for Class 1 Division 1 service in accordance with NFPA 820.

## **2.04 BYPASS PIPING**

- A. Contractor shall use HDPE, ductile iron, or aluminum piping for the temporary bypass pumping system.
- B. All piping shall have no leakage and shall include spill containment vessels or "spill guards".
- C. HDPE Piping shall be as follows:
  - 1. In accordance with ASTM D3350.
  - 2. Minimum SDR of 21.
  - 3. Joints shall be butt-fusion welded.
- D. Ductile Iron Piping shall be as follows:
  - 1. In accordance with AWWA C151.
  - 2. Fittings in accordance with AWWA C110.
  - 3. Restrained joints in accordance with AWWA 151 and 150.
- E. Aluminum piping:
  - 1. In accordance with ASTM B241 or approved by Project Manager.
  - 2. Fittings: Standard pipe fittings made of aluminum alloy suitable for 30 percent above maximum shutoff pressure.
  - 3. Joints shall be rubber.

## **2.05 PIPE PLUGS**

- A. Pipe diameters 24 inches and smaller shall use mechanical plugs with rubber gaskets.
- B. Pipe diameters larger than 24 inches shall use inflatable bag stoppers with 2 or more pieces.

## **2.06 ODOR CONTROL**

- C. Contractor shall provide all equipment necessary to provide odor control during temporary bypass pumping.
- D. Contractor shall furnish all labor and supervision to set up and operate the odor control system:
  - 1. Odor control system shall be of adequate capacity and size to handle odor control measures for the full range of flows.
- E. Odor control system shall be granular activated carbon packaged system or approved equal.

- F. Carbon systems shall be designed for manual airflow adjustments from 600 cfm to 1,000 cfm (minimum range) and shall remove at least 99 percent of hydrogen sulfide.
- G. Systems shall be operational 24 hours a day 7 days a week (including holidays and non-working days).
- H. All electrical equipment and instrumentation shall be suitable for Class 1 Division 1 service in accordance with NFPA 820.
- I. General Requirements for odor control include the following:
  - 1. Contractor shall post a sign on odor control equipment that is readable from 40 feet that lists a phone number people can call regarding odor complaints and shall include the following language: "Please Call 425-257-8844 Regarding Odor Concerns." Phone number utilized shall be approved by the Owner prior to posting.
  - 2. Contractor shall prepare a plan addressing emergency actions in the event an odor complaint is received or if odor control equipment malfunctions. The plan shall be submitted as part of the bypass pumping plan.
  - 3. Odor control enclosure shall be locked and prevent access of unauthorized personnel.

## **2.07 NOISE CONTROL**

- A. Pump equipment shall be equipped with devices or enclosures for noise attenuation, which includes, but is not limited to, mufflers and/or plywood/Styrofoam noise panels.
- B. The noise level shall be at or below 75 dBA at 50 feet from the pumping equipment for the duration of the Work.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Contractor shall notify Owner a minimum of 20 days prior to the Work requiring temporary bypass pumping and notify Project Manager at least 72 hours prior to bypassing or diverting flow in any of the pipelines or laterals or structures.
- B. All pumps, generators, and other equipment shall be placed on a plastic tarp to protect against spills of petroleum products used by the equipment.
- C. Before taking interceptor out of service, Contractor shall verify that bypass system is fully operational and acceptable to Project Manager.
- D. The odor control system shall be operated 24 hours per day, 7 days per week for the duration of the Project.
  - 1. Operation of the odor control system should not be interrupted at any time including holidays, non-working days, and weekends.

- E. Traffic control as specified in Section 01\_55\_26 – Temporary Project Traffic Control.
- F. Flow in the existing sewers shall not be restricted or dammed for any period of time without the approval of Project Manager.
- G. All wastewater facilities, including laterals, shall remain in continuous and full operation during construction.

### **3.02 PROTECTION**

- A. All pumps and piping shall be sized to adequately convey the flows anticipated at each bypass application.
  - 1. The bypass system shall be watertight; no leakage will be allowed.
- B. Contractor shall be responsible for all bypass flows.
  - 1. Contractor shall inspect the entire bypass pumping and piping system for leaks or spills at a frequency of not less than 4 times per day.
  - 2. The temporary bypass system shall not be shut down between shifts, on holidays or weekends, or during work stoppages without written permission from Project Manager.
- C. The temporary bypass system will have trained and qualified attendants available 24 hours per day 7 days per week whose only duty is to maintain the bypass system until the bypassing of the system is no longer required. The attendants shall:
  - 1. Be capable of performing pump and piping maintenance required.
  - 2. Have a cellular phone for communication with Contractor and Project Manager in the event of emergencies.
- D. In the event of any wastewater spill, Contractor shall be responsible for the prompt cleanup and disinfecting of the spill as called for in the temporary bypass pumping plan.
  - 1. Contractor shall compensate Owner for the cost of any fines levied as the result of a spill or unauthorized discharge.
- E. Contractor shall implement measures to prevent interference between the public and the bypass pumping equipment, pipelines, and wastewater.
- F. Contractor shall take precautions to protect all bypass lines from damage.
  - 1. Any aboveground portions of the bypass lines shall be clearly identified by flashers, fencing, or other means to warn the public of their presence.

### **3.03 FIELD QUALITY CONTROL**

- A. Hydrostatic Pressure Test:
  - 1. Prior to operation, test each section of discharge piping with maximum pressure equal to 2 times the maximum operating pressure.
  - 2. The test shall run for a duration of 2 hours.
  - 3. Contractor shall fill the line with water.
  - 4. The line shall be sealed on the discharge end.
  - 5. The line may be put in service if, after the specified test duration, the pressure has been maintained and there are no observable leaks.
  - 6. Notify Project Manager at least 48 hours prior to testing.

- B. Inspection:
  - 1. An attendant/operator shall inspect temporary bypass piping system at a minimum of every hour 24 hours per day.
  - 2. An attendant/operator shall be present to monitor the operation of the bypass pumps at all times, 24 hours per day.
  - 3. Inspection Log: Keep at each pumping location.

### **3.04 CLEAN-UP**

- A. The temporary bypass pumping system shall be cleaned and drained prior to being dismantled.
- B. Contractor shall alternate pigging and purging of the system to remove all loose material.
  - 1. After Contractor has cleaned the pipe, and prior to dismantling of the piping for removal from the project site, Contractor shall disinfect the pipe with 10 percent chlorine solution.
- C. Disturbed Areas:
  - 1. Upon completion of bypass pumping operation, clean disturbed areas, restoring to original condition, including pavement restoration, at least equal to that which existed prior to start of Work.
  - 2. As specified in Section 32\_01\_15 - Pavement Restoration and Rehabilitation.

### **3.05 SCHEDULING**

- A. The temporary bypass pumping system shall not be shut down between shifts, on holidays or weekends, or during work stoppages.
- B. The bypass system shall have trained and qualified attendants 24 hours per day, 7 days per week whose only duty is to maintain the bypass system from the start of bypass until the bypassing of the system is no longer required.

END OF SECTION

**SECTION 33\_05\_61.13**  
**CURED-IN-PLACE MANHOLE LINERS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Sanitary sewer manhole rehabilitation using step removal, wall patching, and installing cured-in-place manhole (CIPM) liner.

**1.02 REFERENCES**

- A. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. T132 - Standard Method of Test for Tensile Strength of Hydraulic Cement Mortars.
- B. ASTM International (ASTM):
  - 1. C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
  - 2. C191 - Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle.
  - 3. C882 - Standard Test Methods for Bond Strength of Epoxy-Resin Systems Used With Concrete by Slant Shear.
  - 4. D543 - Standard Test Methods for Evaluating the Resistance of Plastics to Chemical Reagents.
  - 5. D638 - Standard Test Methods for Tensile Properties of Plastic.
  - 6. D695 - Standard Test Methods for Compressive Properties of Rigid Plastic.
  - 7. D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - 8. D2240 - Standard Test Methods for Rubber Property--Durometer Hardness.
  - 9. D3567 - Standard Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin Pipe and Fittings).
  - 10. D4541 - Standard Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
  - 11. F2019 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic Cured-in-Place (GRP-CIPP) Using the UV-Light Curing Method
- C. International Organization of Standardization (ISO):
  - 1. 9001 - Quality Management Systems.

**1.03 SUBMITTALS**

- A. Submit as specified in Section 01\_33\_00 - Submittal Procedures.
- B. Manufacturer's Certification of installer.

- C. Manufacturer's written warranty.
- D. Manufacturer's certification program training course outline:
  - 1. Certification program must include an annual renewal.
- E. Product data:
  - 1. Submit shop drawings which detail short and long-term properties (provide supporting test data) of component materials and construction and recommendations for material storage and temperature control, CIPM liner handling, insertion, curing, trimming and finishing.
  - 2. Instructions written and published by the manufacturer for purpose of giving complete instruction for use and installation of proposed lining for conditions for which the lining is specified in this Section including the following information:
    - a. Surface preparation (including repairs and re-profiling).
    - b. Curing times.
    - c. Curing methods.
    - d. Special equipment.
    - e. Lining composite cured thickness.
    - f. Liner repair methods to be performed subsequent to CIPM liner sample removal.
    - g. Limitation, exceptions, precautions, and requirements that may adversely affect the performance of the lining.
    - h. Temperature limitations for minimum and maximum ambient and cure conditions.
  - 3. Submit liner thickness calculations, with respect to external hydrostatic pressure, stamped by a third party Registered Engineer in the State of Washington.
  - 4. Submit product test results.
  - 5. Name of third-party testing facility for CIPM liner test samples.
  - 6. If manufacturer's requirements differ from requirements in this Section, clearly state the deviations.
- F. CIPP team member qualifications: As specified in Document 00\_45\_14.07 - Manhole Rehabilitation Qualification Form.
- G. Contractor Certification Letter.
- H. Shop drawings.
- I. Materials schedule.
- J. Lining System Installation Plan.
- K. Manufacturer shall provide a certificate of compliance to these specifications referencing project name and location. Manufacturer shall provide ISO 9001 certificate by a third party confirming that all the ASTM test reports are valid and up to date at the time of the bid and during construction period.

## **1.04 LINING SYSTEM INSTALLATION PLAN**

- A. Quality assurance procedures:
  - 1. Detailed duties of the Installer's Quality Control Manager.
  - 2. Detailed duties of the Superintendent.
  - 3. Training program to qualify personnel in the correct storage and handling of lining materials, and the necessary safety requirements.
  - 4. List of installation and testing equipment to be used, including inspections confirming satisfactory condition of equipment.
- B. Clean manhole prior to installation of CIPM liner, as specified in Document Section 33\_01\_35 - Sewer Pipe and Structure Cleaning.
- C. Criteria for acceptance of the preparation of manhole surfaces.
- D. Traffic control, as specified in Section 01\_55\_26 - Traffic Control.
- E. Temporary bypass pumping and flow control, as specified in Section 33\_05\_01 - Temporary Bypass Pumping.
- F. Method and material for sealing active leaks.
- G. Detailed plan of surface preparation, including repair and reprofiling.
- H. Details of liner installation, including wet-out procedure, required curing times, and end seal procedure.
- I. Methods to ensure custom fit liner to manhole in order to protect concrete and brick surfaces from sewer gases and control wrinkling.
- J. Detailed environmental provisions, such as shading from the sun.
- K. Detailed scheduling provisions for environmental considerations, such as working at night.
- L. Testing procedures:
  - 1. Adhesion test.
  - 2. Dye test.
  - 3. Visual inspection.

## **1.05 QUALIFICATION AND CERTIFICATION**

- A. Installer:
  - 1. Provide manufacturer's certification that lining system installer is trained and qualified to install the lining system, as specified in this Section.  
Provide evidence of CIPM liner installer experience as specified in Document 00\_45\_14.07 - Manhole Rehabilitation Qualification Form.
  - a. Provide certification and qualifications for testing for holidays and other discontinuities.



- B. Superintendent:
  - 1. Qualification requirements:
    - a. Must have experience in CIPM lining manholes of a similar diameter and depth as the proposed project.
    - b. Must have a minimum of 5 years CIPM lining supervisory field experience on at least 3 projects of at least equal scoping and complexity.
    - c. Provide evidence of CIPM liner superintendent experience as specified in Document 00451G - Manhole Rehabilitation Qualification Form.
    - d. At least 1 of the qualified, named superintendents must be present at jobsite during CIPM construction activities.
    - e. Takes full responsibility for Work quality.
- C. Submit certifications before any materials are delivered to the job site.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. As specified in 01\_60\_01 - Product Requirement.
- B. Exercise care during transportation, handling, and installation to ensure the CIPM material is not torn, cut, or otherwise damaged:
  - 1. If any part or parts of CIPM material becomes torn, cut, or otherwise damaged before or during insertion, repair or replace at no additional cost to Owner in accordance with the manufacturer's recommendations and approval by Project Manager before proceeding further.

## **1.07 WARRANTIES AND BONDS**

- A. As specified in Section 01\_78\_36 - Warranties and Bonds.
- B. Special bonded warranty:
  - 1. Provide a 5-year Renewable Maintenance Bond covering both the material costs and the labor costs associated with the installing the approved lining.
    - a. The bond shall also be unconditional in nature covering any type of failure in the lining and agreeing to repair or replace it at no cost to Owner at any point during the 5-year period.
    - b. Renewed yearly for a period of not less than 5 years from the date of final acceptance of the project.
  - 2. Provide written warranty from Manufacturer to cover workmanship and materials for each manhole coated with an approved corrosion protective coating.
    - a. Submit warranty to Project Manager prior to and as a condition of Project final acceptance.
    - b. Warranty also applies to repair materials, primers, or other products used in the application.
    - c. Lining failure is defined as blistering, cracking, embrittlement, or softening, or failure to adhere to the substrate.
    - d. Testing performed by Contractor during construction (e.g., adhesion testing, dye testing, spark testing, and/or other testing) does not in any way modify the warranty, nor relieve Contractor's responsibility for responding and correcting defects during the warranty period.

## PART 2 PRODUCTS

### 2.01 CIPM LINER SYSTEM

- A. Manufacturers: The following or equal:
1. Primeline Trenchless.
  2. Vertiliner.
- B. General manhole guide for the liner products:
1. Not intended to limit manufacturer's and authorized installer's judgment to use a heavier liner in determining appropriate thickness and type of liners for individual structures based upon the specific conditions encountered in each structure, as authorized by Project Manager.
  2. Warranty requirements still apply when liner thickness varies due to judgment of the manufacturer or authorized installer.
  3. Minimum allowable multi-layered composite system: Described in Table 1 below.
    - a. Incorporate layer(s) of structural fiberglass and felt (per design), impregnated with modified epoxy resins and bonded to existing substructure and a layer of non-porous PVC or membrane of special synthetic materials bonded together to protect the manhole from corrosion.

Table 1 - Test Property Values	
<b>ASTM D695</b>	
Compressive Strength =	8,000 psi
Compressive Modulus =	800,000 psi
Minimum Uncured Dry Liner Thickness =	0.175 inch (68 oz./SYD)
Minimum Field Cured Thickness =	0.122 inch
<b>ASTM D2240</b>	
Hardness =	79-82 shore D

- b. Minimum manhole depth limit: None.
  - c. Maximum manhole depth limit: None.
4. Determine liner thickness:
- a. Assume external hydrostatic pressure on manholes of 10 feet or the depth from manhole invert to finished grade, whichever is less.
  - b. If liner thickness calculations require a thicker liner than minimum field thickness shown in Table 1, then provide the thicker liner.
  - c. If liner thickness calculations require a thinner liner than minimum field thickness in Table 1, then provide the Table 1 minimum thickness.
- C. Liner characteristics:
1. Flexible and have an elongation sufficient to bridge the following conditions:
    - a. Up to a 1/4-inch settling crack, without damage to the lining.
    - b. Expansion cracks that may occur during its warranted life.
  2. Impervious and without holes that will allow hidden corrosion on the concrete behind the liner, which can cause the eventual failure of the liner and the manhole.

- D. Liner properties: Manufactured and installed in compliance with the listed minimum values of the following applicable ASTM testing requirements.
  - 1. ASTM C109.
  - 2. ASTM C191.
  - 3. ASTM C882.
  - 4. ASTM D543.
  - 5. ASTM D638.
  - 6. ASTM D695.
  - 7. ASTM D790.
  - 8. ASTM D2240.
  - 9. ASTM D4541.
  - 10. ASTM D5813.
- E. CIPM end seal:
  - 1. Use epoxy sealant compatible with liner for end seal. Coat all concrete or brick surfaces.
  - 2. CIPP end and connection sealing:
    - a. Manufacturers: The following or equal:
      - 1) Neopoxy.
      - 2) Warren Environmental S-301.
- F. CIPM liner labeling:
  - 1. Manufacturer label on each liner tube shall be in 1-inch letters, minimum, and include the following information:
    - a. Date of manufacture of the liner.
    - b. Name or trademark of the manufacturer.
    - c. Name of project.
    - d. Number of the manhole as indicated on the Drawings.
    - e. Liner diameter.
    - f. Liner thickness.
    - g. Liner length.

## **2.02 MANHOLE PATCHING MATERIAL**

- A. Manufacturers: The following or equal:
  - 1. IPA Systems, Octocrete.
  - 2. Fosroc PRECO Patch.
- B. Premixed, nonshrink, cement-based patching material consisting of hydraulic cement and graded silica aggregates, with special plasticizing and accelerating agents.
- C. In compliance with listed minimum values of the following applicable requirements:
  - 1. ASTM C191.
  - 2. AASHTO T132.
  - 3. ASTM C882.
- D. Suitable for vertical or overhead use.
- E. The premixed material shall not contain chlorides, gypsums, plasters, iron particles, aluminum power, or gas-forming agents.

- F. Shall not promote corrosion of steel.
- G. Product test data requirements:
  - 1. Maximum set time, in accordance with ASTM C191: 30 minutes.
  - 2. Minimum 1-hour compressive strength: 2,000 pounds per square inch.
  - 3. Minimum ultimate strength, in accordance with ASTM C109: 5,000 pounds per square inch.
  - 4. Minimum bond strengths, in accordance with ASTM C882, modified: 1,700 pounds per square inch.

## 2.03 ENVIRONMENTAL CONDITIONS

- A. Install products furnished specified in this Section in sanitary sewer manholes.
- B. Products will be exposed to the extremes in temperatures and humidity.
- C. Products will be exposed to corrosive, abrasive and reactive liquids and gasses associated with wastewater conveyance and treatment.
- D. Products will be immersed or intermittently immersed in wastewater.
- E. Product surfaces are subject to splashing of wastewater.

## 2.04 LINER PRODUCT TESTING

- A. Submit results of third-party testing to Project Manager.
- B. Chemical resistance testing in accordance with ASTM D543.
  - 1. Minimum exposure time period for each of the following fluids at 73.4 degrees Fahrenheit: 1 month.

Chemical Solution	Concentration Percent Weight
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Sodium Hydroxide	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

- C. During this period, the CIPP test specimens should lose no more than 20 percent of their initial flexural strength and flexural modulus when tested in accordance with ASTM D5813.
- D. Contractor shall be responsible for all costs associated with the chemical resistance tests.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Contractor shall verify measurements and dimensions prior to manufacturing the CIPM liner.

### **3.02 PREPARATORY PROCEDURES**

- A. Sewer bypassing: Contractor shall meet the requirements for bypassing and flow diversion as specified in Section 33\_05\_11 - Temporary Bypass Pumping.
- B. Water lines for CIPM Work: Water lines used for installation of CIPM shall meet the same requirements as bypass pipes as specified in Section 33\_05\_11 - Temporary Bypass Pumping.

### **3.03 CIPM LINER INSTALLATION**

- A. Install CIPM liner only in manholes designated for CIPM rehabilitation as indicated on the Drawings.
  - 1. CIPM rehabilitation will not begin until completion of mainline rehabilitation with CIPP or CIPP sectional liners.
- B. Remove existing manhole steps.
  - 1. Remove step's metal portion to 1/2-inch below the manhole wall surface.
  - 2. Patch holes flush prior to applying the CIPM rehabilitation system.
- C. Surface preparation:
  - 1. Sewer Cleaning. Prior to CIPM liner installation, Contractor shall clean the existing manhole as specified in as specified in Document Section 33\_01\_35 - Sewer Pipe and Structure Cleaning.
  - 2. Clear the existing manhole of obstructions such as solids or collapsed pipe or intrusions that will prevent or hinder CIPM liner installation.
  - 3. Remove and dispose of loose and deteriorated material.
  - 4. Repair bench areas, as approved by Project Manager:
    - a. Prepare shelf surface to be smooth and sloped to allow bench areas to drain to pipe invert.
  - 5. Repair manhole wall and shelf include plugging, and/or patching as necessary, with specified grout, plugging, or patching compounds.
    - a. Stop active hydrostatic water leakage in accordance with manufacturer's instruction.
    - b. Remove cracked or disintegrated material from patch area exposing sound substrate.

- c. Repair or refinish as appropriate using chemical grout, hydraulic cement, or Portland Type V cement.
    - d. Allow patches to cure according to the manufacturer's specifications before continuing with CIPM manhole rehabilitation process.
  - 6. Trim and grout incoming laterals and sewer main line openings with hydraulic or Portland Type V cement forming a radius fillet (not less than a 6-inch radius) between structure wall and each pipe.
    - a. Extend grout a minimum of 4 inches from outlet onto wall area making a smooth transition for liner connection to pipe openings.
  - 7. Internal inspection. The interior of the manhole shall be carefully inspected to determine any conditions that may prevent proper installation of CIPM liner.
- D. Install CIPM liner system.
  - 1. In accordance with the manufacturer's written instructions.
  - 2. Re-grout inlet and outlet lines and benches, as needed, including preparation, installation, curing, and finish operations for complete rehabilitation process.
    - a. Complete curing process within 4 hours of bypass pumping or inlet line plugging start time.
    - b. Reopen inlet and outlet lines within 1 hour after completion of curing process.
- E. Line shelf areas and floors with the CIPM Liner System materials saturated with the epoxy resin and placed in the bottom to extend approximately three inches up the wall section, so as to overlap with the liner wall section.
  - 1. Make CIPM Liner longer than the structure to overlap and reinforce the bench transition area.
- F. Line the structure with CIPM lining producing a monolithic structure, bonded to the contours of the existing manhole structure.
  - 1. Provide liner bonded to interior structure surface and completely watertight from the ring and cover area to transition area where the shelf and invert channel connects, including completely sealing manhole wall and shelf areas to inlet and outlet pipes.
  - 2. Provide CIPM liner that completely seals the manhole, shelf, pipe inlet and outlets, and the lid ring frame in a monolithic method, as required, or as indicated on the Drawings.
    - a. Seal liner holes, cracks, or seams to prevent gases or fluids from flowing behind the CIPM liner.
    - b. Use end seal at CIPM liner termination(s) and lateral connections.
- G. Manholes that are used in the inversion process and tail for the mainline CIPP rehabilitation work will have exposed concrete in the invert channel.
- H. Coat exposed concrete remaining from CIPM installation with epoxy coating system as indicated on the Drawings and as specified in Section 09\_96\_01 – High-Performance Coatings.
- I. Design and install CIPM liner to protect interior surfaces including the walls, shelves, pipe junctions, riser, and lid ring frame of concrete, brick and other

manhole surfaces from corrosion, to stop infiltration, root intrusion, and further deterioration in the manhole:

1. Custom fabricate liner material and components to fit the specific configuration of each structure prior to the commencement of the liner installation.
2. Rehabilitate concentric, eccentric, or flat top manholes without removing manhole ring, top section, flattop, or corbel.

### **3.04 FIELD QUALITY CONTROL**

- A. Quality of materials, the process of manufacture, and the finished sections are subject to inspection for compliance with the requirements specified in this Section and approval by Project Manager.
- B. Provide lining installations field inspections on the first 25 percent of installations or as deemed necessary by Project Manager.
- C. Witness and verify, in writing, that applicator followed the approved Lining System Application plan, as specified in this Section.

### **3.05 QUALITY ASSURANCE AND TESTING**

- A. Adhesion tests:
  1. Project Manager reserves the right to perform adhesion testing using its own workforce or a qualified testing company.
  2. Test in accordance with ASTM D4541 and as specified in this Section.
  3. The purpose of the test is to ensure that all areas of the rehabilitated manhole are adequately bonded and that the mode of failure will be the tensile strength of the existing concrete or brick structure and not the adhesion of the individual coatings.
  4. Project Manager will select manholes to be subjected to adhesion testing and specific test locations within each manhole.
  5. Project Manager will be present to observe each adhesion test.
  6. Maximum adhesion test load will not exceed 200 pounds per square inch for precast manholes that are not adequately bonded.
  7. Repair damage due to adhesion test failures at no additional cost to Owner.]
- B. Dye testing and visual inspection:
  1. Project Manager reserves the right to perform dye testing as needed and introduce water around the outside of manhole to ensure that manhole rehabilitation products are properly bonded and providing a seal at all product terminations.
  2. Visual inspection accomplished by inspector entering each manhole periodically to ensure that the rehabilitation products meet the final acceptance criteria as specified in this Section.
    - a. Inspector will impact lining areas with a hammer and possibly perform destructive and nondestructive testing in order to ensure adequate bonding and thickness of lining.
    - b. Inspector will take digital images of manhole surfaces using a high-resolution remote camera.
  3. Repair defective area at no additional cost to Owner.

- C. CIPM liner samples:
  - 1. Contractor shall provide coupon samples for up to 5 percent of the structures lined with CIPM at Project Manager request from any structure lined by CIPM liner and at any depth.
  - 2. Repair coupon removal location to the satisfaction of Project Manager at no additional cost to Owner.
  - 3. Provide samples large enough to perform thickness tests in accordance with ASTM D3567 and ASTM D5813.
  - 4. Test samples of installed CIPM liner in accordance with applicable procedures in ASTM D5813.
  - 5. Remove and replace rejected CIPM liners at no additional cost to Owner.
    - a. Rejected liners due to failed core samples will result in additional core samples being taken on additional manholes as directed by Project Manager and at no additional cost to Owner.

### **3.06 ACCEPTANCE**

- A. Before the removal of the diversion of sewage flow, internal inspection of the CIPM-lined manhole, after all liner end and connection sealing is completed, as specified in this Section, will be reviewed by Project Manager for CIPM lining acceptance.
- B. Defects such as foreign inclusions, dry spots, pinholes, delamination, lifts, seam separation, and wrinkling beyond the specification allowances, determined by Project Manager as affecting the integrity or strength of the CIPM liner, shall be repaired or replaced at the Contractor's expense. Method of repair shall be proposed by Contractor and submitted to Project Manager for review and approval.
- C. Wrinkles in the finished CIPM that reduce the structural integrity of the CIPM liner are unacceptable and shall be removed or repaired by Contractor at no additional cost to Owner.
  - 1. If a void between the wrinkle and the pipe exists, Contractor shall repair or replace that section of the pipe at no additional cost to Owner.
  - 2. Methods of repair shall be proposed by Contractor and submitted to Project Manager for review and approval.

### **3.07 SAFETY REQUIREMENTS**

- A. Requirements for safety and ventilation shall be in accordance with all applicable federal, state, and local regulations.

### **3.08 CLEANUP**

- A. Remove surplus materials, protective coverings, and accumulated rubbish.
- B. Thoroughly clean surfaces and repair overspray, splashes, splatters, or other lining-related damage.
- C. Clean, repair, and refinish surfaces damaged by Contractors activities to the original or required condition.

END OF SECTION







## **CITY OF EVERETT, WASHINGTON PUBLIC WORKS DEPARTMENT**

### **ADDENDUM NO. 1 TO 20<sup>th</sup> STREET SEWER REHABILITATION PROJECT WO. # UP 3776 JUNE 4<sup>th</sup>, 2024**

#### **Notice to Plan Holders:**

This Addendum No. 1 contains the following revisions, additions, deletions, and/or clarifications, and is hereby made a part of the plans and specifications (Contract Documents) for the above named project and shall be taken into consideration by Bidders in submitting their bids.

Bidders shall acknowledge receipt of this Addendum No. 1 in the space provided on the Proposal. Failure to do so may subject the Bidder to disqualification of its bid.

This Addendum 1 consists of 4 pages, including all revisions, attachments and details.

#### **The Bid date for receipt of Bids has NOT been changed by this Addendum.**

#### **PLANS**

There are no plans changes at this time.

#### **SPECIFICATIONS**

**Item 1 - SPECIFICATION 00 01 10, TABEL OF CONTENTS, page 1, Division 00**

Delete Section 007373 from TOC

**Item 2 - SPECIFICATION 00 11 13, ADVERTISEMENT FOR BIDS**

Replace this Section in its entirety with the attached revised Section 00 11 13

**Item 3 - SPECIFICATION 00 73 73, APPRENTICE UTILIZATION**

Delete this Section in its entirety.

*All other requirements of the plans and specifications remain in effect.*

*This addendum shall be attached to and made a part of the plans and specifications and shall be acknowledged on the bidder's proposal.*

Sincerely,

John Nottingham PE  
Project Manager

Attachments: Section 00 11 13 (Revised)

Replace Section in its Entirety

## SECTION 00 1113 - ADVERTISEMENT FOR BIDS

### NOTICE TO CONTRACTORS

Notice is hereby given that sealed bids for the **20th Street Sewer Rehabilitation project** will be received at the office of the City Clerk, 1st Floor Everett Municipal Building, 2930 Wetmore, Everett, WA, 98201, until **2:00 p.m. on Tuesday, June 18th, 2024**. At the appointed time, all bids will be opened and read aloud publicly via live streaming, or bidders may attend the bid opening in person at 2930 Wetmore Ave, Suite 9E, Everett, WA 98201. The link to view the live streaming bid opening can be found at: <https://everettwa.gov/319/Procurement>.

The engineer's estimate for this Project is \$1,991,169.00 including sales tax.

This work encompasses the rehabilitation of existing sewer mains along 20th Street and two other locations. The work also includes the rehabilitation of existing sewer manholes. The city is seeking a Contractor to rehabilitate these sewer mains, and manholes through trenchless methods. The work shall include the following, but not be limited to:

1. Installation, operation, and removal of temporary sewage bypass pumping and piping systems.
2. Rehabilitation of approximately 2,450 linear feet of reinforced 36-inch concrete pipe along 20th Street between Grand Avenue and Broadway Avenue.
3. Rehabilitation of approximately 470 linear feet of 10-inch and 150 linear feet of 8-inch concrete pipe at Mill Street and Winter Street.
4. Rehabilitation of approximately 135 linear feet of 24-inch corrugated metal pipe.
5. Rehabilitation of 26 manholes.
6. Pavement demolition and restoration.

Free-of-charge access to project bid documents (plans, specifications, addenda, and Bidders List) is provided to Prime Bidders, Subcontractors, and Vendors by going to [www.bxwa.com](http://www.bxwa.com) and clicking on "Posted Projects", "Public Works", and "City of Everett". This online plan room provides Bidders with fully usable online documents with the ability to: download, view, print, order full/partial plan sets from numerous reprographic sources, and a free online digitizer/take-off tool. It is recommended that Bidders "Register" in order to receive automatic e-mail notification of future addenda and to place themselves on the "Self-Registered Bidders List". Bidders that do not register will not be automatically notified of addenda and will need to periodically check the online plan room for addenda issued on this project. Contact Builders Exchange of Washington at (425) 258-1303 should you require assistance with access or registration.

All bids must be made upon the regular forms provided for this purpose and must be accompanied by a bid bond or certified check in an amount not less than five percent (5%) of the total amount of the Bid. One hundred percent (100%) Payment and Performance Bonds will be required of the successful bidder to guarantee faithful performance of the contract.

The City reserves the right to reject any and all bids and to waive any irregularities or informalities. No Bidder may withdraw his Bid after the hour set for the opening thereof. The City further reserves the right to make the bid award as deemed in the best interest of the City. The right is reserved by the City to postpone the award for a period of 45 days after bid opening.

The Contractor will be required to comply with all local, State, and Federal laws and regulations pertaining to equal employment opportunities.

**The City, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. 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, or national origin in consideration for an award.**

By order of the City Council, Everett, Washington.

**END OF SECTION 00 1113**



## **CITY OF EVERETT, WASHINGTON PUBLIC WORKS DEPARTMENT**

### **ADDENDUM NO. 2 TO 20<sup>th</sup> STREET SEWER REHABILITATION PROJECT WO. # UP 3776 JUNE 4<sup>th</sup>, 2024**

#### **Notice to Plan Holders:**

This Addendum No. 2 contains the following revisions, additions, deletions, and/or clarifications, and is hereby made a part of the plans and specifications (Contract Documents) for the above named project and shall be taken into consideration by Bidders in submitting their bids.

Bidders shall acknowledge receipt of this Addendum No. 2 in the space provided on the Proposal. Failure to do so may subject the Bidder to disqualification of its bid.

This Addendum 2 consists of 14 pages, including all revisions, attachments and details.

#### **The Bid date for receipt of Bids has NOT been changed by this Addendum.**

#### **PLANS**

There are no plans changes at this time.

#### **SPECIFICATIONS**

##### **Item 1 - SPECIFICATION 33 01 30.71, CURED-IN-PLACE PIPE REHABILITATION - FULL STRUCTURAL (GRAVITY)**

Replace this Section in its entirety with the attached revised Section 33 01 30.71

*All other requirements of the plans and specifications remain in effect.*

*This addendum shall be attached to and made a part of the plans and specifications and shall be acknowledged on the bidder's proposal.*

Sincerely,

John Nottingham PE  
Project Manager

Attachments: Section 33 01 30.71\_REV AD2 (Revised)

## **SECTION 33\_01\_30.71**

### **CURED-IN-PLACE PIPE REHABILITATION - FULL STRUCTURAL (GRAVITY)**

#### **PART 1 GENERAL**

##### **1.01 SUMMARY**

- A. This Work consists of the supply and installation of full segment rehabilitation using Glass Fiber Reinforced cured-in-place pipe (CIPP) by ultraviolet light cure in existing circular sewers, CIPP end and connection sealing including all labor, materials, and equipment necessary to complete the work where indicated on the Plans.
- B. CIPP installation will take place prior to all manhole lining work. Lined-through manholes shall be opened prior to manhole coating Work.
- C. Service connections are defined as the interface of the lateral with the sewer main. Service connection sealing is not intended to be a lateral liner. No lateral Work is included in the portion of the Work for CIPP.
- D. Incidental Work to remove and replace manhole cones, risers, frame and cover, and concrete collars as necessary for the installation of the CIPP will be considered as part of the CIPP Work.

##### **1.02 REFERENCES**

- A. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. HS20 - Vehicle Loading Standards.
- B. ASTM International (ASTM):
  - 1. D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents.
  - 2. D638 - Standard Test Method for Tensile Properties of Plastics.
  - 3. D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - 4. D2990 - Standard Test Methods for Tensile, Compressive, Flexural Creep and Creep Rupture of Plastics.
  - 5. D3567 - Standard Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings.
  - 6. D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
  - 7. D5813 - Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems.
  - 8. F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin Impregnated Tube.
  - 9. F1743 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pull in and inflate and Curing of a Resin Impregnated Tube.



10. F2019 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP) Using the UV-light Curing Method.
11. F2164 - Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure.

### **1.03 TERMINOLOGY**

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
  1. CIPP: Cured-in-place pipe liners for rehabilitation of existing sewers manhole to manhole.

### **1.04 SUBMITTALS**

- A. Submit as specified in Section 01\_33\_00 - Submittal Procedures.
  1. Document 00\_45\_14.06 - CIPP Rehabilitation Qualification Form.
- B. Certification showing the Contractor is currently licensed by the appropriate licensor to perform CIPP installation.
- C. Shop Drawings detailing short- and long-term properties with supporting test data of component materials and composite materials.
- D. CIPP manufacturer recommendations for material storage and UV/temperature control, handling, insertion, installation, curing, trimming and finishing, and QA/QC procedures.
- E. Resin manufacturer's recommended curing requirements.
- F. Calculations of required minimum thickness for the CIPP in each pipe reach based on the internal inspection data and the CIPP manufacturer's specifications based on field verification of sizes and prior to ordering any material.
- G. CIPP end and connection sealing materials and methods to be used to reinstate connecting sewers.
- H. Detailed method for addressing CIPP sampling requirements including location and size of each sample, method of removal.
- I. CCTV Inspection reports.
- J. Certification stating CIPP tube has been manufactured in accordance with ASTM F1216 or ASTM F1743 and resin is suitable for its intended use.
  1. Not applicable for CIPPSL.
- K. CIPP liner test reports.
- L. Warranties.

## **1.05 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

- A. Exercise adequate care during transportation, handling, and installation to prevent tearing, cutting, or otherwise damaging the CIPP material.
  - 1. Repair or replace damaged CIPP material in accordance with the manufacturer's recommendations and approval by the Project Manager before proceeding.

## **1.06 QUALIFICATIONS**

- A. Installer:
  - 1. Must have experience in CIPP lining sewers of a similar diameter and length as the proposed project.
    - a. Provide evidence of CIPP installer experience by submitting Document 00451F - Cured-in-Place Pipe Rehabilitation Qualification Form.
- B. Superintendent:
  - 1. Provide evidence of CIPP superintendent experience on experience by submitting Document 00451F - Cured-in-Place Pipe Rehabilitation Qualification Form.
  - 2. At least 1 of the qualified, named superintendents must be present at jobsite during CIPP construction activities.
  - 3. Submit certification showing the Contractor is currently licensed by the appropriate licenser to perform CIPP installation.
    - a. Certification shall be provided to the Project Manager before any materials are delivered to the job site.

## **1.07 WARRANTY**

- A. Provide warranty as specified in Section 01\_78\_36 - Warranties and Bonds.
- B. Special warranty:
  - 1. Provide a 5-year written bonded warranty for the full value of the Contract with a 3.5 percent inflation allowed per year after acceptance of the liner to cover the repairs resulting from liner failure within the warranty period, including new pipe, fittings, labor and incidentals, as well as any fines by the local, state, and federal environmental agencies.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. CIPP: One of the following, or equal:
  - 1. Insituform Technologies, Inc.
  - 2. SAERTEX-LINER MULTI.
  - 3. EnviroCure UV.

- B. CIPP end and connection sealing: One of the following, or equal:
  - 1. COSMIC, A/B Epoxy Paste.
  - 2. Neopoxy.
- C. Lateral connection sealing system: The following or equal:
  - 1. Top Hat.

## **2.02 DESCRIPTION**

- A. Work consists of the installation of a cured-in-place pipe (CIPP) in existing gravity sewers and CIPP end and connection sealing including labor, materials, and equipment necessary to complete the Work.
  - 1. Design new CIPP as a fully structural pipe, not relying on the remaining strength of the host pipe to withstand long-term external loading and internal pressure.
- B. CIPP installation will take place prior to manhole coating work.
  - 1. Open lined-through manholes prior to manhole coating work.
- C. Service connections are defined as the interface of the lateral with the sewer main.
  - 1. Service connection sealing is not intended to be a lateral liner.
  - 2. No lateral work is included in the portion of the Work for CIPP.
- D. Incidental work to remove and replace manhole cones, risers, frame and cover, and concrete collars necessary for the installation of the CIPP will be considered as part of the CIPP work.

## **2.03 DESIGN CRITERIA**

- A. Liner: Design in accordance with the procedures of ASTM F1216 or ASTM F1743 and/or ASTM F2019.
  - 1. Material properties used in design calculations shall be long-term (time-corrected) values.
- B. Assume the following parameters for the gravity liner design in accordance with ASTM F1216 or ASTM F1743 and ASTM F2019:
  - 1. Modulus of soil reaction,  $E' = 1000$  pounds per square inch.
  - 2. Groundwater depth equal 0 feet above top of pipe.
  - 3. Unit weight of soil: 120 pounds per cubic foot.
  - 4. Live load using an AASHTO HS20 vehicle loading.
  - 5. Inside diameter (ID) of host pipe: 8, 10, 24, 30, 36-inch, nominal ID.
  - 6. Host pipe material: Concrete pipe and corrugated metal pipe.
  - 7. Flow capacity: 32 million gallons per day (maximum). See flow requirements in Section 33\_05\_11 - Temporary Bypass Pumping.
  - 8. Length of host pipe: See Drawing G03 for lengths.
  - 9. CIPP shall be designed for fully deteriorated conditions.
  - 10. Safety factor of 2.0.
  - 11. Ovality factor of 2.0 percent.
  - 12. Fluid composition: Raw sewage.
  - 13. Service life minimum: 50 years.

- C. Recognize any non-uniform cross section and the liner bifurcation present at the spring line of the concrete pipe.
  - 1. Accounting for this condition by the use of an ovality reduction factor alone is unacceptable.
- D. Contractor shall be responsible for control of material and process variables to provide a finished CIPP possessing the minimum properties in accordance with ASTM F1216 or ASTM F1743 and required in this Section.

## **2.04 COMPONENT CIPP PROPERTIES**

- A. CIPP fabric tubing:
  - 1. Free from tears, holes, cuts, foreign materials and other surface defects.
  - 2. Designed for use in gravity sanitary sewers.
  - 3. Designed in accordance with ASTM F2019.
  - 4. Fabricated to a size that, when installed, will tightly fit the internal circumference and length of the original sewer pipe.
    - a. Make allowance for circumferential stretching during the installation and shrinkage of resin during curing and aging.

## **2.05 CURED CIPP PROPERTIES**

- A. Physical properties of the cured CIPP:
  - 1. Minimum initial test values as defined in Table 1 of ASTM F1216 or ASTM F1743 and supplemented below for polyester resin.
    - a. Properties for the polyester or any other enhanced resins shall be substantiated with third party test data.
  - 2. Flexural strength: 4,500 pounds per square inch in accordance with ASTM D790, or 6,500 pounds per square inch for sectional liner.
  - 3. Flexural modulus: 300,000 pounds per square inch in accordance with ASTM D790, or 725,000 pounds per square inch for sectional liner.
  - 4. 50-year flexural creep modulus: 150,000 pounds per square inch in accordance with ASTM D2990.
    - a. If approved 10,000-hour tests are not available, use a minimum 50 percent reduction (50 percent retention) of Flexural Modulus of Elasticity in accordance with ASTM F1216 for formula calculations.
  - 5. Tensile strength: 9,000 pounds per square inch in accordance with ASTM D638 for sectional liner.

## **2.06 DIMENSIONS OF CIPP**

- A. Make allowances in determining the felt tube length and circumference for stretch during installation and shrinkage during curing and aging.
  - 1. Minimum length: That which continuously spans the distance from the center of the inlet manhole to the center of the outlet manhole.
  - 2. Verify the lengths in the field before the liner tube is cut and impregnated.
  - 3. Individual installation runs may include 1 or more manhole-to-manhole sections, as authorized by the Project Manager.

- B. Existing sewer lines may be larger than their nominal size due to corrosion of the concrete pipe.
  - 1. It is the Contractor's responsibility to measure the actual inside diameter at different locations of the sewer to determine the appropriate size of CIPP liner.

## 2.07 WALL THICKNESS

- A. Felt tube:
  - 1. Size to the next standard 1.0 mm incremental thickness above the minimum calculated design thickness.
    - a. Size the gap thickness of the wetting out equipment to allow an excess of 5 to 10 percent resin to pass during impregnation, unless otherwise specified, to provide for excess resin migration.
    - b. Nominal CIPP thickness minimum: The calculated design thickness, in accordance with ASTM F1216 or ASTM 1743.
  - 2. Nominal wall thickness at locations of voids in the existing pipe to be lined: Increased to provide the minimum design thickness taking into consideration stretch and expansion of the liner into the void area.
    - a. Determine void locations accurately during video inspection.

## 2.08 CHEMICAL RESISTANCE

- A. Cured pipe shall be resistant to a variety of chemical effluents in accordance with ASTM D543.
  - 1. Perform tests on finished and cured CIPP liner properties as specified.
  - 2. Previous test data will not be acceptable.
- B. Provide chemical resistance test results in accordance with ASTM D543 on samples of the cured liner material that are the same as that proposed for installation.
  - 1. Tests may be performed on the sample of the finished product prior to this Contract, provided a certified affidavit, signed by an officer of the company, is submitted stating the test results were performed on a sample that is the same as the product that will be used on this Project.
  - 2. Exposure minimum: 1 month at 73.4 degrees Fahrenheit.
  - 3. During this period, the CIPP test specimens should lose no more than 20 percent of their initial flexural strength and flexural modulus when tested in accordance with ASTM F1216 or ASTM 1743, when subjected to the following solutions:

Chemical Solution	Concentration, percent
Tap Water (pH 6 to 9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

- C. Contractor shall be responsible for costs associated with the chemical resistance tests.
- D. Provide proof of meeting the requirements for the design specified to the Project Manager for approval at least 7 days prior to ordering any material.

## **2.09 CIPP END AND CONNECTION SEAL**

- A. CIPP end seal:
  - 1. Use epoxy sealant compatible with liner for end seal.
  - 2. Coat concrete or vitrified clay surfaces.
- B. Connection seal:
  - 1. Use epoxy sealant or lateral connection sealing system that is compatible with CIPP liner system for the connection seal.
- C. CIPP end and connection sealing materials and methods to be used to reinstate connecting sewers.
- D. Provide method, procedure, or information to provide either an adhesive, watertight seal to the sewer or a watertight mechanical seal between the cured sectional liner and sewer pipe wall which will not prohibit the installation of future, structural liners, sewer cleaning equipment, and CCTV equipment.

## **PART 3 EXECUTION**

### **3.01 GENERAL REQUIREMENTS**

- A. Verify measurements and dimensions prior to manufacturing the liner.
- B. Examine pipe and fittings for cracks and other physical defects immediately before installation.
  - 1. Examine pipe ends with particular care.
  - 2. Remove defective pipe and fittings from site.
- C. Label outside of each CIPP liner tube by the liner manufacturer with the location of liner manufacturer, name of the project, liner thickness, liner diameter, liner length, and the location where it is to be installed.

### **3.02 HOST PIPE AND SITE PREPARATION**

- A. Bypass flow during the rehabilitation process as specified in Section 33\_05\_11 - Temporary Bypass Pumping.
- B. Host pipe cleaning:
  - 1. Field verify pipeline section lengths to be cleaned and lined.
  - 2. Evaluate confined space atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen in accordance with local, state, and federal safety regulations.

3. Perform cleaning as specified in Section 31\_01\_35 - Sewer Pipe and Structure Cleaning.
  4. Carefully inspected sewer interior as specified in Section 33\_01\_30.12 - CCTV Inspection of Sewer Pipelines, to determine the location of conditions that may prevent proper installation of CIPP.
  5. Verify host pipe material and dimensions.
- C. Odor control:
1. At each location within the Project, prior to diversion of flows, initiate the odor control measures submitted and approved in Section 33\_05\_11 - Temporary Bypass Pumping.
- D. Host pipe repair:
1. Prior to insertion of the liner, take any remediation actions necessary to prepare the host pipe for insertion of the liner.
    - a. This will include removal of obstructions, intrusions, or smoothing of surfaces in order to ensure a proper fit and full expansion of the liner to the host pipe.
  2. Host pipe preparation recommendations shall be made by the Contractor after reviewing the CCTV.
- E. Structural defect repair:
1. Grind down, grout, or otherwise repair sections of the existing host pipe which have shifted, dropped, or severely deteriorated (greater than 2-inch loss of diameter) to provide a smooth continuous surface which will not reduce the cross-sectional area of the interior of the relined pipe or reduce wall thickness to less than the minimum specified thickness.
  2. Recommendations for the repair method shall be made by the Contractor after reviewing the CCTV.
- F. Trimming intruding laterals:
1. Trim intruding lateral so that the service connection is flush with the internal pipe wall.
    - a. Document lateral cutting by internal inspection methods.
    - b. Verify that existing pipe is not damaged during cutting operations.

### **3.03 CIPP TUBE INSTALLATION**

- A. Designate the location where the CIPP tube will be impregnated with resin ("wet-out").
1. Project Manager approval of locations required.
  2. Allow the Project Manager to inspect the materials and "wet-out" procedure.
- B. If the "wet-out" location is not at project site, transport impregnated CIPP tube to site under controlled environmental conditions.
1. Transport vehicles shall include a tamper resistant, sealed temperature recording device which records the temperature of the liner at times after leaving the wet-out site.
  2. Decide when to transport the resin impregnated CIPP tube and when to commence installation depending on prevailing weather conditions, so as to not jeopardize the installation or be detrimental to the long-term performance of the CIPP.

- C. Install liner by pull-in method.
- D. Lower resin-impregnated tube through an inversion tube and reducer, if needed.
  - 1. Install CIPP liner through existing manholes.
  - 2. No separate payment will be made for additional or enhanced access to facilitate the Contractor's CIPP liner installation process.
- E. Monitor the exotherm temperature:
  - 1. By remote temperature sensors placed at the interface of the existing pipe and the CIPP for pipe meeting the following conditions:
    - a. CIPP liner thicknesses greater than 0.75 inch.
    - b. Where the existing pipe, soil, and groundwater combination is likely to provide a significant heat sink, affecting the temperature gradient across the CIPP liner material.
  - 2. Install a minimum of 1 temperature sensors.
  - 3. Do not terminate curing process until the temperature sensor readings indicate that a satisfactory cure has been completed.
  - 4. Manage any extended cure times to not adversely affect the properties of the CIPP lining material.
  - 5. Curing process
  - 6. Follow a step cure using UV as recommended by the manufacturer and approved by the Project Manager.
    - a. Hold at the top step for an adequate length of time to ensure that the design physical properties are attained.
  - 7. Maximum rate of temperature rise and fall during heating and cooling: 2 degrees Fahrenheit per minute.
- F. Reinstatement of service laterals:
  - 1. Reinstall existing service connections after the curing is complete.
  - 2. Reinstall service laterals using only remote internal methods, prior to CIPP acceptance.
  - 3. Accurately locate and reinstall service connections after the CIPP installation and curing has been completed.
    - a. Where the CIPP liner does not create dimples at the service connections or in other ways indicate the locations, determine exact location from the internal inspection data.
  - 4. Reinstall service connections to a minimum of 95 percent of the original opening, matching the invert of the lateral.
- G. Seal the end points of the liner so that no leakage of fluids may infiltrate between the liner and the existing pipe.
- H. Apply either epoxy sealant or lateral connection sealing system, after CIPP acceptance, to completely seal area around opening of the liner and the connection.
  - 1. Installation of the connection seal shall not, in any way, damage or adversely affect the CIPP in any way.
  - 2. Repair or replace damaged CIPP liner at no additional cost to the Owner.
  - 3. Trim loose or hanging/intruding pipe connection seals to be flush with the internal pipe wall.
  - 4. Do not fold the hanging/intruding material.



- I. Inspect CIPP after installation as specified in this Section.

### **3.04 LINER INSTALLATION**

- A. Resin:
  - 1. Shall be in a state to resist wash off during transport/installation.
  - 2. Capable of being installed during wet and/or live flow conditions.
- B. Resin-impregnated tube:
  - 1. Factory-impregnated with resin (wet-out) by the material manufacturer.
  - 2. Folded or wrapped in accordance with manufacturer's instructions.
  - 3. Loaded on a pressure apparatus for transport and installation.
  - 4. Packed suitable for transport to the field for installation.
- C. Pressure apparatus:
  - 1. Either attached to a robotic device or pulled in by winch.
  - 2. The liner shall be pulled in through an existing manhole or approved access point and fully extend to the next designated manhole or termination point. The pulling speed shall not exceed 15 ft/min. Care shall be taken during the installation to not over-stress the tube.
  - 3. After pull in is completed, hold recommended pressure is maintained on the impregnated tube for the duration of the curing process.
- D. Curing:
  - 1. CIPP curing using ultraviolet light shall be in accordance with applicable ASTM F2019, Section 6.6 and 6.7, and manufacturer's recommendations.
  - 2. The ultraviolet curing lamps shall operate in a sufficient frequency range to insure the curing of the resin.
  - 3. A camera must be located on the ultraviolet light assembly to enable the video inspection of the liner to ensure that the liner has been properly inflated and any liner problems can be identified before curing begins.
  - 4. The Contractor shall submit a documented record of time, rate of travel of the ultraviolet light assembly, and internal temperatures and pressures during the curing process to the Project Manager upon request.
- E. Finished liner shall be free of dry spots, lifts, and delamination.
- F. Repair shall not inhibit the closed circuit television post video inspection of the sewer.
- G. Remove any frayed ends of the liner prior to acceptance.
- H. Maintain a visible, written log of activities in accordance with manufacturer's recommendations including time of insertion, bladder pressure and requirements, required cure time, actual cure time, and cool-down duration.

### **3.05 FINISHED PRODUCT**

- A. Provide finished CIPP continuous over the entire length of a manhole to manhole section of pipe, except for sectional liner point repairs.

- B. Remove or repair defects determined by the Project Manager as affecting the integrity or strength of CIPP or as adversely affecting the hydraulic capacity of pipe.
  - 1. Defects, including the following:
    - a. Foreign inclusions.
    - b. Dry spots.
    - c. Pinholes.
    - d. Delamination.
    - e. Lifts.
    - f. Seam separation.
    - g. Wrinkles:
      - 1) With the following conditions:
        - a) Cause a backwater of 1 inch or more.
        - b) Reduce the structural integrity of CIPP.
  - 2. At no additional cost to the Owner.
  - 3. Project Manager approval of repair method required.

### **3.06 CIPP LINER SAMPLING AND TESTING**

- A. Confirm fit and finish meets the visual classification standards in accordance with ASTM D5813.
- B. Secure confined plate samples and arrange for testing to confirm the CIPP flexural strength, tensile strength, flexural modulus, and thickness in accordance with the requirements of ASTM D5813, ASTM D638, ASTM D790, and ASTM D3567 for each liner installed.
- C. Prepare a sample of the installed CIPP liner for subsequent third-party testing of its physical properties.
  - 1. Sampling shall be performed for each separate installation of CIPP or 1 test per batch-order of section of liner or 1 test per batch order of section of liner not taken from actual live installation:
    - a. Example: Provide 1 sample from each pipeline reach where the liner is installed.
  - 2. Determine minimum wall thickness at a minimum of 3 locations on a cut section of the CIPP lining using a method of measurement accurate to the nearest 0.005 inch.
  - 3. Prepare sample using the flat plate sampling method in accordance with ASTM F1216.
    - a. Sample size minimum: Large enough to provide 5 sample specimens each for short-term flexural (bending) properties in accordance with ASTM D790.
    - b. Clamp sample in a mold and place in the downtube during the curing of the CIPP tube.
    - c. Remove sample after water is removed from the cured pipe tube.
  - 4. Identify samples with date, project name, size, thickness, location, resin, and catalyst.
  - 5. Double bag and seal sample.
- D. Test cured sample by an independent testing laboratory as recommended by the CIPP liner manufacturer and approved by the Project Manager.
  - 1. Short-term flexural (bending) properties in accordance with ASTM D790.

2. Tensile properties in accordance with ASTM D638.
3. Long-term properties in accordance with ASTM D2990.
4. Contractor shall be responsible for any deviation from the specified physical properties and those evaluated through testing.
  - a. Failure to meet the specified physical properties shall result in the CIPP liner being considered defective work and shall be rejected.
5. Contractor shall be responsible for costs associated with the testing of the liner physical properties.

E.

### **3.07 ACCEPTANCE TESTING**

- A. Leakage testing in accordance with ASTM F2164 with the following exceptions:
  1. No leakage test will be required for sectional liners.
  2. Test pressure maximum: 1.3 times the maximum surge pressure of the existing system or a minimum of 5 pounds per square inch.
  3. Stabilized pipe test duration: 2 hours.
- B. Wall thickness of samples shall be determined in accordance with ASTM D5813.
  1. Maximum wall thickness at any point: 1-inch.
  2. In accordance with structural integrity and pressure rating requirements.
- C. Post-Lining Inspection video as specified in Section 33\_01\_30.12 - CCTV Inspection of Sewer Pipelines. Inspector must be NASSCO ITCP trained and certified.

### **3.08 SITE CLEAN-UP**

- A. Clean project area.
- B. Dispose of excess material and debris, not incorporated into the permanent installation, at off-site location approved by the Project Manager.
- C. Clean, repair, and refinish surfaces damaged by Contractor's activities to the original or required condition.

END OF SECTION

**CITY OF EVERETT, WASHINGTON  
PUBLIC WORKS DEPARTMENT**

**ADDENDUM NO. 3 TO  
20<sup>th</sup> STREET SEWER REHABILITATION PROJECT  
WO. # UP 3776  
June 13<sup>th</sup>, 2024**

**Notice to Plan Holders:**

This Addendum No. 3 contains the following revisions, additions, deletions, and/or clarifications, and is hereby made a part of the plans and specifications (Contract Documents) for the above named project and shall be taken into consideration by Bidders in submitting their bids. Bidders shall acknowledge receipt of this Addendum No. 3 in the space provided on the Proposal. Failure to do so may subject the Bidder to disqualification of its bid.

This Addendum 3 consists of 3 pages, including all revisions, attachments and details.

**The Bid date for receipt of Bids has NOT been changed by this Addendum.**

**PLANS**

There are no plan changes at this time.

**SPECIFICATIONS**

There are no specification changes at this time.

**ANSWERS TO QUESTIONS SUBMITTED FOR CLARIFICATION**

- Q1 -** Very detailed bypass plan. However, how do you suction and line from/to the same MH, can we deviate from the bypass plan. **The temporary bypass plan is only provided as a guide. The temporary bypass must be designed by the Contractor and submitted for approval as specified in Section 33\_05\_11. Deviations from the alignment shown in the Plans are allowed, but must be approved by the Owner.**

- Q2 -** Called out trenching footage is extending the majority of trenches. Can we utilize 45s so we can shorten them. **The temporary bypass plan is only provided as a guide. The temporary bypass must be designed by the Contractor and submitted for approval as specified in Section 33\_05\_11. Deviations from the alignment shown in the Plans are allowed, but must be approved by the Owner.**
- Q3 -** In order to line between 1795S21 and 1795S23 bypass will need to be performed. No bypass plan is given.? No detail on plans to determine bypass. Is there a more extensive plan set so we are able to determine suction and discharge mhs? Please include depth to invert. **On Sheet BP05 the pipe shown between SMH1795R10 and SMH1795R11 is not an existing pipe. This is the intended bypass pipe route.**
- Q4 -** Can you include all invert and rim and cover elevations for proposed suction mhs. **Please see the attached sheet**
- Q5 -** Plan set calls out h20 rating and 3ft bury depth for bypass pipe. This requires 3ft of depth to the top of bypass pipe. This will generate catastrophic issues with getting through intersections with utilities. Can a typical 1ft of cover over pipes and road plates be used instead? **Shallow bury bypass trenches are allowed per Detail 4 on Drawing BP06 to account for utility conflicts.**
- Q6 -** For bypass operations in the Mill -Winter street area what are your trenching expectations? **The City does not have any expectations for the design of the temporary bypass system. The bypass system will only need to be buried if it is required to provide access across a driveway or side street. Ultimately it is the Contractors responsibility to design the system and submit it for approval.**

The following questions have been raised in regard to the  
*All other requirements of the plans and specifications remain in effect.*

*This addendum shall be attached to and made a part of the plans and specifications and shall be acknowledged on the bidder's proposal.*

Sincerely,

John Nottingham PE  
Project Manager

Attachments: 20<sup>th</sup> St. Manhole Lining Upstream MH

## 20th St. Sewer Rehab - Lining Upstream MH Info

Rehab Manhole	Direction	Upstream Manhole	Invert	Rim
SMH1795L04	Southeast	SMH1795L05	86.07	90.9
	SouthWest	Priv		
	West	SMH1795L02	90.02	95.28
SMH1795T01	West	SMH1795T04	94.74	109.62
SMH1795T20	South	SMH1795Y18	46.99	47.72
	West	SMH1795T16	45.74	69.65
SMH2995N15	West	SMH2995N12	88.19	102.62
	North	SMH2995N14	82.86	96.62
SMH3095Q09	SouthWest	SMH3095Q04	214.24	224.62
	South	SMH3095Q05	192.52	202.62
SMH3095B15	South	SMH3095B27	104.62	111.95
SMH2995M21	West	SMH2995M20		71
	West	SMH2995M18	67.4	81.62
SMH2095F02	North	SMH2095F01	85.52	95.62
SMH2095T03	North	SMH2095T02	87.48	90.12
SMH2095T01	East	SMH2095T27	94.38	98.08
SMH2095T16	Only Side sewers connected			
SMH2995L02	South	SMH2995L06	52.4	69
	West	SMH2995M24	59.91	69.5
	West	SMH2995M21		70

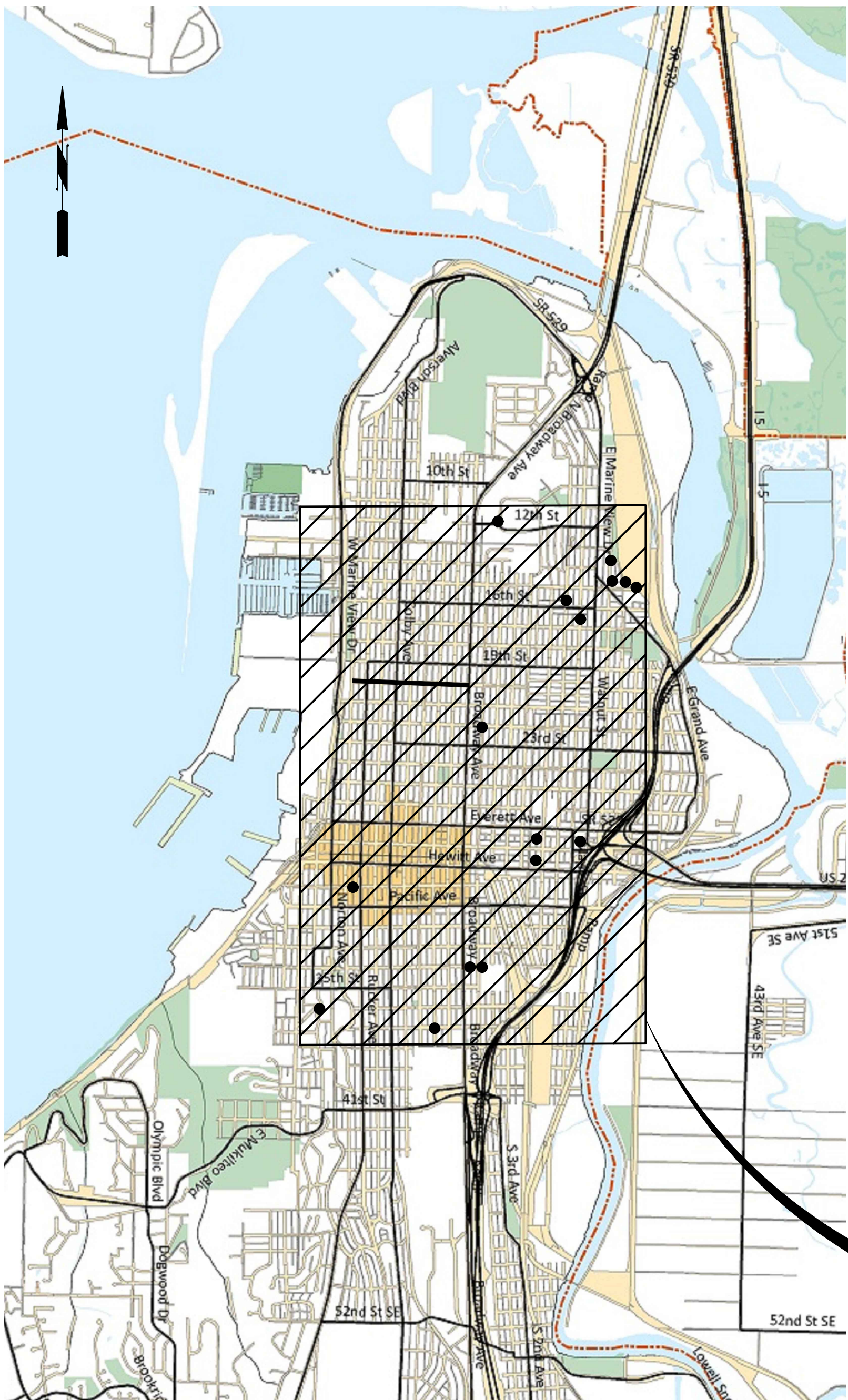


# CITY OF EVERETT

## PUBLIC WORKS DEPARTMENT

### 20TH STREET SEWER REHABILITATION PROJECT

20TH STREET SEWER REHABILITATION PROJECT  
VOLUME 2 OF 2  
PROJECT NO. UP-3776



VICINITY MAP

PROJECT AREA

DRAWING INDEX		
Sheet #	Drawing #	Sheet Title
GENERAL		
1	G01	COVER SHEET, VICINITY MAP
2	G02	LEGEND AND ABBREVIATIONS
3	G03	GENERAL NOTES
4	G04	DESIGN CRITERIA
5	G05	KEY MAP & SURVEY NOTES
CIVIL		
6	C01	20TH ST SEWER REHABILITATION PLAN STA 1+00 TO STA 11+00
7	C02	20TH ST SEWER REHABILITATION PLAN STA 11+00 TO STA 21+00
8	C03	20TH ST SEWER REHABILITATION PLAN STA 21+00 TO STA 30+00
9	C04	MILL-WINTER ST SEWER REHABILITATION PLAN STA 1+00 TO STA 6+60
10	C05	MILL-WINTER ST SEWER REHABILITATION PLAN STA 6+60 TO STA 9+50
11	C06	1525 E MARINE VIEW DR SEWER REHABILITATION PLAN
12	C07	MANHOLE REHABILITATION - 1
13	C08	MANHOLE REHABILITATION - 2
14	C09	CIVIL DETAILS - 1
15	C10	CIVIL DETAILS - 2
BYPASS		
16	BP01	20TH ST SEWER BYPASS PLAN STA 1+00 TO STA 11+00
17	BP02	20TH ST SEWER BYPASS PLAN STA 11+00 TO STA 21+00
18	BP03	20TH ST SEWER BYPASS PLAN STA 21+00 TO STA 30+00
19	BP04	MILL-WINTER ST SEWER BYPASS PLAN STA 1+00 TO STA 6+60
20	BP05	MILL-WINTER ST SEWER BYPASS PLAN STA 6+60 TO STA 9+00 1525 E MARINE VIEW DR SEWER BYPASS PLAN
21	BP06	BYPASS DETAILS - 1
22	BP07	BYPASS DETAILS - 2
23	BP08	BYPASS DETAIL - 3

CITY OFFICIALS:

MAYOR:

CASSIE FRANKLIN

COUNCIL MEMBERS:

COUNCIL PRESIDENT  
DON SCHWAB

MARY FOSSE  
PAULA RHYNE  
SCOTT BADER

LIZ VOGELI  
BEN ZARLINGO  
JUDY TUOHY

RECOMMENDED FOR APPROVAL :


  
PROJECT ENGINEER  
JOHN NOTTINGHAM, P.E.

  
TRAFFIC ENGINEER  
COREY HERT, P.E.

  
OPERATIONS SUPERINTENDENT  
GRANT MOEN, P.E.

  
CONSTRUCTION MANAGER  
KEITH ALEWINE

APPROVED BY :

  
CITY ENGINEER  
THOMAS W. HOOD, P.E.

  
PUBLIC WORKS DIRECTOR  
RYAN L. SASS, P.E.



NO.	DATE	APRVD	REVISION
PLANS ISSUED FOR			
BID	DATE	APRVD	CONST
ACTION	DATE	APRVD	ACTION
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DATE	APRVD	DATE	APRVD

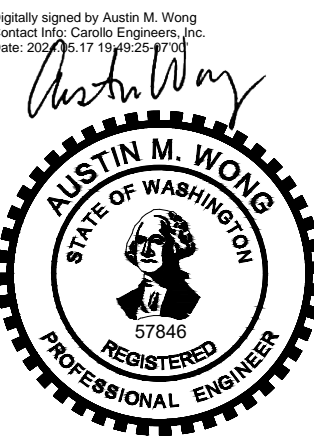
Designed ANW  
Drawn JJC  
Checked EJW/KDR  
Design Review Level  
Issued on 05/17/2024

LIFE THREATENING EMERGENCIES: FIRST CALL 911		
EMERGENCY CONTACTS		
CALL	24 HR PHONE	FOR:
SNO COUNTY PUD	425-783-4745	ELECTRICAL
PSE (GAS)	1-888-225-5773	GAS LEAKS
CITY OF EVERETT (DISPATCH)	425-257-8832	SS,SD,WATER, TRAFFIC & SIGNAL

CALL TWO (2) BUSINESS DAYS  
BEFORE YOU DIG 1-800-424-5555



Know what's below.  
Call before you dig.



Drawing
G01
Sheet No.
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Of Total
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Plot date: 5/17/2024 9:29 PM  
Plotted by: Shannon Adams  
Last saved by: SAdams  
File path: \\P:\WORKING\CAROLLO\_200000\00268243\202682-003.DWG  
Sheet title: 20TH STREET SEWER REHABILITATION PROJECT  
Control Monument  
City of Everett Field Book/Starting Page /

Sheetset Name

Plot style: Everett-2016.stb

GENERAL NOTES:

1. THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE PATTERNS AT THE SITE AT ALL TIMES. WATER SHALL NOT BE ALLOWED TO POND OR STAND DUE TO CONTRACTOR ACTIVITIES.

2. REFER TO SECTION 01 14 00 OF THE SPECIFICATIONS AND OTHER APPLICABLE SECTIONS FOR WORK RESTRICTIONS AND CONSTRAINTS.

3. ALL CONSTRUCTION SIGNING, BARRICADING AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.

4. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL, OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY OF EVERETT.

5. ALL NEW OR REPLACEMENT TRAFFIC SIGNAL LOOPS SHALL BE INSTALLED USING CABLE-IN-DUCT WIRING, SHALL HAVE INDEPENDENT LEAD-IN WIRES FOR EACH LOOP FROM THE CONTROLLER TO THE PULL-BOX, AND EACH LEAD-IN SHALL BE INDIVIDUALLY TAGGED.

6. IF EXISTING CONTROL POINTS/MONUMENTS ARE DISTURBED BY THE CONTRACTOR, CONTRACTOR SHALL FILE THE APPROPRIATE NOTIFICATION TO GOVERNING AGENCY PER WAC 332-120. CONTRACTOR SHALL REPLACE THE CONTROL POINT/MONUMENT PER WAC 332-120.

7. CONTRACTOR TO FIELD VERIFY LOCATION AND NUMBER OF LATERALS AND SERVICE CONNECTIONS/SIDE SEWERS.

8. SEE SHEET G04 FOR SURVEY HORIZONTAL AND VERTICAL CONTROLS AND DATUM.

9. EXISTING UTILITIES AND STRUCTURES (UNDERGROUND, SURFACE, OR OVERHEAD) ARE INDICATED ONLY TO THE EXTENT THAT SUCH INFORMATION WAS KNOWN, OR MADE AVAILABLE TO, OR DISCOVERED BY THE PROJECT REPRESENTATIVE IN PREPARING THE DRAWINGS. THE LOCATIONS, CONFIGURATIONS, AND ELEVATIONS OF SUBSURFACE FACILITIES AND UTILITIES ARE APPROXIMATE, AND NOT ALL UTILITIES AND FACILITIES ARE INDICATED. PIPING SIZES AND MATERIALS, WHERE KNOWN ARE DESIGNATED BASED ON AS-BUILT RECORDS, GIS RECORDS, AND/OR LIMITED SURVEY DATA. CONTRACTOR TO FIELD VERIFY DURING INITIAL INSPECTION WORK. REPORT DISCREPANCIES TO THE PROJECT REPRESENTATIVE.

10. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY PRECISE LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STRUCTURES, WHETHER INDICATED ON THE DRAWINGS OR NOT, IN THE FIELD IN ADVANCE OF EXCAVATING, BY CONTACTING ALL UTILITIES AND OTHER AGENCIES, AND BY PROSPECTING. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, DEMOLITION, PROTECTION, RECONSTRUCTION, AND RECONNECTION OF EXISTING FACILITIES AS REQUIRED TO COMPLETE THE WORK. IF REQUIRED AFTER FIELD VERIFICATION, CONTRACTOR SHALL IMMEDIATELY COORDINATE WITH THE PROJECT REPRESENTATIVE TO DETERMINE ANY NECESSARY MODIFICATIONS TO PROPOSED NEW WORK.

11. BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED NEW WORK.

12. “SCREENED” (LIGHT) DELINEATION INDICATED ON THE DRAWINGS DENOTES EXISTING FACILITIES. “SCREENED” INFORMATION WAS TAKEN FROM EXISTING INFORMATION, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING OF CONSTRUCTION. “BOLD” DELINEATION IS A WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

13. DRAWINGS SHOW ONLY KNOWN SEWER PIPELINES AND LATERALS FROM AS-BUILT RECORDS, GIS RECORDS, AND/OR LIMITED SURVEY DATA. CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATIONS OF OTHER SEWER PIPES AND LATERALS DURING INITIAL INSPECTION OF WORK.

14. CONTRACTOR TO MAINTAIN CONTINUOUS SEWER SERVICE AT ALL TIMES DURING CONSTRUCTION.

15. RIM ELEVATIONS AND INVERT ELEVATIONS SHOWN ON THE DRAWINGS ARE TO BE VERIFIED BY CONTRACTOR DURING INITIAL INSPECTION WORK.

16. ALL CONFINED SPACE ENTRY WORK SHALL COMPLY WITH STATE AND FEDERAL OSHA REQUIREMENTS.

17. CONTRACTOR SHALL OBTAIN RIGHTS-OF-ENTRY FROM PRIVATE PROPERTY OWNERS PRIOR TO ENTERING PRIVATE PROPERTY, THAT ARE NOT OTHERWISE PROVIDED BY THE CITY PRIOR TO COMMENCING OF WORK.

18. PIPES, MANHOLES AND LATERALS NOT SHOWN FOR REHABILITATION, REPLACEMENT OR ABANDONMENT ON DRAWINGS ARE EXCLUDED FROM THE WORK.

19. ALL PIPES DESIGNATED AS "TO BE REHABILITATED" SHALL BE LINED USING CIPP. CONTRACTOR SHALL VERIFY CONDITION OF PIPE FOR SUITABILITY OF INSTALLATION. CHANGES TO THE SCHEDULED REHABILITATION SHALL BE APPROVED, IN ADVANCE OF ANY WORK, BY THE PROJECT REPRESENTATIVE.

20. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS. PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF WASHINGTON.

22. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING TREES, SHRUBS, AND PLANTS, UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE PROJECT REPRESENTATIVE.

23. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS THAT ARE NOT OTHERWISE PROVIDED BY THE COUNTY PRIOR TO COMMENCING OF WORK.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS, BUILDINGS, OR OTHER STRUCTURES RESULTING FROM CONTRACTORS CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND THE PROJECT REPRESENTATIVE AT NO COST TO THE OWNER.

25. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO ALL ADJOINING PROPERTIES ACCESSIBLE TO THE PUBLIC AND EMERGENCY VEHICLES. DESIGNS FOR MAINTAINING ACCESS WILL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CONTROLLING AGENCY FOR REVIEW AND APPROVAL.

26. THE CONTRACTOR MUST HAVE AN APPROVED TRAFFIC CONTROL PLANS PRIOR TO ANY CONSTRUCTION.

27. THE CONTRACTOR SHALL PREPARE AND SUBMIT DIVERSION OF FLOW PLAN PER THE CONTRACT DOCUMENTS. THE CONTRACTOR MUST HAVE AN APPROVED TEMPORARY BYPASS PLAN PRIOR TO ANY CONSTRUCTION.

28. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS; ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE OWNER.

29. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS, OR AS DESIGNATED IN THE FIELD BY PROJECT REPRESENTATIVE.

30. EXACT LOCATION OF ALL SAWCUT LINES MAY BE DETERMINED IN THE FIELD BY A PROJECT REPRESENTATIVE IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.

31. ROADWAY RESTORATION SHALL INCLUDE REPLACEMENT OF ROADWAY STRIPES AND LANE MARKERS TO PRE-CONSTRUCTION CONDITION.
- |                  |      |       |          |      |       |        |      |       |  |
|------------------|------|-------|----------|------|-------|--------|------|-------|--|
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EJW/KDR  
Design Review Level
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- 3200 Cedar Street  
Everett, WA 98201  
425.257.8800 everettwa.gov
- 20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776
- REGION - 10 | STATE - WA
- GENERAL  
GENERAL NOTES
- Drawing  
G03
- Sheet No.  
3  
23  
Of Total



Plot date: 5/17/2024 9:30 PM  
Plotted by: Shannon Adams  
Last saved by: SAdams  
File path: \\P:\WORKING\CAROLLO\_20000\00268243\202682-004.DWG  
Reviewed by: Control Monument  
City of Everett Field Book/Starting Page /

Plot style: Everett-2016.stb  
Sheetset Name

20TH STREET SEWER PIPE SUMMARY*							
PIPE SEGMENT	SHEET NO.	UPSTREAM MH / STRUCTURE	Sewer Mainline Number	DOWNSTREAM MH	LENGTH (FT)	PIPE DIAMETER	MATERIAL
1	C01	SMH1995B12	SML1995B12	SMH1995A17	296	36"	Conc.
2	C01	SMH1995A17	SML1995A17	SMH1995A21	173	36"	Conc.
3	C01	SMH1995A21	SML1995A21	SMH1995A16	171	36"	Conc.
4	C01/C02	SMH1995A16	SML1995A16	SMH1995A15	346	36"	Conc.
5	C02	SMH1995A15	SML1995A15	SMH1995A14	368	36"	Conc.
6	C02	SMH1995A14	SML1995A14	SMH2095D11	297	36"	Conc.
7	C02/C03	SMH2095D11	SML2095D11	SMH2095D05	353	36"	Conc.
8	C03	SMH2095D05	SML2095D05	SMH2095D12	52	36"	Conc.
9	C03	SMH2095D12	SML2095D12	SMH2095D13	388	36"	Conc.
11	C04	SMH1795R07	SML1795R07	SMH1795R08	103	10"	Conc.
12	C05	SMH1795R08	SML1795R08	SMH1795R11	470	8"	Conc.
13	C06	SMH1795S21	SML1795S21	SMH1795S23	158	24"	CMP

MANHOLE SUMMARY TABLE FOR CIPP*							
MANHOLE NUMBER	SHEET NO.	DIAMETER (INCHES)	RIM ELEV. (FEET)	INVERT ELEV. (FEET)	DIRECTION	ESTIMATED DEPTH (FEET)	PIPE DIAMETER (INCHES)
SMH1995B12 <sup>1</sup>	C01	DISCHARGE STRUCTURE	116.71	104.4	West	12.31	30" Conc
			116.71	104.4	West	12.31	16" DI
			116.71	104.1	East	12.61	36" Conc
SMH1995A17	C01	48"	116.51	103.1	West	13.41	36" Conc
			116.51	103	East	13.51	36" Conc
SMH1995A21	C01	96"	115.11	102	West	13.11	36" Conc
			115.11	101.7	East	13.41	36" Conc
			115.11	103.5	Northwest	11.61	18" PVC
SMH1995A16	C01	48"	115.05	101.4	West	13.65	36" Conc
			115.05	101.3	East	13.75	36" Conc
SMH1995A15	C02	48"	114.09	97	West	17.09	36" Conc
			114.09	97.1	East	16.99	36" Conc
SMH1995A14	C02	48"	106.8	91.7	East	15.1	36" Conc
			106.8	91.6	West	15.2	36" Conc
SMH2095D11	C02	48"	98.98	87.3	East	11.68	36" Conc
			98.98	87.2	West	11.78	36" Conc
SML2095D05	C03	48"	93.74	82.1	East	11.64	36" Conc
			93.74	82	West	11.74	36" Conc
SMH2095D12	C03	48"	83.81	71.81	East	12	36" Conc
			83.81	71.81	West	12	36" Conc
			83.81	UNK	North	UNK	12" PVC
			83.81	UNK	South	UNK	12" PVC
SMH2095D13 <sup>2</sup>	C03	48"	94.13	84.78	East	9.35	30" Conc
			94.13	84.73	West	9.4	36" Conc
SMH2095D10	C03	48"	93.95	79.5	North	14.45	30" Conc
			93.95	79.6	South	14.35	30" Conc
			93.95	85.4	Southwest	8.55	6" PVC
			93.95	85	West	8.95	6" PVC
			93.95	79.8	West	14.15	30" Conc
SMH1795R07	C04	48"	48.38	39.6	West	8.78	6" Conc
			48.38	39.5	South	8.88	12" Conc
SMH1795R08	C04	48"	43.36	35	West	8.36	8" Conc
			43.36	34.9	East	8.46	8" Conc
			43.36	34.9	North	8.46	10" Conc
SMH1795R11	C05	48"	27.61	22.9	West	4.71	8" Conc
			27.61	22.7	South	4.91	12" Conc
SMH1795S21	C06	48"	21.12	15.12	North	6	24" Conc
			21.12	13.12	South	8	24" CMP

NOTES

1. SMH1995B12 WILL NOT BE REHABILITATED. HAS A 48" MANHOLE OPENING TO A DISCHARGE TRANSITION VAULT.
2. SMH20295D10 WILL NOT BE REHABILITATED. INFORMATION REGARDING SMH2095D10 IS FOR REFERENCE PURPOSES FOR TEMPORARY BYPASS PUMPING.
- \* PIPE AND MANHOLE INFORMATION IS APPROXIMATE, CONTRACTOR TO FIELD-VERIFY INVERTS AND DEPTHS PRIOR TO CONSTRUCTION.

MANHOLE SUMMARY TABLE FOR STAND ALONE MANHOLE LINING*							
MANHOLE NUMBER	SHEET NO.	ADDRESS	RIM ELEV.	INVERT ELEV.	DIRECTION	ESTIMATED DEPTH	CONNECTION DIAMETER
SMH1795L04	C07	2232 12TH ST.	91.3	84.4	South	6.9	24" Conc
			91.3	84.3	North	7	24" Conc
			91.3	85.3	Southwest	6	10" PVC
			91.3	86.7	Northwest	4.6	8" Conc
			91.3	84.6	West	6.7	10" Conc
SMH1795T01	C07	2821 16TH ST.	75.66	68.2	West	7.46	6" Conc
			75.66	68.1	South	7.56	6" Conc
SMH1795T20	C07	1608 WALNUT ST.	49.13	42.4	South	6.73	6" Conc
			49.13	42.3	North	6.83	6" Conc
			49.13	42.4	Southwest	6.73	6" Conc
SMH2995N15	C07	1907 37TH ST.	88.3	74.2	West	14.1	36" Conc
			88.3	74.3	East	14	36" Conc
			88.3	74.2	North	14.1	36" Conc
SMH3095Q09	C07	3529 FRIDAY AVE.	194.53	190.1	North	4.43	12" Metal
			194.53	190.1	South	4.43	12" Metal
			194.53	190.3	West	4.23	6" Metal
			194.53	190.5	West	4.03	6" Metal
SMH3095B15	C07	1316 WALL ST.	109.04	99.2	South	9.84	10" Conc
			109.04	99.1	North	9.94	10" Conc
			109.04	99.3	East	9.74	10" Conc
			109.04	101.3	Southeast	7.74	6" PVC
SMH2995M21	C08	3330 MCDOUGALL AVE.	69.8	59.4	East	10.4	12" PVC
			69.8	59.4	South	10.4	12" PVC
SMH2095F02	C08	2130 MCDOUGALL AVE.	93.87	81.6	North	12.27	12" Conc
			93.87	81.6	South	12.27	12" Conc
			93.87	88.3	West	5.57	8" Conc
			93.87	82.7	Northwest	11.17	8" Conc
SMH2095T03	C08	2707 CALIFORNIA ST.	91.25	85.6	North	5.65	6" Conc
			91.25	85.5	South	5.75	6" Conc
SMH2095T01	C08	2712 CADAR ST.	98.07	92.5	East	5.57	6" Conc
			98.07	92.2	South	5.87	6" Conc
SMH2095T16	C08	2711 MAPLE ST.	66.51	64.2	South	2.31	6" Conc
			66.51	61.6	Northwest	4.91	6" PVC
			66.51	60.9	South	5.61	6" PVC
SMH2995L02	C08	3402 MCDOUGALL AVE.	64.41	52.4	South	12.01	12" Conc
			64.41	52.4	North	12.01	12" Conc
			64.41	53.2	West	11.21	12" PVC

NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



3200 Cedar Street  
Everett, WA 98201  
425.257.8800 everettwa.gov

20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

GENERAL  
DESIGN CRITERIA

Drawing  
G04

Sheet No.  
4

23  
Of Total



CONTROL POINT TABLE		
BENCHMARK NO.	NORTHING	EASTING
633 32 01	364503.9450	1305505.3650
699 21 01	364528.3130	1304807.6650

SURVEY NOTES

1. THE PURPOSE OF THIS TOPOGRAPHIC SURVEY IS FOR CIVIL ENGINEERING DESIGN. THIS IS NOT A BOUNDARY SURVEY. SOURCES OF BOUNDARY INFORMATION AS SHOWN INCLUDE FIELD-TIED MONUMENTATION, PLATS, COUNTY RECORDS OF SURVEY, AND AUDITOR INDEXING INFORMATION.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITY SYSTEMS, AS SHOWN HEREON, ARE TAKEN FROM UTILITY LOCATE PAINT MARKS OR AS-BUILT PLANS AND ARE SHOWN IN AN APPROPRIATE WAY ONLY.  
  
THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. ALL LOCATOR SERVICES SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION OR SUBSURFACE EXPLORATION.  
CALL 1-800-424-5555.
3. FIELD SURVEY: KPG, JUNE, 2023. LICENSE MICHAEL R. BOWEN, P.L.S. NO. 29294/RONALD D. REICHEL, P.L.S. NO. 38015.
4. STORM AND SEWER CONNECTIONS HAVE BEEN DRAWN FROM CENTER OF LID TO CENTER OF LID.

MATCHLINE TO KEY MAP - NORTH



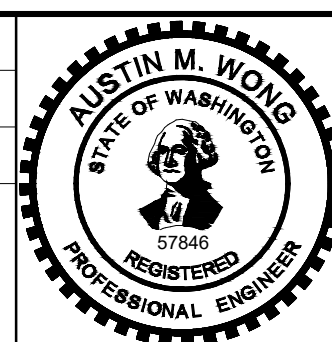
MATCHLINE TO KEY MAP - SOUTH

## KEY MAP - NORTH

SCALE: 1"=500'

NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID ACTION	DATE	APRVD	CONST ACTION	DATE	APRVD	RECORD ACTION	DATE	APRVD	

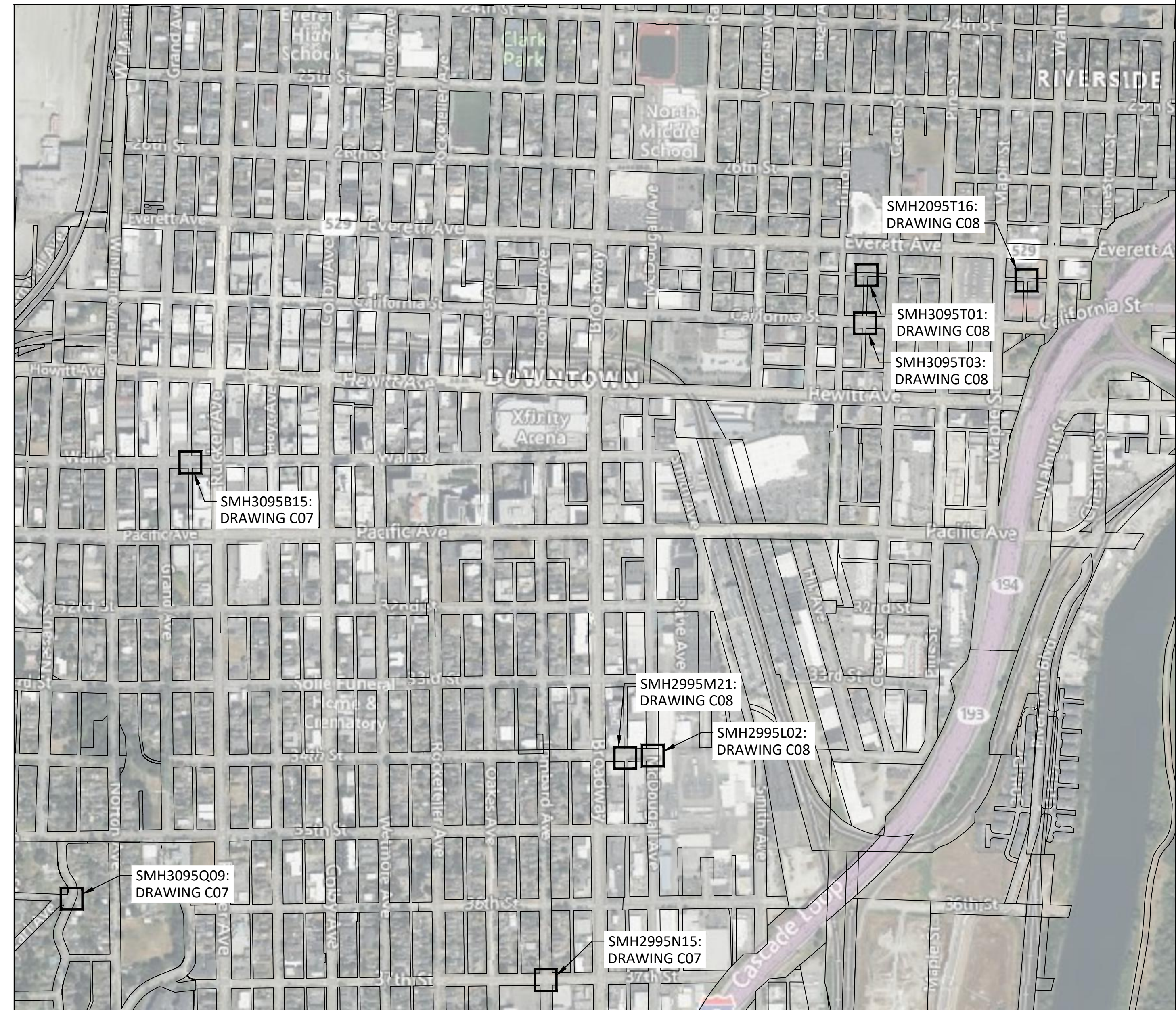
Designed	AMW
Drawn	JJC
Checked	EJW/KDR
Design Review Level	



20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

## KEY MAP - SOUTH

SCALE: 1"=500'



## GENERAL

## KEY MAP & SURVEY NOTES

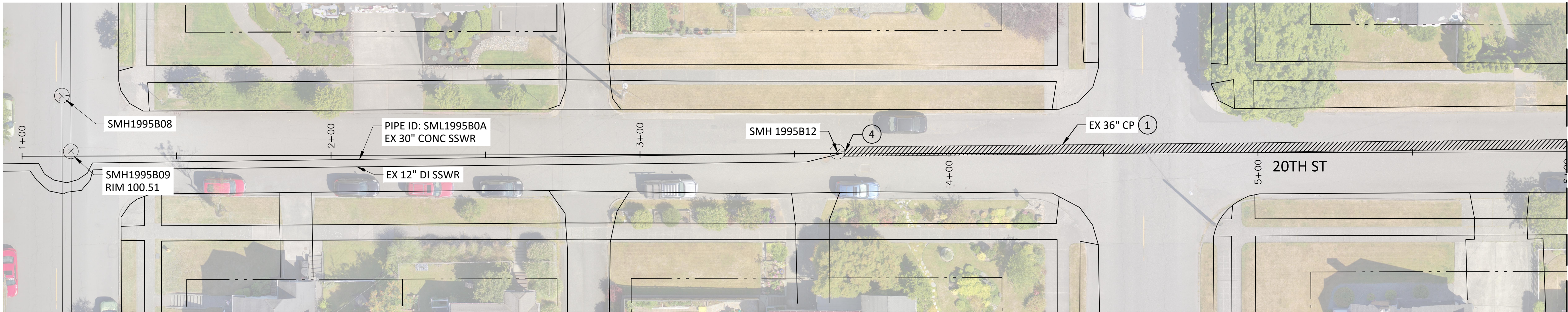
Drawing  
**G05**

Sheet No.  
**5**

**23**  
Of Total



City of Everett Field Book/Starting Page / Control Monument Date Surveyed By Plot date 5/17/2024 9:50 PM Plotted by Shannon Adams Last saved by SAdams Filepath\\fileame C:\PW\_WORKING\CAROLLO\_200000\00268243\202682-C01.DWG Sheetset Name 202682-20TH ST.dwg Plot style Everett-2016.stb



20TH ST REHABILITATION PLAN STA 1+00 TO STA 6+00

SCALE: 1"=20'

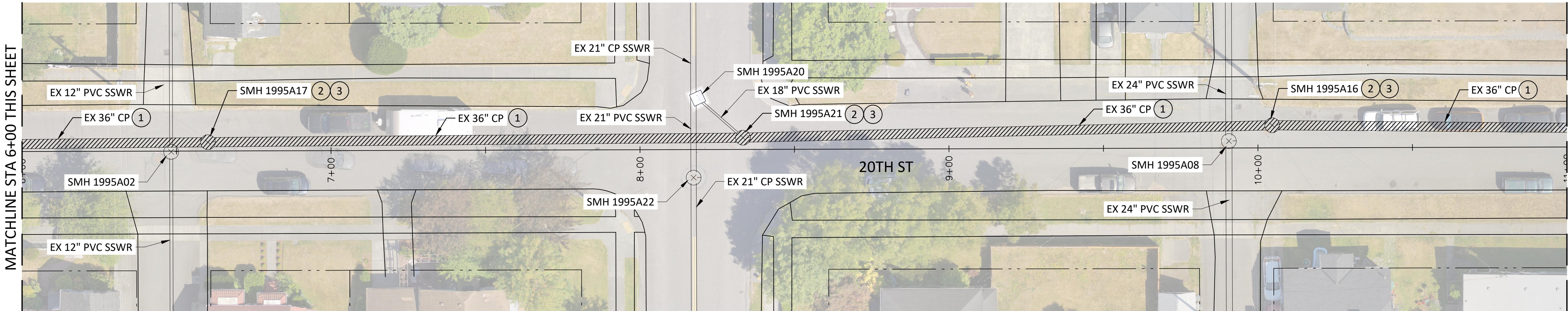
MATCHLINE STA 6+00 THIS SHEET

GENERAL NOTES

- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWINGS BP01 THROUGH BP03 AND SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND PER THE APPLICABLE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.
- BEGINNING OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.



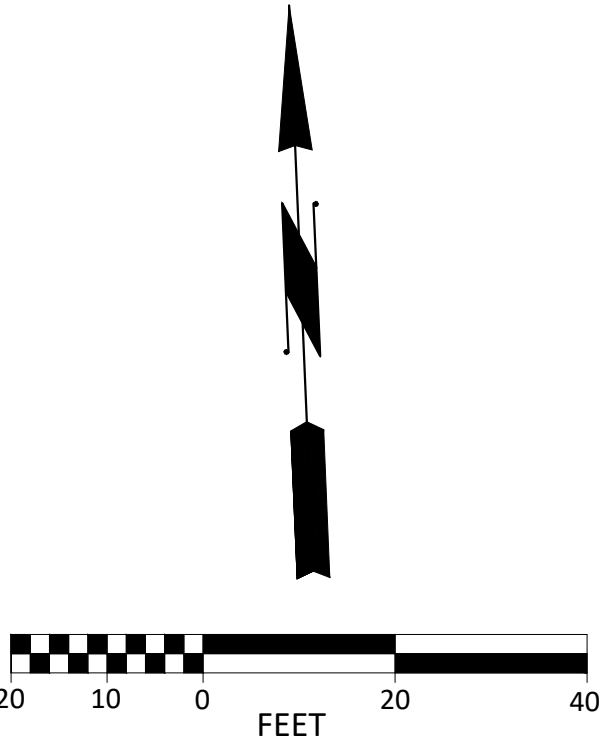
20TH ST REHABILITATION PLAN STA 6+00 TO STA 11+00

SCALE: 1"=20'

MATCHLINE STA 11+00 DWG C02

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



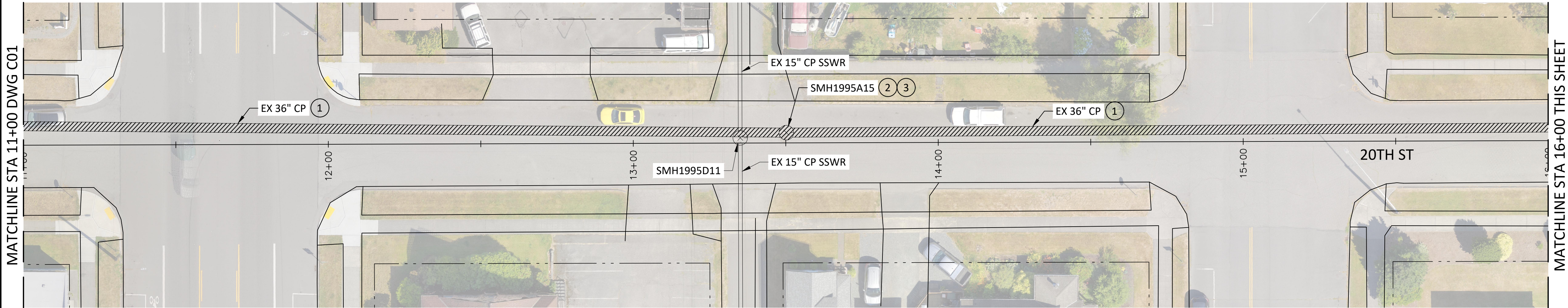
20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
20TH ST SEWER REHABILITATION PLAN STA  
1+00 TO STA 11+00

Drawing  
C01  
Sheet No.  
6  
23  
Of Total

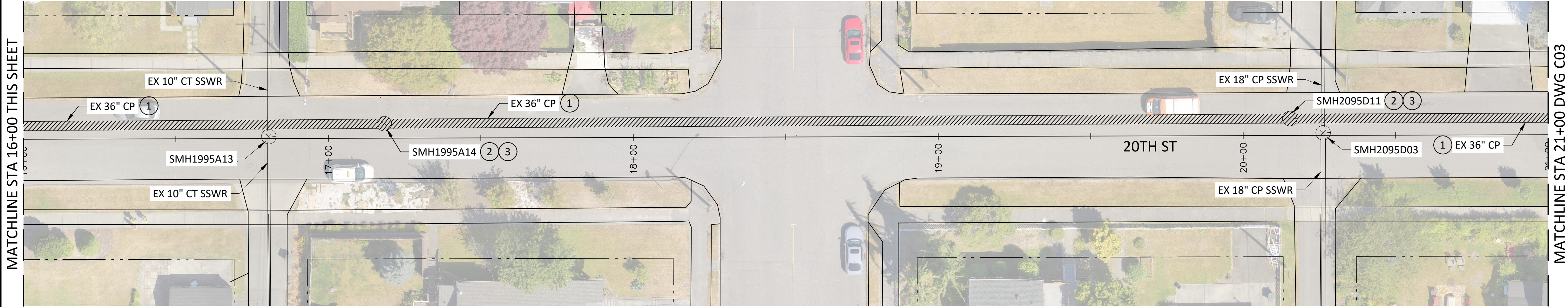


City of Everett Field Book/Starting Page / Control Monument Date Surveyed By Plot date 5/17/2024 9:26 PM Plotted by Shannon Adams Last saved by SAdams Filepath\\filename C:\PW\_WORKING\CAROLLO\_200000\00268243\202682-C02.DWG Sheetset Name 202682-20TH ST.dwg Plot style Everett-2016.stb



REHABILITATION PLAN STATION 11+00 TO 16+00

SCALE: 1"=20'



REHABILITATION PLAN STATION 16+00 TO 21+00

SCALE: 1"=20'

GENERAL NOTES

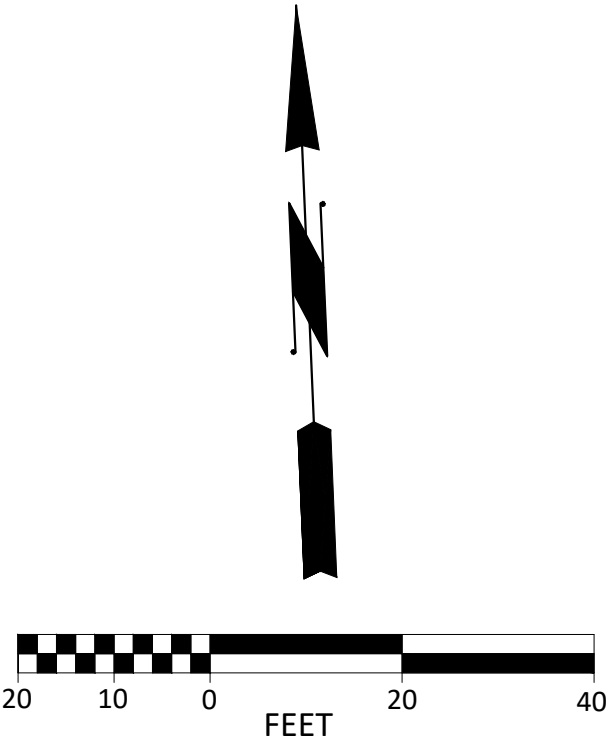
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWINGS BP01 THROUGH BP03 AND SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND PER THE APPLICABLE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

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Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



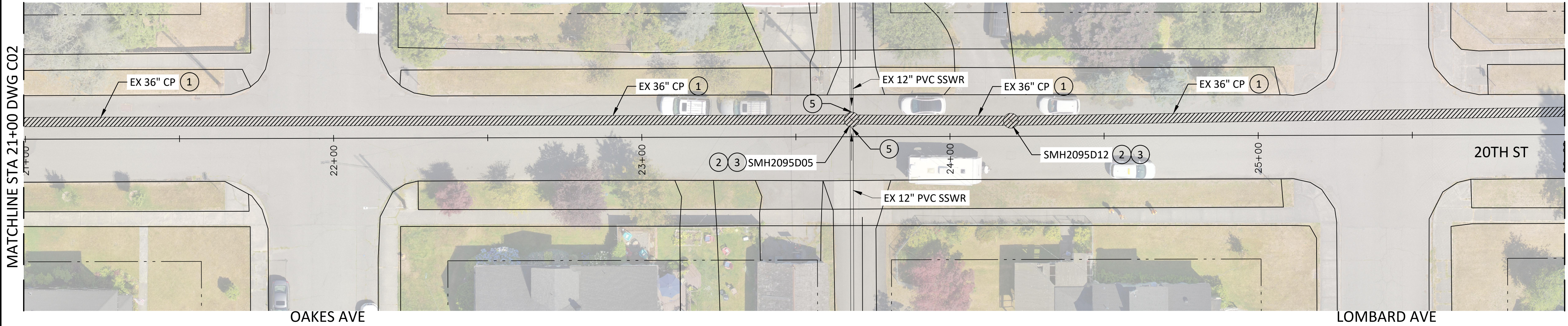
20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

CIVIL  
20TH ST SEWER REHABILITATION PLAN STA  
11+00 TO STA 21+00

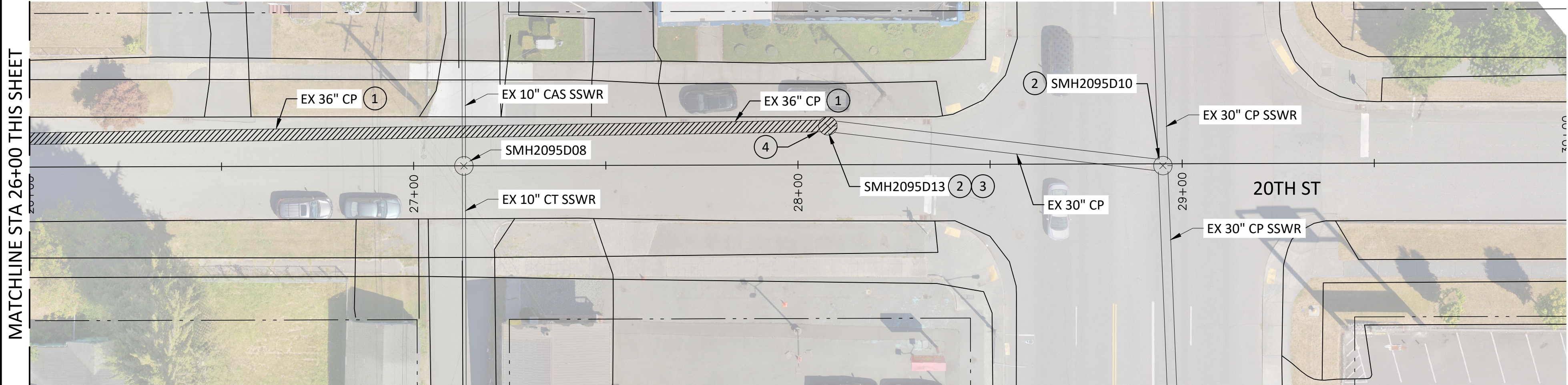
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Sheet No.	7
Of Total	23





REHABILITATION PLAN STATION 21+00 TO 26+00

SCALE: 1"=20'



REHABILITATION PLAN STATION 26+00 TO 30+00

SCALE: 1"=20'

GENERAL NOTES

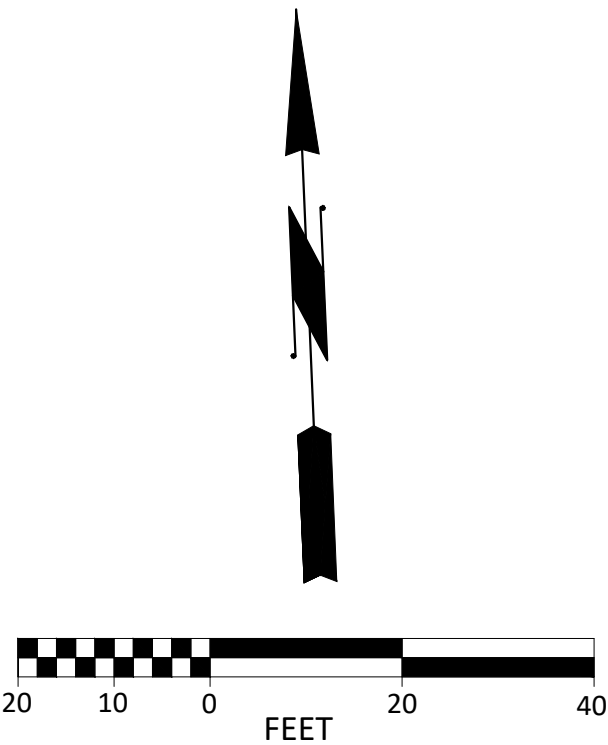
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWINGS BP01 THROUGH BP03 AND SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND PER THE APPLICABLE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.
- TERMINATION OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01.30.71.
- PLUG AND BYPASS SEWER LATERAL FLOWS.

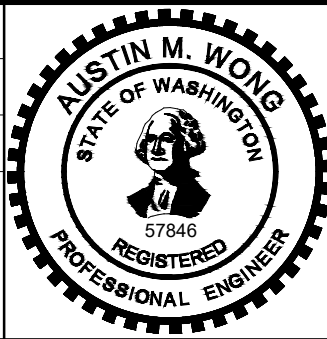
LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
20TH ST SEWER REHABILITATION PLAN STA  
21+00 TO STA 30+00

Drawing	C03
Sheet No.	8
23 Of Total	





MILL ST

CHESTNUT ST

MILL STREET AND WINTER STREET REHABILITATION PLAN

SCALE: 1"=20'

GENERAL NOTES

- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWING BP04 AND SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.
- BEGINNING OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
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AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



3200 Cedar Street  
Everett, WA 98201  
425.257.8800 everettwa.gov

20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
MILL-WINTER ST SEWER REHABILITATION  
PLAN STA 1+00 TO STA 6+60

Drawing  
C04  
Sheet No.  
9  
23  
Of Total





MATCHLINE STA 6+60 SHEET C04

MILL STREET - WINTER STREET REHABILITATION PLAN

SCALE: 1"=20'

- GENERAL NOTES**
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
  - SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
  - SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
  - ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SPECIFICATION SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SPECIFICATION SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
  - SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWING BP04 AND BP05 AND SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
  - ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.

- KEY NOTES**
- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
  - IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
  - MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.
  - TERMINATION OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01.30.71.

- LEGEND**
- EXISTING SANITARY SEWER MANHOLE
  - REHAB EXISTING SEWER MANHOLE
  -



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

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AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level





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Everett, WA 98201  
425.257.8800 everettwa.gov

20TH STREET SEWER  
REHABILITATION PROJECT

WORK ORDER UP-3776

REGION - 10 | STATE - WA

CIVIL

MILL-WINTER ST SEWER REHABILITATION  
PLAN STA 6+60 TO STA 9+50

Drawing <b>C05</b>	
Sheet No. <b>10</b>	<b>23</b> Of Total





1525 E MARINE VIEW DRIVE REHABILITATION PLAN

SCALE: 1"=20'

GENERAL NOTES

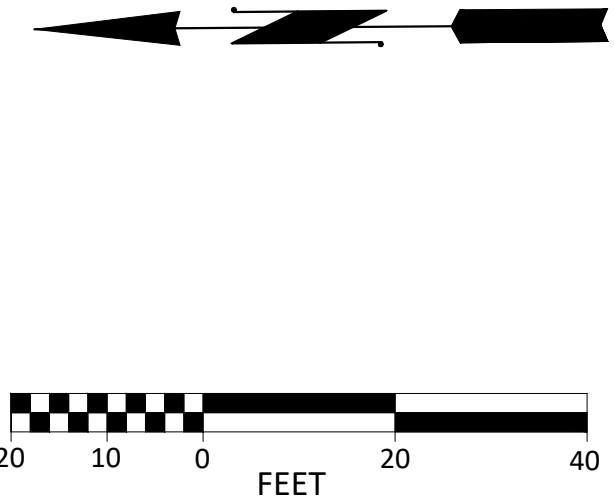
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SPECIFICATION SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SPECIFICATION SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER DRAWING BP05 AND SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- REHAB EXISTING PIPE WITH CIPP PER DETAIL CY820, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SPECIFICATION SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.
- BEGINNING OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.
- TERMINATION OF CIPP REHABILITATION. REHAB EXISTING PIPE PER DETAIL CY813, DRAWING C09, AND SPECIFICATION SECTION 33\_01\_30.71.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

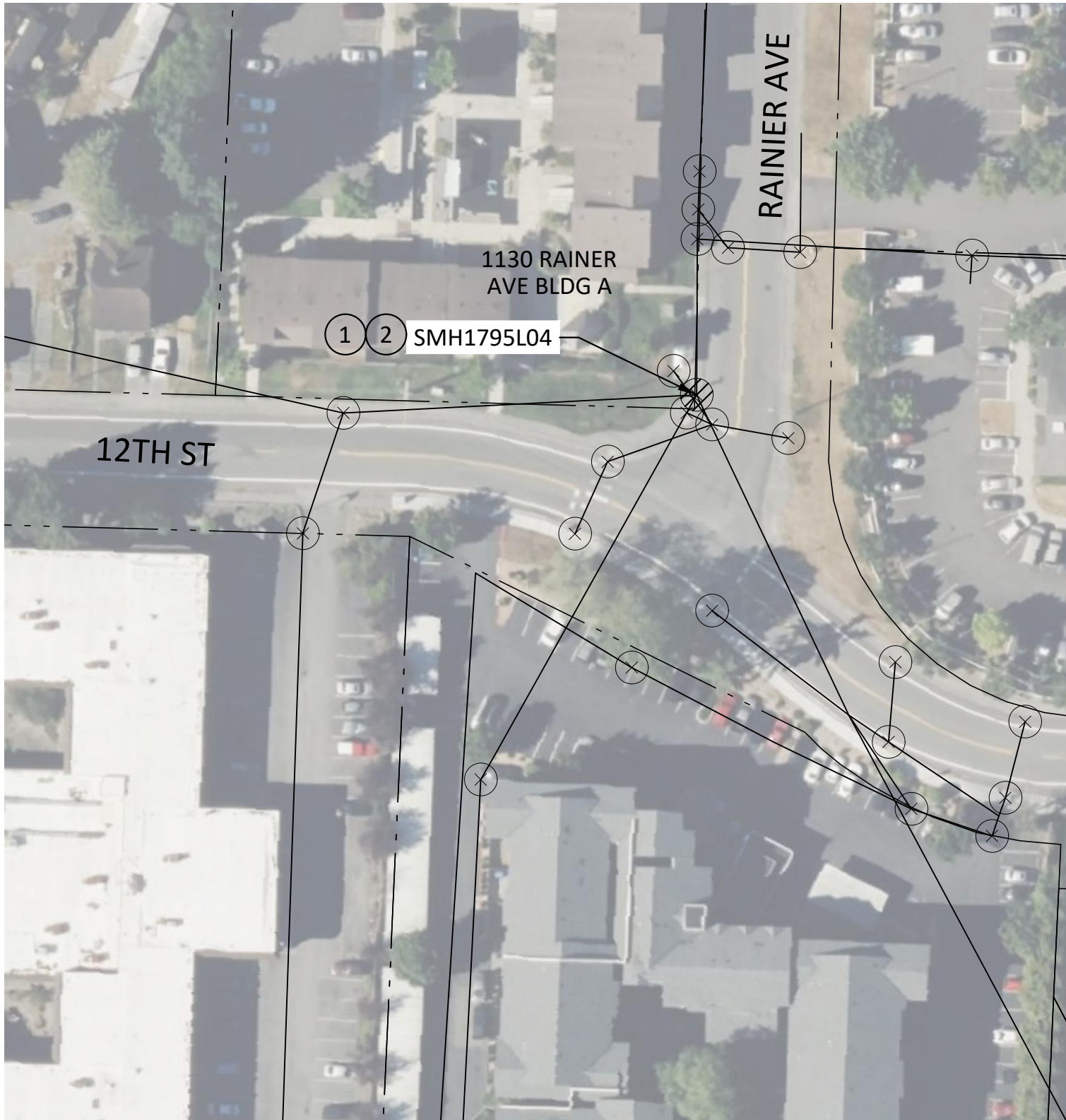
REGION - 10 | STATE - WA

CIVIL  
1525 E MARINE VIEW DR SEWER  
REHABILITATION PLAN

Drawing  
C06

Sheet No.  
11  
23  
Of Total





SMH1795L04 PLAN

SCALE: 1"=60'-0"



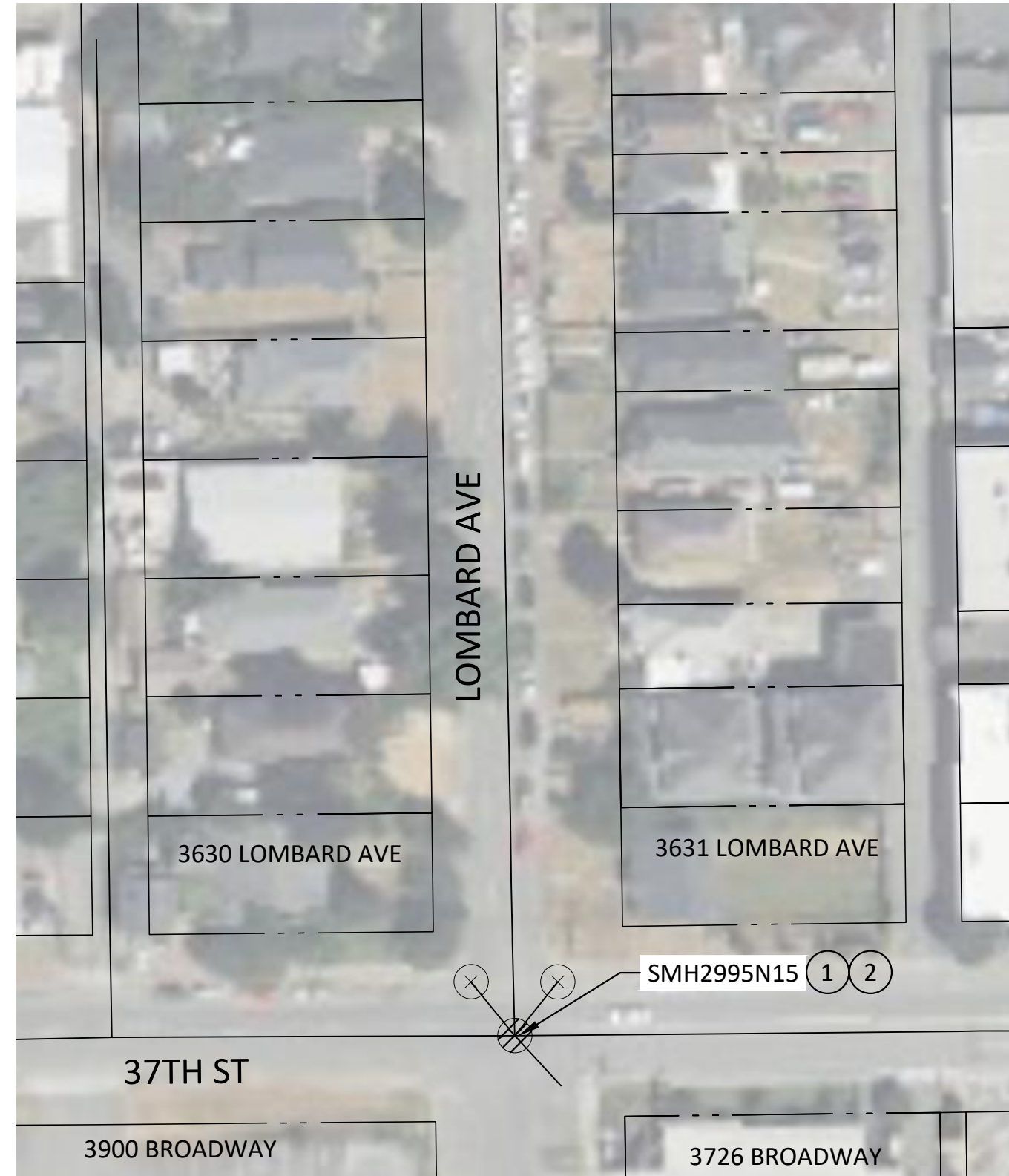
SMH1795T01 PLAN

SCALE: 1"=60'-0"



SM1795T20 PLAN

SCALE: 1"=60'-0"



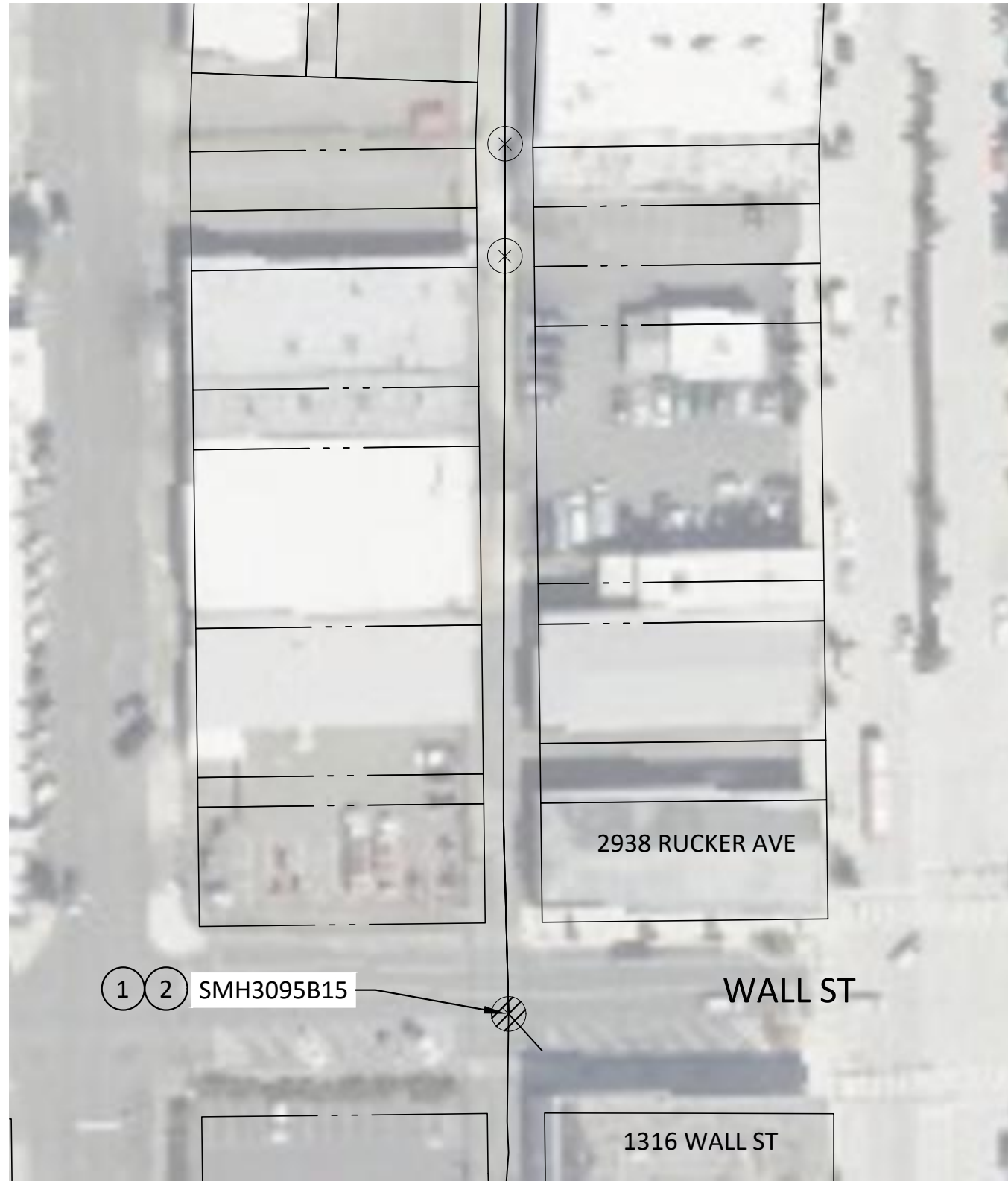
SMH2995N15 PLAN

SCALE: 1"=60'-0"



SMH3095Q09 PLAN

SCALE: 1"=60'-0"



SM3095B15 PLAN

SCALE: 1"=60'-0"

GENERAL NOTES

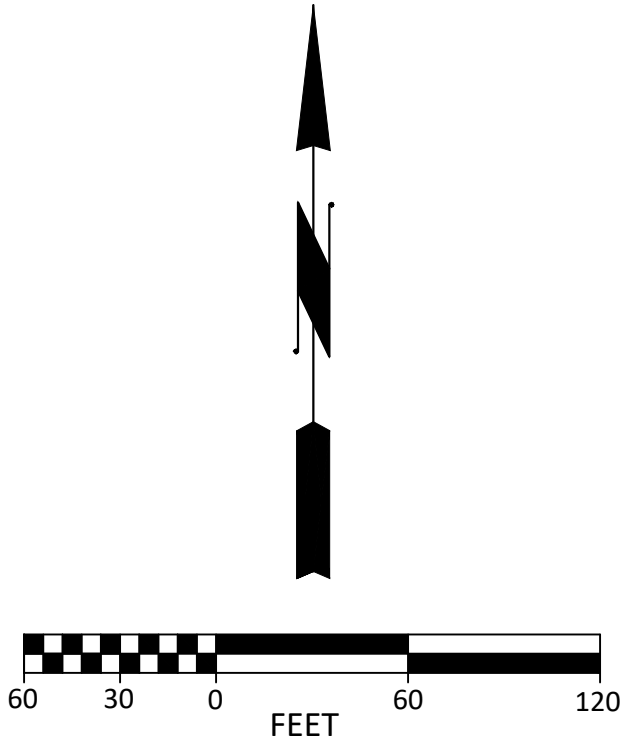
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SPECIFICATION SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SPECIFICATION SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SPECIFICATION SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.

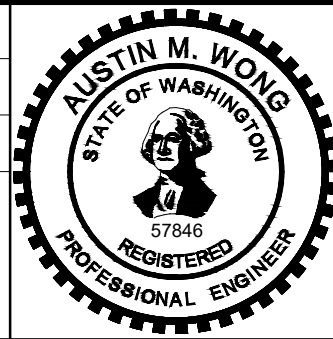
LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level

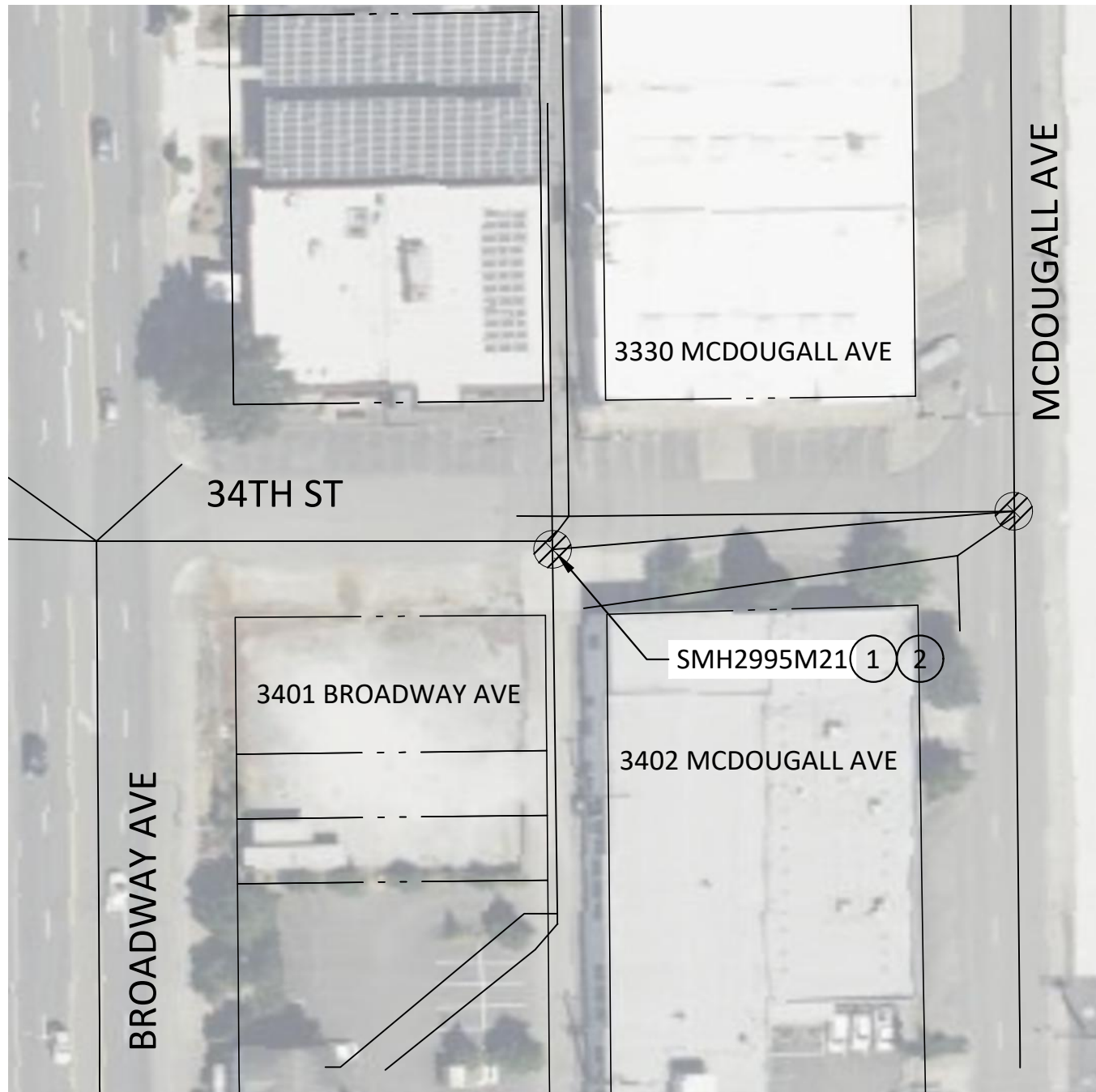


20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
MANHOLE REHABILITATION - 1

Drawing  
C07  
Sheet No.  
12  
23  
Of Total





SMH2995M21 PLAN

SCALE: 1"=60'-0"



SMH2095F02 PLAN

SCALE: 1"=60'-0"



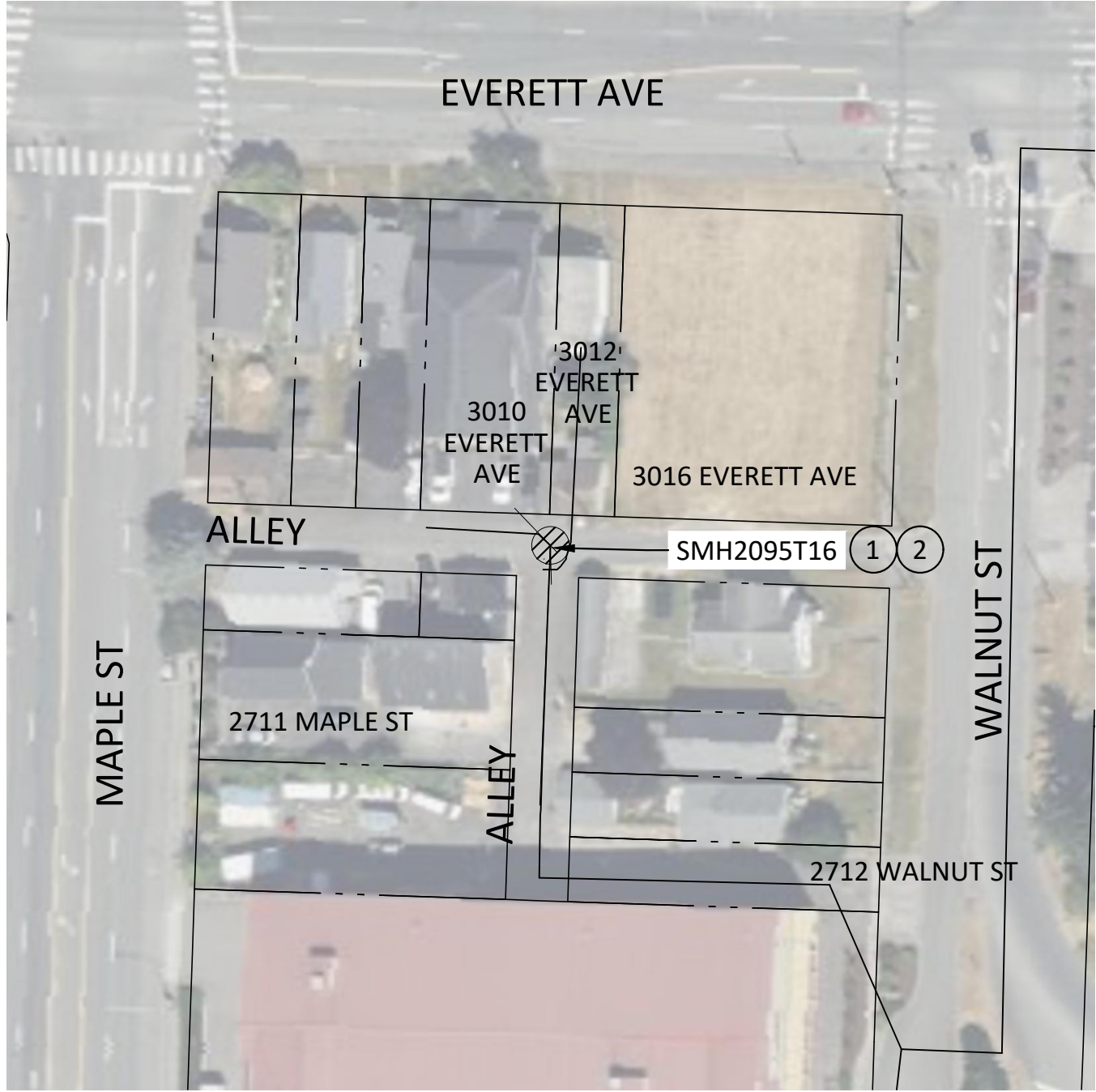
SMH 2095T03 PLAN

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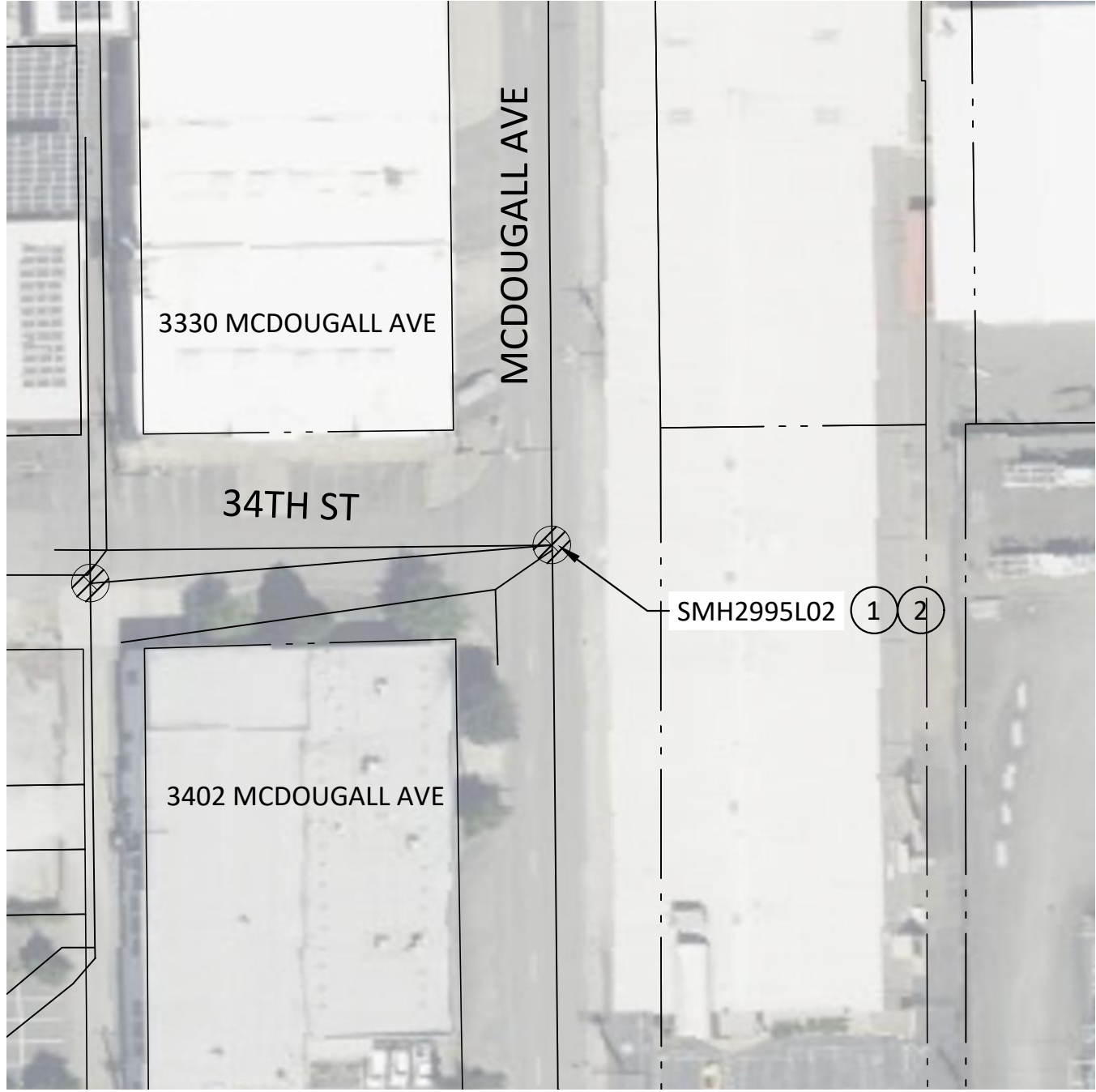
SMH 2095T01 PLAN

SCALE: 1"=60'-0"



SHM 2095T16 PLAN

SCALE: 1"=60'-0"



SHM 2995L02 PLAN

SCALE: 1"=60'-0"

GENERAL NOTES

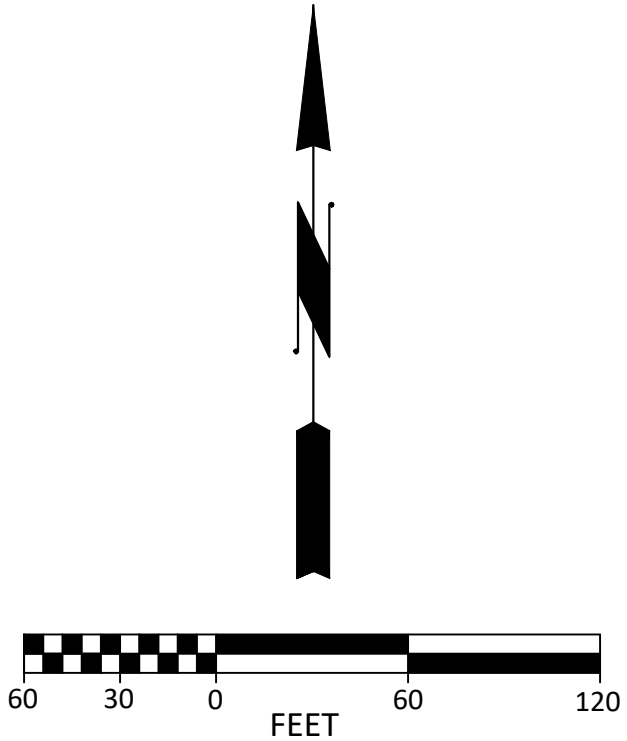
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL PIPE AND STRUCTURES TO BE REHABILITATED SHALL BE CLEANED PER SPECIFICATION SECTION 33\_01\_35 PRIOR TO INSPECTION. INSPECTION SHALL BE CARRIED OUT PER SPECIFICATION SECTION 33\_01\_30.12 AND COMPLETED PRIOR TO REHABILITATION WORK.
- SANITARY SEWER FLOWS SHALL BE BYPASSED PER SPECIFICATION SECTION 33\_05\_11 TO FACILITATE WORK.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING THE REHABILITATION WORK SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.

KEY NOTES

- IF REQUIRED FOR ACCESS, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWING 605, DRAWING C10.
- MANHOLE SHALL BE REHABILITATED USING CURED IN PLACE MANHOLE LINER PER SPECIFICATION SECTION 33\_05\_61.13 AND DETAIL CY811, DRAWING C09.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- PROPERTY LINE



NO.	DATE	APRVD	REVISION
PLANS ISSUED FOR			
BID	DATE	APRVD	CONST
ACTION	DATE	APRVD	ACTION
	DATE	APRVD	RECORD
	DATE	APRVD	ACTION

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



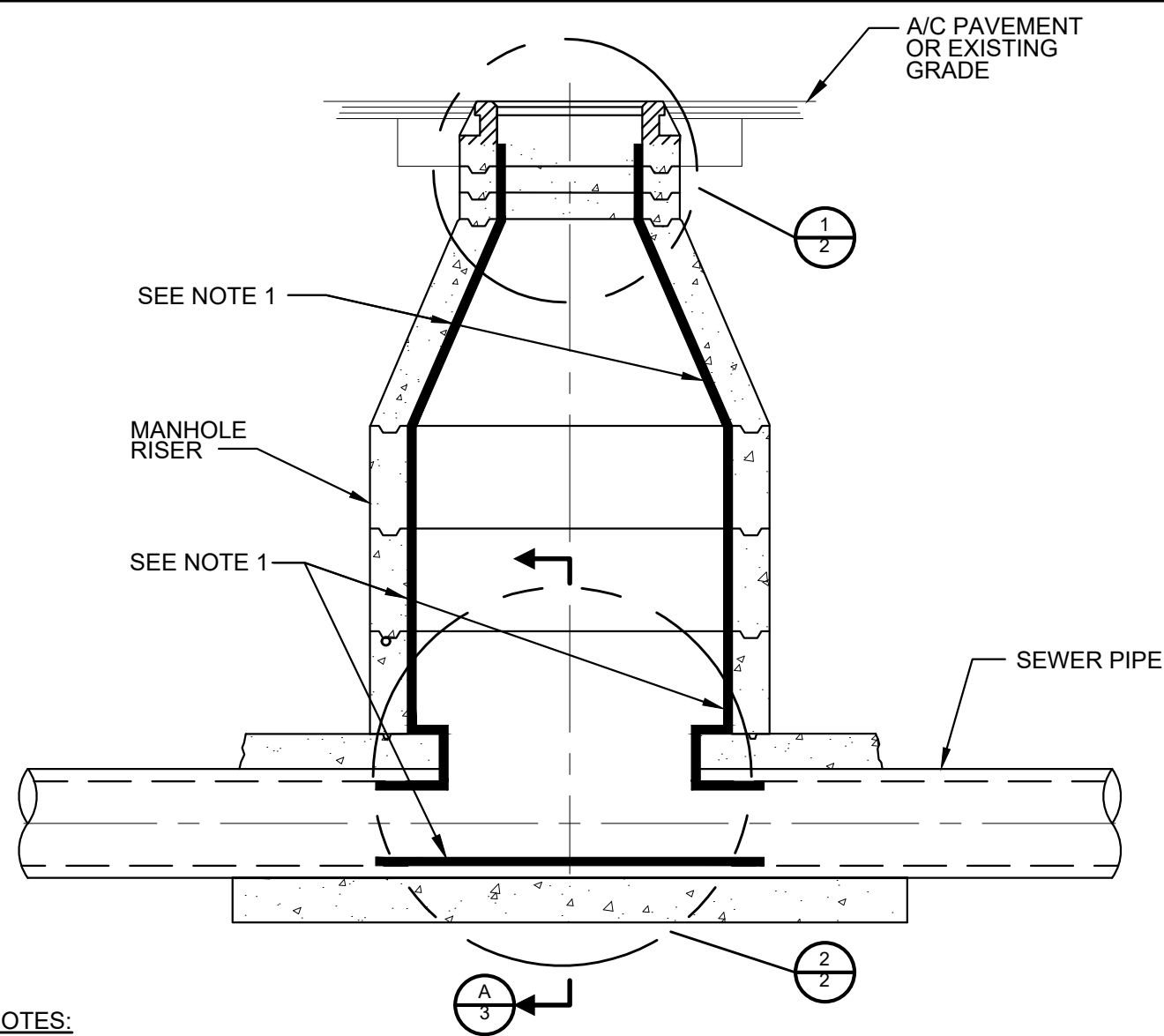
3200 Cedar Street  
Everett, WA 98201  
425.257.8800 everettwa.gov

20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
MANHOLE REHABILITATION - 2

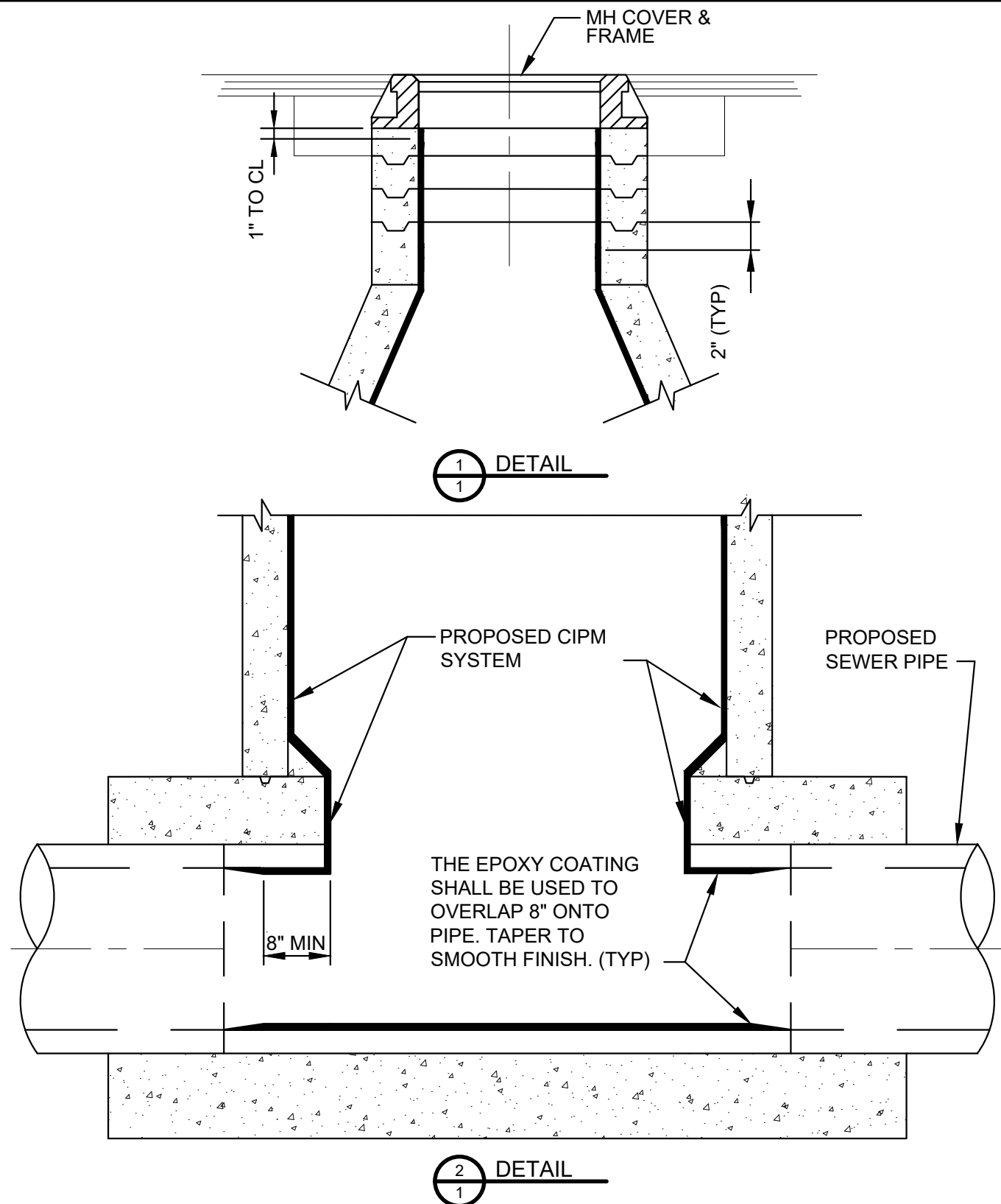
Drawing  
C08  
Sheet No.  
13  
23  
Of Total





NOTES:

1. AFTER INSTALLING CIPP AND CIPM LINER IN THE PIPE AND MANHOLES, THE CONTRACTOR SHALL INSTALL A COATING SYSTEM AS SPECIFIED IN SECTION 33.01.30.71 TO THE LIMITS SHOWN AND AROUND THE CIPP AND CIPM CONNECTION. THE COATING SHALL BE 1/4" (250 MILS) THICK. THE CONTRACTOR SHALL OVERLAP THE COATING 8-INCHES ON TOP OF THE CIPP LINER AND CIPM LINER AS SHOWN TO SEAL.
2. WHERE APPLICABLE, FILL IN JOINT BETWEEN PIPE AND MANHOLE WALL.
3. ALL LINED SURFACES SHALL BE PREPARED TO SPECIFICATION, CLEANED THOROUGHLY AND INSPECTED PRIOR TO LINED.



CY811 CIPM LINER  
TYP

SHEET 1 OF 3

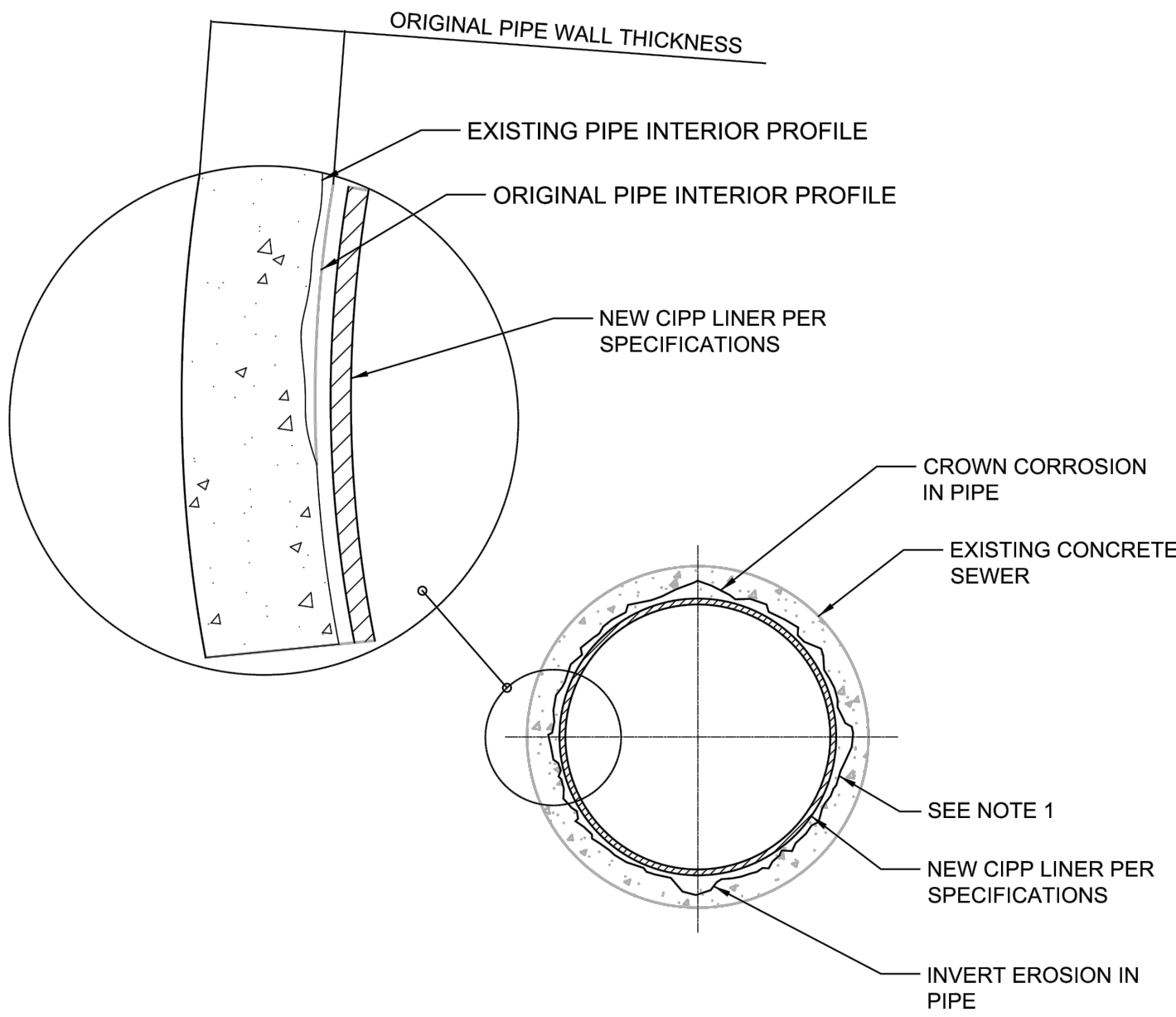
05/21/19



CY811 CIPM LINER  
TYP

SHEET 2 OF 3

05/21/19



NOTES:

1. EXISTING INSIDE DIAMETER OF THE REINFORCED CONCRETE PIPE MAY HAVE AN IRREGULAR SHAPE (NON-CIRCULAR) AS A RESULT OF MATERIAL LOSS DUE TO CORROSION AND/OR EROSION.

CY820 CIPP LINER  
TYP

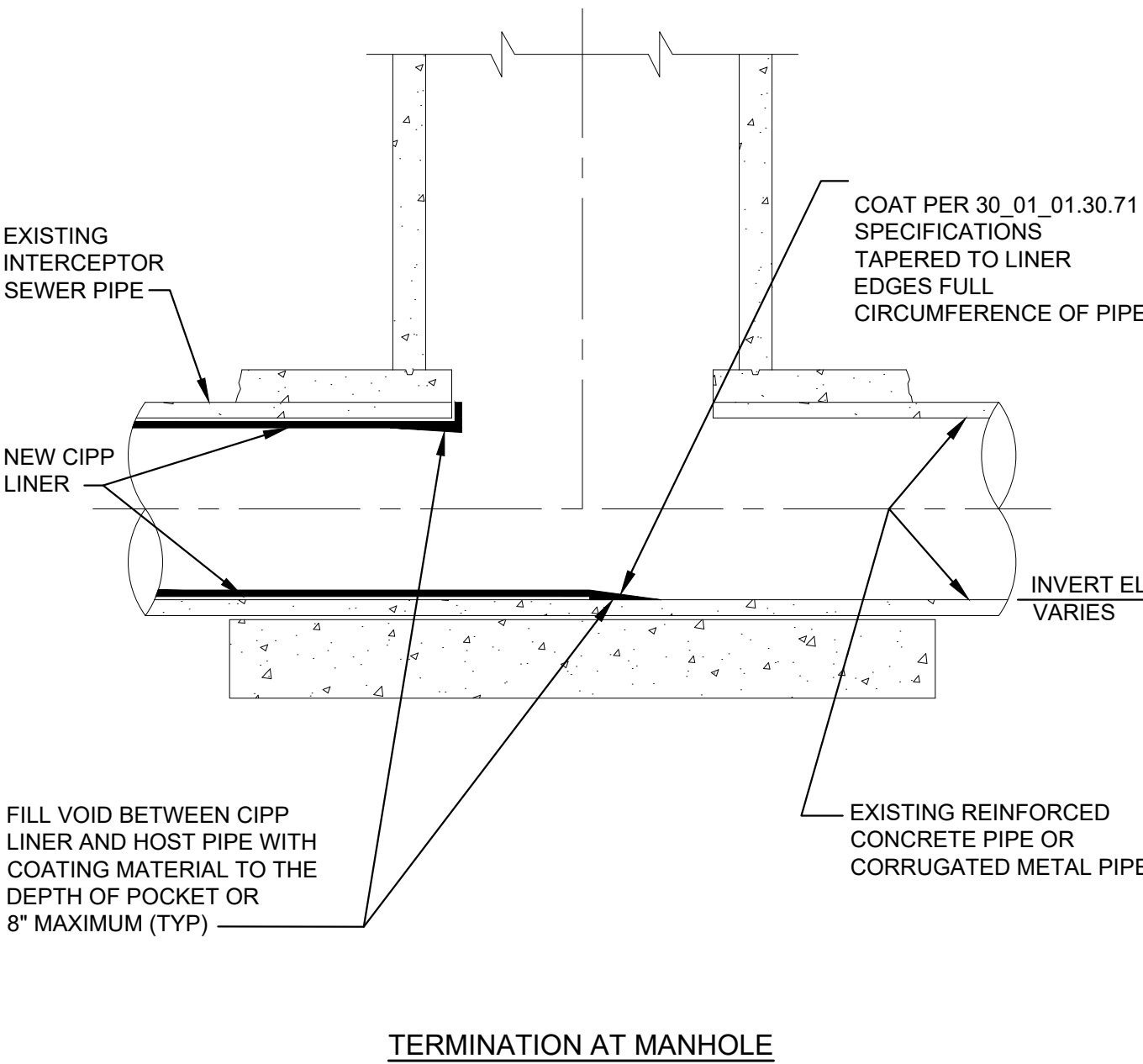
10/11/23



CY813 CIPP LINING  
TYP

SHEET 2 OF 2

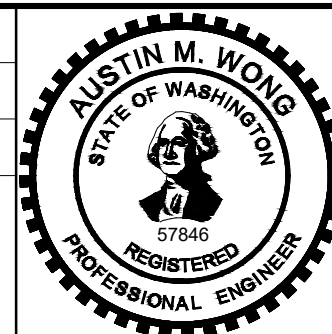
08/03/22



TERMINATION AT MANHOLE

NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level

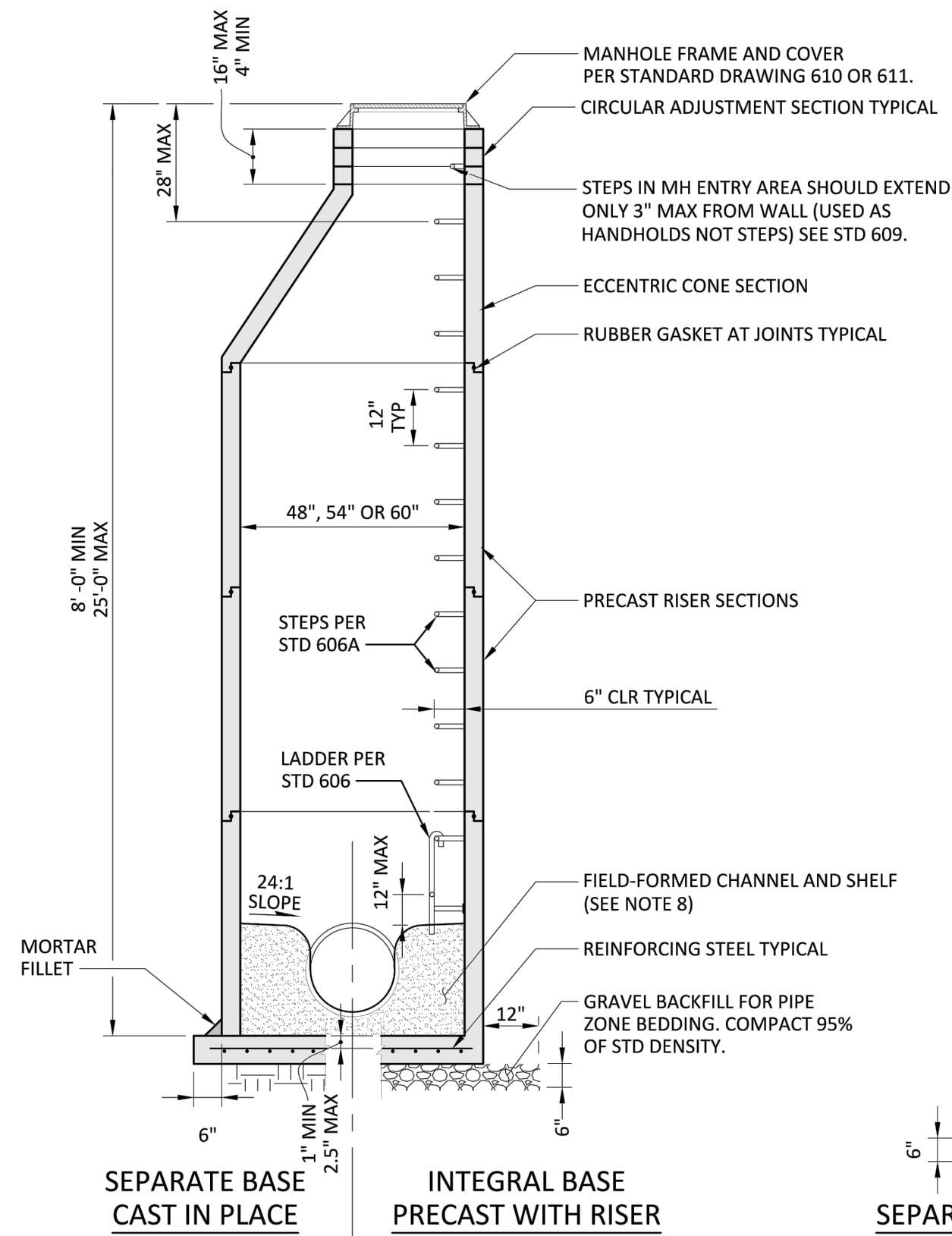


20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

CIVIL  
CIVIL DETAILS - 1

Drawing  
C09  
Sheet No.  
14  
23  
Of Total



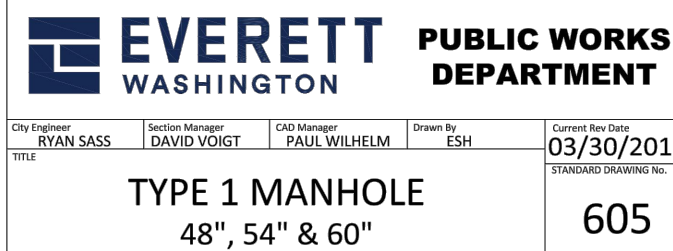
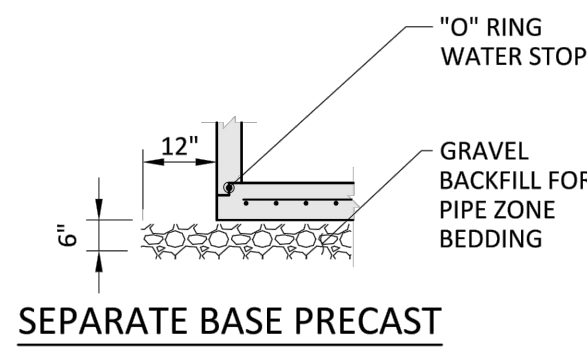


## NOTES

1. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 (ASTM C 478) UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN STANDARD SPECIFICATIONS.
2. ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE 7 SACK MIX SAND AND CEMENT GROUT. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
3. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS FOR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OR 2" MINIMUM.
4. ALL BASE REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MINIMUM CLEARANCE.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS MANHOLE WALL THICKNESS.
6. MANHOLE DIA. DEPENDS ON: SIZE, LOCATION AND NUMBER OF PENETRATIONS FOR PIPES. MANHOLE DESIGN AND SIZE SHALL BE APPROVED AND WARRANTED BY THE MANHOLE SUPPLIER.
7. FOR HEIGHTS OVER 25' MANHOLE BASE SLAB SHALL BE DESIGNED BY A STRUCTURAL ENGINEER.
8. CONCRETE CHANNEL AND SHELF SHALL BE FIELD-FORMED EXCEPT WHERE APPROVED IN ADVANCE BY CITY.

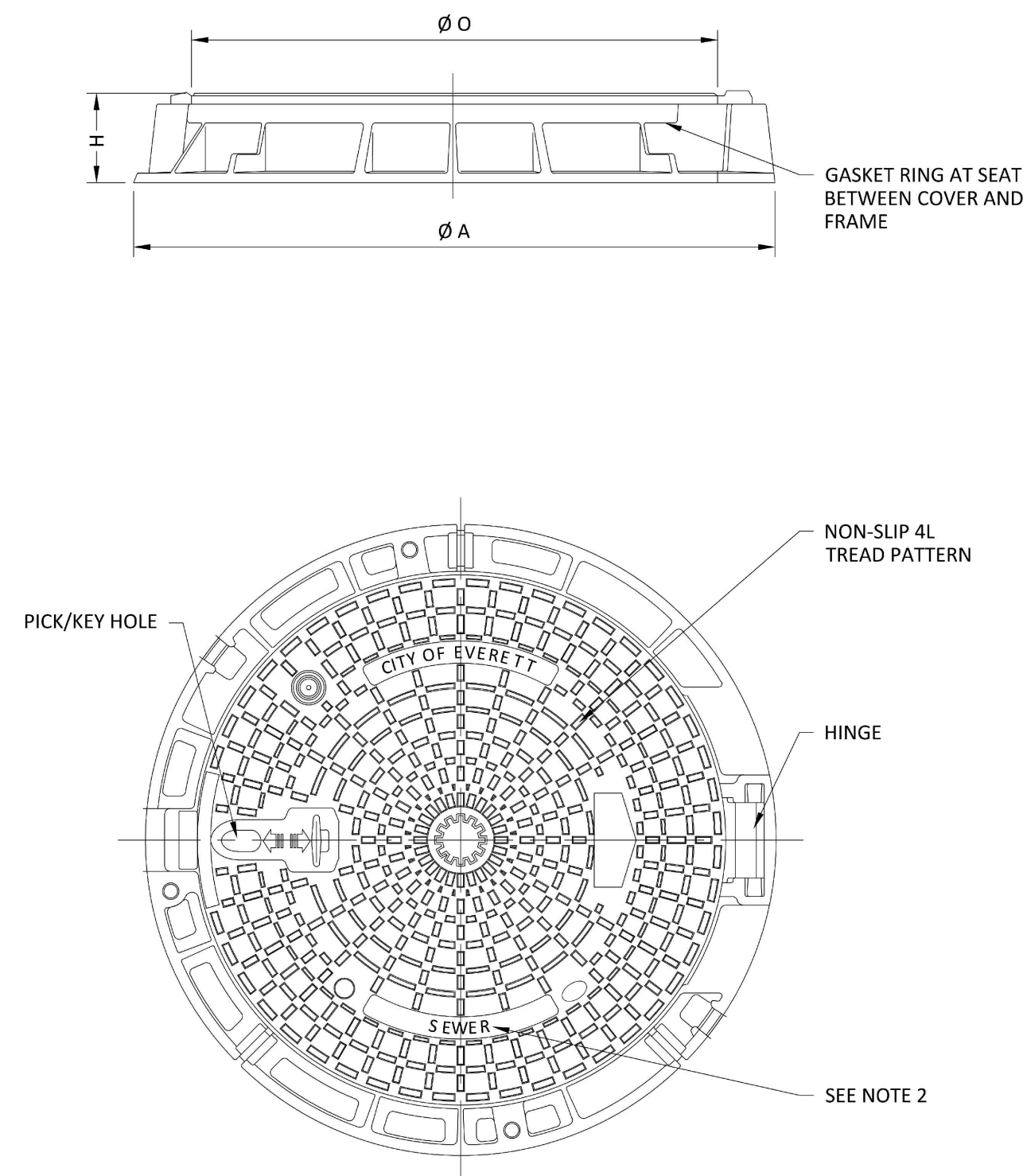
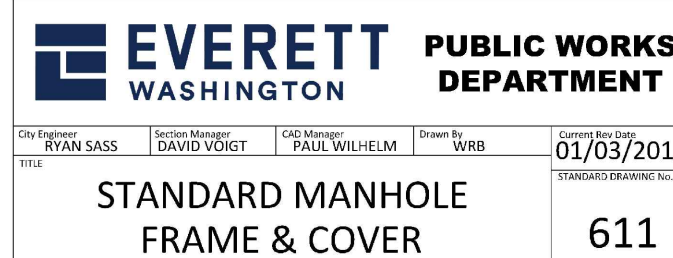
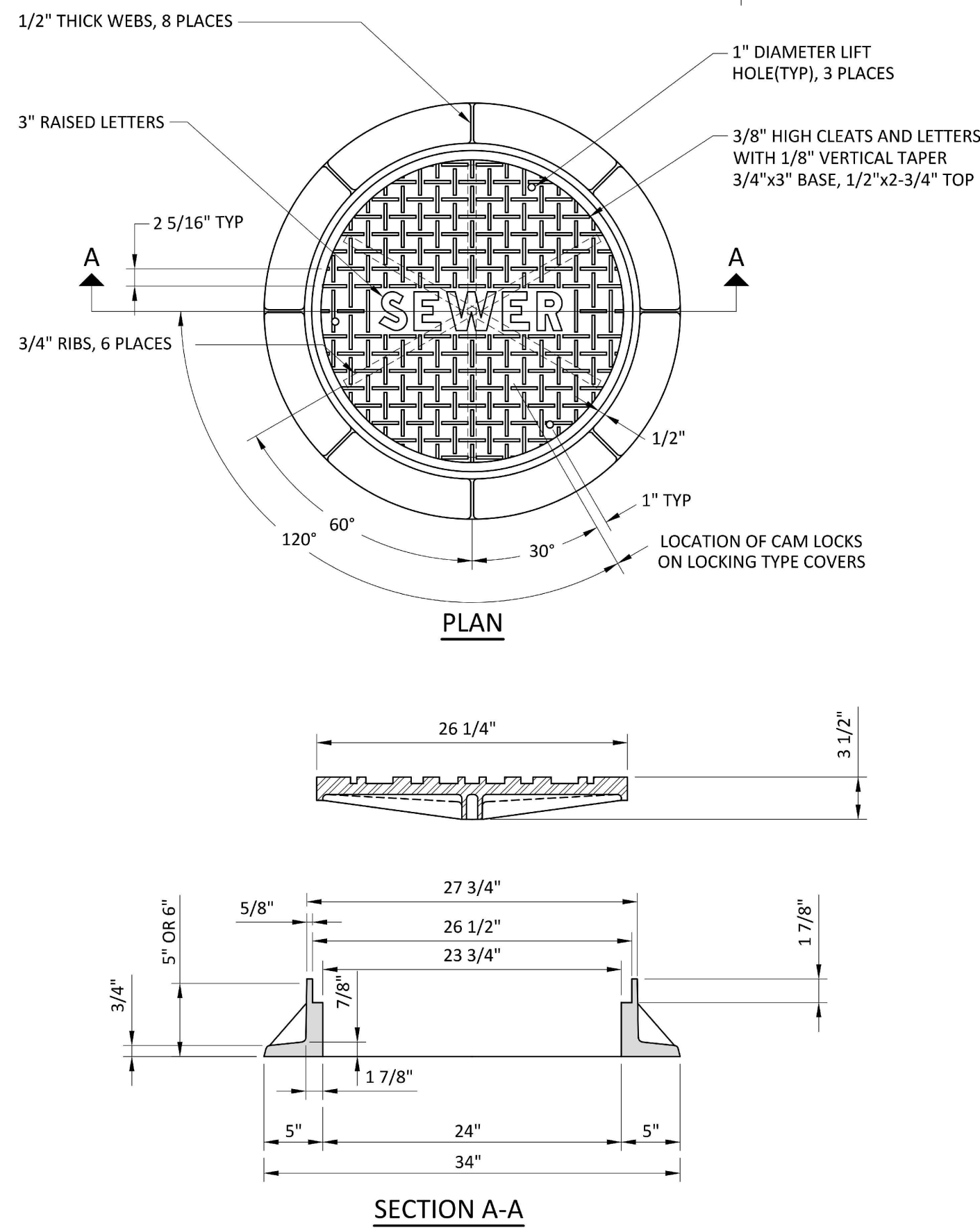
NOTE: KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM.

MANHOLE DIMENSIONS TABLE						
DIA	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCK OUT SIZE	MINIMUM DISTANCE BWT KNOCK OUTS	BASE REINFORCING STEEL #FET IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25



## NOTES

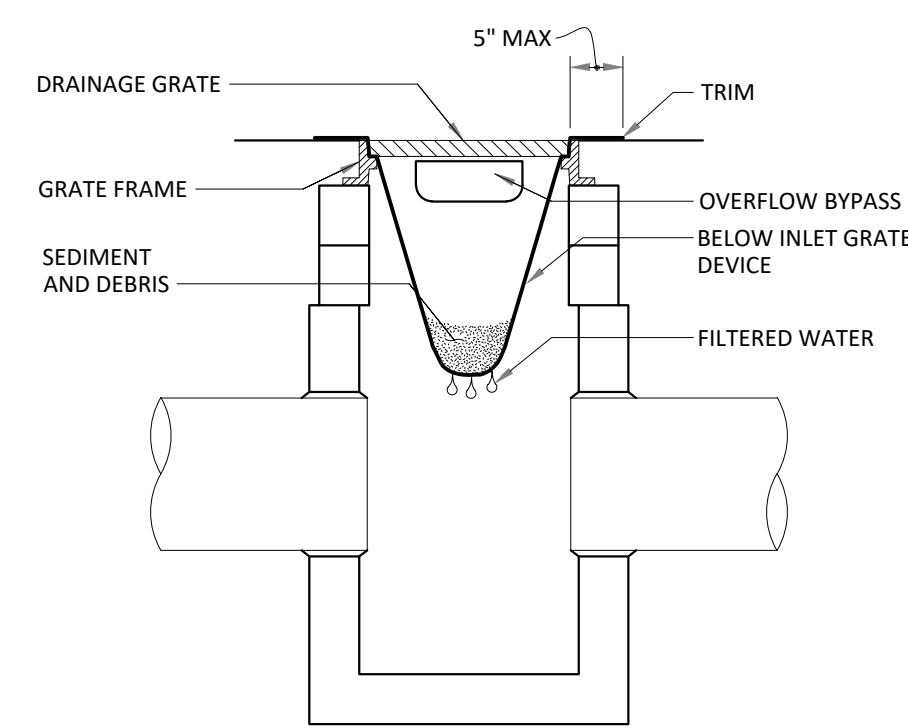
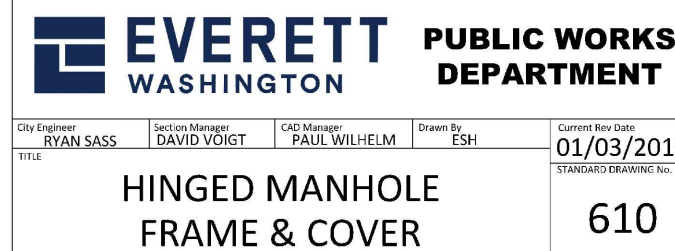
1. MANHOLE FRAMES SHALL BE GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M 105, GRADE 30B.
2. MANHOLE COVER TO BE DUCTILE IRON CONFORMING TO ASTM A536, GR 80-55-06
3. LOCKING COVER TO BE USED AT OFF-STREET LOCATIONS AND OTHER LOCATIONS AS DIRECTED. THE COVER SHALL BE LOCKED DOWN WITH 3-5/8" S.S. SOCKET HEAD CAP SCREWS.
4. FRAME AND COVER SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS FOR DELIVERY.
5. SHALL BE USED ONLY WHERE DIRECTED BY THE CITY OR APPROVED IN ADVANCE.
6. COVER SHALL BE STAMPED "SEWER" OR "DRAIN" DEPENDING ON APPLICATION.



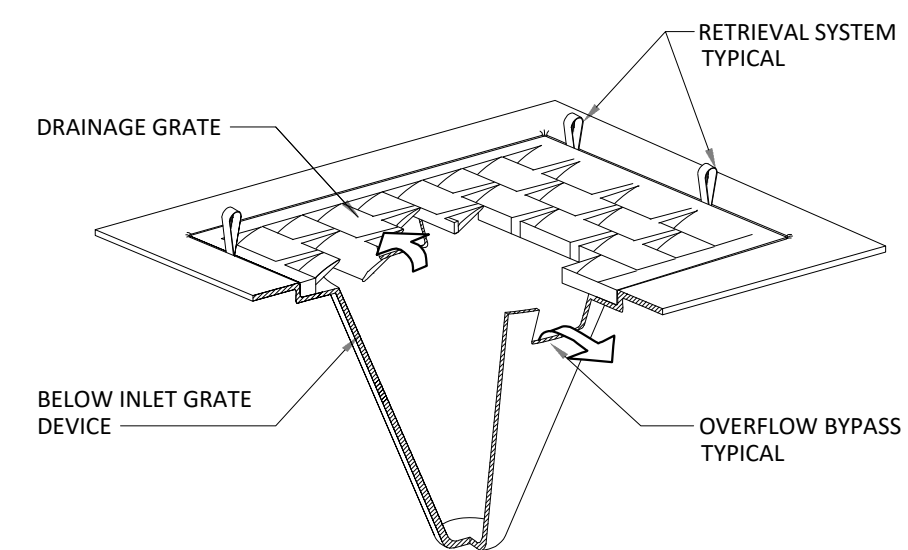
## NOTES

1. MANHOLE COVER AND FRAME SHALL BE AS MANUFACTURED BY PAMREX, EAST JORDAN (IRON WORKS (EIW)) OR APPROVED EQUAL. COVER SHALL BE MANUFACTURED FROM DUCTILE IRON, ASTM A536.
2. COVER SHALL BE STAMPED "SEWER", OR "DRAIN" DEPENDING ON APPLICATION.
3. COVERS SHALL BE HINGED AND INCORPORATE A 90 DEGREE STREET CATCH BLOCKING SYSTEM TO PREVENT ACCIDENTAL CLOSURE AND REMOVABLE AT 120° OPEN. FRAME AND COVER SHALL EXCEED AASHTO H20, M306 OR M105 LOADINGS..
4. FRAMES SHALL BE CIRCULAR, INCORPORATE A SEATING RING AND A FITTING PLUG IN EACH HINGE HOUSING, AND BE AVAILABLE IN A 24 INCH MINIMUM CLEAR OPENING. THE STANDARD FRAME DEPTH SHALL NOT EXCEED 5 INCHES, AND THE FLANGE SHALL INCORPORATE BEDDING SLOTS, BOLT HOLES, AND LIFTING EYES.
5. SHALL BE USED FOR ALL NEW SEWER MANHOLES AND WHERE EXISTING STANDARD MANHOLE FRAME AND COVER ARE TO BE REPLACED.

DIMENSIONS (INCHES)			REFERENCE	MANUFACTURE
A	O	H		
33-1/2	24	4	CDPA60EH	PAMREX
34	24	4	00104042L01	EJW



### SECTION VIEW

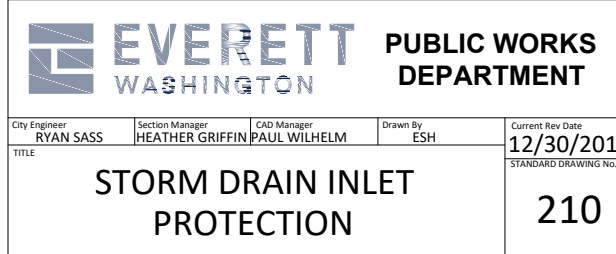


ISOMETRIC VIEW

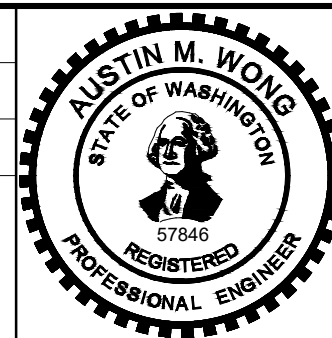
## NOTES

1. CATCH BASIN INSERTS SHALL BE REMOVED AT THE END OF THE PROJECT.
2. CATCH BASIN INSERTS ARE ONLY TO BE INSTALLED IN DRAINAGE DEVICES PER THE MANUFACTURER'S RECOMMENDATIONS. CATCH BASIN INSERTS SHALL BE INSTALLED IN CURB INLETS.
3. CATCH BASIN INSERTS SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
4. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES ONE THIRD FULL OR IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
5. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INLET INSERTS, EMPTYING, AND RE-INSTALLING IT INTO THE CATCH BASIN. DO NOT WASH SEDIMENT INTO STORM DRAINS WHILE CLEANING.
6. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
7. THE BIGD SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
8. THE RETENTION SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.
9. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15).

WSDOT STD PLAN I-40.20-00 ACCEPTABLE SUBSTITUTE IF  
MAINTENANCE MEETS NOTES 1-5

[illegible]

Designed	AMW
Drawn	JJC
Checked	EJW/KDR
Design Review Level	



20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

CIVIL

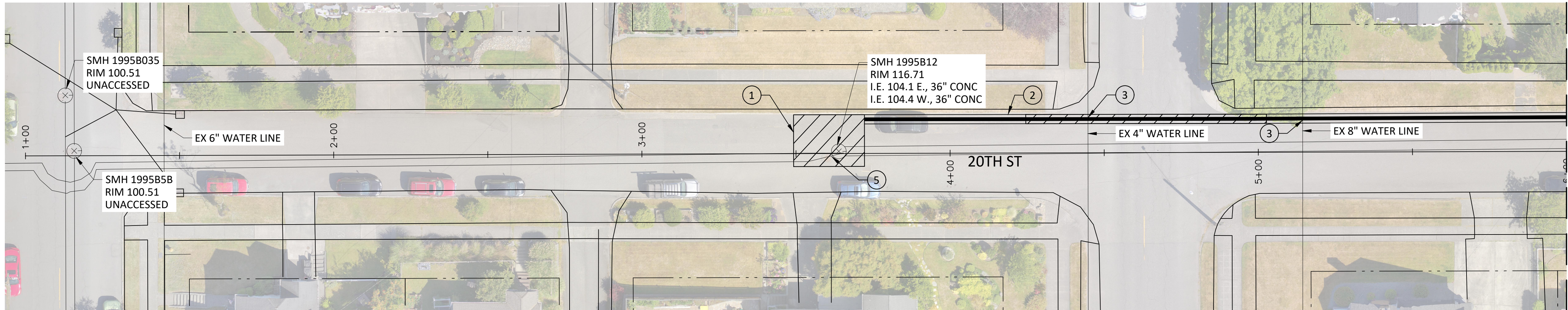
## CIVIL DETAILS - 2

Drawing

C10

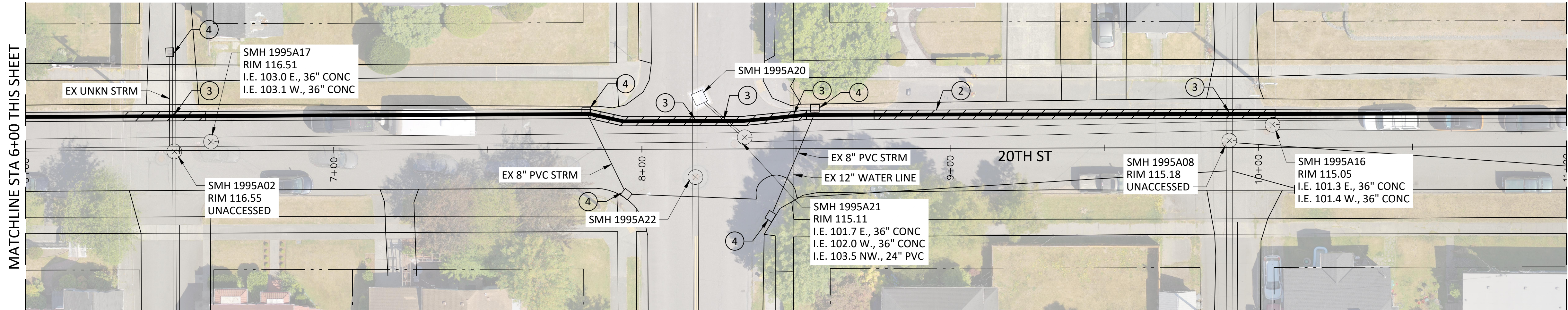
Sheet No. 15 / 23  
Of Total





BYPASS PLAN STATION 1+00 TO 6+00

SCALE: 1"=20'



BYPASS PLAN STATION 6+00 TO 11+00

SCALE: 1"=20'

GENERAL NOTES

- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL BYPASS OPERATIONS ARE TO OCCUR WITHIN THE BYPASS CORRIDOR SHOWN ON THE BYPASS DRAWINGS. IF THE CONTRACTOR REQUIRES AN ADDITIONAL CLOSURE AREA OR ALTERNATIVE ROUTE FOR THE BYPASS PIPING, THESE VARIATIONS SHALL BE SUBMITTED AND APPROVED WITH THE TEMPORARY BYPASS SUBMITTAL.
- UTILITIES SHOWN ON THESE BYPASS DRAWINGS ARE GIS-BASED ONLY AND NO UTILITY SURVEY OR EXPLORATION WAS CONDUCTED DURING THE DEVELOPMENT OF THESE PLANS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN ALL AREAS OF PLANNED EXCAVATION PRIOR TO ANY EXCAVATION.
- ALL TRENCHING FOR BYPASS PIPING SHALL CONFORM TO DETAILS 1, 3, AND/OR 4 ON DRAWING BP06. ALL TRENCHES SHALL BE RESTORED PER DETAIL 1, DRAWING BP07 FOLLOWING CONSTRUCTION.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING INSTALLATION AND/OR REMOVAL OF THE BYPASS PIPING SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.
- SEE DETAIL 2, DRAWING BP06 FOR DRIVEWAY RAMP. THE CONTRACTOR SHALL ALSO MAINTAIN PEDESTRIAN ACCESS THROUGH RAMPS AT CROSSWALKS.
- IF REQUIRED FOR THE BYPASS SYSTEM, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWINGS 605, 610, AND 611 ON C10.

KEY NOTES

- PROPOSED TEMPORARY BYPASS INTAKE AREA. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SPECIFICATION SECTION 33\_05\_11.
- PROPOSED TEMPORARY BYPASS PIPING ROUTING CORRIDOR. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SPECIFICATION SECTION 33\_05\_11.
- CONTRACTOR SHALL POTHOLE AND UTILITY LOCATE AT ALL TRENCHING LOCATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.
- INSTALL STORM DRAIN INLET PROTECTION ON ALL STORM DRAINS WITHIN 50 LINEAL FEET OF CONSTRUCTION PER EVERETT STANDARD DRAWING 210 ON C10.
- SEE BP08 FOR DISCHARGE STRUCTURE SCHEMATIC.

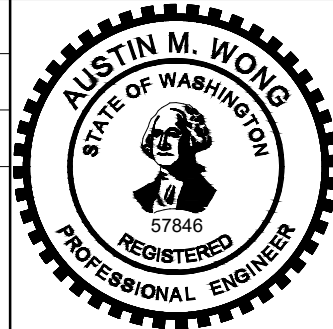
LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- SCHEMATIC BYPASS ROUTE
- SCHEMATIC TRENCHED BYPASS
- PROPERTY LINE
- PROPOSED TEMPORARY BYPASS STAGING AREA



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST				RECORD		
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed	AMW
Drawn	JJC
Checked	EJW/KDR
Design Review Level	



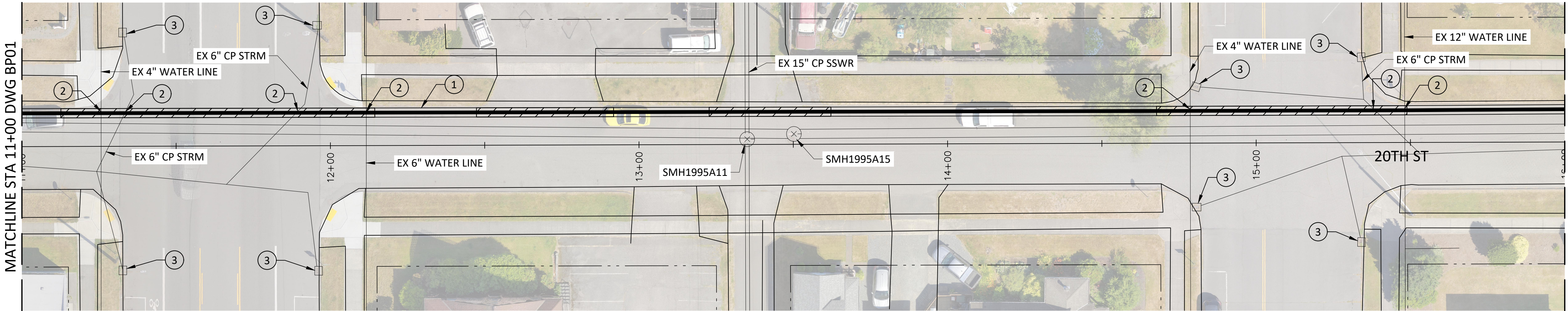
20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

BYPASS  
20TH ST SEWER BYPASS PLAN STA 1+00 TO  
STA 11+00

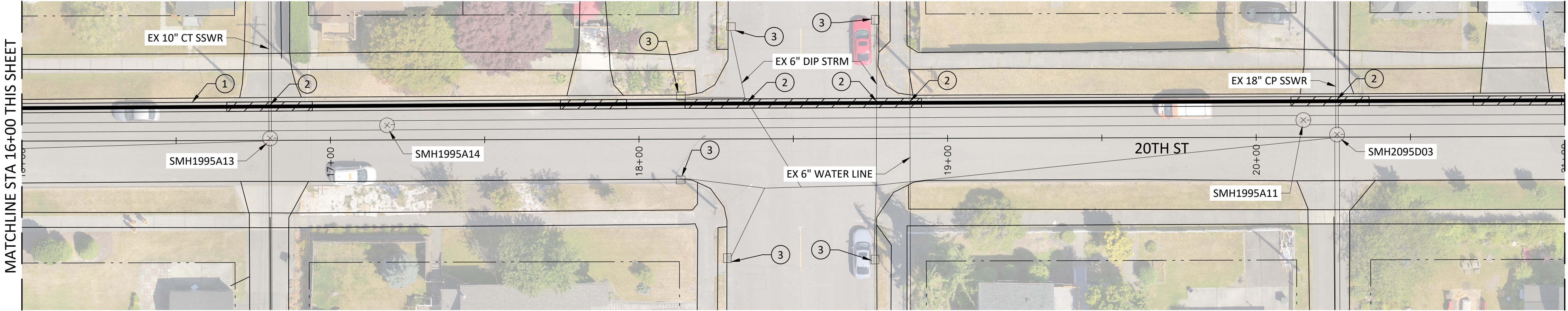
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Sheet No.	16
Of Total	23





BYPASS PLAN STATION 11+00 TO 16+00

SCALE: 1"=20'



BYPASS PLAN STATION 16+00 TO 21+00

SCALE: 1"=20'




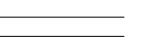
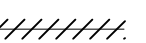
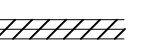

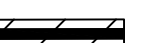
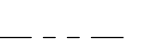
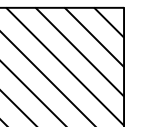
GENERAL NOTES

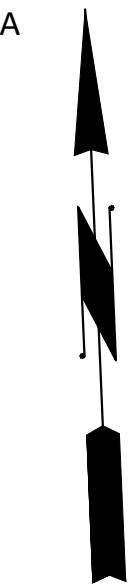
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- SEE DETAIL 2, DRAWING BP06 FOR DRIVEWAY RAMP. THE CONTRACTOR SHALL ALSO MAINTAIN PEDESTRIAN ACCESS THROUGH RAMPS AT CROSSWALKS.
- IF REQUIRED FOR THE BYPASS SYSTEM, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWINGS 605, 610, AND 611 ON C10.

KEY NOTES

- PROPOSED TEMPORARY BYPASS PIPING ROUTING CORRIDOR. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SPECIFICATION SECTION 33\_05\_11.
- CONTRACTOR SHALL POTHOLE AND UTILITY LOCATE AT ALL TRENCHING LOCATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.
- INSTALL STORM DRAIN INLET PROTECTION ON ALL STORM DRAINS WITHIN 50 LINEAL FEET OF CONSTRUCTION PER EVERETT STANDARD DRAWING 210 ON C10.

LEGEND

-  EXISTING SANITARY SEWER MANHOLE
-  REHAB EXISTING SEWER MANHOLE
-  EX SANITARY SEWER MAINLINE (<12" DIAMETER)
-  EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
-  REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
-  REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
-  SCHEMATIC BYPASS ROUTE
-  SCHEMATIC TRENCHED BYPASS
-  PROPERTY LINE
-  PROPOSED TEMPORARY BYPASS STAGING AREA



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



3200 Cedar Street  
Everett, WA 98201  
425.257.8800 everettwa.gov

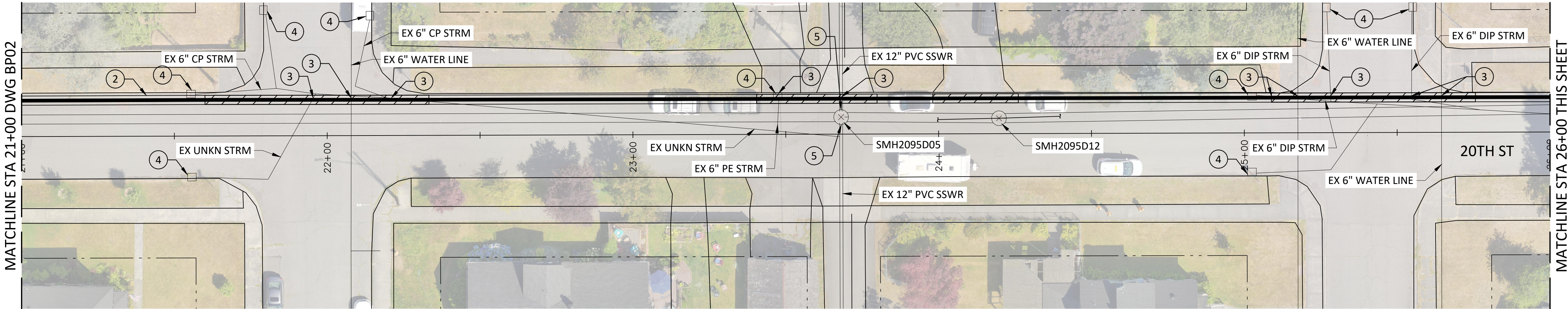
20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

BYPASS  
20TH ST SEWER BYPASS PLAN STA 11+00  
TO STA 21+00

Drawing	
BP02	
Sheet No.	
17	23 Of Total

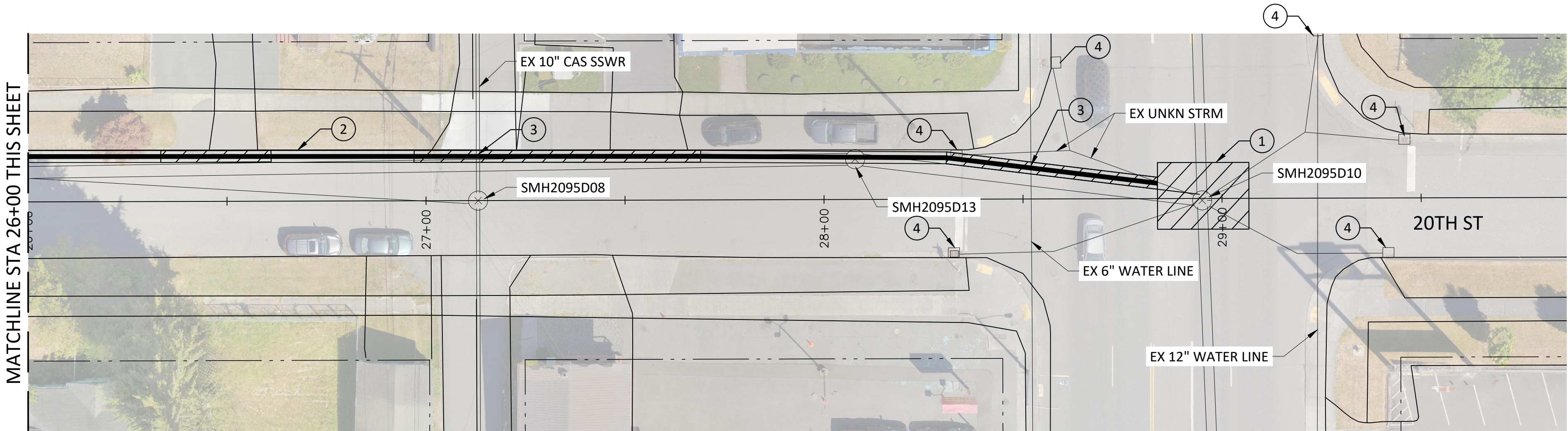


City of Everett Field Book/Starting Page / Control Monument Date Surveyed By Plot date: 5/17/2024 9:38 PM Plotted by: Shannon Adams Last saved by: SAdams Filepath: \\everett\cadd\cadd\working\CAROLLO\_200000\00268243\202682-BP03.DWG Sheetset Name: 202682-20TH ST.dwg Plot style: Everett-2016.stb



BYPASS PLAN STATION 21+00 TO 26+00

SCALE: 1"=20'



BYPASS PLAN STATION 26+00 TO 30+00

SCALE: 1"=20'

GENERAL NOTES

- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL BYPASS OPERATIONS ARE TO OCCUR WITHIN THE BYPASS CORRIDOR SHOWN ON THE BYPASS DRAWINGS. IF THE CONTRACTOR REQUIRES AN ADDITIONAL CLOSURE AREA OR ALTERNATIVE ROUTE FOR THE BYPASS PIPING, THESE VARIATIONS SHALL BE SUBMITTED AND APPROVED WITH THE TEMPORARY BYPASS SUBMITTAL.
- UTILITIES SHOWN ON THESE BYPASS DRAWINGS ARE GIS-BASED ONLY AND NO UTILITY SURVEY OR EXPLORATION WAS CONDUCTED DURING THE DEVELOPMENT OF THESE PLANS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN ALL AREAS OF PLANNED EXCAVATION PRIOR TO ANY EXCAVATION.
- ALL TRENCHING FOR BYPASS PIPING SHALL CONFORM TO DETAILS 1, 3, AND/OR 4 ON DRAWING BP06. ALL TRENCHES SHALL BE RESTORED PER DETAIL 1, DRAWING BP07 FOLLOWING CONSTRUCTION.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING INSTALLATION AND/OR REMOVAL OF THE BYPASS PIPING SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.
- SEE DETAIL 2, DRAWING BP06 FOR DRIVEWAY RAMP. THE CONTRACTOR SHALL ALSO MAINTAIN PEDESTRIAN ACCESS THROUGH RAMPS AT CROSSWALKS.
- IF REQUIRED FOR THE BYPASS SYSTEM, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWINGS 605, 610, AND 611 ON C10.

KEY NOTES

- PROPOSED TEMPORARY BYPASS OUTLET AREA. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SPECIFICATION SECTION 33\_05\_11.
- PROPOSED TEMPORARY BYPASS PIPING ROUTING CORRIDOR. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SPECIFICATION SECTION 33\_05\_11.
- CONTRACTOR SHALL POTHOLE AND UTILITY LOCATE AT ALL TRENCHING LOCATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR.
- INSTALL STORM DRAIN INLET PROTECTION ON ALL STORM DRAINS WITHIN 50 LINEAL FEET OF CONSTRUCTION PER EVERETT STANDARD DRAWING 210 ON C10.
- CONTRACTOR TO PLUG AND MAINTAIN FLOW VIA BYPASS OR VACTOR DURING CIPP INSTALLATION AND CURING OF THE EXISTING 36" SEWER.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- SCHEMATIC BYPASS ROUTE
- SCHEMATIC TRENCHED BYPASS
- PROPERTY LINE
- PROPOSED TEMPORARY BYPASS STAGING AREA



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



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20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

BYPASS  
20TH ST SEWER BYPASS PLAN STA 21+00  
TO STA 30+00

Drawing  
BP03  
Sheet No.  
18  
23  
Of Total

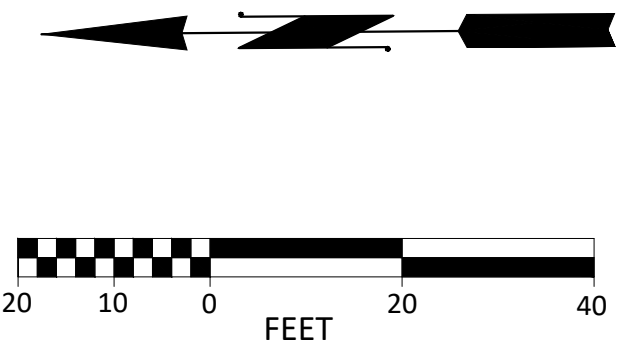




- GENERAL NOTES**
- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
  - SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
  - SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
  - ALL BYPASS OPERATIONS ARE TO OCCUR WITHIN THE BYPASS CORRIDOR SHOWN ON THE BYPASS DRAWINGS. IF THE CONTRACTOR REQUIRES AN ADDITIONAL CLOSURE AREA OR ALTERNATIVE ROUTE FOR THE BYPASS PIPING, THESE VARIATIONS SHALL BE SUBMITTED AND APPROVED WITH THE TEMPORARY BYPASS SUBMITTAL.
  - UTILITIES SHOWN ON THESE BYPASS DRAWINGS ARE GIS-BASED ONLY AND NO UTILITY SURVEY OR EXPLORATION WAS CONDUCTED DURING THE DEVELOPMENT OF THESE PLANS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN ALL AREAS OF PLANNED EXCAVATION PRIOR TO ANY EXCAVATION.
  - ALL TRENCHING FOR BYPASS PIPING SHALL CONFORM TO DETAILS 1, 3, AND/OR 4 ON DRAWING BP06. ALL TRENCHES SHALL BE RESTORED PER DETAIL 1, DRAWING BP07 FOLLOWING CONSTRUCTION.
  - ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING INSTALLATION AND/OR REMOVAL OF THE BYPASS PIPING SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.
  - SEE DETAIL 2, DRAWING BP06 FOR DRIVEWAY RAMP. THE CONTRACTOR SHALL ALSO MAINTAIN PEDESTRIAN ACCESS THROUGH RAMPS AT CROSSWALKS.
  - IF REQUIRED FOR THE BYPASS SYSTEM, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWINGS 605, 610, AND 611 ON C10.

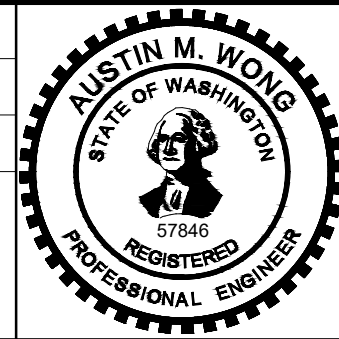
- KEY NOTES**
- PROPOSED TEMPORARY BYPASS PIPING ROUTING. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SECTION 33\_05\_11.
  - PROPOSED TEMPORARY BYPASS INTAKE AREA. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SECTION 33\_05\_11.

- LEGEND**
- EXISTING SANITARY SEWER MANHOLE
  - REHAB EXISTING SEWER MANHOLE
  - EX SANITARY SEWER MAINLINE (<12" DIAMETER)
  - EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
  - REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
  - REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
  - SCHEMATIC BYPASS ROUTE
  - SCHEMATIC TRENCHED BYPASS
  - PROPERTY LINE
  - PROPOSED TEMPORARY BYPASS STAGING AREA



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
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ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

Designed  
AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level

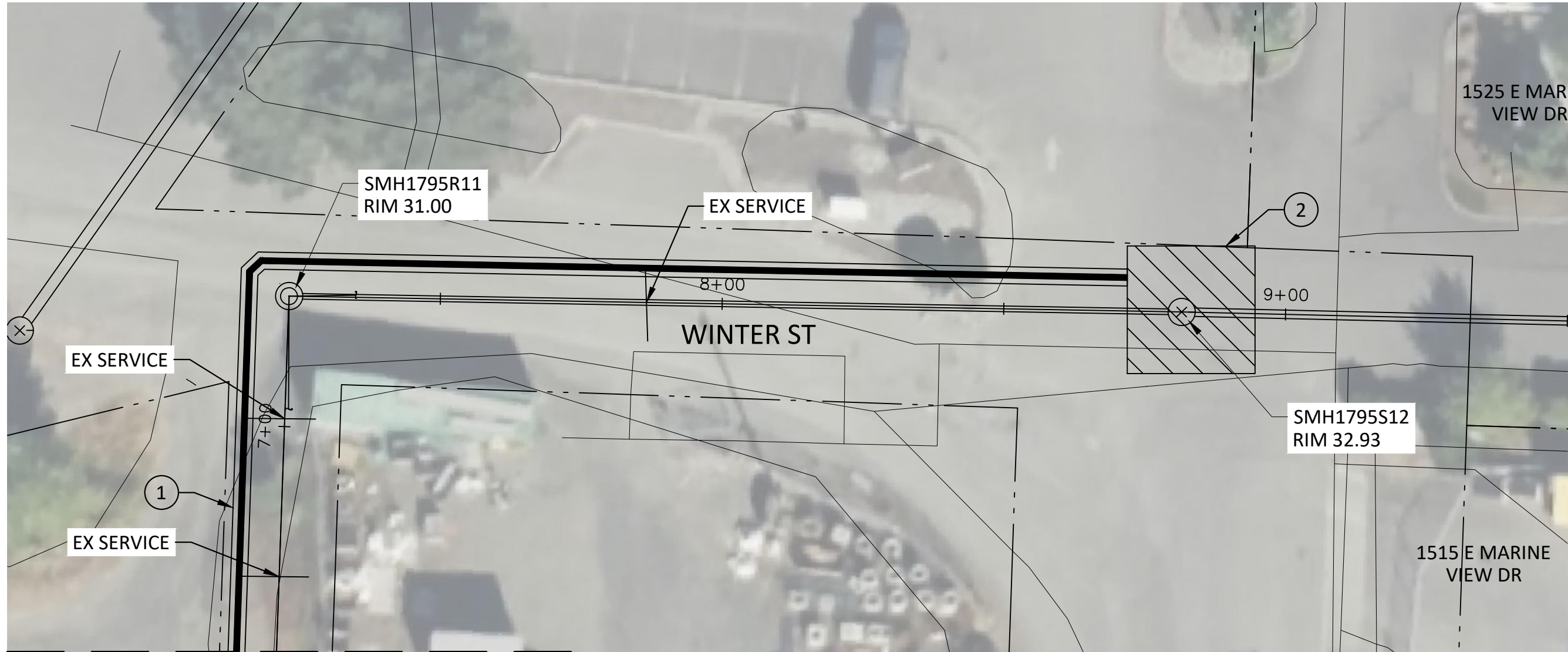


20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

BYPASS  
MILL-WINTER ST SEWER BYPASS PLAN STA  
1+00 TO STA 6+60

Drawing  
BP04  
Sheet No.  
19  
23  
Of Total

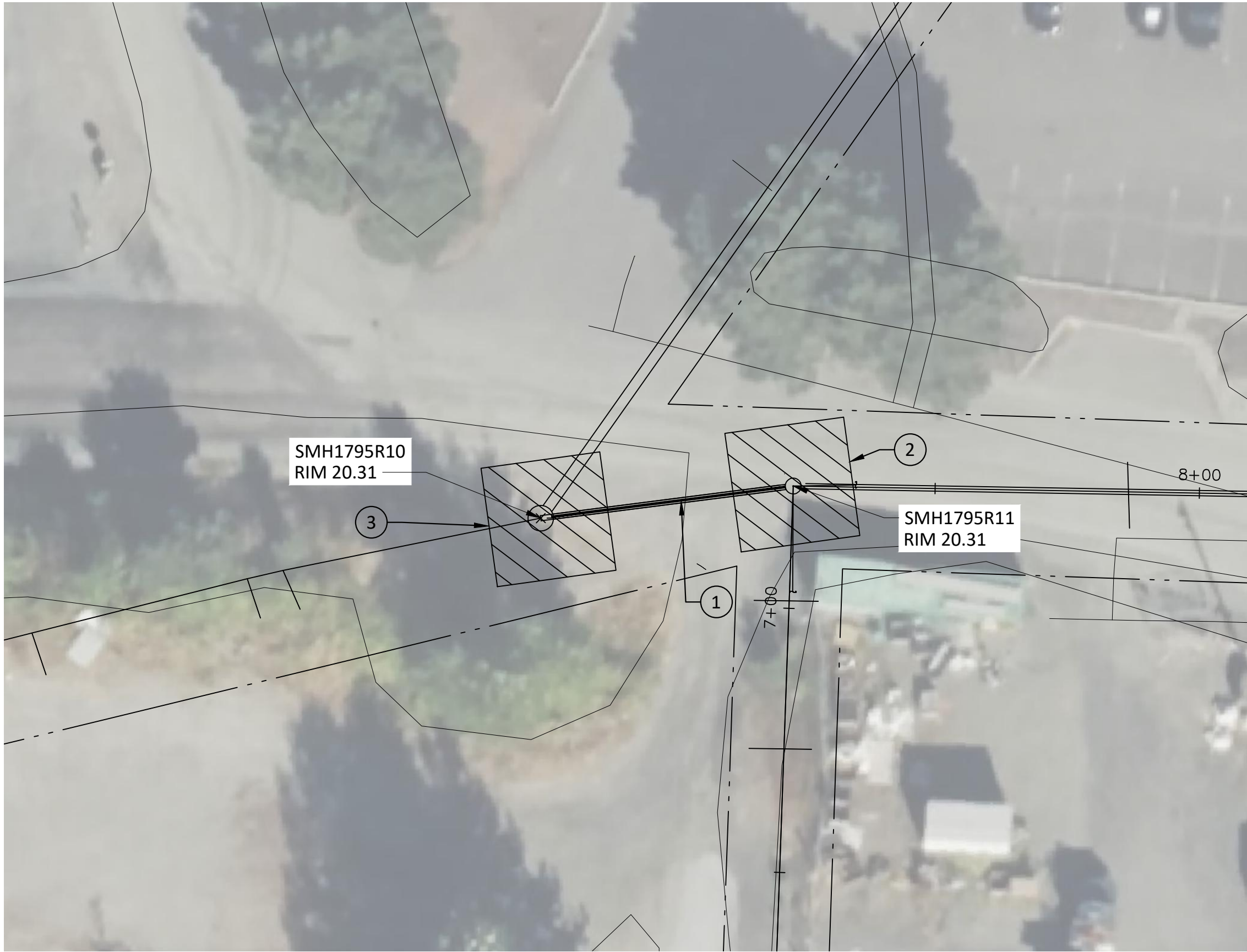




MATCHLINE STA 6+60 SHEET BP04

MILL STREET TO WINTER STREET BYPASS PLAN

SCALE: 1"=20'



MARINE VIEW DRIVE BYPASS PLAN

SCALE: 1"=20'

GENERAL NOTES

- SEE DRAWING G02 FOR ABBREVIATIONS, LEGEND, AND SYMBOLS.
- SEE DRAWING G03 FOR GENERAL NOTES AND DESIGN CRITERIA.
- SEE DRAWING G05 FOR KEY MAP AND CONTROL POINTS.
- ALL BYPASS OPERATIONS ARE TO OCCUR WITHIN THE BYPASS CORRIDOR SHOWN ON THE BYPASS DRAWINGS. IF THE CONTRACTOR REQUIRES AN ADDITIONAL CLOSURE AREA OR ALTERNATIVE ROUTE FOR THE BYPASS PIPING, THESE VARIATIONS SHALL BE SUBMITTED AND APPROVED WITH THE TEMPORARY BYPASS SUBMITTAL.
- UTILITIES SHOWN ON THESE BYPASS DRAWINGS ARE GIS-BASED ONLY AND NO UTILITY SURVEY OR EXPLORATION WAS CONDUCTED DURING THE DEVELOPMENT OF THESE PLANS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN ALL AREAS OF PLANNED EXCAVATION PRIOR TO ANY EXCAVATION.
- ALL TRENCHING FOR BYPASS PIPING SHALL CONFORM TO DETAILS 1, 3, AND/OR 4 ON DRAWING BP06. ALL TRENCHES SHALL BE RESTORED PER DETAIL 1, DRAWING BP07 FOLLOWING CONSTRUCTION.
- ALL PAVEMENT, SIDEWALK, CURBS, AND DRIVEWAYS DAMAGED DURING INSTALLATION AND/OR REMOVAL OF THE BYPASS PIPING SHALL BE REPLACED IN-KIND FOLLOWING CONSTRUCTION PER THE CITY OF EVERETT STANDARD DRAWINGS.
- SEE DETAIL 2, DRAWING BP06 FOR DRIVEWAY RAMP. THE CONTRACTOR SHALL ALSO MAINTAIN PEDESTRIAN ACCESS THROUGH RAMPS AT CROSSWALKS.
- IF REQUIRED FOR THE BYPASS SYSTEM, REMOVE AND REINSTALL MANHOLE FRAME, COVER, GRADE RINGS, AND CONE PER CITY OF EVERETT STANDARD DRAWINGS 605, 610, AND 611 ON C10.

KEY NOTES

- PROPOSED TEMPORARY BYPASS PIPING ROUTING. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SECTION 33\_05\_11.
- PROPOSED TEMPORARY BYPASS DISCHARGE AREA. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SECTION 33\_05\_11.
- PROPOSED TEMPORARY BYPASS INTAKE AREA. CONTRACTOR TO FOLLOW BYPASS REQUIREMENTS PER SECTION 33\_05\_11.

LEGEND

- EXISTING SANITARY SEWER MANHOLE
- REHAB EXISTING SEWER MANHOLE
- EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (<12" DIAMETER)
- REHAB EX SANITARY SEWER MAINLINE (≥12" DIAMETER)
- SCHEMATIC BYPASS ROUTE
- SCHEMATIC TRENCHED BYPASS
- PROPERTY LINE
- PROPOSED TEMPORARY BYPASS STAGING AREA



NO.	DATE	APRVD	REVISION						
PLANS ISSUED FOR									
BID			CONST			RECORD			
ACTION	DATE	APRVD	ACTION	DATE	APRVD	ACTION	DATE	APRVD	

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AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level

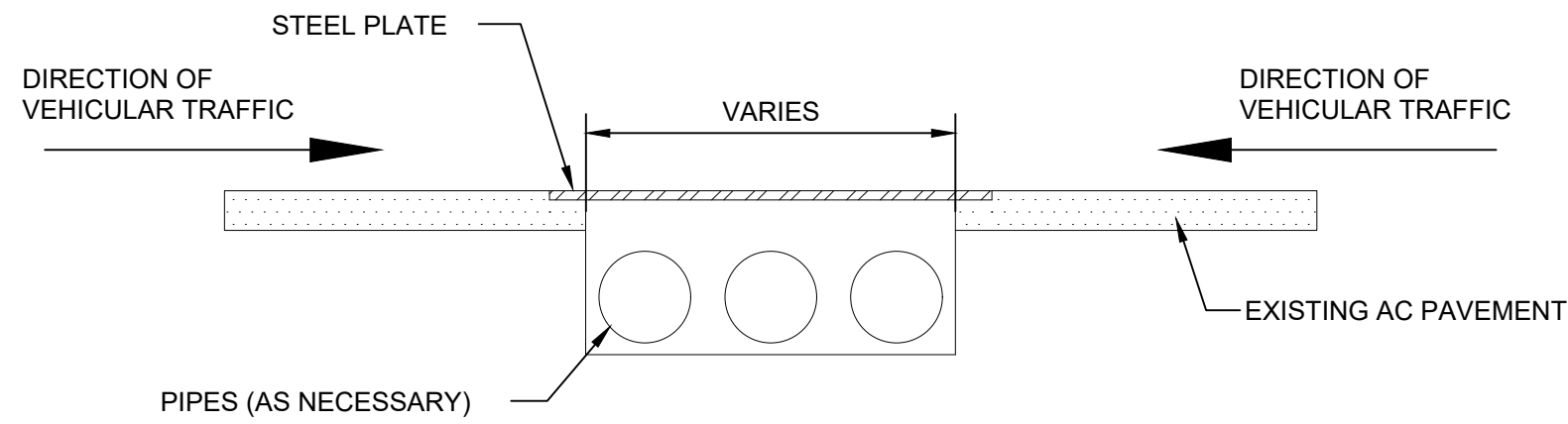


20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

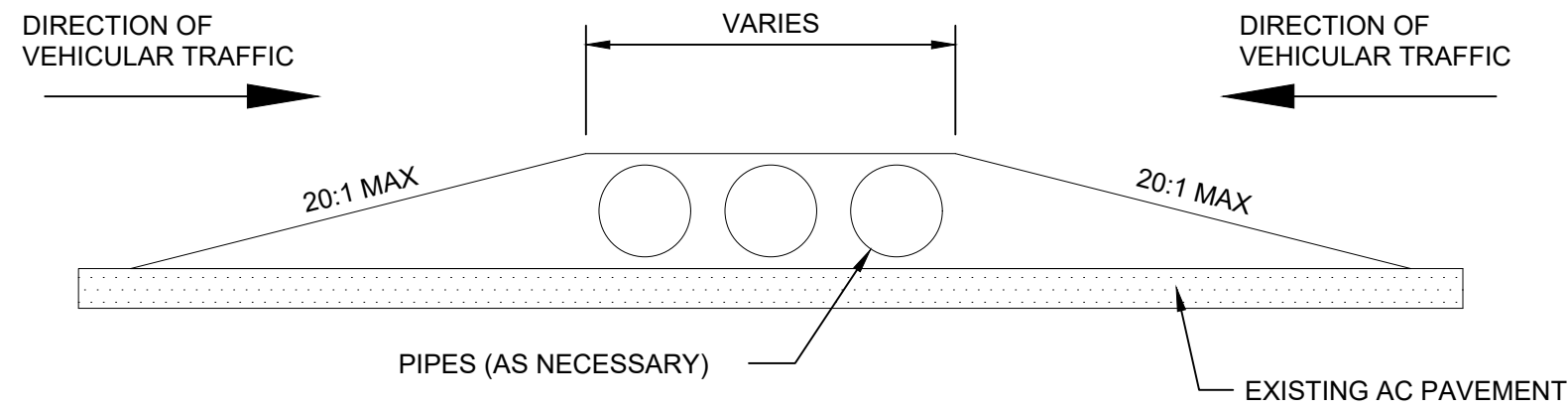
BYPASS  
1525 E MARINE VIEW DRIVE SEWER  
REHABILITATION PLAN

Drawing  
BP05  
Sheet No.  
20  
23  
Of Total





CASE 1-FOR SPEEDS > 25 MPH



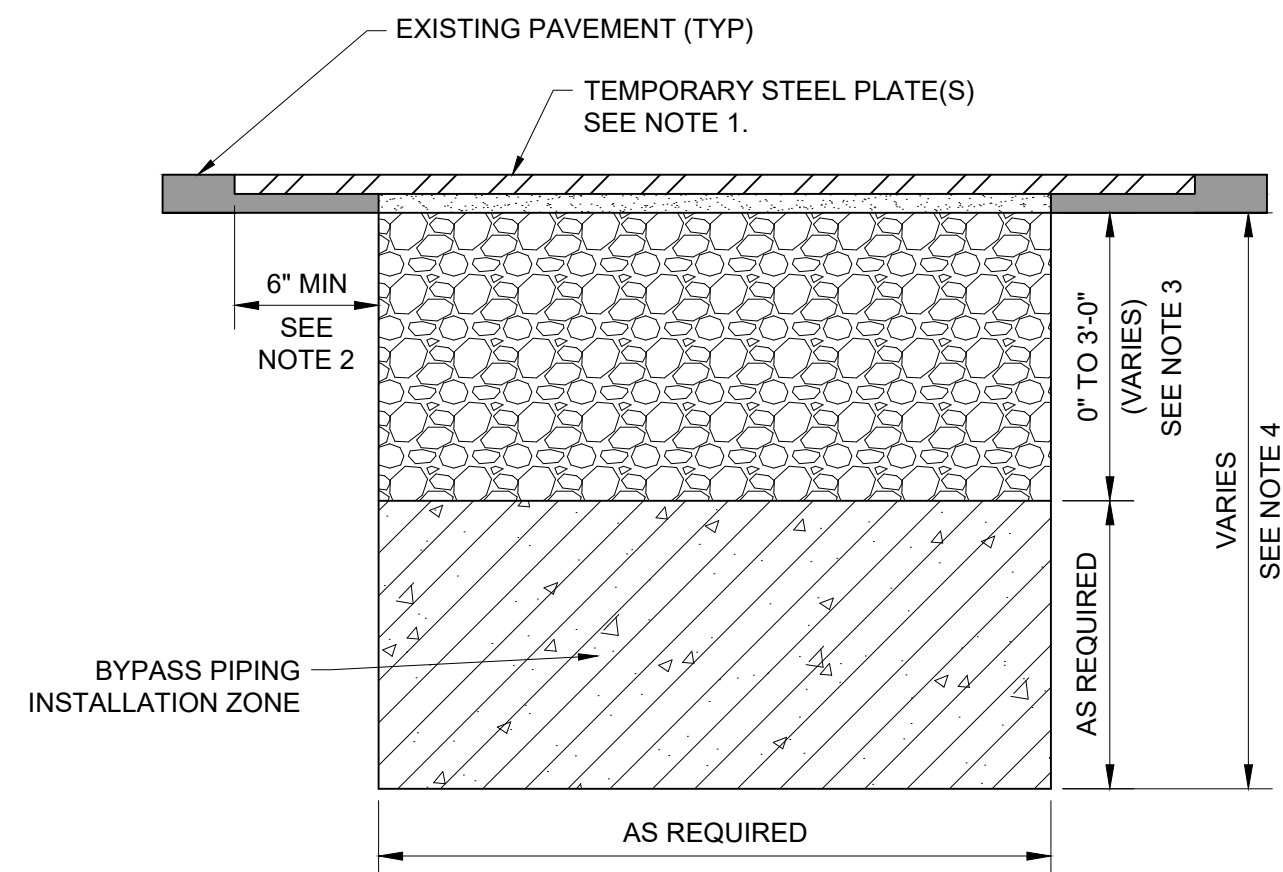
CASE 2-FOR SPEEDS <= 25 MPH

1  
G02  
BP01-BP07

SCALE: NTS

NOTE:

- CASE 1 REQUIREMENT FOR BELOW PAVEMENT INSTALLATION PRIOR TO COMMENCEMENT OF WORK IN ANY LOCATION WHERE THE CONTRACTOR ELECTS TO TEMPORARILY INSTALL THE BYPASS SEWER LINE BELOW PAVEMENT, A SHOP DRAWING SUBMITTAL INDICATING THE MEANS AND METHOD, MUST BE SUBMITTED WITH THE TBP FOR REVIEW AND APPROVAL.
- SEE DETAILS 3 AND 4, THIS SHEET, FOR TEMPORARY TRENCH REQUIREMENTS. STEEL PLATES SHALL ONLY BE UTILIZED WHEN DEPTH OF COVER<3'-0" AS NOTED.



NOTES:

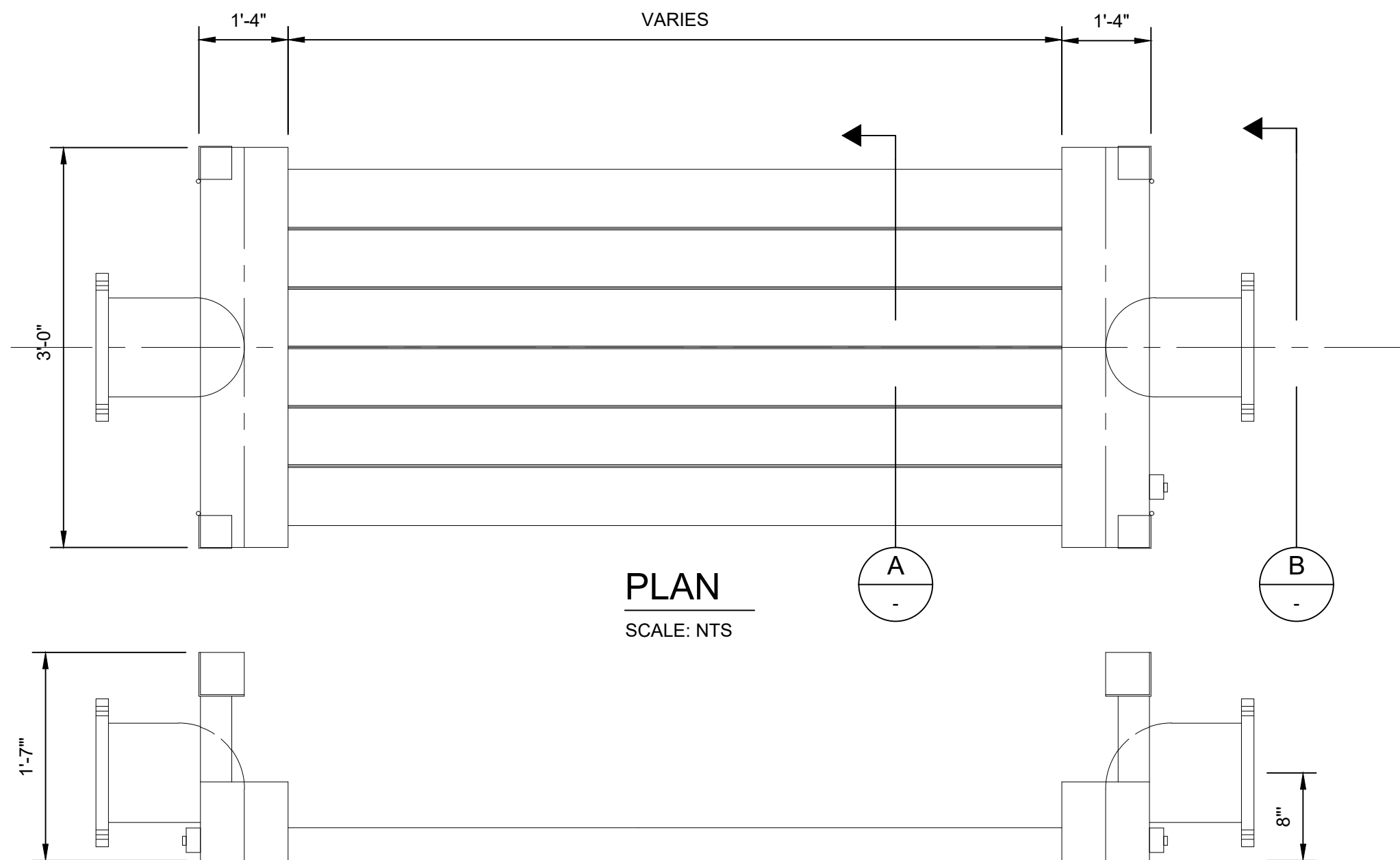
- STEEL PLATING TO BE DESIGNED FOR HS 20-44 LOADING TAKING INTO ACCOUNT TRENCH WIDTH USED AND THE CORRESPONDING REQUIRED SPAN. IF MULTIPLE PLATES ARE STACKED, TACK WELD PLATES TOGETHER TO PREVENT RATTLING.
- PROVIDE TEMPORARY GRIND AT TRENCH EDGES. DEPTH TO MATCH STEEL PLATE THICKNESS. RECESS PLATING TO INSTALL FLUSH WITH EXISTING PAVEMENT.
- PIPE DEPTH VARIES DEPENDING ON EXISTING UTILITY CROSSING SIZES AND ELEVATIONS. WHERE DEPTH OF PIPE MEETS OR EXCEEDS 3'-0", DETAIL 3 ON THIS DRAWING MAY BE UTILIZED FOR STANDARD PIPE TRENCHING.
- BACKFILL PER SPECIFICATIONS. MATERIAL TO BE COMPACTED TO MINIMUM 95% MODIFIED PROCTOR.
- TRENCHING THROUGH NON-PAVED AREAS TO BE TEMPORARILY COVERED WITH NATIVE MATERIAL AT SURFACE.

4

SHALLOW TRENCHED TEMPORARY BYPASS PIPING

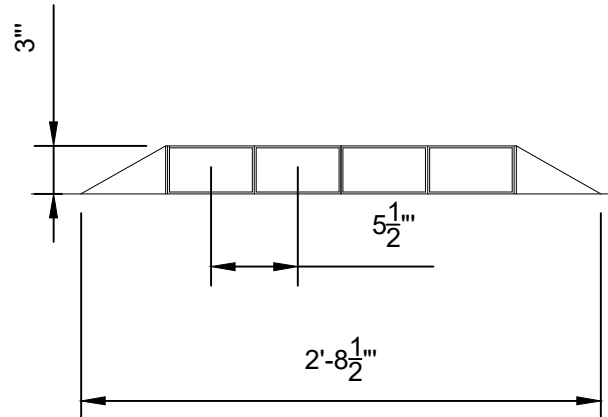
G02  
BP01-BP07

SCALE: 1/2"=1'-0"



PLAN

SCALE: NTS

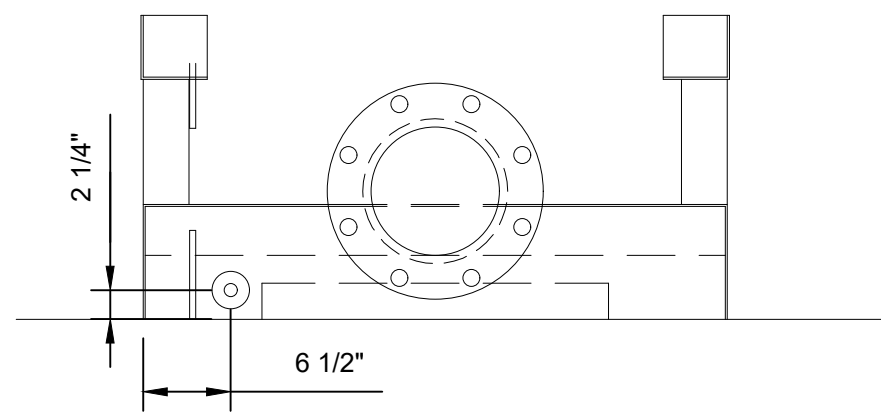


A

SECTION

SCALE: NTS

4-12  
STITCH WELD



B

SECTION

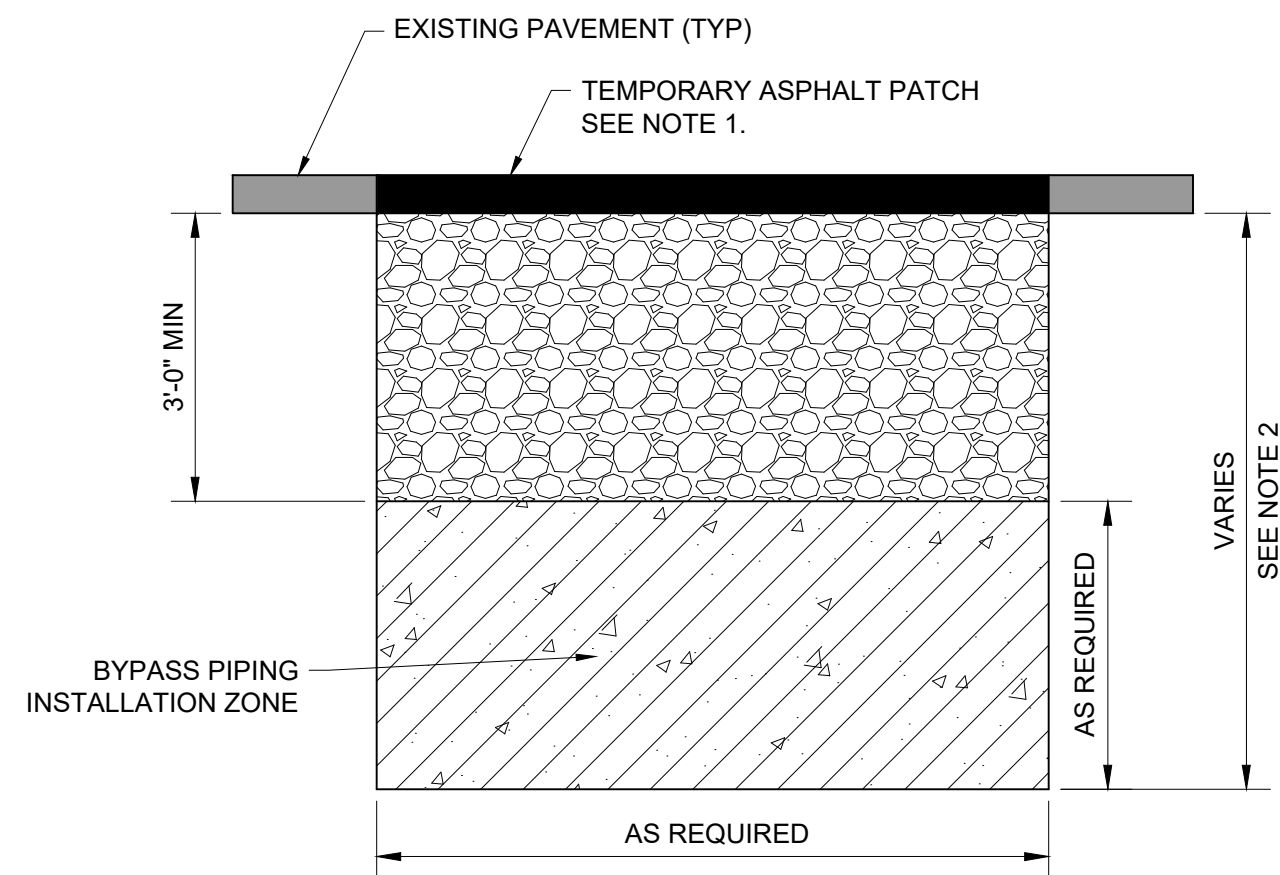
SCALE: NTS

2

DRIVEWAY RAMP

G02  
BP01-BP07

SCALE: NTS



NOTES:

- TEMPORARY ASPHALT PATCH SHALL MEET EXISTING ASPHALT THICKNESS.
- BACKFILL PER SPECIFICATIONS. MATERIAL TO BE COMPACTED TO MINIMUM 95% MODIFIED PROCTOR.
- TRENCHING THROUGH NON-PAVED AREAS TO BE TEMPORARILY COVERED WITH NATIVE MATERIAL AT SURFACE,

3

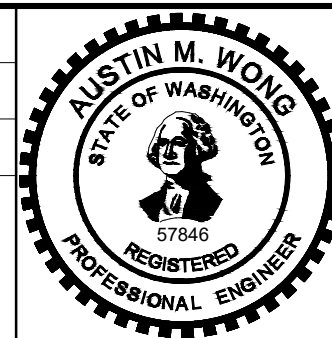
STANDARD TRENCHED  
TEMPORARY BYPASS PIPING

G02  
BP01-BP07

SCALE: 1/2"=1'-0"

NO.	DATE	APRVD	REVISION
PLANS ISSUED FOR			
BID	DATE	APRVD	CONST
ACTION	DATE	APRVD	ACTION
DATE	APRVD	RECORD	DATE
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AMW  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



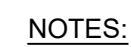
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20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

BYPASS  
BYPASS DETAILS - 1

Drawing  
BP06

Sheet No.  
21  
23  
Of Total



- NOTES:

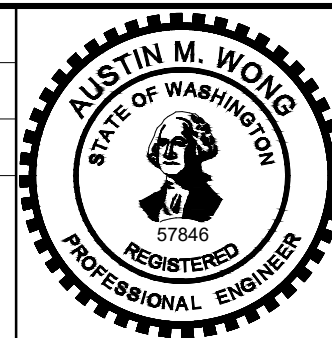
- SCALE: 1/2"=1'0"



- SCALE: 1/2"=1'0"

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Designed	XX
Drawn	JJC
Checked	EJW/KDR
Design Review Level	



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20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776

REGION - 10 | STATE - WA

BYPASS

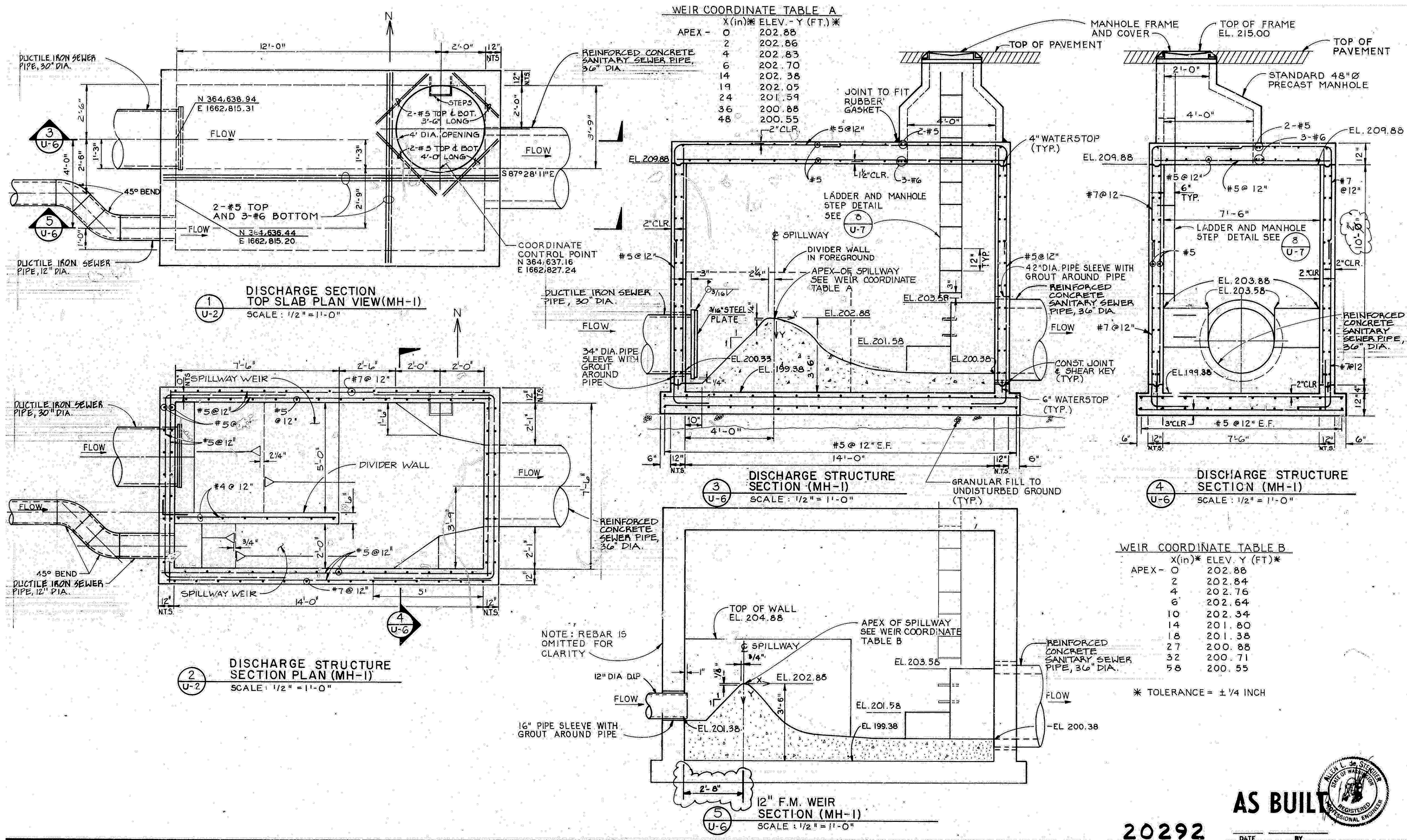
## BYPASS DETAILS - 2

Drawing	BP07
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Sheet No.  
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2  
Of T

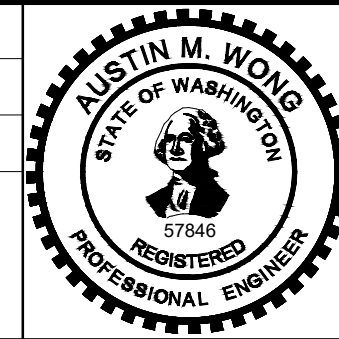


City of Everett Field Book/Starting Page / Control Monument Date Surveyed By Plot date 5/17/2024 9:47 PM Plotted by Shannon Adams Last saved by SAdams Filepath\\fileshare C:\PW\_WORKING\CAROLLO\_200000\02082-20TH ST.dwg Sheetset Name 202082-20TH ST.dwg Plot style Everett-2016.sbt



NO.	DATE	APRVD	REVISION
PLANS ISSUED FOR			
BID	DATE	APRVD	CONST
ACTION	DATE	APRVD	ACTION
DATE	APRVD	RECORD	DATE
APRVD	APRVD	APRVD	APRVD

Designed  
AWM  
Drawn  
JJC  
Checked  
EJW/KDR  
Design Review Level



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20TH STREET SEWER  
REHABILITATION PROJECT  
WORK ORDER UP-3776  
REGION - 10 | STATE - WA

BYPASS  
BYPASS DETAIL - 3

Drawing  
BP08

Sheet No.  
23

23  
Of Total