

**CONTRACT DOCUMENTS
FOR THE
CONSTRUCTION OF**

STORM REHABILITATION BROOKLYN AVE.

PROJECT NO. 21PW14



**CITY OF ROSEBURG
PUBLIC WORKS DEPARTMENT
DOUGLAS COUNTY, OREGON**

**PREPARED BY:
City of Roseburg
900 SE Douglas Ave.
Roseburg, OR 97470
541-492-6730**

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**CITY OF ROSEBURG
ADVERTISEMENT FOR BID**

Project Name: Storm Rehabilitation Brooklyn Ave.

Project Number: 21PW14

Project Description: The proposed work generally consists of furnishing all labor, equipment, materials and supervision for storm line rehabilitation of approximately 365 lineal feet of 48 inch diameter and 515 lineal feet of 54 inch diameter pipe utilizing cured-in-place pipe (CIPP), Spin-Cast Geopolymer (SCGP) or Monolithic Polyurethane (MSAP) Storm line rehabilitation.

Bids are due by 2:30 p.m. on Tuesday, June 1, 2021

All bids will be opened at 2:30 p.m.

Additional forms disclosing first tier subcontractors are due by 4:00 p.m.

No bids shall be received after this date and time.

Contact – Submit bids to:
City of Roseburg City Recorder
900 SE Douglas
Roseburg OR 97470
(541) 492-6866
bids@cityofroseburg.org

Address Technical Questions to:
Ryan Herinckx
City of Roseburg
900 SE Douglas Ave.
Roseburg, OR 97470
rherinckx@cityofroseburg.org

SOLICITATION DOCUMENTS: Solicitation documents, including contract terms, conditions, specifications, all attachments and/or addenda for the Invitation to Bid are available for review at the above contact address. Bid documents will not be mailed to prospective bidders, but may be downloaded from the Oregon Procurement Information Network (ORPIN) through the following internet address: <http://orpin.oregon.gov/open.dll/welcome>. Bidders without access to ORPIN may download the documents at a Plan Center or the City of Roseburg’s website at www.cityofroseburg.org under “Bidding Opportunities.”

Bidders are not required to be pre-qualified in accordance with the laws of Oregon and the Information to Bidders at least ten days prior to the date of bid opening. Bidders must be licensed with the Oregon Construction Contractors Board and comply with City of Roseburg Municipal Code.

The resulting public works contract is subject to ORS 279C.800 to 279C.870 or the Davis-Bacon Act (40 U.S.C. 3141 to 3148). No bid will be considered unless the bid contains a statement that the bidder will comply with the provisions of ORS 279C.840 (Prevailing Wage Rates).

INVITATION TO BID

The City of Roseburg will receive sealed bids or bids submitted via email marked "**Bid for Storm Rehabilitation Brooklyn Ave., Project No. 21PW14**" until the hour of 2:30 p.m. on **Tuesday, June 1, 2021**, at which time they will be publicly opened and read in person or virtually. If opened virtually, a link will be posted on the City's website at <https://www.cityofroseburg.org/bidding> no later than 24 hours prior to the opening. When required by ORS 279C.370, bidders must submit a list of their first-tier subcontractors providing labor, or labor and materials, no later than 4:00 p.m. that same day. Bids shall be addressed and delivered to Amy L. Sowa, City Recorder, City Hall, 900 SE Douglas Avenue, Roseburg, Oregon 97470, or emailed to bids@cityofroseburg.org. Any and all bids received after the 2:30 p.m. deadline for submission, or for which the list of first-tier subcontractors has not been submitted by 4:00 p.m. that same day, shall be considered nonresponsive and returned to the bidder. All bidders must list their "Construction Contractors Board" or "State Landscape Contractors Board" license number as required by ORS 701.021 or 671.530 on the bid form.

The proposed work generally consists of furnishing all labor, equipment, materials and supervision for storm line rehabilitation of approximately 365 lineal feet of 48 inch diameter and 515 lineal feet of 54 inch diameter pipe utilizing cured-in-place pipe (CIPP), Spin-Cast Geopolymer (SCGP) or Monolithic Polyurethane (MSAP) Storm line rehabilitation. The bids will be evaluated as **unit price pursuant to OAR 137-049-0380(2)(b)**. The proposed work will require the bidder to meet the highest standards prevalent in the industry or business related to the work to be performed. Failure to meet such standards may result in a reduction or withholding of payment; require bidder to provide, at bidder's own expense, additional work required to meet such standards; or termination of the contract, with damages being sought. Technical questions regarding the work to be performed should be addressed to:

Ryan Herinckx
City of Roseburg
900 SE Douglas Ave
Roseburg, OR 97470
541-492-6730
rherinckx@cityofroseburg.org

Bids must be accompanied by a certified check, cashier's check, irrevocable letter of credit or Bid Bond in an amount equal to not less than ten percent (10%) of the total amount of the bid. Bidders shall state as part of the bid that the provisions of ORS 279C.800 to 279C.870 (Prevailing Wage Rates) shall be complied with; provided however, if the project is subject to the federal prevailing rates of wage under the Davis-Bacon Act (40 U.S.C. 3141 et seq.) or if the project is subject to both the state and federal prevailing rates of wage, the bid must contain a statement by the bidder that contractor and every subcontractor shall pay the higher of the applicable state or federal prevailing rate of wage to all workers on the project. Bidders must also certify as part of the bid that the requirements of ORS 279C.505(2) (Employee Drug Testing Program) shall be complied with. Bidders are not required to be pre-qualified in accordance with the laws of Oregon and the Information to Bidders. Each bid must contain a statement as to whether the bidder is a resident bidder, as defined in ORS 279A.120. Bidders are not required to be licensed under ORS 468A.720 (Asbestos Abatement). However, the successful bidder shall at all times during the project provide qualified staff on site that is able

to identify asbestos containing material. Bidders are hereby notified there are underground pipelines and structures containing asbestos within the City of Roseburg. If any such material is encountered during the project, the bidder shall thereupon be required to notify the City and comply with all requirements of applicable laws and regulations. Unless exempt under ORS 279C.800 to 279C.870, the successful bidder must file a \$30,000 Public Works Bond with the Construction Contractors Board prior to beginning work on the project, and certify that all sub-contractors have also filed such bond. Bidders must agree to use recyclable products to the maximum extent financially feasible. **Bidders with 50 or more employees and for contracts over \$500,000, are required to possess a certificate issued by the Department of Administrative Services for completion of pay equity training (NEW).**

The City of Roseburg may reject any bid not in compliance with all public bidding procedures and requirements, including the requirement to demonstrate the bidder's responsibility under ORS 279C.375(3)(b), may waive any irregularities, and may reject for good cause any or all bids upon a finding of the City it is the public interest to do so. The City may also cancel this invitation in accordance with OAR 137-049-0270.

Dated this 10th day of May, 2021.

CITY OF ROSEBURG, DOUGLAS COUNTY, OREGON
/s/ Amy L. Sowa, City Recorder

INFORMATION TO BIDDERS

1. FORM OF BID

All bids must be made upon the blank Bid Form attached hereto and must give a price for each item and an aggregate amount or a lump sum price as required in the Bid Form.

The City reserves the right to reject any or all bids or to accept the bid deemed in the best interest of the City. Without limiting the generality of the foregoing, the City may reject any bid which is incomplete, obscure or irregular; which omits any one or more items in the price sheet; in which unit prices are obviously unbalanced; or which is accompanied by an insufficient or irregular Bid Bond.

The bidder shall sign the Bid Form in the blank space provided therefore. All bids must contain the bidder's tax identification number. Bids made by a corporation, general or limited partnership, or L.L.C., shall contain the name and address of such organization, together with names and addresses of officers, partners or managing members. If the bid is made by a corporation, it must be signed by one of the corporate officers with the authority to sign for the corporation; if made by a partnership, by one of the partners.

All bids must be submitted at the time and place, and in the manner prescribed in the Invitation to Bid.

2. BID PROTEST; REQUEST FOR CHANGE OR CLARIFICATION

A bidder may protest, or request a change in items in the bid documents, including contract terms and conditions or specifications, by filing a written protest with the City not less than ten (10) calendar days prior to the bid submission deadline. Such written protest or request for change must include a detailed statement of the grounds for the protest and a statement of the desired changes to the contract terms and conditions or specifications.

The City shall not consider a bidder's protest or request for change after the deadline for submitting such protest or request. The City shall provide notice to the bidder if it entirely rejects the bidder's protest or request for change. If the City agrees with the bidder's protest or request, in whole or in part, the City shall issue a written Addendum to the bid documents or specifications.

Prior to the deadline for submitting a written protest or request for change, a bidder may request that the City clarify any provision of the bid documents. The City's clarification to a bidder, whether orally or in writing, shall not change the bid documents and is not binding on the City unless the City amends the bid documents by issuing a written addendum.

If a written addendum is issued by the City, all bidders must provide written acknowledgement, with their bids, of receipt of all issued addenda.

3. CONTRACT DOCUMENTS

The Contract Documents for this Project consist of, but are not necessarily limited to, the Invitation to Bid, Information to Bidders, Bid Form, Construction Contract including Exhibit "A" Standard City Contract Provisions, First-Tier Subcontractor Disclosure Form, Drug Testing Program Certification Form, Bidder's Responsibility Form, Performance Bond, Payment Bond, Public Works Bond Filing Certification form (when required), Pay Equity Compliance Certification (when applicable), General Conditions, Technical Provisions, Special Conditions, Standard Drawings, Specifications and Plans and Supplemental Specifications, all as required for the full execution and satisfactory completion of the Project. Any person contemplating the submission of a bid and being in doubt as to the meaning or intent of said Contract Documents should request of the City, in writing, an interpretation thereof. Any interpretation of said Contract Documents shall be made only in writing by the City.

4. ESTIMATE OF QUANTITIES

The estimate of quantities of work to be done as stated in the Bid Form, although stated with as much accuracy as possible, is approximate only and is assumed solely for the purpose of comparing bids. The quantities on which payments will be made to the Contractor are to be determined by measurement of the work actually performed and paid at the unit price bid, regardless of the amount of increase or decrease in the estimated quantities as specified in the Contract Documents. The City reserves the right to increase or diminish the amount of any class of work as may be deemed necessary.

5. CONSTRUCTION CONTRACTORS' BOARD - STATE LANDSCAPE CONTRACTORS' BOARD

All contractors bidding on public contracts must be licensed with the Construction Contractors' Board or the State Landscape Contractors Board as required by ORS 701.021 or 671.530. Bids must be identified with the Contractors' Board license number. No bids will be considered without this information.

6. DISCLOSURE OF FIRST-TIER SUBCONTRACTORS

When a public improvement contract value is greater than \$100,000, all bidders are required to disclose information about first-tier subcontractors, providing labor or labor and materials, when the contract amount of such first-tier subcontractor is equal to or greater than:

- 1) 5% of the project bid, or \$15,000, whichever is greater; or
- 2) \$350,000 regardless of the percentage of the total bid.

Bidders must disclose the following information about such subcontracts, on the First-Tier Subcontractor Disclosure Form provided by the City and included herein, within two hours of the bid submission deadline:

- 1) The subcontractor's name;

- 2) The subcontract dollar value; and
- 3) The category of work to be performed by the subcontractor.

Any bidder not using subcontractors subject to the above disclosure form, must write "NONE" on the Disclosure Form and sign and submit the form. The City will reject a bid if the bidder fails to submit the Disclosure Form before the deadline.

7. DRUG TESTING PROGRAM

ORS 279C.505(2) requires public improvement contracts to include a provision requiring contractors to demonstrate that they have an employee drug and alcohol testing program in place. All bidders are required to certify, on the Drug Testing Program Certification Form provided by the City and included herein, that they have such program in place. This certification will become part of the Contract if awarded and contractor will be required to maintain such program throughout the performance of the Contract. Failure to maintain a program shall constitute a material breach of the Contract.

8. PROMPT PAY POLICY - TIMELY PROGRESS PAYMENTS

ORS 279C.570 and 279C.580 require prompt payment to contractors and subcontractors and provides for settlement of compensation disputes between the parties. The City is required to automatically calculate and pay interest on invoices from the contractor when payments become overdue. The interest commences thirty (30) calendar days after receipt of the invoice from the contractor, or fifteen (15) calendar days after the payment is approved by the City, whichever is earlier. The rate of interest charged to the City on the amount due shall equal three times the discount rate on 90-day commercial paper, but shall not exceed 30 percent.

The City is also required to ensure that the contractor includes a clause in each subcontract that obligates the contractor to pay first-tier subcontractors for satisfactory performance under its contract. Contractors must pay subcontractors within ten (10) calendar days of receiving payment from the City. Contracts between primary contractors and subcontractors must also contain an interest penalty clause that obligates the contractor, if payment is not made to the subcontractor within thirty (30) calendar days after receipt of payment from the City, to pay the first-tier subcontractor an interest penalty on amounts due in the case of each payment not made in accordance with the subcontract payment clause. The contractor is also required to ensure that first-tier subcontractors include these requirements in each of its subcontracts with lower-tier subcontractors or suppliers.

If requested in writing by a first-tier subcontractor, within ten (10) calendar days after receiving the request, the contractor must provide the first-tier subcontractor, a copy of that portion of any invoice or request for payment submitted to the City, or pay document provided by the City to the contractor, specifically related to any labor or materials supplied by the first-tier subcontractor.

9. PRE-QUALIFICATION OF BIDDERS

When required, bidders shall pre-qualify under ORS 279C.430 and 279C.435, and shall submit the information requested on the form furnished by the City. This information shall be submitted at least ten (10) calendar days prior to the date of bid opening. Bidder qualifications are approved on a calendar year basis and must be renewed annually by filing a new pre-qualification application and obtaining approval after January 1 of each year. The City will accept the approval of qualifications granted from the Department of Transportation and the Department of Administrative Services, including the time periods used by those agencies.

10. BID BOND, PUBLIC WORKS BOND, PAYMENT BOND AND PERFORMANCE BOND

A Bid Bond, Public Works Bond Filing Certification, Payment Bond and Performance Bond shall be provided as specified in Subsection 5.4 of the General Conditions. No waivers, special requirements or emergency provisions have been established for this Contract.

11. PAY EQUITY COMPLIANCE CERTIFICATION (NEW)

ORS 279A.167 requires businesses with fifty (50) or more employees, and a contract valued at more than \$500,000, to provide proof they are properly trained on Oregon's pay equity laws. A certificate proving the contractor has completed the training shall be provided as specified in Subsection 26 of the "Bid Form".

12. HIGHEST STANDARDS OF WORK AND CONSEQUENCES FOR FAILURE

The work to be performed must meet the highest standards prevalent in the industry or business most closely related to the work to be performed. Failure to meet such standards may result in consequences including, but not limited to a reduction or withholding of payment; a requirement that bidder perform, at bidder's own expense, additional work required to meet such standards; or termination of the contract, with damages being sought.

13. CONDITIONS OF WORK

Bidders must make their own determination of the nature of the work proposed under this Contract, the local conditions which can be encountered in this area, and all other matters which can in any way affect the work proposed under this Contract. It shall also be the bidder's responsibility to be thoroughly familiar with the Contract Documents. Failure to make the examination necessary for this determination or to examine any form, instrument or document of the Contract shall not release the bidder from the obligations of this Contract.

14. REVIEW OF BIDS; BASIS FOR AWARD; NOTICE OF INTENT TO AWARD; AND RIGHT TO PROTEST AWARD

In reviewing all bids received and determining the lowest responsible bidder, the City reserves the right to take into account and give reasonable weight to the extent of the bidder's experience on work of the nature involved, on the bidder's record as to

dependability in carrying out of contracts, and evidence of present ability to perform the Contract in a satisfactory manner.

The City may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the City all such information and data for this purpose as the City may request. The City reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the City that such bidder is properly qualified to carry out the obligations of the Contract, to complete the work contemplated therein, and to do so in a timely manner. The City specifically reserves the right to reject a bid from a bidder who, at the time bids are opened, has failed to complete work in a timely manner under a contract previously awarded to the bidder by the City. Conditional bids will not be accepted.

In accordance with ORS 279A.120(2)(b), in determining the lowest responsible bidder, the City shall, for the purpose of awarding the Contract, add a percentage increase on the bid of a non-resident bidder equal to the percent, if any, of the preference given to that bidder in the state in which the bidder resides.

Within forty-five (45) calendar days after the bid opening, the City will accept one of the bids or reject all of the bids received. If the City intends to accept one of the bids, it shall issue a Notice of Intent to Award the Contract to all bidders. The City's award will not be final until seven (7) calendar days after the date of the notice if no protest is filed; or if a protest is filed, until the City provides a written response to all timely-filed protests that denies the protest and affirms the award.

A bidder may submit a formal written protest to the City's Notice of Intent to Award the Contract within seven (7) calendar days of the date of the City's Notice of Intent. The written protest must specify the grounds upon which the protest is based and must show that the protesting party is an adversely affected or aggrieved bidder. A bidder is adversely affected or aggrieved only if the bidder is eligible for award of the Contract as the responsible bidder submitting the lowest responsible bid, is next in line for award and claims that all lower bidders are ineligible for award in accordance with law.

Such protest must be submitted to the City Recorder, 900 SE Douglas, Roseburg, OR 97470 or by email at info@cityofroseburg.org. Any protest received after the 7-day deadline will not be considered. The City Recorder shall forward such protest to the City Manager who shall have the authority to settle or resolve the protest by written decision.

15. EXECUTION OF CONTRACT, BONDS AND DAMAGES FOR FAILURE TO EXECUTE

The bidder whose bid is accepted will be required to appear within ten (10) calendar days after notice that the Contract has been awarded to bidder and to execute the Contract with the City for the full and complete performance of all work specified, and as required by Subsection 5.4 of the General Conditions, deliver the Public Works Bond Filing Certification form, the Payment Bond to assure payment of the obligations incurred in the performance of the Contract and the Performance Bond and to ensure performance of the Contract.

Should the successful bidder fail or refuse to execute the Contract and furnish the Public Works Bond Filing Certification form, Payment Bond and/or Performance Bond when required, then the Bid Bond deposited by said bidder shall be retained by the City as liquidated damages.

16. COMMENCEMENT DATE AND EXPIRATION DATE OF CONTRACT

This Contract shall be in effect from the time the Contract is signed until the Project is completed. The Contractor must be capable of commencing construction on the work contemplated in the Contract Documents within ten (10) calendar days after the execution of the Contract and receipt of the City's notification to proceed and shall complete the same within the time specified in the bid.

17. DURATION OF BIDS; RETURN OF BID BONDS

All bids will be binding until the later of:

- 1) the day the contract is executed; or
- 2) sixty (60) calendar days after the date of bid opening.

Bid bonds will be returned to unsuccessful bidders not later than the date on which the bids are no longer binding.

18. PUBLIC RECORDS

These Contract Documents and each bid received in response to it, together with copies of documents pertaining to the award of a contract shall be kept on file as a public record by the City Recorder; provided however, such records shall not be disclosed until after the notice of intent to award the contract has been issued.

19. RECORDS REVIEW; CONFIDENTIALITY

After notice of intent to award the resulting contract has been issued, all bids shall be available for public inspection except for those portions of a bid that the bidder designates in its bid as trade secrets or as confidential proprietary data in accordance with applicable state law. If the City determines such designation is not in accordance with applicable law, the City shall make those portions available for public inspection. The bidder shall separate information designated as confidential from other non-confidential information at the time of submitting its proposal. Prices, makes, models or catalog numbers of items offered, scheduled delivery dates and terms of payment are not confidential, and shall be publicly available regardless of a bidder's designation to the contrary.

20. MATERIALS CONTAINING ASBESTOS

Materials containing asbestos may be present in underground pipe systems. All appropriate Federal, State, County and Municipal rules, regulations and guidelines must be followed when working with asbestos containing material. Non friable material must be handled, transported and disposed of in a way that prevents it from becoming friable

and releasing asbestos fibers. If AC pipe is shattered, damaged or badly weathered, it is considered to be friable and will likely release asbestos fibers. A DEQ licensed asbestos abatement contractor using DEQ certified workers must remove all friable asbestos material. Any and all permits and fees that are required by the DEQ, Douglas County and any other regulatory agency must be obtained and paid for by the Contractor prior to disposing of the asbestos containing material. For information about asbestos rules, contact the DEQ Western Region office in Medford, Oregon.

BIDDER'S CHECK LIST

Bidder's attention is called to the following forms, which must be executed in full as required with the bid:

- A. BID FORM(S):** Each bidder shall complete the bid form(s). Prices must be shown in the spaces provided and must be expressed in figures.
- B. BID BOND:** This form is to be executed by bidder and bidder's Surety. The amount of cash, certified check, cashier's check, irrevocable letter of credit or Bid Bond shall not be less than 10% of the total Bid amount.
- C. FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM:** When required by law, this form must be submitted by the bid submission deadline, at which time bids will be opened and read, or within two (2) working hours of such submission deadline. If no subcontractors for labor or for labor and materials will be used, the bidder must write "NONE" on the disclosure form, sign and submit the form as required. Failure to submit this form within two hours of the bid submission deadline will result in the bid becoming non-responsive and such bid will be returned to the bidder.
- D. DRUG TESTING PROGRAM CERTIFICATION FORM:** This form must be submitted with the bid to demonstrate that bidder has an employee drug and alcohol testing program in place and will continue to keep the program in place throughout the duration of performing the Contract awarded.
- E. PUBLIC WORKS BOND PRE-BID NOTICE & CERTIFICATION FORM:** This form must be submitted with the bid to demonstrate contractor's awareness of and intended compliance with the requirement to file a Public Works Bond with the Construction Contractors Board prior to beginning work on the project if awarded the bid.
- F. PAY EQUITY COMPLIANCE CERTIFICATION FORM (NEW):** If applicable pursuant to Section 11 of "Information for Bidders", this form must be submitted with the bid to demonstrate contractor has completed required training regarding pay equity and the prohibition against discrimination in compensation or wage benefits.

The following forms are to be executed after the Contract is awarded, prior to beginning work on the project:

- A. CONSTRUCTION CONTRACT:** This agreement is to be executed by the successful bidder.
- B. PERFORMANCE BOND AND PAYMENT BOND:** Both a Performance Bond and a Payment Bond are to be executed by the successful bidder and bidder's Surety Company and submitted at the time the Contract is executed.
- C. PUBLIC WORKS WAGE CERTIFICATION FORM:** This form is to be completed in accordance with state law and submitted monthly during the duration of the contract, by the fifth business day of the following month, with request for payment.
- D. CERTIFICATE OF INSURANCE:** This certificate is to be executed by the successful bidder and bidder's insurance company and submitted at the time the Contract is executed.
- E. PUBLIC WORKS BOND FILING CERTIFICATION:** This form is to be executed by the successful bidder and submitted at the time the Contract is executed to certify if

Contractor has filed the required Public Works Bond or elected not to file the Bond due to qualifying under ORS 200.055.

BID FORM

**City of Roseburg
900 SE Douglas Avenue
Roseburg, Oregon 97470**

The undersigned bidder has carefully examined the Contract Documents for the construction of the

STORM REHABILITATION BROOKLYN AVE. PROJECT No. 21PW14

referred to in the Invitation to Bid dated May 10, 2021, inviting bids on such Project and also the site of the Project. Bidder will provide all necessary labor, equipment, tools, apparatus and other means of construction, do all the work and furnish all the materials called for by said Contract Documents in the manner prescribed therein to provide a complete Project.

The undersigned bidder understands that the quantities of work as shown herein are approximate only, unless noted otherwise, and are subject to increase or decrease. The bidder offers to perform the work, at the unit price stated in the following schedule, whether the quantities are increased or decreased.

Base Bid					
Item No.	Description	Unit	Estimated Quantity	Unit Cost	Total Cost
1	Mobilization	LS	100%		
2	Temporary Traffic Control	LS	100%		
3	CIPP Liner 48-inch	LF	365		
3a	48" Spin-Cast Geopolymer Pipe	LF	365		
3b	48" Monolithic Polyurethane Pipe	LF	365		
4	CIPP Liner 54-inch	LF	515		
4a	54" Spin-Cast Geopolymer Pipe	LF	515		
4b	54" Monolithic Polyurethane Pipe	LF	515		
5	Service Line Connection	EA	7		
6	Asphalt Trench Resurfacing	SY	50		
7	Post-Installation Video	LF	890		
Total:					

*Abbreviations (Add other abbreviations as required for the project):

LS – Lump Sum

EA – Each

LF – Lineal Feet

SY – Square Yard

BIDS WILL BE AWARDED WITH LOWEST PRICE FOR METHODS CHOSEN WHICH COULD INCLUDE ALL CIPP OR A COMBINATION OF CIPP, SCGP OR MSAP. CONTRACTOR SHOULD FILL OUT 3, 3a or 3b **AND** 4, 4a or 4b TO PROVIDE A FINAL BID PRICE.

The undersigned also declares and agrees as follows:

1. That the only persons or parties interested in this bid are those named herein, that the bid is in all respects fair and without fraud, and that it is made without any connection or collusion with any person making another bid on this Contract.
2. That the bidder, and any subcontractor upon which the bidder is relying, have carefully examined and had an opportunity to comment on, the Contract Documents for the construction of the proposed improvements including a full set of the plans and specifications, including all addenda thereto; that bidder has personally inspected the contemplated construction area or areas; that bidder is satisfied as to the adequacy and completeness of the plans and specifications, the feasibility of the work described therein, quantities of materials, items of equipment and conditions of work involved, including the fact that the description of work and materials as included herein are approximate only; and that this bid is made according to the provisions and under the terms of the Specifications which are hereto attached and hereby made a part of this bid.
3. All of the Specifications and Plans which are listed herein have been examined by the undersigned bidder and the terms and conditions thereof are hereby accepted.
4. It is understood that the Plans may be supplemented by additional Drawings and Specifications in explanation and elaboration of the Plans and it is agreed that such Supplemental Drawings, when not in conflict with those referred to in Paragraph 3 above, will have the same force and effect as if completed and attached hereto, and that when received, will be considered a part of the Contract Documents.
5. It is understood that all work will be performed under the price schedule outlined herein and that all services, materials, labor and equipment and all work necessary to complete the Project in accordance with the Plans and Specifications shall be furnished for the prices named in the bid. If there is a change in the scope of work or work which cannot be properly classified under the price schedule then bidder agrees to do this work as "extra work". The undersigned bidder agrees to do any extra work and furnish materials, and to accept as full compensation therefore at such prices as may be agreed upon in writing by the City and the Contractor before extra work begins. Each party binds itself to agree to reasonable prices.
6. It is understood the work to be performed must meet the highest standards prevalent in the industry or business most closely related to the work to be performed. It is further understood that failure to meet such standards may result in consequences including, but not limited to, a reduction or withholding of payment; a requirement that bidder perform, at bidder's own expense, additional work required to meet such standards; or termination of the contract, with damages being sought.

7. The bidder agrees that if this bid is accepted, the bidder will, within ten (10) calendar days after the notification of acceptance, execute the Construction Contract with the City in the form of Contract specified, and will, at the time of execution of the Contract, deliver to the City the Performance Bond, Payment Bond and Public Works Bond Filing Certification form as required herein, and will furnish all the materials necessary to complete the Project in the manner, in the time and according to methods as specified in the Specifications and required by the City.
8. The cash, certified check, cashier's check, irrevocable letter of credit or Bid Bond shall be payable to the City to the extent of 10% of the amount of the bid in case this bid is accepted by the City and the undersigned shall fail or refuse to execute the Contract and furnish a Payment Bond, a Performance Bond or the Public Works Bond Filing Certification form as required by the Specifications within the time limit named therein after notification that said bid is accepted, all in accordance with the provisions of this bid and the Plans and Specifications which are a part hereof.
9. All items for the Contract for which forms are provided herein have been completed in full by the showing of prices for each and every item thereof, and for the showing of other information indicated by the Bid Form.
10. Bidder agrees to begin work within ten (10) calendar days after the execution of the Contract proposed herein and receipt of the City's notification to begin work and to complete work in all respects within **One Hundred Twenty (120)** calendar days after "Notice to Proceed" has been issued by the City.
11. In the event the bidder is awarded the Contract and fails to complete the Project within the time limit or extended time agreed upon, as more specifically set forth in the General Conditions, liquidated damages shall be paid to or withheld by the City pursuant to Paragraph 4 of the Construction Contract (Time of Performance - Liquidated Damages) at the rate of Five Hundred Dollars (\$500.00) per day, until the Project has been completed as provided in the General Conditions.
12. The undersigned bidder hereby states, as part of this bid, that the applicable provisions of Oregon's Prevailing Wage Law (ORS 279C.800 to 279C.870) and the Federal Prevailing Wage Law (Davis-Bacon Act, 40 U.S.C. 3141-3148), shall be complied with. When the Project is subject to both the State and Federal Prevailing Wage Laws and rates, workers in each trade will be paid the higher of the two rates.
13. The undersigned bidder and bidder's subcontractors shall comply with ORS 656.017, which requires them to provide Workers' Compensation coverage for all their subject workers.
14. The undersigned bidder hereby states, as part of this bid, that bidder shall comply with ORS 279C.505(2) which requires bidder to have an employee drug testing program in place.
15. The undersigned bidder and bidders' subcontractors shall comply with ORS 279C.570 and 279C.580, which require timely progress payments for public improvement projects and provide interest penalties for late payment.

16. The undersigned bidder hereby states, as part of this bid, bidder and bidder's subcontractors shall comply with the provisions of Exhibit "A" - "Standard City Contract Provisions".
17. If the bidder is awarded the Contract for this work, the name and address of the Surety who will provide the Payment Bond, Performance Bond and Public Works Bond (if required) will be:_____.
18. The name and address of the bidder who is submitting this bid is: _____, which is the address to which all communications pertinent to this bid and the Contract shall be sent. The bidder's email address is:_____.
19. The names of the principal officers of the corporation submitting this bid or of the partnership, or of all parties interested in this bid as principals are as follows:
_____.
20. The undersigned bidder acknowledges that Addenda No. _____ through _____ have been delivered to bidder and have been examined as part of the Contract Documents.
21. In the prosecution of this work, the bidder proposes to use the subcontractors listed on the First-Tier Subcontractor Disclosure Form presented within two working hours of the bid submission deadline as set forth in the Invitation to Bid. Any bidder not using subcontractors subject to the above referenced Disclosure Form shall indicate "NONE" on the Disclosure Form and sign and submit the form as required.
22. Declaration of Residency: I "am" or "am not" (circle one) a "resident bidder"* as defined by ORS 279A.120, a contractor that has paid unemployment taxes or income taxes in Oregon during the 12 calendar months immediately preceding submission of the bid, has a business address in this state and has stated in the bid whether the bidder is a "resident bidder" pursuant to ORS 279A.120.
23. The bidder's Construction Contractors Board License Number or Landscape Contractors Board License Number is: _____.
24. Bidder's Tax Identification Number: _____. Email:_____.
25. Public Works Bond: If the bid is accepted, prior to beginning work on the project, the bidder will file with the Construction Contractors Board, a Public Works Bond in the amount of \$30,000 with a corporate surety authorized to do business in the State of Oregon; and before permitting a subcontractor to begin work on the project, the bidder will verify that the subcontractor has also filed the aforementioned bond. If the bidder, as a certified disadvantaged, minority, women or emerging small business enterprise, elects not to file the Public Works Bond, bidder will file written verification of such certification with the Construction Contractors Board and provide the Board and the City of Roseburg with notice of such election.

26. **If applicable** pursuant to Section 11 of "Information for Bidders", the undersigned bidder hereby states, as part of this bid, that bidder has completed pay equity compliance training and received a certificate of completion from the Oregon Department of Administrative Services. **(NEW)**

If sole Proprietor or Partnership:

In witness hereto, the undersigned as set his/her hand this _____ day of _____, 2021.

Printed name of bidder: _____

Signature of bidder: _____

Title: _____

If Corporation:

In witness whereof, the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this ____ day of _____, 2021.

Name of Corporation: _____

Printed name of person signing: _____

Signature: _____

Title: _____

Attest: _____

Secretary

STANDARD BID BOND

We, _____, "as Principal,"
(Name of Principal)
and _____, an _____ Corporation,
(Name of Surety)

authorized to transact Surety business in Oregon, as "Surety," hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns to pay unto the City of Roseburg ("Obligee") the sum of (\$ _____) dollars.

WHEREAS, the condition of the obligation of this bond is that Principal has submitted its proposal or bid to an agency of the Obligee in response to Obligee's procurement document (No. _____) for the project identified as:

_____ which proposal or bid is made a part of this bond by reference, and Principal is required to furnish bid security in an amount equal to ten percent (10%) of the total amount of the bid pursuant to the procurement document and ORS 279C.365(5) for competitive bidding or 279C.400(5) for competitive proposals.

NOW, THEREFORE, if the proposal or bid submitted by Principal is accepted, and if a contract pursuant to the proposal or bid is awarded to Principal, and if Principal enters into and executes such contract within the time specified in the procurement document and executes and delivers to Obligee its good and sufficient performance bond, payment bond and public works bond as required by Obligee within the time fixed by Obligee, then this obligation shall be void; otherwise, it shall remain in full force and effect.

IN WITNESS WHEREOF, we have caused this instrument to be executed and sealed by our duly authorized legal representatives this _____ day of _____, 2021.

PRINCIPAL: _____ SURETY: _____

By _____ Signature BY ATTORNEY-IN-FACT:

_____ Official Capacity Name

Attest: _____ Corporation Secretary Signature

_____ Address

_____ City State Zip

_____ Phone Email

FIRST TIER SUBCONTRACTOR DISCLOSURE FORM INSTRUCTIONS

Instructions for First-Tier Subcontractor Disclosure:

Bidders are required to disclose information regarding certain first-tier subcontracts (ORS 279C.370). Specifically, when the contract amount of a first-tier subcontract furnishing labor or labor and materials would be great than or equal to: (1) 5% of the project bid, but at least \$15,000; or (2) \$350,000 regardless of the percentage, the bidder must disclose the following information about that subcontract either in its bids submission, or within two hours after bid closing:

- (A) The subcontractor's name;
- (B) The category of work that the subcontractor would be performing; and
- (C) The dollar value of the subcontract.

If the bidder will not be using any subcontractors that are subject to the above disclosure requirements, the bidder is required to indicate "NONE" on the accompanying form.

THE CONTRACTING AGENCY MUST REJECT A BID IF THE BIDDER FAILS TO SUBMIT THE DISCLOSURE FORM WITH THIS INFORMATION BY THE STATED DEADLINE (OAR 137-049-0360).

** The subject form is on the following page.*

FIRST TIER SUBCONTRACTOR DISCLOSURE FORM

PROJECT NAME: Storm Rehabilitation Brooklyn Ave.

BID#: 21PW14

BID CLOSING: DATE: _____ **TIME:** _____

This form must be submitted at the location or email specified in the Invitation to Bid on the advertised bid closing date and within two working hours after the advertised bid closing time.

List below: the name of each subcontractor that will be furnishing labor or labor and materials and is required to be disclosed, the category of work that the subcontractor will be performing and the dollar value of the subcontract. Enter "NONE" if there are no subcontractors that need to be disclosed. (ATTACH ADDITIONAL SHEETS IF NEEDED)

NAME OF SUBCONTRACTOR	DOLLAR VALUE	CATEGORY OF WORK
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____
_____	\$ _____	_____

Failure to submit this form by the disclosure deadline will result in a nonresponsive bid. A nonresponsive bid will not be considered for award.

Form submitted by (bidder name): _____

Contact name: _____ **Phone #:** _____

Form Received in the City Recorder's Office:

Time: _____ **Date:** _____ **By:** _____

**EMPLOYEE DRUG TESTING PROGRAM
CERTIFICATION FORM**

BIDDER'S NAME: _____

PROJECT NAME & NUMBER: Storm Rehabilitation Brooklyn Ave., No. 21PW14

ORS 279C.505 (2) provides that every public improvement contract contain a condition that the Contractor shall demonstrate that an employee drug testing program is in place. The City's award of the Contract for which this certificate is required is conditioned, in part, upon the Bidder's demonstration of compliance with the provisions of ORS 279C.505(2). If the Bidder named above is awarded the Contract, this certificate shall become a part of, and shall constitute a continuing representation and warranty under, the Contract.

To induce the City to award the Contract to the Bidder, the undersigned, as the duly authorized representative of the Bidder, hereby represents and warrants, on behalf of the above named Bidder:

1. That Bidder has and enforces, and at all times during the term of the Contract will have and enforce, a written employee drug testing policy that at a minimum, requires compliance with the Oregon Department of Transportation Commercial Drivers License drug testing regulations;
2. A copy of the Bidder's current written employee drug testing policy will be available for inspection by the City at any time upon the City's request; and
3. The Bidder understands and agrees that its representations and warranties herein will become a continuing part of the Contract and that breach of any of the foregoing will be sufficient grounds for disqualification under 279C.440(2)(d).

The City shall not be liable, either directly or indirectly, in any dispute arising out of the substance or procedure of Bidder/Contractor's drug testing program. Nothing in this drug testing provision shall be construed as requiring Bidder/Contractor to violate any legal, including constitutional rights of any employee, including but not limited to, selection of which employees to test and the manner of such testing. The City shall not be liable for Bidder/Contractor's negligence in establishing or implementing, or failure to establish or implement, a drug testing policy, or for any damage or injury caused by Bidder/Contractor's employees acting under the influence of drugs while performing work covered by the Contract. These are Bidder/Contractor's sole responsibilities.

In Witness whereof, the Bidder has caused this document to be executed by its duly authorized representative on the date shown below.

Signature: _____

Printed Name, Title: _____

Date: _____

**PAY EQUITY COMPLIANCE TRAINING
CERTIFICATION FORM
(NEW)**

BIDDER'S NAME: _____

PROJECT NAME & NUMBER: Storm Rehabilitation Brooklyn Ave., No. 21PW14

ORS 279A.167(1) provides that the Oregon Department of Administrative Services shall establish a program to certify that a person that intends to submit a bid or proposal for a public contract understands the prohibition set forth in ORS 652.220 and in other laws or rules that prohibit discrimination in compensation or wage payments. Following completion of the course, a certificate of completion will be provided. This certification is recommended for ANY contractor in the state of Oregon, and **required for any contractor who employs fifty (50) or more people, and for a contract valued at more than \$500,000**. Information on how to receive this certification can be found by clicking [here](#).

To induce the City to award the Contract to the Bidder when the certification is required, the undersigned, as the duly authorized representative of the Bidder, hereby represents and warrants, on behalf of the above named Bidder:

1. That Bidder has completed the training on pay equity as outlined in ORS 652.220; and
2. A copy of the Certificate of Completion of the pay equity compliance training will be available for inspection by the City at any time upon the City's request.

In Witness whereof, the Bidder has caused this document to be executed by its duly authorized representative on the date shown below.

Signature: _____

Printed Name, Title: _____

Date: _____

**CITY OF ROSEBURG
PUBLIC WORKS BOND - PRE-BID NOTICE AND CERTIFICATION**

I, the undersigned contractor, hereby certify that if awarded the contract for which I am submitting this bid, prior to beginning work on such Project, unless exempt under ORS 279C.800 to 279C.870, I will file with the Construction Contractors Board, a Public Works Bond in the amount of \$30,000 with a corporate surety authorized to do business in the State of Oregon. I further certify that before permitting a subcontractor to start work on the Project upon which I am submitting this bid, I will verify that the subcontractor has also filed such Public Works Bond or has elected not to file such bond as allowed by state law. The Public Works Bond shall provide that the contractor or subcontractor will pay claims ordered by the Bureau of Labor and Industries to workers performing labor upon public works projects. The bond shall be a continuing obligation and remain continuously in effect.

If, as a contractor, I qualify as a disadvantaged, minority, women, disable veteran or emerging small business enterprise certified under ORS 200.055 and I have elected not to file the aforementioned Public Works Bond, I hereby certify that I will file written verification of such certification with the Construction Contractors Board. I also certify that before beginning any work on the Project, I will provide the City of Roseburg and the Construction Contractors Board written notice that I have elected not to file the Public Works Bond. If so certified under ORS 200.055, I understand that my election not to file the Public Works Bond will expire one year from the date it was filed and that a claim for unpaid wages may be filed against the payment bond I submitted on the Project.

I further certify that I understand the Public Works Bond described above is in addition to any other bond that I am required to provide, or that may be required of a subcontractor, for this Project.

Project Name: _____

Project Number: _____

Contractor's Printed Name: _____

Contractor's Signature: _____

Dated: _____

**CITY OF ROSEBURG
CONSTRUCTION CONTRACT
[PROJECT #]**

Dated: _____

Parties: City of Roseburg ("CITY")
 A municipal corporation in the State of Oregon
 900 SE Douglas Avenue
 Roseburg, OR 97470

 and

 [Name of Company] ("CONTRACTOR")

Additional Independent Contractor Information:

- A. Type of Entity: Sole Proprietorship Partnership Limited Liability Company Corporation
- B. Address:
- C. Telephone:
- D. Fax No:
- E. Email:
- F. Construction Contractor Board No.

This Contract is made and entered into this _____ day of _____, 2021, by and between _____ hereinafter called the "Contractor", and the City of Roseburg, a municipal corporation of the State of Oregon, hereinafter called the "City".

WITNESSETH

That the Contractor and City, for the consideration hereinafter described agree as follows:

- 1. **WORK TO BE PERFORMED.** The Contractor agrees to do all the work and furnish all necessary labor, materials, tools and equipment for the completion of the **Storm Rehabilitation Brooklyn Ave., Project No. 21PW14** in accordance with the bid made by the Contractor on the 1st day of June, 2021, all in full compliance with the Contract Documents referred to herein, and guarantees all materials and workmanship for one year after acceptance of the project.

- 2. **CONTRACT DOCUMENTS.** The Contract Documents include the City's Invitation to Bid, Information to Bidders, the Bid Form signed by the Contractor, this Construction Contract with Exhibit A, First-Tier Subcontractor Disclosure Form, Drug Testing Program Certification Form, Bidder's Responsibility Form, Performance Bond, Payment Bond, Public Works Bond Filing Certification form (when required), General Conditions, Technical Provisions, Special Conditions, Standard Drawings, Specifications and Plans and Supplemental Specifications, all

as required for the full execution and satisfactory completion of the work. All of the Contract Documents are incorporated herein by this reference and made a part of this Contract.

3. **PAYMENT.** In consideration of the faithful performance of the work herein described, the City agrees to pay the Contractor **(insert cost/bid amount)** as payment in full per the provisions of the Contract Documents.

4. **TIME OF PERFORMANCE - LIQUIDATED DAMAGES.** The Contractor shall commence work under this Contract upon receiving notification to proceed from the City. The Contractor agrees that the work under this Contract shall be completed within **One Hundred Twenty (120)** calendar days after notification to begin work. If the Contractor fails to complete the Project within the time hereinbefore mentioned, or in the extended time agreed upon, liquidated damages shall be paid to or withheld by the City at the rate of **Five Hundred (\$500.00)** per day until the Project is completed. It has been agreed that the damages arising from a delay in completion would be difficult to ascertain with any degree of accuracy, even after the Project is completed. It has also been agreed that the amount of liquidated damages specified herein is a reasonable forecast of just compensation for the harm that will be caused by a delay in completion of the Project. Any such sum which the Contractor may be obligated to pay under the terms of this Paragraph is paid as liquidated damages, and not as a penalty.

5. **COMPLIANCE WITH LAW.** The Contractor shall comply with all local, state and federal laws, ordinances and regulations applicable to contracts covering municipal contracts, and shall make prompt payment of all amounts that may be due from said Contractor in the way of taxes, other governmental charges or lawful deductions, and shall make prompt payment of all labor and materials and shall save the City harmless from any damages or claims whatsoever in the performance of the Contract. Contractor and all subcontractors agree to comply with the City's Standard Contract Provisions, attached as Exhibit A and incorporated herein by this reference, and Roseburg Municipal Code Regulations relating to business registration.

6. **NOTICE.** Any notice required or permitted by this Contract must be delivered and served personally, or alternatively, deposited in the United States mail, postage prepaid, registered or certified, return receipt requested, addressed to the parties as shown below:

CITY:
City of Roseburg
ATTN: City Manager
900 SE Douglas Avenue
Roseburg OR 97470

CONTRACTOR:

Such notice, if mailed within the State of Oregon, shall be deemed delivered upon the second day following the date postmarked. If mailed outside the State of Oregon, notice shall be deemed delivered upon the fifth day following the date postmarked.

7. **GOVERNING LAW; VENUE LOCATION.** Oregon law shall be applied to all actions relating to the Contract, and the venue in any such action shall lie in the Circuit Court of Douglas County, Oregon.

IN WITNESS WHEREOF, the parties hereto have executed this Contract the day and year first above written.

CITY

Nicole Messenger
City Manager

Date: _____

ATTEST:

Amy L. Sowa, City Recorder

CONTRACTOR

(Authorized Signature)
Title: _____

Date: _____

Tax Identification Number

Email: _____

EXHIBIT "A"
STANDARD CONTRACT PROVISIONS
PREVAILING WAGE CONTRACT
(ORS 279C.800 - 279C.870)

The following provisions, if applicable, are hereby included in and made a part of the attached public contract which is subject to Prevailing Wage Laws and rates, between the City of Roseburg and the Contractor named therein as provided for in the Roseburg Code, Oregon Revised Statutes, and Federal laws, rules, regulations, and guidelines. If a Contractor or Subcontractor violates the provisions below, the City may, at its option, terminate the contract or a subcontract and said Contractor or Subcontractor in such event shall forfeit all rights under the contract except to payment for actual labor and materials furnished to the City. The City may waive in whole or in part any forfeitures or sanctions provided in this Exhibit.

1. PREFERENCE FOR OREGON GOODS AND SERVICES; NONRESIDENT CONTRACTOR REPORT TO DEPARTMENT OF REVENUE - ORS 279A.120:

1.1 For purposes of awarding the contract the City will:

1.1.1 give preference to goods and services that have been manufactured or produced in Oregon if the price, fitness, availability and quality are otherwise equal; and

1.1.2 add a percentage increase to the bid of a non-resident bidder equal to the percentage, if any, of the preference given to the contractor in the same state in which the contractor lives.

1.2 As used in this Section:

1.2.1 "nonresident contractor" means a contractor that is not a resident contractor;

1.2.2 "resident contractor" means a contractor that has paid unemployment taxes or income taxes in the state of Oregon during the twelve (12) calendar months immediately preceding submission of the bid for the contract; has a business address in this state; and stated in the bid for the contract that it was not a "resident bidder" under ORS 279A.120.

1.3 If the Contractor is a nonresident contractor and the contract price exceeds \$10,000, the Contractor shall promptly report to the Department of Revenue on forms to be provided by the Department, the total contract price, terms of payment, length of contract and such other information as the Department may require before the Contractor may receive final payment on the public contract. The City shall satisfy itself that the requirement of this Subsection has been complied with before it issues a final payment on the contract.

2. PAYMENT OF LABORERS AND MATERIALMEN, CONTRIBUTIONS TO INDUSTRIAL ACCIDENT FUND, LIENS, AND WITHHOLDING TAXES - ORS 279C.505(1):

The Contractor shall:

- 2.1 Make payment promptly, as due, to all persons supplying to such Contractor, labor or material for the performance of the work provided for in the contract.
- 2.2 Pay all contributions or amounts due the Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the contract.
- 2.3 Not permit any lien or claim to be filed or prosecuted against the City of Roseburg or any subdivision thereof on account of any labor or material furnished.
- 2.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

3. **PAYMENT OF CLAIMS BY PUBLIC OFFICERS - ORS 279C.515:**

- 3.1 If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or a Subcontractor by any person in connection with the contract as such claim becomes due, the public officer or officers representing the City of Roseburg may pay such claims to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of the contract. The payment of a claim in the manner authorized shall not relieve the Contractor or his/her surety from his or her obligations with respect to any unpaid claims.
- 3.2 If the Contractor or a first-tier Subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with the contract within thirty (30) days after receipt of payment from the City of Roseburg or the Contractor, the Contractor or first-tier Subcontractor shall owe the person the amount due plus interest charges commencing at the end of the 10-day period that payment is due under ORS 279C.580(4) and ending upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest charged to the Contractor or first-tier Subcontractor on the amount due shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve District that includes Oregon on the date that is thirty (30) calendar days after the date when payment was received from the City of Roseburg or from the Contractor, but the rate of interest shall not exceed 30 percent. The amount of interest may not be waived.
- 3.3 If the Contractor or Subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with the contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The Contractor shall announce the foregoing in any Subcontract issued.

4. **HOURS OF LABOR - ORS 279C.520:** No person shall be employed for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency, or when the public policy absolutely requires it, and in such cases the employee shall be paid at time and a half pay:

- 4.1 For all overtime worked in excess of 8 hours a day or 40 hours in any one week, when the work week is five consecutive days, Monday through Friday; or

- 4.2 For all overtime in excess of 10 hours a day or 40 hours in any one week when the work week is four consecutive days, Monday through Friday; and
- 4.3 For all work performed on Saturday and on any legal holiday specified in ORS 279C.540, or all holidays specified in a collective bargaining agreement.

The Contractor must give notice to employees who perform work on the contract, in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees, the number of hours per day and days per week that the employees may be required to work.

5. PAYMENT FOR MEDICAL CARE AND ATTENTION TO EMPLOYEES - ORS 279C.530:

- 5.1 The Contractor shall promptly as due, make payment to any person, co-partnership or association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, of all sums which the Contractor agrees to pay for such services and all monies and sums which the Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.
- 5.2 The Contractor, its subcontractors, if any, and all employers providing work, labor or materials under this Contract who are subject employers under the Oregon Workers' Compensation Law shall comply with ORS 656.017, which requires them to provide workers' compensation coverage that satisfies Oregon law for all their subject workers. Out-of-state employers must provide workers' compensation coverage that complies with ORS 656.126 for their workers. Employer's Liability Insurance with coverage of not less than \$500,000 each accident shall be included.

6. PAYMENT TO SUBCONTRACTORS - ORS 279C.580:

- 6.1 The Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier Subcontractor, including a material supplier, for the purpose of performing the public contract:
 - 6.1.1 A payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) calendar days of payment by the City out of such amounts as are paid to the Contractor by the City of Roseburg under the contract; and
 - 6.1.2 An interest penalty clause that obligates the Contractor, if payment is not made within thirty (30) calendar days after receipt of payment from the City of Roseburg, to pay to the first-tier Subcontractor an interest penalty on amounts due in the case of each payment not made in accordance with the payment clause included in the subcontract pursuant to Paragraph 6.1.1 of this Subsection. A Contractor or first-tier Subcontractor shall not be obligated to pay an interest penalty if the only reason that the Contractor or first-tier Subcontractor did not make payment when payment was due is that the

Contractor or first-tier Subcontractor did not receive payment from the City of Roseburg or Contractor when payment was due. The interest penalty shall be:

6.1.2.1 For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

6.1.2.2 Computed at the rate specified in ORS 279C.515(2).

6.2 The Contractor shall include in each of its subcontracts, for the purpose of performance of such contract condition, a provision requiring the first-tier Subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in Paragraphs 6.1.1 and 6.1.2 and requiring each of its Subcontractors to include such clauses in their subcontracts with each lower-tier Subcontractor or supplier.

6.3 None of the provisions of this Section 6 are intended to prevent the Contractor or any Subcontractor from including in its contracts the provisions described in ORS 279C.580(5) and (6).

7. PROHIBITION OF DISCRIMINATORY WAGE RATES BASED ON SEX – ORS 652.220: The Contractor shall not:

7.1 Discriminate between employees on the basis of a protected class in the payment of wages or other compensation for work of comparable character, the performance of which requires comparable skills;

7.2 Pay wages or other compensation to any employee at a rate greater than that at which the employer pays wages or other compensation to employees of a protected class for work of comparable character, the performance of which requires comparable skills. This section does not apply where:

- (a)** Payment is made pursuant to a seniority or merit system which does not discriminate on the basis of a protected class; or
- (b)** A system measures earnings by quantity or quality of production, including piece-rate work; or
- (c)** Travel is necessary and regular for the employee; or
- (d)** Education, training, experience, or any combination of factors account for the entire compensation differential.

7.3 Discriminate in the payment of wages or other compensation against any employee because the employee has filed a complaint in a proceeding, has testified or is about to testify, or because the employer believes that the employee may testify in any investigation, proceedings or criminal action pursuant to ORS 652.210 to 652.235.

8. DRUG TESTING - ORS 279C.505(2):

8.1 The Contractor shall demonstrate that an employee drug testing program is in place at the time of submitting its bid, and that such program will be maintained throughout the contract period, including any extensions. The failure of Contractor to have, or to

maintain such a drug testing program is grounds for rejection of a bid or immediate termination of the contract.

8.2 The City of Roseburg shall not be liable, either directly or indirectly, in any dispute arising out of the substance or procedure of Contractor's drug testing program. Nothing in this drug testing provision shall be construed as requiring Contractor to violate any legal, including constitutional, rights or any employee, including but not limited to, selection of which employees to test and the manner of such testing. The City shall not be liable for Contractor's negligence in establishing or implementing, failure to establish or implement a drug testing policy, or for any damage or injury caused by Contractor's employees acting under the influence of drugs while performing work covered by the contract. These are Contractor's sole responsibilities and nothing in this provision is intended to create any third party beneficiary rights against the City.

9. PREVAILING WAGE PROVISIONS - ORS 279C.800 - 279C.870; 40 U.S.C. 3141 – 3148:

9.1 The hourly rate of wage to be paid by the Contractor and all Subcontractors to workers under the contract shall not be less than the prevailing rate of wage for an hour's work in the same trade or occupation in the locality where the labor is performed as set forth in the specifications for the public contract; provided however, if the public contract is also subject to the Federal Prevailing Wage Rate pursuant to the Davis-Bacon Act (40 U.S.C. 3141 - 3148), then the higher of the two rates shall be paid. The Contractor will comply with the provisions of ORS 279C.840 and all applicable provisions of ORS 279C.800 to 279C.870 and/or the Davis-Bacon Act, 40 U.S.C. 3141 - 3148.

9.2 The Contractor or the Contractor's surety and every Subcontractor or the Subcontractor's surety shall file certified statements with the City in writing using the form prescribed by the Commissioner of the Bureau of Labor and Industries certifying the hourly rate of wage paid each worker whom the Contractor or the Subcontractor has employed in the Work under the contract and further certifying that no worker employed under such public contract has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the contract. The certified statement shall be verified by the oath of the Contractor or the Contractor's surety or Subcontractor or the Subcontractor's surety that the Contractor or Subcontractor has read the certified statement and knows the contents thereof and that the same is true to the Contractor's or Subcontractor's knowledge. The certified statements shall set out accurately and completely the payroll records for the prior week including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid.

9.3 Each certified statement shall be delivered or mailed by the Contractor or Subcontractor to the City. A true copy of the certified statement shall also be filed at the same time with the Commissioner of the Bureau of Labor and Industries. Certified statements for each week during which the Contractor or Subcontractor employs a worker under the public contract shall be submitted once a month, by the fifth business day of the following month. Information submitted on certified statements may be used only to ensure compliance with the provisions of ORS 279C.800 to 279C 870. The City shall retain 25% of the amount earned by the Contractor if the certified statements are not submitted

as required. The City shall pay the Contractor the amount retained within 14 days after the Contractor files the certified statements regardless of whether a Subcontractor has failed to file the required certified statements. The Contractor shall retain 25% of any amount earned by a first-tier Subcontractor until the Subcontractor has filed with the City, the required certified statements. The Contractor shall verify the first-tier Subcontractor has filed the certified statements before the Contractor may pay the Subcontractor any amount retained. The Contractor shall pay the first-tier Subcontractor the amount retained within 14 days after the Subcontractor files the required certified statements.

10. PUBLIC WORKS BOND REQUIREMENTS – ORS 279C.836:

- 10.1** If the public contract involves public works, unless exempt under ORS 279C.800 to 279C.870, prior to beginning work on the contract, the Contractor shall file with the Construction Contractors Board, a Public Works Bond in the amount of \$30,000 with a corporate surety authorized to do business in the State of Oregon.
- 10.2** Before allowing a Subcontractor to begin work under a public contract involving public works, for which the Contractor has been awarded the contract, the Contractor shall verify that the Subcontractor has also filed a Public Works Bond with the Construction Contractors Board or elected not to file such bond as allowed by state law.
- 10.3** The Public Works Bond shall provide that the Contractor or Subcontractor will pay claims ordered by the Bureau of Labor and Industries to workers performing labor under the public contract involving public works. The bond shall be a continuing obligation and remain continuously in effect.
- 10.4** If the Contractor or Subcontractor qualifies as a disadvantaged, minority, women, disabled veteran or emerging small business enterprise certified under ORS 200.055 and has elected not to file the Public Works Bond, the Contractor or Subcontractor will file written verification of such certification with the Construction Contractors Board. If the Contractor or Subcontractor elects not to file the Public Works Bond, before beginning any work on the public contract involving public works, the Contractor or Subcontractor shall provide the City and the Construction Contractors Board with written notification of such election.

11. DEMOLITION CONTRACTS; LAND AND LANDSCAPE MAINTENANCE - ORS 279C.510:

- 11.1** If the public contract includes demolition, the Contractor shall salvage or recycle construction and demolition debris, if feasible and cost effective.
- 11.2** If the public contract includes services for lawn and landscape maintenance, the Contractor shall compost or mulch yard waste material at an approved site.

12. DISCRIMINATION IN SUBCONTRACTING PROHIBITED; REMEDIES - ORS 279A.110:

- 12.1** The Contractor may not discriminate against a Subcontractor in the awarding of a subcontract because the Subcontractor is a minority, women, disabled veteran or emerging small business enterprise certified under ORS 200.055.
- 12.2** By entering into the contract, the Contractor certified it has not discriminated and will not discriminate, in violation of Subsection 12.1, against any minority, women, disabled veteran or emerging small business enterprise in obtaining any required subcontract.
- 12.3** If the Contractor violates the nondiscrimination certification made under Subsection 12.2, the City may regard the violation as a breach of contract that permits the City to terminate the contract or exercise any remedies for breach permitted under the contract.
- 13. HIGHEST STANDARDS; CONSEQUENCES FOR FAILURE – ORS 279B.060:**
- 13.1** By entering into the Contract, Contractor agrees to perform the work to the highest standards prevalent in the industry or business most closely related to the work to be provided;
- 13.2** Contractor understands that failure to meet the highest standards in the industry may result in consequences including, but not limited to:
- 13.2.1** reducing or withholding of payment;
- 13.2.2** requiring Contractor to perform, at Contractor’s own expense, additional work required to meet such standards; or
- 13.2.3** declaring a default, terminating the Contract and seeking damages and other relief available under the terms of the Contract or other applicable law.
- 14. COMPLIANCE WITH LAWS:** The Contractor and Subcontractor shall comply with all federal, state and local laws, rules, ordinances and regulations at all times and in the performance of the contract.

**CITY OF ROSEBURG
PUBLIC WORKS BOND FILING CERTIFICATION**

Pursuant to ORS 279C.800 to 279C.870, I, undersigned contractor, do hereby certify that, prior to beginning work on the Project for which I have been awarded the bid by the City of Roseburg:

1. I have filed with the Construction Contractors Board (“Board”), a Public Works Bond in the amount of \$30,000 with a corporate surety authorized to do business in the State of Oregon.
 Yes **No (Check one)**

2. I have elected not to file a Public Works Bond with the Board because I am a disadvantaged, minority, women, disabled veteran or emerging small business enterprise certified under ORS 200.055. I have provided the Board written verification of such certification and written notification of my election not to file the Public Works Bond. I understand that my election not to file the Public Works Bond will expire one year from the date it was filed and that a claim for unpaid wages may be filed against the payment bond I submitted on the Project.
 Yes **No (Check one)**

3. I have verified any subcontractor involved in the Project has, prior to beginning any work on this Project, either filed the Public Works Bond with the Board or has elected not to file the Public Works Bond because the subcontractor is a disadvantaged, minority, women, disabled veteran or emerging small business enterprise certified under ORS 200.055.
 Yes **No (Check one)**

(a) I have verified that any subcontractor involved in this Project that has elected not to file the Public Works Bond has provided the Board written verification of its certification under ORS 200.055 and written notification of its election not to file the Public Works Bond. **Yes** **No (Check one)**

I understand the Public Works Bond described above is in addition to any other bond that I am required to provide, or that may be required by a subcontractor, for this Project.

Project Name: Storm Rehabilitation Brooklyn Ave.

Project Number: 21PW14

Contractor’s Printed Name: _____

Contractor’s Signature: _____

Dated: _____

**CITY OF ROSEBURG
STANDARD PERFORMANCE BOND**

Bond No.: _____

Solicitation: _____

Project Name: Storm Rehabilitation Brooklyn Ave.

_____ (Surety #1) Bond Amount No. 1: \$ _____

_____ (Surety #2)* Bond Amount No. 2: \$ _____

**If using multiple sureties* Total Penal Sum of Bond \$ _____

We, _____ as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns, firmly by these presents to pay to the City of Roseburg the sum of (Total Penal Sum of Bond)

_____ (Provided that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into a contract with the City of Roseburg, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Sureties, and shall indemnify and save harmless the City of Roseburg and members thereof, its officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Principal or its subcontractors, and shall in all respects perform said Contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the City of Roseburg be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279A, 279B and 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this _____ day of _____, 2021.

PRINCIPAL: _____

By

Signature

Official Capacity

Attest:

Corporation Secretary

SURETY: _____

[Add signatures for each surety if using multiple bonds]

BY ATTORNEY-IN-FACT:

[Power-of-Attorney must accompany each surety bond]

Name

Signature

Address

City State Zip

Phone Email

**CITY OF ROSEBURG
PAYMENT BOND**

Bond No.: _____
Solicitation: _____
Project Name: Storm Rehabilitation Brooklyn Ave.

	(Surety #1)	Bond Amount No. 1:	\$	
	(Surety #2)*	Bond Amount No. 2:	\$	
<i>*If using multiple sureties</i>		Total	Penal	Sum of Bond
\$ _____				

We, _____ as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns, firmly by these presents to pay to the City of Roseburg the sum of (Total Penal Sum of Bond)

_____ (Provided that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into a contract with the City of Roseburg, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and schedule of Contract prices which are set forth in the Contract and any attachments, and all authorized modifications of the Contract which increase the amount of the work, or the cost of the Contract, or constitute authorized extensions of time for performance of the Contract, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided by the Contract, with or without notice to the Sureties, and shall indemnify and save harmless the City of Roseburg and members thereof, its officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its subcontractors, and shall promptly pay all persons supplying labor, materials or both to the Principal or its subcontractors for

prosecution of the work provided in the Contract; and shall promptly pay all contribution due according to workers compensation requirements and the State Unemployment compensation Fund from the Principal or its subcontractors in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its subcontractors pursuant to ORS 316.167, and shall permit no lien nor claim to be filed or prosecuted against the City on account of any labor or materials furnished; and do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the City of Roseburg be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279A, 279B and 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this _____ day of _____, 2021.

PRINCIPAL: _____

By _____
Signature

Official Capacity

Attest: _____
Corporation Secretary

SURETY: _____
[Add signatures for each surety if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each surety bond]

Name

Signature

Address

City State Zip

Phone Email

LOWEST BIDDER RESPONSIBILITY DETERMINATION FORM
(TO BE COMPLETED BY THE CITY UPON NOTICE OF INTENT TO AWARD)

“**Lowest responsible bidder**” means the lowest bidder who is not on the list established by the Construction Contractors Board pursuant to ORS 701.227 and who has:

1. Substantially complied with all prescribed public contracting procedures and requirements of the State of Oregon and the City of Roseburg;
2. Met the standards of responsibility described in ORS 279B.110 and 279C.375, and Roseburg Municipal Code Chapter 3.06; and
3. Not been disbarred or disqualified from bidding or debarred by the State of Oregon under ORS 279B.130 or 279C.440, or by the City under the provisions of Roseburg Municipal Code Chapter 3.06.

Project Name: Storm Rehabilitation Brooklyn Ave.

Bid/Project Number: 21PW14

Business Entity/ Bidder’s Name: _____

CCB License Number: _____

Form submitted by City of Roseburg.

Form submitted by:

Name: _____

Title: _____

Date: _____

The City has (check all of the following):

- Checked the list created by the Construction Contractors Board under ORS 701.227 for bidders who are not qualified to hold a public improvement contract.
- Determined whether the bidder has met the standards of responsibility. In so doing, the City has found that the bidder demonstrated that the bidder:
 - Has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities.
 - Holds current licenses that businesses or service professionals operating in this state must hold in order to undertake or perform the work specified in the Contract.
 - Is covered by liability insurance and other insurance in amounts required in the solicitation documents.

Qualifies as a carrier-insured employer or a self-insured employer under ORS 656.407, or has elected coverage under ORS 656.128.

Has disclosed the bidder's first-tier subcontractors in accordance with ORS 279C.370.

Has a satisfactory record of performance.

Has a satisfactory record of integrity.

Is legally qualified to contract with the City.

Possesses a certificate that the Oregon Department of Administrative Services issued under ORS 279A.167 – Pay Equity Compliance (if applicable). **(NEW)**

Has supplied all necessary information in connection with the inquiry concerning responsibility.

Determined the bidder to be (check one of the following):

Responsible under ORS 279C.375(3)(a) and (b).

Not responsible under ORS 279C.375(3)(a) and (b).

If the City has found the bidder not to be responsible, please see attached document explaining the City's determination.

Note: This form is to be submitted by the City of Roseburg to the Construction Contractors Board immediately following issuance of the City's Notice of Intent to Award the subject contract. A copy must immediately be filed with the City Recorder.

**BUREAU OF LABOR AND INDUSTRIES
PREVAILING WAGE RATES FOR PUBLIC WORKS CONTRACTS**

Prevailing Wage Rates are the minimum wages that must be paid to all workers employed in the construction, reconstruction, major renovation or painting of all public works, unless specifically exempted by state or federal law. Rather than including the entire State and/or Federal Prevailing Wage Rate publications in the bid specifications and contract, public entities may make reference to the specific prevailing wage rate publication where the prevailing wage rates are found or provide a link to the specific prevailing wage rate publication where the prevailing wage rates are found.

Oregon Bureau of Labor and Industries Prevailing Wage Rates applicable to the subject project/contract are available on BOLI's website at www.oregon.gov.boli. The prevailing wages to be applied throughout the duration of this project are those in effect for BOLI Prevailing Wage Rate Region 6, (Douglas County Oregon), upon the date the project is first advertised.

Federal Prevailing Wages Rates under the Davis Bacon Act (40 U.S.C. 3141 et seq.) may be found at www.wdol.gov. The prevailing wages to be applied throughout the duration of this project are those in effect for Federal Prevailing Wage Rates under the Davis Bacon Act (40 U.S.C. 3141 et seq.) at the time the initial specifications were first advertised for bid solicitations.

If the project is subject to both ORS 279C.800 to 279C.870 and to the Davis Bacon Act (40 U.S.C. 3414 et seq.), the contractor and every subcontractor shall pay the higher of the applicable state or federal prevailing rate of wage to all workers on the projects.

For specific information or questions regarding the Prevailing Wage Rate Law, you may log on to the above referenced websites or contact the nearest Oregon Bureau of Labor and Industries office listed below.

BOLI Office Locations

Eugene	1400 Executive Parkway, Eugene, OR 97401	541/686-7623
Medford	700 E. Main, Suite 105, Medford, OR 97504	541/776-6270
Portland	800 NE Oregon St., #32, Portland, OR 97232	503/731-4074
Salem	3865 Wolverine St. NE, Bldg. E-1, Salem, OR 97305	503/378-3292

**THIS PROJECT IS SUBJECT TO THE OREGON BOLI PREVAILING WAGE RATES
EFFECTIVE ON April 1, 2021.**

GENERAL CONDITIONS

1. DEFINITIONS

1.1 Whenever used in these General Conditions or in the other Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

“Acceptance” means that the work has been completed in accordance with the Contract Documents and approved in writing by the Owner.

“Act of God or Nature” means a natural phenomenon of such catastrophic proportions or intensity as would reasonably prevent performance.

“Addendum” means any written document, signed by all parties, pertaining to additions, deletions, revisions or other issues with the Contract Documents issued after the Contract Documents have been issued.

“Bid” means the offer of a bidder to perform the work described by the Contract Documents when made out and submitted on the prescribed Bid Form and properly signed.

“Bidder” means any person, firm, partnership, corporation, limited liability company, or other entity submitting a bid for the work described hereunder.

“Change Order” means a document recommended by the Project Manager which is signed by the Contractor and the City and authorizes an addition, deletion or revision in the work or an adjustment in the Contract price or Contract times, issued on or after the effective date of the Contract.

“City” means the City of Roseburg located in the State of Oregon, and owner of the Project and work related thereto.

“Contract Documents” means and includes the Invitation to Bid, Information for Bidders, Bid Form, Construction Contract with Exhibit “A” Standard Contract Provisions, First-Tier Subcontractor Disclosure Form, Drug Testing Program Certification Form, Bidder’s Responsibility Form, Performance Bond, Payment Bond, Public Works Bond Filing Certification form (when required), General Conditions, Technical Provisions, Special Conditions, Standard Drawings, Specifications & Plans, and Supplemental Specifications all as required for the full execution and satisfactory completion of the Project.

“Contractor” means the firm, partnership, corporation, limited liability company, or other entity executing the Contract with the City for the performance of the work herein described.

“Defective” means, when modifying the work, refers to work that is unsatisfactory, faulty or deficient in that it:

- a. does not conform to the Contract Documents; or
- b. does not meet the requirements of any applicable inspection, reference standard, test or approval referred to in the Contract Documents; or
- c. has been damaged prior to the Project Manager’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by the City at Substantial Completion in accordance with the Contract Documents).

“Design Consultant” means the firm who prepared the Plans and Specifications and shall not mean the Project Manager.

"Engineer" means the City's authorized Engineer, as designated by the City Manager or Public Works Director for the Contract, either acting directly or through the inspector, within the scope of assigned duties.

“Final Completion” means that all work has been completed in conformance with the Contract Documents and the Contract has been fully performed.

“Holidays” means any Oregon legal holiday.

“Liquidated Damages” means that which is set forth in Subsection 6.9 herein.

“Milestone” means a principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all of the work.

“Pay Equity Compliance Certificate” means a certificate issued by the Department of Administrative Services pursuant to ORS 279A.167 following completion of pay equity training.

"Payment Bond" means the approved form of security furnished by the Contractor and Contractor's Surety as a guarantee of good faith on the part of the Contractor to make all payments that are the Contractor's obligations, in accordance with the terms of the Contract.

“Performance Bond” means the approved form of security furnished by the Contractor and Contractor's Surety as a guarantee of good faith on the part of the Contractor to execute the work that is the Contractor's obligation, in accordance with the terms of the Contract.

"Plans" means and includes the City approved maps, standard drawings, work order drawings and supplemental drawings and sketches which will show the locations, character, dimensions and details of the work to be done.

"Project" means all work described and specified herein and as indicated on the Plans.

“Project Manager” means the City’s authorized Project Manager for the Contract, as designated by the City Manager or Public Works Director, either acting directly or through a designated representative, within the scope of assigned tasks.

“Proposal Request” means a written statement issued by the Project Manager to the Contractor on or after the effective date of the Contract and signed by the City and the Contractor identifying additions, deletions or revisions in the work, or responding to differing or unforeseen subsurface or physical conditions under which the work is to be performed or to emergencies. A Proposal Request will not change the Contract price or the Contract times but is evidence that the parties expect that the change ordered or documented by a Proposal Request will be incorporated in a subsequently issued Change Order.

“Public Works Bond” means a \$30,000 form of security furnished by the Contractor and/or Subcontractor and Contractor’s and/or Subcontractor’s Surety to the Construction Contractors Board to pay claims ordered by the Bureau of Labor and Industries to workers performing labor under a public works project.

“Punch List” means a list developed by the Project Manager after Substantial Completion that identifies defects or deficient workmanship or work not completed in conformance with the Contract Documents.

“Request for Information” means a formal request from the Contractor to the Project Manager requesting clarification and/or direction necessary to complete the work.

“Signature” means either a hand written or electronic signature.

“Specifications” means and includes the directions, provisions and requirements contained herein and referred to herein pertaining to the Project.

“Submittals” means all drawings, diagrams, material data, schedules and other information which are specifically prepared or assembled by or for the Contractor and submitted by the Contractor to illustrate some portion of the work.

“Substantial Completion” means that the degree of completion of the Project, or portion of the Project as evidenced by the Project Manager’s written notice of Substantial Completion, sufficient to provide the City, the full-time use of the Project, or portion of the Project, for the purpose for which it was intended. Determination of Substantial Completion is solely at the discretion of the Project Manager. 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. The criteria the Project Manager may use in exercising his/her discretion in determining Substantial Completion includes, but is not limited to, the completion of all equipment contained in the Project, or portion of the Project, all other components necessary to enable the City to operate the facility in the manner that was intended.

"Superintendent" means the executive representative of Contractor, authorized to receive and fulfill instructions from the Project Manager or Project Manager's representatives.

"Supplemental Specifications" means specific instructions setting forth conditions or requirements peculiar to the Project under consideration when said Project is not completely covered by the Specifications contained herein.

"Surety" means the person, firm, partnership, corporation, limited liability company or other entity that has the requisite authority to execute the bonds required from the Contractor.

2. CONTRACT DOCUMENTS

2.1 Award, Execution of Documents, Delivery of Bonds.

2.1.1 If awarded, the Contract will be awarded to the lowest responsible bidder whose qualifications indicate the award will be in the best interest of the City and whose bid complies with all the prescribed requirements. No award will be made until the City has concluded such investigations as the City deems necessary to establish the responsibility, qualifications and financial ability of the Bidders to do the work in accordance with the Contract Documents.

2.1.2 In determining the lowest responsible bidder for the purpose of awarding the Contract, the City, pursuant to ORS 279A.120 shall:

2.1.2.1 give preference to goods and services that have been manufactured or produced in Oregon if the price, fitness, availability and quality are otherwise equal; and

2.1.2.2 add a percentage increase on the bid of a nonresident bidder equal to the percent, if any, of the preference given to that bidder in the state in which the bidder resides.

2.1.3 The City reserves the right to reject any and all bids not in compliance with all public bidding procedures and requirements or when such rejection is in the interest of the City; to reject the bid of a bidder who has previously failed to perform properly or complete contracts of a similar nature on time; and to reject the bid of a bidder who is not, in the opinion of the City, in a position to perform the Contract. If the Contract is awarded, the City will give the successful bidder written notice of award within forty-five (45) calendar days after bid opening.

2.1.4 At least three (3) counterparts of the Construction Contract and such other Contract Documents as practicable will be signed by the City and Contractor. The Contractor shall receive one (1) executed counterpart of the Contract Documents.

2.1.5 When required by the specifications, the Contractor shall deliver simultaneously with the execution of the Contract Documents a good and sufficient Payment Bond to ensure payment of the obligations incurred in the

performance of this Contract, a Performance Bond to assure performance of the Contract and the Public Works Bond Filing Certification form executed by the Contractor. No exceptions will be made to this provision.

2.1.6 Failure of the successful bidder to execute the Contract Documents and deliver the required Payment Bond, Performance Bond and Public Works Bond Filing Certification form within ten (10) calendar days of the notification of the award of the Contract shall be just cause for the City to annul the award.

2.2 Correlation, Interpretation, and Intent of Contract Documents.

2.2.1 The intent of the Plans and Specifications as contained herein is to describe the complete Project which the Contractor shall undertake to do in full compliance with the Construction Contract with Exhibit "A", Plans and Specifications. The Contract Documents comprise the entire agreement between the City and the Contractor. The Contract Documents may only be altered as provided in the General Conditions of the Contract.

2.2.2 The Plans and Specifications are intended to be explanatory and complimentary of each other. Contractor shall execute any work indicated in the Plans and not in the Specifications, or vice versa, as if indicated in both. Should any work or materials be reasonably required or intended for carrying the Project to satisfactory completion, which is inadvertently omitted on the Plans and Specifications, Contractor shall furnish the same as fully as if particularly delineated or described. Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Project Manager for further explanations as may be necessary and shall conform thereto so far as may be consistent with the terms of the Contract. In the event any doubt or question arising respecting the true meaning of the Plans or Specifications, Contractor may seek a determination by the Project Manager according to Subsection 3.2 and Paragraph 3.3.3. Should the Contractor disagree with the Project Manager's decision, the Contractor may appeal to the City Manager in accordance with Paragraph 3.4.2. In resolving such conflicts, errors and/or discrepancies, the Contract Documents shall be given precedence in the following order: Construction Contract with Exhibit "A", the Plans and the Specifications. Within the Specifications, the order of precedence shall be as follows: General Conditions, Information for Bidders, Special Conditions and Technical Provisions.

2.2.3 Figure dimensions on Plans shall govern over scale dimensions, and detailed drawings shall govern over general drawings. Any work that may reasonably be inferred from the Plans and/or Specifications as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to reference such recognized standards. The Contractor assumes full responsibility for having

familiarized himself with the nature and extent of the Contract Documents, work locality and local conditions that may in any manner affect the work to be done.

- 2.3 Verification and Warranty.** The Contractor shall make the determination of the nature of the work proposed under the Contract, local conditions which can be encountered within the Project area and all other matters which can in any way affect the work proposed under the Contract. It shall also be the responsibility of the Contractor to be thoroughly familiar with the Contract Documents. Failure to make the examination necessary for this determination or to examine any form, instrument or document of the Contract with Exhibit "A" shall not release the Contractor from the obligations of the Contract with Exhibit "A". The Contractor warrants that no oral or written agreement or conversation with any officer, agent or employee of the City, either before or after the execution of the Contract, has affected or modified any of the terms or obligations herein contained.
- 2.4 Documents to be Kept on the Jobsite.** The Contractor shall keep at least one (1) copy of the Contract Documents at the jobsite, in good order, available to the Project Manager.
- 2.5 Additional Contract Documents.** The City will furnish to the Contractor, on request and free of charge, up to three (3) copies of the Contract Documents. Additional copies of Contract Documents may be obtained upon request by paying the actual cost of reproduction.
- 2.6 Surveys.** When required for the Project, surveying and staking of the component parts of the work shall be as detailed in the Specifications and on the Plans. The Contractor shall construct the work in accordance with the construction stakes and shall be charged with full responsibility for conformity and agreement of the work with said construction stakes.

3. PROJECT MANAGER-CITY CONTRACTOR RELATIONS

- 3.1 General.** The City has the authority to act as the sole judge of the work with respect to both quantity and quality as set forth in the Contract. It is expressly stipulated that the Plans, 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.
- 3.2 Project Manager.** The Project Manager is the representative of the City and is employed to act as advisor and consultant to the City in project managing matters related to the Contract. The City has delegated its authority to the Project Manager to make initial decisions regarding all claims and questions, which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work under the Contract. The Project Manager determines the intent and meaning of the Contract and makes initial decisions with respect to the Contractor's fulfillment of the Contract and the Contractor's entitlement to compensation. Should the Contractor disagree with a decision of the Project Manager with respect to the Contract, the Contractor may request that the City

Manager review the Project Manager's decision and make a determination in the manner provided under Paragraph 3.4.2.

The Project Manager may designate a field representative as an alternate in his/her capacity on the job site. All notifications required under the Contract shall be made directly to the Project Manager or the designated representative.

3.3 Duties and Responsibilities of the Project Manager

3.3.1 The Project Manager will make periodic visits to the site of the Project to observe the progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. The Project Manager shall not be required to make comprehensive or continuous inspections to check the quality or quantity of the work, and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Project. Visits and observations made by the Project Manager shall not relieve the Contractor of obligations to conduct comprehensive inspections of the work, to perform acceptable work and to provide adequate safety precautions.

3.3.2 The Project Manager or the field representative thereof will be assigned to periodically observe the work and to act in matters of construction under the Contract. It is understood the Project Manager or field representative shall have the power to issue instructions and make decisions within the limitations of the authority granted by the City. Such inspection shall not relieve the Contractor of obligations to conduct comprehensive inspections of the work, perform acceptable work and provide adequate safety precautions.

3.3.3 All claims of the Contractor shall be presented to the Project Manager or designated representative, for a decision which shall be made in writing within a reasonable time. All decisions of the Project Manager shall be final subject only to the Contractor's right to appeal the Project Manager's decision to the City Manager in the manner provided in Subsection 3.4.

3.4 Appeal to the City Manager by the Contractor.

3.4.1 Determination by the Project Manager. As provided in Subsections 3.1, 3.2, and 3.3, the Contractor shall refer questions regarding meaning and intent of the Contract Documents in writing to the Project Manager for his/her decision. The Project Manager shall, within a reasonable time, respond to the Contractor in writing with his/her decision. If the Contractor disagrees with the Project Manager's decision or considers the decision requires extra work, Contractor may appeal the decision to the City Manager. Any related work performed by the Contractor prior to the Project Manager's decision is done at Contractor's risk unless otherwise authorized by the Project Manager.

3.4.2 City Manager Appeal Process. In the event the Contractor disagrees with any decision of the Project Manager, the Contractor may, within ten (10) calendar days of the date of such decision, appeal the decision to the City

Manager for review. The appeal must be in writing and must set forth the questions referred to the Project Manager, the Project Manager's decision and the Contractor's basis for disagreement. The Contractor shall deliver a copy of the appeal to the Project Manager at the time it is filed with the City Manager. The City Manager shall make all reasonable efforts to review the appeal and deliver his/her decision in writing to the Contractor within thirty (30) calendar days from the date of receipt of the appeal. Failure of the Contractor to appeal the decision of the Project Manager within the said ten (10) calendar day period constitutes a knowing and voluntary waiver of the Contractor's right to thereafter assert any claim resulting from such decision. This procedure is not meant to preclude or discourage informal resolution of disagreements between the Project Manager and the Contractor.

In the event the City Manager elects to do so, the City Manager may establish a "Claims Review Board" either to assist in reviewing an appeal hereunder or to consider Contractor appeals directly. Once established, the Claims Review Board will hear all future appeals of claims for this Contract.

During the pendency of any appeal, any related work performed by the Contractor shall be done at the Contractor's risk unless otherwise authorized by the Project Manager.

The filing of an appeal does not automatically extend the milestones and/or deadlines set forth in the Contract Documents and the Contractor continues to be subject to liquidated damages for failure to complete the Project within the time allotted.

In the event the City Manager or the Contractor commences arbitration or other legal action against the other for damages or for equitable relief, the prevailing party in such arbitration or other legal action is entitled to recover its reasonable attorney's fees therein and in any appeal therefrom.

The parties hereby stipulate and consent that venue for all arbitration or other legal actions arising under the Contract is in Douglas County, Oregon and that jurisdiction for all legal actions that are brought in or transferred to court is in the Douglas County Circuit Court of the State of Oregon; except, if a claim must be brought in a federal forum, then it must be brought and adjudicated solely and exclusively in the United States District Court for the District of Oregon located in Eugene, Oregon.

3.5 Suspension of Work. The Project Manager shall, in addition to its other authority, have the authority to suspend the work, wholly or in part, for such period or periods as may be deemed necessary due to unsuitable weather or such other conditions as are considered unfavorable for prosecution of the work, or failure on the part of the Contractor to carry out the provisions of the Contract. The Contractor shall not suspend operation without the permission of the Project Manager or Project Manager's authorized representative.

3.6 Notice of Potential Claim for Additional Compensation and/or Time.

3.6.1 The Contractor shall not be entitled to any additional compensation or extension of time for any act or failure to act by the Project Manager or the City, the happening of any event or occurrence or any other cause, unless the Contractor shall have given the Project Manager a written notice of potential claim.

3.6.2 The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation or time will or may be due, the nature of the costs involved and insofar as possible, the amount of the potential claim. If based on an act or failure to act by the Project Manager or the City, except in case of emergency, such notice shall be given to the Project Manager prior to the time that the Contractor starts performance of the work giving rise to the potential claim for additional compensation. In all other cases, notice shall be given within ten (10) calendar days after the happening of the event or occurrence giving rise to the potential claim.

3.6.3 It is the intention of this section that differences between the parties arising under and by virtue of the Contract shall be brought to the attention of the Project Manager at the earliest possible time in order that such matters may be settled if possible or other appropriate action may be taken promptly.

3.7 Examination of Completed Work. If the Project Manager requests it, the Contractor at any time before acceptance of the Project by the City, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standards required by the Contract Documents. Should the work thus exposed or examined prove to be in accordance with the Contract Documents, the uncovering or removing, the replacing of the covering or making good of the parts removed, shall be paid for by the City; but should the work so exposed or examined prove to be not in accordance with the Contract Documents, the uncovering or removing and the replacing of the covering or the making good of the parts removed, shall be at Contractor's expense. Should any work be performed without giving notice of plan of work, thereby eliminating an opportunity of inspection by the Project Manager, the Project Manager may require the Contractor to uncover such work at Contractor's own expense for examination by the Project Manager. Cost of uncovering such work shall be borne by the Contractor, whether or not the work is found acceptable. The work shall also be subject to inspection by appropriate governmental inspectors at all times.

3.8 Contractor's Superintendent. A qualified superintendent, who is acceptable to the Project Manager, shall be maintained by the Contractor on the Project to give efficient supervision over the Project until its completion. The superintendent shall have full authority to act on behalf of the Contractor, and all directions given to the superintendent shall be considered given to the Contractor. In general, the Project Manager's instructions shall be confirmed in writing and always upon written request from the Contractor.

3.9 Information Regarding Existing Facilities and Utilities.

3.9.1 Facilities. Any information relative to the location of other structures as might be shown on the Contract Documents will be obtained from the best information available and field observations; however, the City cannot guarantee the accuracy or completeness of this information.

3.9.2 Utilities. The Design Consultant has endeavored to determine the existence of utilities at the job site from the records of positions of these utilities as derived from such records as are shown on the Drawings. No excavations were made to verify the location shown for underground utilities. The service connections to these utilities are not shown on the Drawings. It is the responsibility of the Contractor to determine the exact location of all utilities and service connections hereto. The Contractor shall make its own investigations, including contacting the owners of appropriate utilities and making 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 and/or surrounding structures. The Contractor shall immediately notify the Project Manager as to any utility discovered by the Contractor that is not shown on the Drawings or that is in a different position than shown on the Drawings.

In the event it is necessary to remove, relocate or temporarily maintain a utility because of interference with the work, the Contractor shall perform the work on the utility and the City shall pay Contractor as follows:

3.9.2.1 When it is necessary to remove, relocate or temporarily maintain a service connection, the cost of which is not required to be borne by the owner thereof, the Contractor bears all expenses incidental to the work on the service connection. The Contractor shall perform the work on the service connection in a manner satisfactory to the owner thereof; if being understood that the owner of the service connection has the option of doing such work with its own forces, or permitting the work to be done by the Contractor.

3.9.2.2 When it is necessary to remove, relocate or temporarily maintain a utility or underground obstruction that is in the position shown on the Drawings, the cost of which is not required to be borne by the owner thereof, the Contractor bears all expenses incidental to the work on the utility. The Contractor shall perform the work on the utility in a manner satisfactory to the owner thereof; it being understood that the owner of the utility has the option of doing such work with its own forces, or permitting the work to be done by the Contractor.

3.9.2.3 When it is necessary to remove, relocate or temporarily maintain a utility or underground obstruction that is not shown on the Drawings or is in a position different from that shown on the Drawings and were it in the position shown on

the Drawings would not need to be removed, relocated or temporarily maintained, the cost of which is not required to be borne by the owner thereof, the City will make arrangements with the owner of the utility for such work to be done at no cost to the Contractor.

No representations are made that the obligations to move or temporarily maintain any utility and to pay the cost thereof, is or is not required to be borne by the owner of such utility, and it is the responsibility of the Contractor to investigate to determine whether or not said cost is required to be borne by the owner of the utility.

Governmental agencies and owners of utilities reserve the right to enter at any time upon any street, alley, right-of-way or easement 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.

3.10 Use of Premises

3.10.1 All work included under the Contract is to be constructed on land belonging to the City, on public right-of-way administered and regulated by state and/or local government or on easements to the benefit of the City or the public. The Contractor shall abide by special conditions or requirements of the property owner or governing authority. The Contractor shall confine equipment, the storage of materials and the operation of Contractor's workers to the limits as shown on the Plans or as indicated by law, ordinances, permits or directions of the Project Manager and shall not unreasonably encumber the premises with materials.

3.10.2 Any additional land and access thereto which the Contractor might desire for temporary construction facilities or for storage of materials shall be provided by the Contractor with no liability to the City. The Contractor shall pay all costs involved in acquiring such rights and all clean up shall be made as required by these Specifications.

3.11 Private Property. The Contractor shall not enter upon private property for any purpose without obtaining permission and shall be responsible for the preservation of all public property, trees, monuments, etc. along and adjacent to the street and/or right-of-way, and shall use every precaution necessary to prevent damage or injury thereto. The Contractor shall use suitable precautions to prevent damage to pipes, conduits and other underground structures, including but not limited to, verifying with all appropriate utilities where underground structures are located, and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.

3.12 Assignment of Contract. Contractor shall not sublet, sell or assign the Contract or sublet any of the work to be performed hereunder without the written consent of the City. Any such assignment or subletting of any such work without City's consent shall be null and void and without force or effect.

3.13 City's Right to do Work. If, in the sole opinion of the Project Manager, the Contractor neglects to prosecute the work properly or neglects or refuses at Contractor's own cost, to take up and replace work that has been rejected by the Project Manager, the Project Manager shall notify the City who shall notify the Surety of the condition. After at least ten (10) calendar days written notice to the Contractor and the Contractor's Surety, or without notice if an emergency or danger to the Project or public exists, and without prejudice to any other right which the City may have under the Contract, the City may take over that portion of the Project which has been improperly executed, make good the deficiencies and deduct the actual costs thereof from the payments then or thereafter due the Contractor. If no amount is owed to the Contractor, then the City may still pursue all of its other legal and/or equitable remedies.

3.14 City's Right to Terminate Contract.

3.14.1 Upon occurrence of any one or more of the following, the City may terminate the Contract at any time, immediately or upon such notice as the City in its sole discretion deems appropriate, by providing written notice to the Contractor which describes the reason for termination:

3.14.1.1 Contractor persistently fails to perform the work in accordance with the Contract Documents, including but not limited to, failure to supply sufficient skilled workers, suitable materials or equipment and failure to adhere to the progress schedule as the schedule may be revised from time to time;

3.14.1.2 Contractor fails to comply with applicable laws or the provisions of any of the Contract Documents, including, but not limited to the Construction Contract with Exhibit "A" Standard City Contract Provisions;

3.14.1.3 Contractor disregards the authority of the Project Manager;

3.14.1.4 Contractor violates any provision of the Contract and, after receiving notice of the violation, fails to remedy the breach immediately; or

3.14.1.5 Contractor files for bankruptcy under any chapter of the Bankruptcy Code (Title 11, United States Code); or a petition in bankruptcy is filed against Contractor under the Bankruptcy Code or any other provision of law seeking substantial relief; or Contractor makes a general assignment for the benefit of creditors; or a trustee, receiver or similar agent is appointed to take charge of Contractor's property

for the benefit of creditors; or Contractor otherwise admits in writing to being unable to pay its debts as they become due.

3.14.2 Upon the City's issuance of written notice of termination, the Contractor shall immediately cease all work under this Contract, unless, as shall be specified in the notice, the City, in its sole discretion, would be harmed by any uncompleted work, in which case, Contractor shall complete those items specified by the City in its notice.

3.14.3 The City may terminate the Contract upon seven (7) calendar days' notice if the City determines for any reason that the completion of the Contract is no longer in the best interests of the City.

3.14.4 If the City terminates the Contract pursuant to Paragraph 3.14.1, the City may choose any remedy available to it under the Contract, applicable statutes, City Code or common law, including but not limited to, completing the Project itself or through another contractor. The Contractor shall pay the City for all additional costs incurred by the City to obtain substitute performance. The Contractor shall be entitled to payment for that portion of the work that the Contractor completed according to the Contract, less the City's costs to obtain substitute performance for the balance of the work.

3.14.5 If the City terminates the Contract pursuant to Section 3.14.3, the City shall pay Contractor for that portion of the work the Contractor has completed according to the Contract, plus Contractor's cost for materials ordered and delivered to the site before Contractor receives the City's notice of termination; provided that such materials shall then belong to the City.

3.15 Contractor's Right to Stop Work or Terminate Contract. The Contractor may suspend work or terminate the Contract upon ten (10) calendar days written notice to the City, for any of the following reasons:

3.15.1 If an order of any court or other public authority caused the work to be stopped or suspended for a period of ninety (90) calendar days through no act or fault of the Contractor or his employees;

3.15.2 If the City should fail to act upon any request for payment within thirty (30) calendar days after its approval by the Project Manager; or

3.15.3 If the City should fail to pay the Contractor any sum within thirty (30) calendar days after its award by arbitrators.

3.16 Rights of Various Interests. Wherever work being done by the City's forces is contiguous to work covered by the Contract, the respective rights of the various interests involved shall be established by the Project Manager to secure the completion of the various portions of the work in general harmony.

3.17 Subcontracts.

3.17.1 The Contractor shall not be permitted to subcontract any of the work to be performed under the Contract without the written consent of the City, submission of the First-Tier Subcontractor Disclosure Form as required prior to the Bid opening deadline and verification that the Subcontractor has filed a Public Works Bond, when required, with the Construction Contractors Board prior to beginning any work on the Project. The Contractor shall not employ any subcontractor that the Project Manager may object to due to subcontractor lacking the capability of performing work of the type and scope anticipated. No changes will be allowed from the approved subcontractor list without approval of the Project Manager.

3.17.2 The Contractor agrees to be as fully responsible to the City for the acts and omissions of the Contractor's subcontractors or of any persons either directly or indirectly, employed by Contractor's subcontractors as Contractor is for the acts and omissions of persons directly employed by Contractor.

3.17.3 Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the City.

3.18 Unforeseen Difficulties. The Contractor shall protect the work and materials from damage due to the nature of the work, the elements, carelessness of other contractors or from any cause whatever until completion and acceptance of the Project. All loss or damages arising out of the nature of the work to be done under the Contract Documents, from any unseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor.

3.19 Work During an Emergency. The Contractor shall be responsible for and must have resources available for all emergency work which might occur on the Project under construction for which the Contractor is responsible. The Contractor shall perform any work and furnish and install any materials and equipment necessary during an emergency endangering life or property. In all cases the Contractor shall notify the Project Manager of the emergency as soon as practicable, but the Contractor shall not wait for instructions before proceeding to properly protect both life and property.

3.20 Oral Agreements. No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents. No provision of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing. No evidence shall be introduced in any proceeding of any other waiver or modification.

3.21 Liens and Claims Against Contractor. The Contractor shall not permit any lien or claim to be filed or prosecuted against the City on account of any labor or material furnished under this Contract whether the same be furnished by the Contractor or any Subcontractor. If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or a Subcontractor by any person in connection with the Contract as such claim becomes due, the City may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due to the Contractor under this Contract. The

payment of a claim in this manner does not relieve the Contractor or its surety from obligation with respect to any unpaid claims.

Any claim, by a person claiming to have supplied labor or materials for the performance of the work, for payment asserted against the Contractor's payment bond must be asserted in conformity with ORS 279C.600 et. Seq.

4. MATERIALS AND WORKMANSHIP

4.1 Materials to be Reviewed Before Use.

4.1.1 Only materials conforming with the specified requirements and conditionally accepted by the Project Manager shall be used in the Project.

4.1.2 Before any material to be used in the Project is delivered, the Contractor shall advise the Project Manager of the source from which the material is to be obtained, furnish such samples as may be required for testing purposes, and receive the Project Manager's conditional acceptance for the use of that particular material. The conditional acceptance of any source of supply by the Project Manager does not imply that all material from that source will be accepted. Should material from any conditionally accepted source fail to maintain a quality meeting the requirements of the Specifications, use of material from that source shall be discontinued and the Contractor shall furnish acceptable material from other sources. Regardless of the source, any material delivered for the Project which fails to meet the requirements will be rejected. Only material meeting all requirements will be allowed to be incorporated in the Project. Any material or item incorporated in the Project which does not meet requirements of the Contract Documents, even if it was used with the consent and/or the presence of an inspector, shall be removed and acceptable material shall be used in its place, with all costs related to such removal and installation being borne by the Contractor.

4.1.3 Any material which, after conditional acceptance, has for any reason become unsuitable for use shall be rejected and not used.

4.2 Tests of Materials.

4.2.1 All tests of materials shall be made in accordance with acceptable methods as described and designated in the Specifications. When tests of materials are required, such tests shall be made by a testing laboratory accepted by the Project Manager and at the expense of the Contractor. The Contractor shall afford such facilities as may be required for collecting and forwarding samples and shall hold the materials represented by the samples until tests have been made and the materials found equal to the requirements of the Specifications or to approved samples. The Contractor in all cases shall furnish the required samples without charge.

4.2.2 In the absence of any definite Specification or reference to a Specification in the Technical Specifications or in the Special Provisions for the particular

Project involved, it shall be understood that such materials shall meet the Specifications and requirements of the American Society for Testing Materials. Unless otherwise specified, all tests of materials shall be made in accordance with the methods prescribed by the American Society for Testing Materials.

4.2.3 In cases where compliance of materials or equipment with Contract requirements is not readily determinable through inspection and tests, the Project Manager shall request the Contractor provide properly authenticated documents, certificates or other satisfactory proof of compliance. These documents, certifications and proofs must cover performance characteristics, materials or construction and the physical or chemical characteristics of materials.

4.2.4 If the Specifications require, or the Contractor's request is approved by the Project Manager, inspection or testing may take place away from the job site. The additional cost to the City for such remote inspection or testing includes travel and subsistence expenses and will be paid by the Contractor through a reduction in payment to the Contractor equal to the travel and subsistence expenses. In the event the remote inspection or testing is not specified and is required by the City, the required travel and subsistence expense will be paid for by the City.

- 4.3 Storage of Materials.** Materials shall be so stored as to insure the preservation of their quality and fitness for the Project. When considered necessary, they shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without the written permission of the City and the private property owner.
- 4.4 Character of Workers.** The Contractor shall at all times be responsible for the conduct and discipline of Contractor's employees and/or any subcontractor or persons employed by subcontractors. All workers must have sufficient knowledge, skill and experience to properly perform the work assigned to them. Any foreman or worker employed by the Contractor or Subcontractor who, in the opinion of the Project Manager, does not perform the work in a skillful manner, appears to be incompetent or acts in a disorderly or intemperate manner shall, at the written request of the Project Manager, be removed from work on any portion of the Project except as allowed by the Project Manager.
- 4.5 Construction Means, Methods, Techniques, and Procedures.** The Contractor shall have the full power and authority to select the means, methods, techniques and procedures for performing the work covered under the Contract, provided said means, methods, techniques and procedures are in strict compliance with the requirements of all local, state and federal authorities and with these Specifications, and are not in conflict with the recommended installation practices of the manufacturers who are the suppliers of the materials to be utilized on the contemplated Project. The construction means, methods, techniques and procedures utilized shall produce a satisfactory quality of workmanship and shall be adequate to maintain the schedule of progress as required under the provisions of these Specifications.
- 4.6 Contractor's Tools and Equipment.** The Contractor's tools and equipment used on the work covered under the Contract shall be furnished in sufficient quantity and of a

capacity and type that will safely perform the work specified, and shall be maintained and used in a manner that will not create a hazard to persons or property, or cause a delay in the progress of the work.

- 4.7 Rejected Materials and Work.** Any material supplied by the Contractor which is condemned or rejected by the Project Manager or the Project Manager's authorized representative because of non-conformity with the Contract Documents shall be removed at once from the vicinity of the Project by the Contractor at his own expense, and the same shall not be used on the Project. Any defective work whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause shall be removed within ten (10) calendar days after written notice is given by the Project Manager, and the work shall be re-executed by the Contractor at his own expense.
- 4.8 Unnoticed Defects.** Any defective work or materials furnished by the Contractor and discovered by the Project Manager before the Project has been given final acceptance or final payment has been made, or during the guarantee period, shall be removed and replaced by work and materials which shall conform to the provisions of the Contract Documents. Failure on the part of the Project Manager or his representative to condemn or reject bad or inferior work or materials shall not be construed to imply acceptance of such work or materials.
- 4.9 Right to Retain Imperfect Work.** If any part or portion of the work done or material furnished by the Contractor under the Contract proves to be defective and not in accordance with the Plans and Specifications, and if the imperfection in the same is not of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions which are dangerous or undesirable, the City shall have the right and authority to retain such work but shall make such deductions in the payment therefore as may be just and reasonable.
- 4.10 Correction of Defective Work.** When, and as often as the Project Manager determines through its inspection procedures, material, equipment or workmanship incorporated in the Project do not meet the requirements of the Contract, the Project Manager may give notice of the noncompliance to the Contractor in writing. Within five (5) calendar days of receipt of such notice, the Contractor shall undertake all work necessary to correct the deficiency and to comply with the Contract. The Contractor agrees to pay all costs of correcting the defective work, including wages and overhead charges for inspection. If the Contractor disagrees with the Project Manager's determination and believes the corrective work should be covered by a Change Order, the Contractor shall immediately notify the City, in writing, setting forth the basis for its position. The City will review the matter and notify the Contractor, in writing, of its determination within thirty (30) calendar days after receipt of the Contractor's notification. If the City determines 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 claim for either additional compensation or time extension or both resulting from the performance of such corrective work, the Contractor shall, within fifteen (10) calendar days after receipt of the City's determination, notify the City in writing of its intent to claim additional compensation,

time or both. The Contractor shall document all cost information associated with the corrective work and shall submit such information to the Project Manager on a monthly basis. Receipt of the cost data by the Project Manager does not constitute an Acceptance of the corrective work or an authorization for a Change Order to cover the corrective work.

4.11 Cutting and Patching. The Contractor shall do, or be responsible for, all cutting, fitting or patching that may be required by, shown on or reasonably implied by the Plans and Specifications. Any defective work performed or material furnished by the Contractor, which is discovered by the Project Manager before final acceptance of the Project or before final payment has been made, shall be removed and replaced or patched at the Contractor's expense in a manner approved by the Project Manager or his representative.

4.12 Cleanup.

4.12.1 As the Project progresses and immediately after completion of the Project, the Contractor shall clean up and remove all refuse and unused materials of any kind resulting from the Project. If the Contractor fails to commence the cleanup within 24 hours after being directed to do so by the Project Manager, the Project Manager may have the cleanup performed by others. The cost shall be borne by the Contractor and may be deducted from payments due or to become due the Contractor.

4.12.2 After the Project is completed and before final acceptance of the Project, all areas affected by the Project shall be neatly finished and all equipment, temporary structures, rubbish and waste shall be removed from the Project area.

4.13 Guarantee.

4.13.1 The Contractor shall fully warrant all work for at least one (1) full calendar year from the City's Final Acceptance of the Project, regardless of the length of manufacturers' or installers' warranties.

4.13.2 In addition to any other warranties that are required, the Contractor shall make all necessary repairs and replacements to remedy any and all defects, breaks or failures of the work occurring within one (1) calendar year following the date of the City's Final Acceptance due to faulty or inadequate materials or workmanship. Such repairs and replacements must conform to the Contract Specifications under which the Contractor originally performed the work.

4.13.3 In the event of a dispute regarding any portion of the work, the Contractor shall nonetheless provide any warranty service, repairs or replacements as described in Paragraphs 4.13.1 and 4.13.2 above, for that portion of the work that is not in dispute. In the event a dispute delays the City's Final Acceptance of the work, the warranty for portions of the work not in dispute runs from the date of the City's Final Acceptance of the remaining portions of the work.

4.13.4 The Contractor shall also repair any damage or remedy any disturbance to other publicly owned property or improvements thereon if caused by the Contractor's work and if the damage or remedy occurs during the warranty period.

4.13.5 If the Contractor performs warranty work, then the warranty work for repetitive defects in materials, workmanship or equipment also shall have a one (1) calendar year warranty period from the date of its completion and the City's Final Acceptance of that work. The Contractor shall continue to provide warranty work pursuant to the terms of the Contract until the defects are completed and the City provides notice of its Final Acceptance of the work.

4.13.6 The City shall provide the Contractor with written notice of the need to perform warranty work unless it is determined that an emergency exists, that delay would cause serious additional loss or damage, or if any delay in performing the work might cause injury to any member of the public. If the Contractor, after written Notice, fails within ten (10) calendar days to comply with the City's request, the City has the right to perform the warranty work either by hiring another Contractor or by using its own forces. In either event, the Contractor and its Surety remain liable to the City for the cost of the work performed and any additional damage suffered by the City.

4.13.7 The Contractor shall provide a bond during the one (1) calendar year warranty period to guarantee the Contractor's performance of warranty work. The Contractor shall provide to the City a bond in the amount of 20% of the final Contract Amount in one of the following ways:

- 4.13.7.1** Continuation of the Contract performance and payment bond.
- 4.13.7.2** Any new performance and payment bond, acceptable to the City, which covers the Contractor's warranty obligations imposed by the Contract Documents.
- 4.13.7.3** Cash deposit to the City Finance Department. A receipt from the City Finance Director constitutes proof of the deposit.
- 4.13.7.4** Other arrangements proposed by the Contractor that the City finds acceptable in the City's sole discretion.

5. INSURANCE, LEGAL AND FINANCIAL RESPONSIBILITY, AND PUBLIC SAFETY

5.1 Insurance.

5.1.1 Policy Requirements. The insurance policies specified herein shall be approved as to form by the City. Contractor shall deliver a certificate of all required policies to City upon execution of the Contract Documents and prior to commencement of any work under the Contract. If requested by the City,

Contractor shall furnish the City with executed copies of such policies of insurance. Coverage provided by the Contractor must be underwritten by an insurance company deemed acceptable to the City. Insurance coverage shall be provided by companies admitted to do business in Oregon and rated A- or better by AM Best. A thirty (30) day notice of cancellation, termination or non-renewal in coverage clause shall be included in all insurance policies. Failure to maintain any required insurance coverage in the minimum required amount shall constitute a material breach of the Contract and shall be grounds for immediate termination of the Contract. If the insurer is unwilling or unable to provide such commitment, the Contractor shall provide the City with the relevant sections of its policies describing how the insurer may reduce, modify or cancel the insurance. Furthermore, the Contractor has an affirmative duty to provide the City with any notice the Contractor receives regarding the reduction, modification or cancellation of its insurance within 24 hours of Contractor's receipt of such notice. All policies required by these provisions shall:

- 5.1.1.1 also name the City as an additional insured, protecting City from any and all claims, losses, actions or omissions of Contractor or as a result of the joint concurring or contributory act, omission or negligence of Contractor and City arising with or related to activities specified under the Contract;
- 5.1.1.2 be written as primary policies, not contributing with, or in excess of, any coverage City may have; and
- 5.1.1.3 have loss payable clauses in favor of and reasonably satisfactory to City.

5.1.2 Commercial General Liability Insurance. During the performance of the Contract, Contractor shall obtain and maintain continuously in effect a commercial general liability insurance policy, including personal and advertising injury liability and products, completed operations and construction site coverage, with a combined single limit per occurrence of not less than \$2,000,000. The aggregate limit shall not be less than \$4,000,000. The policy shall be endorsed to state that the aggregate limit of liability shall apply separately to the Contract. Coverage may be written in combination with Commercial Automobile Liability Insurance with separate limits for Commercial General Liability and Commercial Automobile Liability. If available, such policy shall contain a contractual liability endorsement to cover Contractor's indemnification obligations under the Contract. Claims Made policies will not be accepted.

5.1.3 Commercial Automobile Liability Insurance. At all times during the term of the Contract, and at the sole expense of Contractor, Contractor shall maintain continuously in effect, "Symbol 1" commercial automobile liability coverage covering all owned, non-owned and hired vehicles. This coverage may be written in combination with the Commercial General Liability Insurance with separate limits for Commercial Automobile Liability and Commercial General Liability. Combined single limit per occurrence shall not be less than \$2,000,000.

If this coverage is written in combination with the Commercial General Liability, the aggregate limit for Commercial General Liability shall not be less than \$4,000,000 and the policy shall be endorsed to state that the aggregate limit of Commercial General Liability shall apply separately to the Contract.

5.1.4 Workers Compensation. At all times during the term of the Contract, and at the sole expense of the Contractor and Subcontractors, the Contractor and all Subcontractors shall comply with ORS 656.017, which requires them to provide Workers Compensation coverage for all their subject workers.

5.1.5 Pollution Liability. Contractor or appropriate Subcontractor shall obtain, at their expense, and keep in effect during the term of the Contract, Pollution Liability Insurance covering their liability for bodily injury, property damage and environmental damage resulting from sudden accidental or gradual pollution and related cleanup costs incurred by the Contractor or appropriate Subcontractor, all arising out of the work or services (including the transportation risk, when applicable) to be performed under the Contract. Combined single limit per occurrence shall not be less than \$2,000,000, with an annual aggregate limit of not less than \$4,000,000. If available, such policy shall contain a contractual liability endorsement to cover Contractor's indemnification obligations under the Contract. Claims Made policies will not be accepted.

5.2 Indemnification. The Contractor shall hold the City harmless from, and indemnify it for, all loss, costs, claims, demands, damages, suits, actions and judgments for property damage and/or personal injury, including death, arising out of the Project or performance under the Contract by the Contractor's agents or employees, or any of them. In any event any such action or claim is brought against City, Contractor shall, if City so elects, upon tender by City, defend the same at Contractor's sole cost and expense, promptly satisfy any judgment adverse to City or to City and Contractor jointly and reimburse City for any loss, costs, damage or expense (including legal fees) suffered or incurred by City.

5.3 Taxes and Charges. The Contractor shall pay state and local sales and use taxes on all items as required by the laws and statutes of the state and its political subdivisions. The Contractor shall withhold and pay any and all withholding taxes, whether state or federal; pay all social security charges and state unemployment compensation charges; and pay or cause to be withheld, as the case may be, any and all taxes, charges, fees or sums whatsoever which are now or may hereafter be required to be paid or withheld under the laws.

5.4 Bid Bond, Payment Bond, Performance Bond and Public Works Bond.

5.4.1 Contracts for Under \$25,000.00. Except when required by the Purchasing Agent, and except for public improvement contracts, bids on all public contracts under twenty-five thousand dollars (\$25,000.00) are exempt from the requirements for a Bid Bond, a Performance Bond to assure performance of the Contract and a Payment Bond to assure payment of the obligations incurred in the performance of the Contract. The Information for Bidders shall state when Bonds are required for contracts under \$25,000.00.

5.4.2 Contracts for \$25,000.00 or More. Except for public improvement contracts, or except when waived by the Council, bids on all public contracts of twenty-five thousand dollars (\$25,000.00) or more, shall be accompanied by a Bid Bond, and the Contractor shall post a Performance Bond to assure performance of the Contract and a Payment Bond to assure payment of the obligations incurred in the performance of the Contract. The Information for Bidders shall state when the requirement for Bonds have been waived for contracts of \$25,000.00 or more.

5.4.3 Public Improvement Contracts & Contracts for Highways, Bridges and Other Transportation Projects:

5.4.3.1 Bids on Public Improvement contracts for one hundred thousand dollars (\$100,000.00) or less, and contracts for highways, bridges and other transportation projects for fifty thousand dollars (\$50,000.00) or less, are exempt from the requirement of a Bid Bond, a Performance Bond and a Payment Bond.

5.4.3.2 Bids on Public Improvement contracts for more than one hundred thousand dollars (\$100,000), and contracts for highways, bridges and other transportation projects for more than fifty thousand dollars (\$50,000), must be accompanied by a Bid Bond, Performance Bond and Payment Bond.

5.4.4 Emergency Contracts. For all contracts awarded under Roseburg Municipal Code Subsection 3.06.025(F), the City Council or the Purchasing Agent may waive the requirements for Bid Bond, the Payment Bond and the Performance Bond. Upon receiving the Purchasing Agent's report regarding the emergency conditions necessitating waiver, as required by Roseburg Municipal Code Subsection 3.06.025(F), the Council may modify or reject the Purchasing Agent's decision to waive Bond requirements.

5.4.5 Public Works Bond. Before beginning work on a public works contract, a contractor or subcontractor, unless exempt under ORS 279C.800 to 279C.870, shall submit a \$30,000 Public Works Bond to the Construction Contractors Board and certify to the City that such Bond has been submitted. In case of an emergency, or when the City's interest or property would probably suffer material injury by delay or other cause, the requirement to file a Public Works Bond may be excused if the Purchasing Agent has declared an emergency under Roseburg Municipal Code Section 3.06.025.

5.4.6 Submittal and Return of Bid Bonds. When required by the above Subparagraphs, the Bid Bond shall accompany the bid in the form of cash, certified check, cashier's check, irrevocable letter of credit or Bid Bond in a form approved by City, and in an amount equal to ten percent (10%) of the total amount of the bid. There shall be no exceptions to this provision. All required Bid Bonds, excepting that of the Contractor submitting the successful bid, will be returned

within thirty (30) calendar days after the Contract has been awarded. The Bid Bond from the successful Contractor will be retained until bidder has entered into a satisfactory Contract with the City, and when required, furnished a Performance Bond to assure performance of the Contract, a Payment Bond to assure payment of the obligations incurred in the performance of the Contract and the Public Works Bond Confirmation form executed by the Contractor. Should the successful bidder fail or refuse to execute the Contract and/or furnish the Payment Bond, Performance Bond or Public Works Bond Confirmation form as required, the Bid Bond deposited by said bidder shall be retained as liquidated damages by the City.

5.4.7 Bond Form. The form of all bonds required by the City shall be as the City may prescribe, and shall be with a Surety company satisfactory to the City and authorized to do business in the State of Oregon. Bonds shall be in force for one year after acceptance of the completed Project to cover all guarantees against defective materials and workmanship and all claims by subcontractors or third parties for services or materials provided to Contractor or Contractor's Subcontractors.

5.5 Royalties and Patents. The Contractor shall pay all royalty and license fees, unless otherwise specified. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the City and the Project Manager harmless from loss on account thereof.

5.6 Permits and Licenses.

5.6.1 The Contractor shall apply for and obtain, but the City shall cover the cost of, all rights-of-way permits, easements, franchises, highway crossing permits and railroad crossing permits as required. The Contractor shall comply with all specifications or requirements stipulated in the permits granted to the City.

5.6.2 The Contractor shall obtain at Contractor's expense, all other permits (such as building permits, burning permits, blasting permits and safety permits), licenses and inspection fees necessary for construction purposes as required by appropriate local, county, state or federal laws and/or ordinances. The Contractor shall also be registered to do business with the City of Roseburg prior to beginning work on the Contract.

5.7 Laws to be Observed. The Contractor shall keep fully informed of all local and county ordinances, state and federal laws in any manner affecting the Project herein specified. Contractor shall at all times comply with said ordinances, laws and regulations, and the City's Standard Contract Provisions in Exhibit "A" of the Construction Contract; and protect and indemnify the City and City's officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, provisions or regulations.

5.8 Safety.

5.8.1 The Contractor will be solely and completely responsible for conditions of the jobsites, including safety of all persons and property during work on the Project. This requirement will apply continuously and not be limited to normal working hours. Safety provisions shall conform to all applicable federal, state, county and local laws, ordinances and codes. The Contractor shall comply with ORS 279C.505(2) drug testing program requirements at all times throughout the completion of the Project.

5.8.2 The Contractor shall also comply with the "U.S. Department of Labor Occupational Safety and Health Act", the "Construction Safety Act" administered by the U.S. Department of Labor, and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, except where these are in conflict with state laws, in which case the more stringent requirement must be followed.

5.8.3 Contractor shall comply with all federal, state and local safety requirements, including but not limited to regulations pertaining to health hazard notification, control of hazardous energy, use of hazardous substances, handling and disposal of hazardous waste, removal and disposal of asbestos, entry into and work in confined spaces and handling of materials containing lead. City will notify Contractor of any hazardous conditions of which City is aware and will provide Contractor with information about City's safety and hazard notification programs. Such notification from the City does not relieve Contractor of any responsibility under the Contract or under federal or state statute, regulation or common law to inform itself of existing and potential hazards, to communicate those hazards to its employees, and to use all reasonable steps to minimize the risk of harm to its employees, other workers and the public.

5.8.4 The Contractor shall maintain at the jobsite all articles necessary for giving first aid to the injured and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the jobsite.

5.8.5 The duty of the Project Manager to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on or near the construction sites.

5.8.6 If death, serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Project Manager and the City. In addition, the Contractor must promptly report in writing to the Project Manager all accidents whatsoever arising out of, or in connection with, work on the Project or adjacent to the sites, giving full details and statements of witnesses.

5.8.7 If any claim is made by anyone against the Contractor or any Subcontractor because of any accident, the Contractor shall promptly report the facts in writing to the Project Manager, giving full details of the claim.

- 5.9 Equal Opportunity Clause.** The provisions of Executive Order 11246 of September 24, 1965, and the Rules and Regulations issued therein are hereby incorporated by reference, and the Contractor agrees, by acceptance of the Contract, to comply with such Executive Order, rules, regulations and amendments thereto, to the extent the same are applicable to the contracting and/or subcontracting of services or work hereunder.
- 5.10 Warning Signs and Barricades.** The Contractor shall provide adequate signs, barricades and lights and take all necessary precautions for the protection of the work under the Project and the safety of the public. All barricades and obstructions shall be protected at night by signal lights which shall be kept burning from sunset to sunrise. Barricades shall be of substantial construction and shall be painted white or whitewashed to increase their visibility at night. Suitable warning signs shall be so placed and illuminated at night as to show in advance where construction, barricades or detours exist.
- 5.11 Flaggers.** In addition to furnishing and maintaining adequate signs, barricades and lights, the Contractor is required to furnish any and all flaggers that are required to control traffic. The City is hereby specifically exempted from furnishing any flaggers for the Project. If flaggers are required on any jobsite, they shall be supplied by the Contractor at no additional cost to the City.
- 5.12 Public Safety and Convenience.** The Contractor shall at all times conduct work on the Project so as to insure the least possible obstruction to traffic and inconvenience to the general public and residents in the vicinity of the Project, and to insure the protection of persons and property in a manner satisfactory to the Project Manager. No road or street shall be closed to the public except with the permission of the Project Manager and proper governmental authority. Temporary provisions shall be made by the Contractor to insure the use of sidewalks and the proper functioning of all gutters, sewer inlets, drainage ditches and irrigation ditches, which shall not be obstructed except as approved by the Project Manager.
- 5.13 Protection of Work and City's Property.** The Contractor shall at all times safely guard the City's property and equipment from injury or loss in connection with Contractor's work under the Contract. The Contractor shall at all times safely guard and protect the Project and adjacent property (as provided by law and the Contract Documents) from damage. Contractor shall be responsible for any damage to the City's property and equipment which is a result of the Contractor's negligence.
- 5.14 Sanitary Provisions.** The Contractor shall provide and maintain such sanitary accommodations for the use of its employees and those of its subcontractors as may be necessary to comply with the requirements and regulations of the local and state departments of health and as directed by the Project Manager.
- 5.15 Payment of Prevailing Wages on Public Works in Oregon.**

5.15.1 The Contractor and all Subcontractors on the Project shall pay not less than the "prevailing rate of wage" as that term is defined in ORS 279C.800 to 279C.870, and if applicable, the Federal Prevailing Wage required under the

Davis-Bacon Act (40 U.S.C. 3141 - 3148), whichever is higher. The determination and application of such prevailing rate of wage is provided for in ORS 279C.800 through 279C.870, and if applicable, the Davis-Bacon Act (40 U.S.C. 3141 - 3148).

5.15.2 If the Bureau of Labor has made no determination of the prevailing rate of wage, it shall be the obligation of the Contractor to determine the same by making application to the Bureau of Labor or otherwise.

5.15.3 The Contractor or the Contractor's surety and every Subcontractor or the Subcontractor's surety shall file certified statements with the City in writing using the form prescribed by the Commissioner of the Bureau of Labor and Industries certifying the hourly rate of wage paid each worker whom the Contractor or the Subcontractor has employed in the work under this Contract and further certifying that no worker employed upon such public work has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in this Contract. The certified statement shall be verified by the oath of the Contractor or the Contractor's surety or Subcontractor or the Subcontractor's surety that the Contractor or Subcontractor has read the certified statement and knows the contents thereof and that the same is true to the Contractor's or Subcontractor's knowledge. The certified statements shall set out accurately and completely the payroll records for the prior week including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid.

5.15.4 Each certified statement shall be delivered or mailed by the Contractor or Subcontractor to the City. A true copy of the certified statement shall also be filed at the same time with the Commissioner of the Bureau of Labor and Industries. Certified statements for each week during which the Contractor or Subcontractor employs a worker upon the public work shall be submitted once a month, by the fifth business day of the following month. Information submitted on certified statements may be used only to ensure compliance with the provisions of ORS 279C.800 to 279C.870 or the Davis-Bacon Act (40 U.S.C. 3141 - 3148), whichever applies.

5.15.5 As provided by ORS 279C.810, the contract amount threshold for application of the state prevailing wage rate law is \$50,000.00.

5.16 Subcontractor and Supplier Agreements. The Contractor shall include in its subcontracts for property or services entered into by the Contractor and a first-tier subcontractor, including a material supplier, for the purpose of performing the Contract:

5.16.1 A payment clause that obligates the Contractor to pay the first-tier subcontractor for satisfactory performance under its subcontract within ten (10) calendar days of payment by the City out of such amounts as are paid to the Contractor by the City under the Contract; and

5.16.2 An interest penalty clause that obligates the Contractor, if payment is not made within thirty (30) calendar days after receipt of payment from the City, to

pay to the first-tier subcontractor, an interest penalty on amounts due in the case of each payment not made in accordance with the payment clause included in the subcontract pursuant to this requirement. The Contractor or first-tier subcontractor shall not be obligated to pay an interest penalty if the only reason that the Contractor or first-tier subcontractor did not make payment when payment was due, is that the Contractor or first-tier subcontractor did not receive payment from the City or Contractor when payment was due. The interest penalty shall be:

5.16.2.1 For the period beginning on the day after the required payment date and ending on the date on which payment of the amount is made; and

5.16.2.2 Computed at the rate specified in ORS 279C.515(2).

5.16.3 The Contractor shall include in each of its subcontracts, for the purpose of performance of the Contract condition, a provision requiring the first-tier subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in this section and requiring each of its subcontractors to include such clauses in their subcontracts with lower-tier subcontractors or suppliers.

5.16.4 None of the provisions of this section are intended to prevent the Contractor or any subcontractor from including in its contracts, the provision described in ORS 279C.580 (5) and (6).

5.17 Application for and Processing of Subcontractor and Supplier Payments. The Contractor shall provide each first-tier Subcontractor, including a material supplier, with a standard form that the first-tier Subcontractor may use as an application for payment or as another method by which the Subcontractor may claim a payment due from the Contractor. The Contractor, except as otherwise provided in this Subsection, shall use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. The Contractor may change the form or the regular administrative procedures the Contractor uses for processing payment if the Contractor:

5.17.1 Notifies the Subcontractor in writing at least forty-five (45) calendar days before the date on which the Contractor makes the change; and

5.17.2 Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.

6. PROGRESS AND COMPLETION OF PROJECT

6.1 Contract Time and Commencement of Construction. The Contractor shall be capable of commencing construction on the Project covered under the Contract within ten (10) calendar days after signing of the Construction Contract. The Contract shall be in effect from the time it is signed until the Project is complete and accepted by the City. During periods when weather or other conditions are unfavorable for construction, the Contractor shall pursue only such portions of the work that will not be damaged thereby.

Contractor shall not construct any portion of the work during the time unfavorable conditions exist that are likely to adversely affect the quality or efficiency of the work. It is expressly understood and agreed by and between the Contractor and the City that the Contract time specified for completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

6.2 Preconstruction Conference. A preconstruction conference will be scheduled by the City prior to commencement of construction. The Contractor will be notified of the time and place of this conference and shall be required to attend. Ten (10) calendar days prior to the preconstruction conference, the Contractor shall provide to the Project Manager four (4) copies of a project work schedule for review and approval. The Contractor has an affirmative duty to update the construction schedule each time changes occur.

6.3 Prosecution of the Project.

6.3.1 It is expressly understood and agreed that the time of beginning, rate of progress and time of completion of the Project are of the essence of the Contract. The Contractor shall perform the construction of said Project with due diligence and at such a rate and in such a manner as, in the opinion of the Project Manager, is necessary for completion within the time set forth in Paragraph 4 of the Contract.

6.3.2 After commencement of construction on the Project by the Contractor, if the Contractor is delayed by reason of the failure of the City to provide sufficient materials for construction thereof or to provide continuous open right-of-way, then the completion date of said Project shall be extended to the extent that the Contractor is delayed in carrying on said Project by reason of such failure on the part of the City.

6.3.3 The Contractor shall arrange its work and dispose of materials so as to insure the least possible interference and inconvenience to the landowners on or beside whose property the construction is taking place, or to the public where the construction lies in or near a public thoroughfare. Contractor shall employ only such number of construction crews as are reasonably necessary to construct said Project within the allotted time. The City may require the employment of an additional crew or crews, if in its judgment it is necessary in order to complete said Project with the time required.

6.3.4 If the Contractor desires to carry on work at night or outside the regular hours, timely notice shall be given to the Project Manager to allow satisfactory arrangements to be made for inspecting the Project in progress.

6.4 Provisions for Delays:

6.4.1 Notice of Delays. Whenever the Contractor foresees any delay in the prosecution of the work, and in any event, immediately upon the occurrence of any delay which the Contractor regards as unavoidable, Contractor shall notify

the Project Manager in writing on the probability of the occurrence of such delays, the probable duration and cause. The Contractor shall take immediate steps to prevent the occurrence or continuance of the delay. If this cannot be done, the Project Manager shall determine how long the delay will probably continue and to what extent the prosecution and completion of the work are being delayed thereby. The Project Manager shall also determine whether the delay is to be considered avoidable or unavoidable and shall notify the Contractor of his/her determination. The Contractor shall not make a claim for delays that are not called to the attention of the Project Manager at the time of their occurrence.

6.4.2 Avoidable Delays Defined. Avoidable delays in the prosecution or completion of the work include, but are not limited to:

- 6.4.2.1** All delays that could have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or its Subcontractor;
- 6.4.2.2** Delays that do not necessarily prevent or delay the prosecution of other parts of the work or the completion of the whole work within the time specified;
- 6.4.2.3** Reasonable delays resulting from time required by the City and Project Manager for approval of plans submitted by the Contractor and for the making of surveys, measurements, testing and inspections; and
- 6.4.2.4** Delays arising from interruptions occurring in the prosecution of the work on account of the reasonable interference from other contractors employed by the City which do not necessarily prevent the completion of the whole work within the time specified.

6.4.3 Unavoidable Delays Defined. Unavoidable delays in the prosecution or completion of the work include, but are not limited to, all delays (other than avoidable delays as defined above) that result from causes beyond the control of the Contractor and that could not have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or its Subcontractors. Delays caused by other contractors employed by the City will be considered unavoidable delays only insofar as they interfere with the Contractor's completion of the work. Delays due to normal weather condition are not regarded as unavoidable delays insofar as they interfere with the Contractor's completion of the work. If the Project Manager determines the Contractor has experienced an unavoidable delay, and further that such delay has affected the controlling operations of the work, the City shall grant to the Contractor an extension of time for Contract performance, not to exceed the number of calendar days of unavoidable delay experienced by the Contractor. The Contractor has no remedy for unavoidable delay except as provided by this paragraph. Delays due to normal weather conditions are not regarded as unavoidable as the Contractor agrees to plan its work with prudent allowances for interference by

normal weather conditions. Delays caused by acts of God, fire, unusual storms, flood, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes and freight embargoes are considered unavoidable delays insofar as they interfere with the Contractor's completion of the work. Delays caused by shortages of materials are considered unavoidable providing the Contractor can prove to the City that the Contractor has made reasonable and timely attempts to secure the material(s).

A rainstorm, windstorm, high water or other natural phenomenon for the specific locality of the work, which might reasonably have been anticipated from historical records of the general locality of the work, do not constitute unusually severe weather. For the purposes of this Contract, rainfall data is assumed to be the same as that measured at the Roseburg Regional Airport by the Environmental Data Service of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

6.4.4 Time Extension for Delays.

6.4.4.1 Extensions for Avoidable Delays. In case the work is not completed in the time specified, including extensions of time as may have been granted for unavoidable delays, the Contractor will be assessed damages for those costs incurred by the City that are attributable to the fact the work was not completed on schedule. The City may grant an extension of time for avoidable delay if the City deems it in its best interest. The Contractor shall compensate the City, in exchange for granting an extension of time for avoidable delay, for the actual costs to the City of Project management, inspection, general supervision and overhead expenses which are directly chargeable to the work and that accrue during the period of such extension. The actual costs do not include charges for final inspection and preparation of the final estimate by the City.

6.4.4.2 Extensions for Unavoidable Delays. For delays the Contractor considers unavoidable, the Contractor shall submit to the Project Manager, complete information demonstrating the effect of the delay on the controlling operation in its construction schedule. The submission must be made within ten (10) calendar days of the beginning of the occurrence which is claimed to be responsible for the unavoidable delay. The Project Manager shall review the Contractor's submittal and determine the number of calendar days of unavoidable delay, if any, and the effect of such delay on the controlling operations of the work. If the Project Manager determines the Contractor has experienced an unavoidable delay, and further that such delay has affected the controlling operations of the work, the City shall grant to the Contractor an extension of time for Contract

performance, not to exceed the number of calendar days of unavoidable delay experienced by the Contractor. The Contractor has no remedy for the unavoidable delay except as provided in this Section. During such extension of time, neither charges for the inspection nor administration nor damages for delay will be assessed against the Contractor. It is understood and agreed by the Contractor and the City that time extensions due to unavoidable delays involve controlling operations that would prevent completion of the whole work within the specified time.

If the Contractor disagrees with the Project Manager's determination, the Contractor may appeal such determination to the City Manager in accordance with Paragraph 3.4.2.

- 6.5 Changes in the Project.** The City may, as the need arises, order changes in the Project through additions, deletions or modifications without invalidating the Contract. Compensation and time of completion affected by the change shall be adjusted at the time of ordering such change.
- 6.6 Extra Work.** New and unforeseen items of work found to be necessary but which cannot be covered by any item or combination of items for which there is an established Contract price, shall be classified as extra work. Upon written order from the City and approval from the Project Manager, the Contractor shall do such extra work as may be required for the proper completion or construction of the whole Project contemplated. In the absence of such written order, no claim for extra work shall be considered. Extra work shall be performed in accordance with these Specifications where applicable and work not covered by the Specifications or special provisions shall be done in accordance with the best practice as approved by the Project Manager. Extra work required in an emergency to protect life and property shall be performed by the Contractor as required. Contractor shall notify the Project Manager of the emergency as soon as possible, but shall begin work prior to providing notice if immediate work is necessary to protect life or property.
- 6.7 Unforeseen Difficulties.** A delay beyond the Contractor's control occasioned by an act of God, or by strikes, lockouts, fire, etc., may entitle the Contractor to an extension of time to complete the Project as determined by the Project Manager, provided however, that the Contractor shall immediately give written notice to the Project Manager of the cause of such delay. In no event shall the Contractor be entitled under the Contract to collect or recover any damages, loss or expense incurred by any delay other than as caused by the City as stipulated hereinabove in Subsection 6.3 "Prosecution of the Project".
- 6.8 Use of Completed Portions.** The City shall have the right to take possession of and use any completed or partially completed portions of the Project. Such use shall not be considered as final acceptance of any portion of the Project, nor shall such use be considered as cause for an extension of Contract completion time unless authorized by a change order issued by the City.

6.9 Liquidated Damages. If the Contractor fails to complete the work, or any part thereof, in the time agreed upon in the Contract or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the Contractor shall reimburse the City for the additional expense and damage for each calendar day that the Contract remains uncompleted after the Contract completion date. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the Contract is the per diem rate as stipulated in the Bid. The amounts are hereby agreed upon as liquidated damages for the loss to the City.

It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty but as damages for delay which have accrued against the Contractor. The exact amount of damage that would be sustained by the City due to delay is difficult, if not impossible, to accurately ascertain, but the parties believe the specified amount of liquidated damages to be a reasonable forecast of the damage for delay that the City would likely sustain. Such liquidated damages are in addition to any other ascertainable damage, other than for delays that the City sustains for Contractor's breach of the Contract. The City may deduct such damages from any amount due, or that may become due the Contractor or the amount of such damages becomes due and may be collected from the Contractor or its Surety.

6.10 Substantial Completion. Substantial Completion shall have the meaning set forth in Subsection 1.1 "Definitions" of these General Conditions.

Upon consideration by the Contractor that a determination of Substantial Completion of the Project, or a designated portion thereof, is completed, the Contractor shall so notify the Project Manager in writing. This notice shall include the Contractor's list of any minor incomplete contract work items to finish the Project. Upon receipt of the written notification, the Project Manager will promptly, by personal inspection, determine the actual status of the work in accordance with the terms of the Contract. If the Project Manager finds that the terms of Substantial Completion of the Contract have not yet been met, the Project Manager will so inform the Contractor. If, instead, the Project Manager determines from the inspection that the work, or the designated portion thereof, has met the terms of Substantial Completion, the Project Manager will issue to the Contractor a "Written Notice of Substantial Completion" along with a Punch List of any deficient work items needing repair or correction. The Contractor agrees to complete all such corrective work within thirty (30) calendar days after submission of the Punch List to the Contractor by the Project Manager. If the Contractor fails to complete the corrective work within the thirty (30) calendar days, the Contractor is liable to the City in the amount stated in the liquidated damages section of the Contract for each day thereafter until all corrective work is completed. The City shall be entitled to deduct liquidated damages from final payment.

6.11 Final Completion. The Contractor shall notify the Project Manager in writing requesting a designation of Final Completion at the completion of the punch list items related to the Substantial Completion designation, and at the completion of any other items necessary to the completion of the Project. The Project Manager will inspect these remaining items, and upon satisfactory completion, will issue a written "Notice of Final Completion" which shall be subject to the City's Final Acceptance. In the event some items are not

ready for the City's Final Acceptance the City may, without waiving any of the City's right to the portion(s) of the Project not yet receiving Final Acceptance, nonetheless provide Final Acceptance for those portion(s) of the items of the Project the City deems appropriate. As stated in Subsection 4.13, the terms of the guarantee commence on the date of the City's Written Notice of Final Acceptance for that portion of the work.

7. MEASUREMENT AND PAYMENT

7.1 General.

7.1.1 All work acceptably completed under the Contract shall be measured by the Project Manager according to United States Standard Measures, and the quantities of work performed or materials furnished shall be computed on the basis of such measurements.

7.1.2 The Contractor shall accept the compensation as herein provided in full payment for furnishing all materials not provided by the City and all labor, tools and equipment; for performing all work under the Contract; for all loss or damage arising from the nature of the Project other than unforeseeable environmental conditions as described in ORS 279C.525, the action of the elements or any unforeseen difficulties which may be encountered during the prosecution of the Project, until its final acceptance by the City.

7.2 Payments. The City shall make monthly progress payments within thirty (30) calendar days from the date of the pay request for work which has been completed and accepted by the City per ORS 279C.570.

7.3 Final Payment. The City shall retain five percent (5%) of all payments until the entire Project has been given Final Acceptance by the City. The entire Project must be accepted by the City prior to releasing retainage. Upon the City's acceptance of the entire Project, the retainage will be released and the Contractor shall be responsible for the workmanship and materials for one year thereafter as provided in Subsection 4.13.

If the contract price exceeds \$500,000, the City will place amounts deducted as retainage into an interest-bearing escrow account. Interest on the retainage amount accrues from the date the payment request is approved until the date the retainage is paid to the Contractor.

7.4 City's Right to Withhold Payment. The City may withhold payment in whole or in part on an approved invoice to the extent necessary to protect City from loss due to any of the following causes discovered subsequent to approval of the invoice by the Project Manager or the Project Manager's representative:

7.4.1 Defective work;

7.4.2 Evidence indicating the probable filing of claims by other parties against the Contractor;

7.4.3 Failure of the Contractor to make payments to Subcontractors, material suppliers or workers; or

7.4.4 Damage to another contractor.

7.5 Payment for Uncorrected Work. Should the Project Manager direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, the City may make an equitable deduction from the amount due to the Contractor on the Project in order to compensate the City for the uncorrected work.

7.6 Payment for Extra Work. In any case where the Contractor deems additional compensation is due Contractor for work or materials not clearly covered in the Contract Documents or not ordered by the Project Manager according to provisions of the Contract Documents, the Contractor shall notify the Project Manager, in writing, of his intention to make a claim in order that such matters may be settled, if possible, or other appropriate action promptly taken. If such notification is not given, or the Project Manager is not afforded proper facilities by the Contractor for keeping strict account of actual cost, then the Contractor hereby waives the claim for such extra compensation. Such notice by the Contractor, and the fact that the Project Manager has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim. Claims for additional compensation shall be made in itemized detail and submitted, in writing, to the City and Project Manager within ten (10) calendar days following completion of that portion of the Project for which the Contractor makes his claim. In case the claim is found to be just, it shall be allowed and paid under a supplemental agreement to be entered into between the parties to the Contract.

7.7 Release of Liens.

7.7.1 Before the City pays the Contractor for the work included under the Contract, the Contractor shall sign and deliver to the City a release of liens or claims sworn to under oath and duly notarized. The release shall state that the Contractor has satisfied all claims and indebtedness of every nature in any way connected with the Project, including but not limiting the generality of the foregoing, all payrolls, amounts due to subcontractors, accounts for labor performed and materials furnished, incidental services, liens and judgments.

7.7.2 If any lien or claim remains unsatisfied after payment to the Contractor is made, the Contractor shall refund to the City all monies that the City may be compelled to pay in discharging such a lien or claim, including all costs and reasonable attorneys' fees.

7.8 Acceptance of Payment Constitutes Release. The acceptance by the Contractor of a payment for the invoice shall release the City from all claims and liability to the Contractor for all things done or furnished in connection with the work specified on said invoice, and every act of the City and others relating to or arising out of the Project. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from obligations under the Contract, the Performance Bond or the Payment Bond as herein provided.

7.9 Correction of Defective Work. The Project Manager's approval of the invoice for work completed and the City's payment to the Contractor on such invoice, shall not relieve the Contractor of the responsibility for faulty materials or workmanship on said work during the one-year guarantee period as stipulated in Subsection 4.13. The one-year guarantee period for each portion of the Project begins when each portion of the Project receives written notice of Final Acceptance from the City. The City shall promptly give notice of faulty materials or workmanship which are discovered within the one-year guarantee period and the Contractor shall promptly replace any such defects. If the Contractor fails to make the repairs and replacements promptly, the City may do the work, and the Contractor and Contractor's Surety shall be liable for the cost thereof.

8. ENVIRONMENTAL MATTERS

8.1 Contractor Compliance. Contractor shall comply with, and require its Subcontractors to comply with, all applicable federal, state and local statutes, ordinances, orders, rules and regulations relating to the protection of human health and environment, including but not limited to, the use, storage, release, spill, disposal or other handling of petroleum products and other hazardous substances.

8.2. Unanticipated Regulatory Compliance and Site Conditions.

8.2.1 If Contractor is delayed or additional work is required due to the enactment of new or an amendment to existing statutes, ordinances or regulations relating to the prevention of environmental pollution and the preservation of natural resources occurring after submission of the successful bid, City may, at its sole discretion:

- 8.2.1.1** terminate the Contract;
- 8.2.1.2** complete the Project itself;
- 8.2.1.3** use non-City forces already under contract with the City;
- 8.2.1.4** require that the underlying property owner be responsible for the additional work;
- 8.2.1.5** call for bids for a new contractor to provide the necessary services; or
- 8.2.1.6** issue Contractor a change order setting forth the additional work that must be undertaken.

8.2.2 If Contractor encounters a condition not referred to in the Contract Documents, not caused by Contractor and not discoverable by a reasonable pre-bid visual site inspection, and such condition requires compliance with the regulations referred to in Paragraph 8.2.1 above, Contractor shall immediately provide City notice of the condition. Except as required by any environmental or natural resource regulation, or, in case of an emergency, Contractor shall not

commence work or incur any additional job site costs with regard to the condition encountered without written direction from the City. Upon request, Contractor shall estimate emergency or regulatory compliance costs as well as the anticipated delay and costs resulting from the encountered condition, and promptly deliver such estimate to City for resolution.

8.2.3 In the event of an occurrence of an unanticipated site condition as described in Paragraph 8.2.2 above, City, within a reasonable period of time, may do any of the following at its sole discretion:

- 8.2.3.1** terminate the Contract;
- 8.2.3.2** complete the Project itself;
- 8.2.3.3** use non-City forces already under contract with the City;
- 8.2.3.4** require that the underlying property owner be responsible for the additional work;
- 8.2.3.5** call for bids for a new contractor to provide the necessary services; or
- 8.2.3.6** issue Contractor a change order setting for the additional work that must be undertaken.

8.2.4 In the event City terminates the Contract under Subparagraph 8.2.1.1 or 8.2.3.1, Contractor shall be entitled to all costs and expenses incurred to the date of the termination, including overhead and reasonable profits, on the percentage of the Project completed. Contractor shall not be entitled to profits or consequential damages on the uncompleted portion of the Contract. If the City chooses to issue a change order or terminate the Contract for either of the reasons set forth in Paragraph 8.2.1 or 8.2.3, Contractor agrees to provide the City access to Contractor's documentation used to prepare Contractor's bid in order to assist City in making the City's determination of the additional compensation to be paid.

9. CHANGE ORDERS.

9.1 Authorized Changes in the Work. Changes to the drawings, specifications, quantities or details of the Project are inherent in the nature of construction and may be necessary or desirable during the course of Project construction. Without impairing or invalidating the Contract, the City may at any time, without notice to any surety, by written order designed or indicated to be a Change Order or a Proposal Request, make any change in the work within the general scope of the Contract, including, but not limited to changes:

9.1.1 In the Plans and Specifications (including drawings and designs);

9.1.2 In the time, method, or manner of performance of the work;

9.1.3 In the City-furnished facilities, equipment, materials, services or site; or

9.1.4 Directing acceleration in the performance of the work.

9.2 Unauthorized Changes in the Work. The Contractor shall not be entitled to an increase in the Contract price or an extension of the Contract times with respect to any work performed that is not required by the Contract Documents as amended, modified or supplemented except in the case of an emergency. In the event of an emergency, the Contractor has seven (7) calendar days to notify the Project Manager of the nature and extent of the emergency. If notification is not provided within seven (7) calendar days, no time adjustment or cost compensation will be allowed.

9.3 Execution of Change Orders. The City and the Contractor shall execute appropriate Change Orders and Proposal Requests and upon receipt of an approved Change Order or Proposal Request, the Contractor shall perform the work as modified. If the Change Order increases the Contract amount, the Contractor shall notify Contractor's Surety of the increase and shall provide the City with a copy of any resulting modification to the Bond documents. Change Order and Proposal Requests shall clearly state all costs and schedule adjustments.

9.4 No Oral Change Orders. No oral order, statement or conduct of the City constitutes a Change Order or entitles the Contractor to an equitable adjustment.

9.5 Change of Contract Price.

9.5.1 The Contract price may only be changed by a Change Order.

9.5.2 The value of any work covered by a Change Order or of any claim for an adjustment in the Contract price will be determined as follows:

9.5.2.1 Where the work involved is covered by the unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved; or

9.5.2.2 Where the work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum; or

9.5.2.3 Where the work involved is not covered by the unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Subparagraph 9.5.2.2, time and materials basis plus the Contractor's fee for overhead and profit as defined in Paragraph 9.5.3.

9.5.3 Percentage Allowances. For work negotiated and completed on a time and materials basis the Contractor's maximum allowable percentage markup of such costs shall be as follows:

Materials	15%
Equipment	15%
Labor	20%
Special Services	15%

9.5.3.1 When a subcontractor performs work under a time and materials Change Order, the Contractor will be allowed a supplemental markup of 5% on the subcontractor's charges.

9.6 Lump Sum Change Orders. Whenever practicable, changes in Contract price resulting from extra work will be determined by a mutually agreed-upon lump sum price. The Contractor's proposal for such changes must include a detailed breakdown of all labor and materials to be performed by its forces and by the forces of its Subcontractors and material suppliers.

Costs for labor, material, rentals, approved services, and for overhead and profit for the Contractor, Subcontractor and material suppliers must be calculated as specified under the Subsection 9.7.

When the City desires a price quotation from the Contractor for a proposed change to the Contract, the Project Manager will issue a Proposal Request describing the proposed changes. The Contractor shall respond with a price quote within ten (10) calendar days of the issuance of the Proposal Request.

Contractor's quotations for Change Orders and Proposal Requests must be in writing and firm for a period of thirty (30) calendar days. Any compensation paid in conjunction with the terms of a Change Order compromises the total compensation due the Contractor for the modification defined in the Change Order. By signing the Change Order or Proposal Request, the Contractor acknowledges that the stipulated compensation includes payment for the modification plus all payment for the interruption of schedules, extended overhead, delay or any other impact claim or ripple effect, and by such signing specifically waives any reservation or claim for additional compensation or claim for Contract time extension in respect to the subject Change Order or Proposal Request.

The City's request for quotations on modifications to the work is not considered authorization to proceed with the work prior to the approval of a formal Proposal Request or Change Order, and such request does not justify any delay in existing work.

9.7 Time and Material Change Orders. Whenever the Contractor is directed by written notice from the Project Manager as the City's representative, to perform extra work on a time and material basis, the Contractor shall furnish labor, equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual necessary expense of the following:

9.7.1 Field and office labor, including estimating and procurement personnel and foremen, who are directly assigned to the time and materials work (actual payroll cost, including wages, fringe benefits as established by law). The cost of

labor includes any employer payment to or on behalf of the worker for health and welfare, pension, vacation and similar purposes. Where subsistence and travel allowances are required for performance of extra work, the charges consist of the actual amount paid to each worker. No other fixed labor burdens will be considered unless approved in writing by the City.

9.7.2 Material delivered and used on the designated work, including sales tax, if paid by the Contractor or its Subcontractor.

9.7.3 Rental or equivalent rental cost of equipment, including necessary transportation, for items having a value in excess of \$100. When equipment is not rented, the equivalent rental cost of equipment is based on the standard rental rates for Contractor-owned equipment, but in no event exceeds the rental rates set forth in the most current edition of the "Equipment Watch Rental Rate Blue Book", published by Penton Media. For equipment not listed in the Blue Book, the rental rate is as listed by the local section of the Associated General Contractors. If the equipment is not listed by the Associated General Contractors, the rental rate will be mutually agreed upon in writing between the Contractor and City prior to the use of the unlisted equipment. The reasonable cost of moving equipment onto and off the job site may be included, but equipment rental will not be paid when the equipment is inoperative due to breakdowns. Individual pieces of equipment or small tools having a replacement value of \$100 or less are considered as included in the overhead allowances and no additional payment therefore will be made.

When equipment is used on the extra work for less than five (5) business days, hourly rates will be used. Less than thirty (30) minutes of operation are considered ½ hour of operation. When equipment is used on the extra work for more than five (5) business days, weekly rates apply. In this case, less than four (4) hours of operation is considered to be ½ calendar day of operation.

Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances must not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment are understood to cover all fuel, supplies, repairs, and renewals.

The City reserves the right to furnish such materials and equipment as it deems expedient, and the Contractor has no claim for profit or added fees on the cost of such materials and equipment.

9.7.4 The added fixed fees defined in Paragraph 9.5.3 constitute full compensation for the cost of general supervision, overhead, profit and any other general expense.

9.7.5 If a dispute occurs over payment for work provided on a time and material basis, the dispute is not cause for stopping work.

9.7.6 The Contractor shall maintain accurate and detailed records for all work performed on a time and materials basis. These records must reflect all the actual necessary expenses pertaining to the extra work and must at all times be available for audit by the City.

9.7.7 The Contractor shall make clear distinction in its records between the direct costs of work paid for on a time and materials basis and the costs of other work. The Contractor shall furnish the Project Manager report sheets in duplicate of each day's work that itemize the labor, materials and equipment used, and shall make the report sheets available for the City's review. The daily report sheet must provide names or identifications and classifications of workers, the hours worked, the sizes, types and identification numbers of equipment, and hours operated. Daily report sheets must be signed by the Contractor or its authorized agent and verified by the Project Manager.

9.7.8 To receive partial payments and final payment for time and materials work, the Contractor shall submit to the Project Manager, in a manner approved by the Project Manager, detailed and complete documented verification of the Contractor's and any of its Subcontractor's actual cost incurred. Material and rental charges must be substantiated by copies of vendors' invoices. Such costs must be submitted within thirty (30) calendar days after said work has been satisfactorily completed.

TECHNICAL PROVISIONS

CITY OF ROSEBURG

STORM REHABILITATION BROOKLYN AVE.

21PW14

PREPARED BY:



May 10, 2021

SPECIAL PROVISIONS

WORK TO BE DONE

The proposed work generally consists of furnishing all labor, equipment, materials and supervision for storm line rehabilitation of approximately 24 lineal feet of 42 inch diameter, 365 lineal feet of 48 inch diameter and 488 lineal feet of 54 inch diameter pipe utilizing cured-in-place pipe (CIPP), Spin-Cast Geopolymer (SCGP) or Monolithic Polyurethane (MSAP) Storm line rehabilitation.

APPLICABLE SPECIFICATIONS

The Specifications, which are applicable to the work on this project, are:

- APWA/ODOT 2021 edition of the "Oregon Standard Specifications for Construction".

All number references in these special provisions shall be understood to refer to the Sections and subsections of the Standard Specifications and Supplemental Standard Specifications bearing like numbers and to Sections and subsections contained herein in their entirety. Standard Specifications not specifically addressed in these Special Provisions shall be complied with if applicable.

SECTION 00110 - TERMS, ABBREVIATIONS, AND DEFINITIONS

Comply with Section 00110 of the Standard Specifications modified as follows:

Meaning of Terms – Add the following after the last bullet:

This is a City of Roseburg project. Substitute terms pertaining to:

- Transportation Commission with Roseburg City Council
- Engineer with Public Works Director or her authorized representatives
- Department with the City of Roseburg
- Other like terms with City of Roseburg substitutes

SECTION 00120 - BIDDING REQUIREMENTS AND PROCEDURES

General Bidding Requirements

Each Bid must be submitted on the prescribed Bid Form and delivered as specified in the Invitation to Bid. The Bid Form must contain Signatures of personnel authorized to submit Bids, modify Bids, or withdraw Bids.

00120.05 Requests for Solicitation Documents

Informational Plans and Specifications (not for bidding) may be obtained from the Engineer at a fee. Copies of the Oregon Standard Specifications may be purchased at the ODOT Procurement Office - Construction, Contractor Plans, 455 Airport Road SE, Building K, Salem, Oregon 97301-5348 (telephone 503-986-6936).

(a) **Paper Bids** - Solicitation documents, including contract terms, conditions, specifications, all attachments and/or addenda for the Invitation to Bid are available for review at the above contact address. Bid documents will not be mailed to prospective bidders, but may be downloaded from the Oregon Procurement Information Network (ORPIN) through the following internet address: <http://orpin.oregon.gov/open.dll/welcome>. Bidders without access to ORPIN may download the documents at a Plan Center or the City of Roseburg's website at www.cityofroseburg.org under "Bidding Opportunities."

(b) **Electronic Bids** – Electronic Bids are will be accepted, each bid must be submitted on the prescribed Bid Form and electronically delivered as specified in the Invitation to Bid. The Bid Form must contain Signatures of personnel authorized to submit Bids, modify Bids, or withdraw Bids.

00120.10 Bid Booklet

The Bid Booklet may include, but is not limited to:

- Bidder's checklist
- Bid Section
- Appendix, which includes required time-sensitive forms, DBE information, sample forms, and other informational pages The Bid Section includes all pages after the Bidder's checklist and before the appendix. The Bid Section may include, but is not limited to:
 - Description and location of the proposed Project
 - Time, date, and location for opening Bids
 - Project completion time
 - Class of Project
 - Class of Work
 - Identification of applicable Supplemental Specifications and Special Provisions
 - Bid statement
 - Certificate of non-collusion
 - Certificate of residency
 - Certificate of compliance with Oregon tax laws
 - Bid Schedule
 - Identification of Bidder(s) and Sureties
 - Bid signature page
 - Bid Bond form
 - First-tier Subcontractor disclosure form

Depending on the Project, other certificates or statements may be bound within the Bid Section. Plans, Specifications, and other documents referred to in the Bid Section will be considered part of the Bid.

Examination of Work Site and Solicitation Documents; Consideration of Conditions to be Encountered

Before submitting a Bid, Bidders shall carefully examine the site of the proposed Work, the Bid Booklet, Plans, and Specifications. Bidders should also contact Utility owners to verify all Utilities' anticipated involvement on the Project Site. Bidders are also encouraged to review any subsurface investigation material referenced in 00120.25 that may be available. Submission of a Bid will constitute confirmation that the Bidder has examined the Project Site and Solicitation Documents, finds the Plans and Specifications to be sufficiently detailed and accurate to enable Bidder to properly perform the Work, and understands the conditions to be encountered in performing the Work and all requirements of the Contract.

The Agency and its employees will not be responsible for loss or unanticipated costs suffered by the Bidder because of the Bidder's failure to become fully informed about all conditions of the Work, or failure to request clarification of Plans and Specifications Bidder believes to be erroneous or incomplete.

Any clarification of Plans and Specifications needed by the Bidder shall be requested by email through the Engineer. Requests shall be made no later than five calendars prior to the bid opening for the Agency's reply to reach all Bidders before Bid Closing. Oral explanations or interpretations given before receiving Bids for a Project will not be binding. To be binding, interpretation of the Plans and Specifications by the Agency must be made by written Addendum furnished to all Holders of Bidding Plans according to 00120.30. Notification of erroneous or incomplete Plans or Specifications shall also be submitted to the Engineer.

- Information pertaining to work on this project contact:

Ryan Herinckx

City of Roseburg

900 SE Douglas Ave

Roseburg, OR 97470

541-492-6884

rherinckx@cityofroseburg.org

Material, Equipment, and Method Substitutions

When the Contract specifies certain Materials, Equipment, and/or methods, the Bidder shall include those Materials, Equipment, and/or methods in the Bid unless the Engineer has issued an Addendum granting approval to substitute. The procedure for requesting approval is as follows:

- (a) **Written Request** - If a Bidder proposes to use Materials, Equipment and/or methods other than those specified, the Bidder shall send a written request to the Engineer, at least five Calendar Days prior to Bid Opening, including complete descriptive and technical information on the proposed Materials, Equipment and/or methods.
- (b) **Functional Similarity** - Materials and Equipment proposed for substitution shall be similar in design, and equal or better in quality and function to those specified.
- (c) **Manufacturer's Information** - If manufacturers' brochures or information is needed, the Bidder shall submit three copies of each with all pertinent information clearly marked.
- (d) **Differences** - The Bidder shall specifically note all differences between the specified Materials, Equipment and/or methods and the proposed substitutes.
- (e) **Cost** - Where a substitute will result in alteration of the design or space requirements, or any other modifications to the Plans, the Bidder shall include in the substitution request all items of cost for the revised design and construction.
- (f) **Notification of Holders of Bidding Plans** - If the Engineer approves any proposed substitution, such approval, and any modifications necessitated to the design and construction by the substitution, will be acknowledged by Addenda. Unless the Engineer has approved substitutions of Materials, Equipment, and/or methods prior to opening of Bids, the Bidder shall furnish the items specified in the Contract. Substitution after Award is specified in 00180.31(b), 00180.31(c), and 00180.31(d).

00120.30 Changes to Plans, Specifications, or Quantities before Opening of Bids

The Agency reserves the right to issue Addenda making changes or corrections to the Plans, Specifications, or quantities. The Agency will provide Addenda only by publishing them on the Agency's web site. See the CITY web site page included with the Special Provisions for the web site address where the Addenda are available. Addenda may be downloaded from the web site. Bidders shall be responsible for checking the Agency web site for Addenda. Bidders should check the web site weekly until the week of Bid Closing and daily the week of Bid Closing. Bidders, not the Agency, shall be responsible for failure of Bidders to check and download Addenda. Bids shall incorporate all Addenda. Bids may be rejected if opened and found by the Agency to not be based on all Addenda published on the web site before Bid Closing.

00120.40 Preparation of Bids:

(a) General:

- (1) **Paper Bids** - For Bids submitted by paper, the Bidders shall not alter, in any manner, the paper documents bound within the Bid Section. Bidders shall complete the certifications and statements included in the Bid Section of the Bid Booklet according to the instructions. Signature of the Bidder's authorized representative thereon constitutes the Bidder's confirmation of and agreement to all certifications and statements contained in the paper Bid Booklet. Entries on the paper documents in the Bid Section shall be in ink or typed.

Signatures and initials shall be in ink, except for changes submitted by electronic transmission as provided by 00120.60 (in which case FAX signatures shall be considered originals).

The Bidder shall properly complete and bind all the paper documents in the Bid Section, as specified in 00120.10, between the front and back covers of the Bid Booklet, except that the Bid Bond is not required if another permissible type of Bid guaranty is provided. (see 00120.40(e))

- (2) Electronic Bids** – For Bids submitted electronically, the Bidders shall not alter, in any manner, the paper documents bound within the Bid Section. Bidders shall complete the certifications and statements included in the Bid Section of the Bid Booklet according to the instructions thereon constitutes the Bidder's confirmation of and agreement to all certifications and statements contained in the Bid Booklet. Entries on the paper documents in the Bid Section shall be in ink or typed. Signatures and initials shall be in ink, except for changes submitted by electronic transmission.

(b) Bidding Considerations - Bidders may refer to the following Subsections for requirements that may affect bidding considerations:

- 00120.80, Preference for Oregon Resident Bidders
- 00130.80, Restrictions on Commencement of Work
- 00150.55, Coordination of Work
- 00150.75, Protection and Maintenance of Work
- 00160.20(a), Buy America
- 00160.20(b), Buy Oregon
- 00180.20, Subcontracting Limitations
- 00180.21, Subcontracting
- 00195.50(a-1), Incidentals
- 00195.00(a), Cost of Insurance and Bonds

(c) Bid Schedule Entries:

(1) Paper Bid Schedule Entries - Using figures, Bidders shall fill in all blank spaces in the paper Bid Schedule. For each item in the paper Bid Schedule, Bidders shall enter the unit price and the product of the unit price multiplied by the quantity given. The unit price shall be greater than zero, shall contain no more than two decimal places to the right of the decimal point, and shall be expressed in U.S. dollars and cents (for example, \$150.25 or \$0.37). Bidders shall also enter the total amount of the Bid obtained by adding amounts for all items in the paper Bid Schedule. Corrections or changes of item entries shall be in ink, with incorrect entry lined out and correct entry entered and initialed.

(2) Electronic Bid Schedule Entries – For Bid submitted electronically, Bidders shall enter the unit price for each of the separate Bid Items listed. The unit price shall be greater than zero, shall contain no more than two decimal places to the right of the decimal point, and shall be expressed in U.S. dollars and cents (for example, \$150.25 or \$0.37).

(d) Bidder's Address and Signature Pages - Bidders shall include in the Bid the address to which all communications concerning the Bid and Contract should be sent. The Bid must be signed by a duly authorized representative of the Bidder.

(e) Bid Guaranty - All Bids shall be accompanied by a Bid Bond per the requirements of Section 5.4 of the General Conditions in the amount of 10% of the total amount of the Bid.

(1) Bid Guaranty with Paper Bids – For bids submitted by paper, the Bid guaranty shall be either a Surety bond, irrevocable letter of credit issued by an insured institution as defined in ORS 706.008, or security in the form of a cashier's check or certified check made payable to the Agency. (See ORS 279C.365(4).)

If a Surety bond is submitted, Bidders shall use the City's standard Bid Bond form included with the paper Bid Booklet. Bidders shall submit the bond with original signatures and the Surety's seal affixed. The Bid guaranty shall be submitted by mail, delivery service, or hand delivered to the offices and addresses, and at the times given in the paper Bid Booklet.

(2) Bid Guaranty with Electric Bids – For bids submitted electronically, the Bidder may choose to submit an electronic Bid Bond or a paper Bid guaranty prior to the time of Bid Closing as follows:

- The electronic Bid Bond which is part of the digitally signed electronic Bid Booklet. This electronic Bid Bond shall include the approved Bond ID number issued by the Surety and shall be submitted by the Bidder prior to the time of Bid submission given in the Bid Booklet.
- A Bid Bond form which is part of the electronic Bid Booklet may be printed and then filled out. The printed Bid Bond form, with original signatures and the Surety's seal affixed, shall be submitted by mail, delivery service, or hand delivered to the office and addresses, and at the times given in the Bid Booklet. Alternately, if the Bidder chooses to submit a Bid guaranty in the form of an irrevocable letter of credit issued by an insured institution as defined in ORS 706.008, or a cashier's check or certified check made payable to the Agency (see ORS 279C.365(4)), it shall be submitted by mail, delivery service, or hand delivered to the offices and addresses, and at the times given in the Bid Booklet.

(f) Disclosure of First-Tier Subcontractors - If a Bidder's Bid on a public improvement Project exceeds \$100,000, the Bidder shall, within two working hours of the time Bids are due to be submitted, submit to the Agency, on a form provided by the Agency, a disclosure identifying any first-tier Subcontractors that will furnish labor or labor and Materials, and whose contract value is equal to or greater than:

- 5% of the total Project Bid, but at least \$15,000;
- or
- \$350,000, regardless of the percentage of the total Project Bid.

For each Subcontractor listed, Bidders shall state:

- The name of the Subcontractor;

- The dollar amount of the subcontract; and
- The category of Work that the Subcontractor would be performing.

If no subcontracts subject to the above disclosure requirements are anticipated, a Bidder shall so indicate by entering "NONE" or by filling in the appropriate check box. For each Subcontractor listed, Bidders shall provide all requested information. An incomplete form will be cause for rejection of the Bid.

The Subcontractor Disclosure Form must be submitted by filling out the Subcontractor Disclosure Form included in the Bid Booklet and submitting it together with the Bid at the time and place designated for receipt of Bid. or within two hours of the time designated for receiving Bids.

Subcontractor Disclosure Forms submitted will be considered late if not received by the City of Roseburg within two working hours of the time designated for receiving Bids.

Bids not in compliance with the requirements of this Subsection will be considered non-responsive.

120.45 Submittal of Bids

(a) Paper Bids – Paper Bids may be submitted by mail, parcel delivery service, or hand delivery to the offices and addresses, and at the times given in the Bid Booklet. Bidders shall submit paper Bids in a sealed envelope marked with the word "Bid", the name of the Project, and the words "To Be Opened Only by Authorized Personnel" on the outside. If a delivery or courier service is used, the Bidder shall place the sealed envelope containing the Bid inside the delivery or courier service's envelope. Closing time for acceptance of Bids is at the time on the day of the Bid Opening as stated in the Bid Booklet. Bids submitted after the time set for receiving paper Bids will not be opened or considered. The Agency assumes no responsibility for the receipt and return of late paper Bids.

(b) Electronic Bids – Electronic Bids shall be submitted by scanning and submitting via email transmission to the email address given in the paper Bid Booklet, signed by an individual authorized to sign the Bid.

0120.60 Revision or Withdrawal of Bids

(a) Paper Bids – Information entered into the paper Bid Booklet by the Bidder may be changed after the paper Bid has been delivered to the City of Roseburg, Provided that:

- Changes are prepared according to the instructions identified in the Bid Booklet;

- Changes are received at the same offices, addresses, and times identified in the paper Bid Booklet for submitting Bids;
- The Bid number is included; and`
- The changes are submitted in writing or by scanning and submitting via email transmission to the email address given in the paper Bid Booklet, signed by an individual authorized to sign the Bid.

A Bidder may withdraw its paper Bid after it has been delivered to City of Roseburg, provided that:

- The written withdrawal request is submitted on the Bidder's letterhead, either in person or by scanning and submitting via email to the email address given in the Bid Booklet;
- The request is signed by an individual who is authorized to sign the Bid, and proof of authorization to sign the Bid accompanies the withdrawal request; and
- The request is received at the same offices, addresses, and times identified in the paper Bid Booklet for submitting Bids.

(b) Electronic Bids – Email submittals and submittals in writing to revise electronic Bids will not be permitted. However, the Bidder may submit multiple electronic Bids for the same Project to revise the electronic Bid. All electronic Bid Submittals must meet all requirements and deadlines for submitting electronic Bids

A Bidder may withdraw its electronic Bid after it has been delivered to City of Roseburg, provided that:

- The written withdrawal request is submitted on the Bidder's letterhead, either in person or by scanning and submitting via email to the email address given in the Bid Booklet;
- The request is signed by an individual who is authorized to sign the Bid, and proof of authorization to sign the Bid accompanies the withdrawal request; and
- The request is received at the same offices, addresses, and times identified in the paper Bid Booklet for submitting Bids.

00120.65 Opening and Comparing Bids

Bids will be opened and the total price for each Bid will be read publicly at the time and place indicated in the Notice to Contractors and the Bid Booklet. Bidders and other interested parties are invited to be present.

Bids for each Project will be compared on the basis of the total amount of each Bid. The total amount of the Bid will be the total sum computed from quantities listed in the Bid Schedule and unit prices entered by the Bidder.

In case of conflict between the unit price and the corresponding extended amount, the unit price shall govern, and the Agency may make arithmetic corrections on extension amounts.

00120.70 Rejection of Nonresponsive Bids

A Bid will be considered irregular and will be rejected if the irregularity is deemed by the Agency to render the Bid non-responsive. Examples of irregularities include without limitation:

- The Bid Section documents provided are not properly used or contain unauthorized alterations.
- The Bid is incomplete or incorrectly completed.
- The Bid contains improper additions, deletions, alternate Bids, or conditions.
- The Bid or Bid modifications are not signed by a person authorized to submit Bids or modify Bids, as required by 00120.01.
- The Bid is submitted on documents not obtained directly from the Agency's Plans office as identified in the Advertisement, or is submitted by a Bidder who has not been identified by the Agency as a Holder of Bidding Plans, as required by 00120.05.
- A member of a joint venture and the joint venture submit Bids for the same Project. Both Bids may be rejected.
- The Bid has entries not typed or in ink, or has signatures or initials not in ink (save for changes received by FAX as provided by 00120.60).
- Each change or correction is not individually initialed.
- White-out tape or white-out liquid is used to correct item entries.
- The price per unit cannot be determined.
- The Bid guaranty is insufficient or improper.
- The original Bid Bond form is not used or is altered.
- The Oregon Construction Contractors Board registration number and expiration date are not shown on the Bid if required in the Solicitation Document.
- A disclosure of first-tier Subcontractors, if required under 00120.40(f), is not received within two working hours of the time Bids are due to be submitted, or the disclosure form is not complete.
- The Bid does not acknowledge all issued Addenda.
- The Bid contains entries that are not greater than zero.
- The Bid contains entries with more than two decimals to the right of the decimal point.
- The Bid entries are not expressed in U.S. dollars and cents.
- The Agency determines that any Pay Item is significantly unbalanced to the potential detriment of the Agency.

00120.80 Reciprocal Preference for Oregon Resident Bidders

Bidders shall complete the certificate of residency provided by the Agency in the Bid Booklet. Failure to properly complete the form will be cause to reject the Bid.

As used in the certificate of residency and this Subsection, "Resident Bidder" means a Bidder who has:

- Paid unemployment taxes or income taxes in the State of Oregon during any of the 12 calendar months immediately preceding submission of the Bid;
- A business address in the State of Oregon; and
- Certified in the Bid that the Bidder qualifies as a Resident Bidder.

“Nonresident Bidder” means a Bidder who is not a Resident Bidder as defined above. In determining the lowest Bid, the Agency will, for the purpose of awarding the Contract, add a percentage increase to the Bid of a Nonresident Bidder equal to the percentage, if any, of the preference given to that Bidder in the state in which the Bidder resides (ORS 279A.120). The percentage preference applied in each state will be published on or before January 1 of each year by the Oregon Department of Administrative Services. The Agency may rely on these percentages without incurring liability to any Bidder (ORS 279A.120). This increase will only be applied to determine the lowest Bid, and will not cause an increase in payment to the Contractor after Award of the Contract.

00120.90 Disqualification of Bidders

The Bid(s) of a disqualified Bidder will be rejected. Any of the following reasons is sufficient to disqualify a Bidder:

- More than one Bid is submitted for the same Work by an Entity under the same or different name(s).
- Evidence of collusion among Bidders. Participants in collusion will be found not responsible, and may be subject to criminal prosecution.
- Any of the grounds for disqualification cited in ORS 279C.440. A Bidder will be disqualified if the Bidder has:
- Been declared ineligible by the Commissioner of the Bureau of Labor and Industries under ORS 279C.860;
- Not been registered (licensed) by the Oregon Construction Contractors Board (CCB) or been licensed by the State Landscape Contractors Board before submitting a Bid (ORS 279C.365(1)(k), ORS 701.055, and ORS 671.530). The Bidder’s registration number and expiration date shall be shown in the Bid form, if requested. Failure to furnish the registration number, if requested, will render the Bid non-responsive and subject to rejection. (not required on Federal-Aid projects); or
- Been determined by the CCB under ORS 701.227 not to be qualified to hold or participate in a public contract for a public improvement.

00120.91 Rejection of Bid on Grounds of Nonresponsibility of Bidder

The Bid of a Bidder who is found to be nonresponsible according to the criteria listed in 00130.10 or ORS 279C.375(3) will be rejected.

SECTION 00130 - AWARD AND EXECUTION OF CONTRACT

Comply with Section 00130 of the Standard Specifications, modified and supplemented by the City of Roseburg General Conditions located within this booklet, and modified as follows:

00130.10 Award of Contract – Notice of award will be sent within 45 calendar days from the opening of proposals.

SECTION 00150 - CONTROL OF WORK

Comply with Section 00150 of the Standard Specifications modified as follows:

Coordination of Specifications and Plans – Add the following before the first bullet:

City of Roseburg General Contract Conditions and Special Conditions govern over all Standard Specifications Sections.

00150.15(b) Agency Responsibilities – Delete this section

00150.15(c) Contractor Responsibilities – Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall be perform all construction staking.

The Contractor shall perform the Contactor responsibilities described in the Construction Surveying Manual for Contractors, Chapter 1.6 (see Section 00305) and the following:

Perform earthwork including intersections and matchlines and set stakes defining limits for clearing.

00150.50(e) Notification - Add the following paragraph to the end of this subsection:

This Project is located within the Oregon Utility Notification Center area which is a Utilities notification system for notifying owners of Utilities about Work being performed in the vicinity of their facilities. The Utilities notification system telephone number is 811 (or use the old number which is 1 800 332 2344).

00150.60 Construction Equipment Restrictions - Add the following subsection:

00150.60(d) Access and Work Zone – Construction equipment access shall be limited to existing public right-of-way, and easements.

00150.70 Detrimental Operations – Replace the paragraph that begins "The Contractor shall avoid..." with the following paragraph:

The Contractor shall avoid operations whose methods, conditions, or timing may injure people or damage property or the Work. Damage may include without limitation, staining surfaces with mud or asphalt or damaging Utilities and foundations. (also see 00150.60, 00150.75, and Section 00170).

00150.80 Removal of Unacceptable and Unauthorized Work – Replace the paragraphs that begin "The Agency will not pay..." and "If, when ordered by..." with the following two paragraphs:

The Agency will not pay the Contractor for unacceptable Work, except as provided in 00150.25, or for unauthorized work. The Engineer may issue a written order for the correction or removal of such work at the Contractor's sole expense.

If, when ordered by the Engineer, the Contractor fails to correct or remove unacceptable Work or remove unauthorized work, the Engineer may have the correction, removal, or removal and replacement, done by others and deduct the entire cost from monies due or to become due the Contractor under the Contract.

SECTION 00165 - QUALITY OF MATERIALS

Comply with Section 00165 of the Standard Specifications modified as follows:

00165.03 Testing by Agency – Replace this subsection, except for the subsection number and title, with the following:

No testing will be performed by the City. All testing shall be the responsibility of the Contractor. The Contractor shall retain and pay for the service of an approved, recognized independent testing laboratory to conduct laboratory tests on materials and field testing as required.

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the Standard Specifications modified as follows:

Permits, Licenses, and Taxes - Add the following bullets:

- The City of Roseburg requires a Bulk Water Permit to be issued when using fire hydrants or other City devices to obtain water for construction or bulk purposes. A no fee Bulk Water Permit is available from the City of Roseburg Public Works Department.
- City of Roseburg requires a permit for all street closures. Contractor is responsible for obtaining the permit and supplying any supplemental information as requested by the City.
- Contractor shall be licensed to do business in the State of Oregon and the City of Roseburg.

SECTION 00180 - PROSECUTION AND PROGRESS

Comply with Section 00180 of the Standard Specifications, supplemented by the City of Roseburg General Conditions located within this booklet, and modified as follows:

Subcontracting Limitations- Replace this subsection, except for the subsection number and title, with the following:

(a) **General** - The Contractor's own organization shall perform Work amounting to at least 30% of the original Contract Amount. The value of subcontracted Work is the full compensation to be paid to the Subcontractor(s) for all pay items in the subcontract(s).

(b) **Own Organization** - The term "own organization", as used in Section 00180, includes only employees of the Contractor, Equipment owned or rented by the Contractor, Incidental rental of operated Equipment, truck hauling of materials, and Materials and Equipment to be incorporated into the Work purchased or produced by the Contractor.

(c) **Rental of Operated Equipment** - The use of Equipment rented with operators, except truck hauling of materials which is addressed in 00180.20(e), will be allowed without a subcontract only when the following requirements are met:

(1) **Written Request** - The Contractor has submitted to the Engineer a written request describing the work or service to be provided, its estimated cost, and the estimated duration. The Engineer must approve the request before the work or service is provided.

(2) **Limitations** - The use of Equipment rented with operators is limited to performing minor, Incidental, short-duration work or services under the direct supervision of the Contractor or subcontractor, with Equipment not customarily owned, leased, or operated by a Contractor, or with Equipment that is temporarily unavailable to the Contractor.

(3) **Submittals** - The Contractor shall provide the Engineer with a copy of the rental agreement or purchase order covering the work or service to be provided. The Contractor shall make certain that the provider of approved work or services submits payrolls required under Section 00170 and complies with applicable Contract provisions, including without limitation 00170.07. The work or service provider will not be considered a subcontractor under the Contract, but will be considered an agent of the Contractor in the performance of work or service.

(4) **Revocation of Approval** - The Engineer may revoke approval for the work or **services** provided through rented, operated Equipment at any time the Engineer determines that the work is outside that authorized under 00180.20(c-2). Unless the Contractor promptly submits to the Engineer a subcontract agreement for consent under 00180.21, the work or service provider shall be immediately removed from the Project Site.

(b) On-Site Work - Add the following at the end of this subsection:

The Contractor shall perform no On-Site work between noon on the day preceding a legal holiday or holiday weekend and 8:00 a.m. on the day following the legal holiday or the last day of a holiday weekend, except for Thanksgiving, when no work may occur between noon on Wednesday and 8:00 a.m. the following Monday. For this section, legal holidays include: Memorial Day, Labor Day, Veterans Day and Thanksgiving, Christmas, and New Year's Eve Day.

Add the following subsection:

00180.40(c) Limitations of Operations: - Limitation of operations specified in these special provisions include, but are not limited to the following:

Limitations	Subjecti
on	
Cooperation with Utilities	00150.50
Cooperation with Other Contractors	00150.55
Contract Completion Time.....	00180.50(h)
Traffic Lane Restrictions.....	00220.40(e)
Special Events.....	00220.40(e)
Maintenance Under Traffic	00620.43
Opening Sections to Traffic	00745.51

Be aware of and subject to schedule limitations in the Standard Specifications and supplemental Standard Specifications which are not listed in this subsection.

00180.41 Project Work Schedules: - Delete the paragraph that begins "One of the following Type..." to end of section, detailed "Type" schedule will not be required for this project.

00180.50(c) Beginning of Contract Time – Replace this subsection, except for the subsection number and title, with the following:

When the Contract Time is stated in Calendar Days, counting of Contract Calendar Days will begin with the issuance of the Notice to Proceed.

Add the following subsection:

00180.50(h) Contract Time – The Contractor shall complete all Work to be done under the Contract, within One Hundred Twenty (120) days of notice to proceed.

00180.85(b) Liquidated Damages - Add the following paragraph:

Liquidated damages for failure to complete the Work on time required by 00180.50(h) will be \$500.00 per Calendar Day.

SECTION 00199 - DISAGREEMENTS, PROTESTS, AND CLAIMS

Delete Section 00199 of the Standard Specifications. Refer to the City of Roseburg General and Special Conditions.

SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC

Comply with Section 00220 of the Standard Specifications modified as follows:

00220.03(a) Work Zone Notifications – Delete subsection (a) and substitute the following:

(a) Road Closures – If public streets are to be closed for any duration, obtain the required permits from the City’s Public Works Department and comply with all requirements including any notification requirements for the affected residences and required public notifications. Generally, provide a 72 hour initial public notification published in the local paper, broadcast on at least one local radio station, and published in the News-Review. Maintain access for residences and school employees.

00220.40(c) Driveways – Add the following bulleted item(s):

- Coordinate with residences when closing access to property at least 24 hours in advance.
- Provide temporary access once excavation is past by use of steel plates, aggregate or other approved method. Protect and delineate access by use of traffic cones.
- Traffic shall not be placed on any driveways until concrete has reached 70-percent of the specified compressive strength. This may require high, early concrete, which will be at the discretion of the Contractor.

00220.40(d) Adjacent to Excavations – Delete the bulleted items and add the following:

- At the end of each working day, backfill all excavations in areas completed to match the existing surface with permanent backfill material. Cover with steel plates areas where further work will continue. At the end of each work week, temporary patch excavated trench with AC. After all work is completed and laterals re-connected, complete permanent patch.
- Delineate excavation with traffic cones spaced at 25’ max.

SECTION 00225 - WORK ZONE TRAFFIC CONTROL

Comply with Section 00225 of the Standard Specifications, modified as follows.

General Requirements – Delete all paragraphs after the third paragraph of this subsection which begins with Install a 48 inch “TRUCKS” sign....

SECTION 00412 – CURED-IN-PLACE PIPE LINING

00412.00 Scope – Add the following paragraphs to the end of this subsection.

Contractor shall provide and install a resin impregnated fabric tube pulled-in-place through an existing storm pipe conduit identified for cured-in-place-pipe (CIPP) lining in accordance with American Society for Testing and Materials (ASTM) F1743 for the pulled-in-place installation of Cured-in-Place thermosetting resin pipe.

The existing pipe is a spiral wound aluminized steel pipe with a severely deteriorated invert that is currently exposed to the potential intrusion of exterior groundwater which has not been verified. The Contractor is responsible for insuring the CIPP product can be properly installed under conditions that may not be entirely dry if after diverting all upstream flows, groundwater is still present in the host pipe.

00412.01 Submittals - Replace this subsection, except for the subsection number and title, with the following:

This section replaces Section 00410.03 of the Standard Specifications, submit the following,

1. Catalog data and manufacturer’s technical data showing complete information on material composition, physical properties, depth of installation and dimensions of system components of the tube and resin system. Include manufacturer’s recommendation for handling, storage, insertion, curing, trimming, finishing and re- pair of damaged liner.
2. Certification showing that the Installer is currently licensed by the appropriate licensor to perform CIPP installation. Certification shall be given to the Owner prior to delivery of material to the job site.
3. Certification from the manufacture that the materials meet the requirements of these specifications and intended use. Certification of test results confirming than the liner and resin meet the minimum chemical resistance requirement according to ASTM F1216.
4. Liner system manufacturer’s calculations for the volume of resin to be used for each segment including the calculated amount of excess resin necessary to achieve full saturation. The volume calculations must be based on required finished liner characteristics and should account for tube void space, the structural condition of the host pipe and predicted changes in the resin’s physical and chemical characteristics due to polymerization.

5. Flow diversion plan for the mainline. This will include a specific plan for each individual manhole section which identifies location of bypass pipe, method of discharging against the curbline where shown on the plans, crossing street inter- section, pumping capacity and location of equipment within the street.
6. Manufacturer's or Assembler's recommendations for factory and field (whichever applies) wet out procedures including: volume of resin per unit of liner, roller gap setting, mixing ratios and procedures for resin and catalyst/hardener, shelf life of resin, pot life of resin, required wet out procedure to ensure full saturation, and other criteria deemed necessary to ensure proper wet out of the liner.
7. A letter identifying the cleaning methods Contractor plans to employ to remove sediment, debris, grease, scale, encrustation, mineral deposits and roots through- out the gravity pipe to be lined and in the structures to be repaired. The letter shall include a detailed explanation of the cleaning process and a schedule of activities.
8. Name of resin supplier and liner fabric supplier. Resin manufacturer installation procedures including curing and cooling temperature and time requirements and sequences. Provide detailed calculations to confirm the liner thickness for the proposed resin system. List all assumptions, design criteria and material characteristics whether they are based on the information in the specifications, plans or not.
9. Structural calculations for each CIPP liner size with recommended thickness based upon minimum physical properties in Table 1 of ASTM 1216. Values greater than this for flexural strength and flexural modulus may be used at the discretion of the Contractor. Verification of final thickness and physical properties will be determined in accordance with Section 00412.71. Consequences for failure to reach the submittal strength are outlined in 00412.91.
10. Manufacturer's or Assembler's certification that the liner materials and system are in compliance with the specifications, codes, and standards referenced herein.
11. Manufacturer's or Assembler's recommendations for minimum and maximum pressures, temperatures, and time durations to be used during liner inversion, cure, and cool down.
12. Procedures for cool down and relieving static head after CIPP cure.
13. CIPP samples in accordance with 00412.71.
14. Data-logger output in printed and electronic (excel spreadsheet) formats.
15. CCTV inspection reports as specified in subsection 00413.40.
16. CIPP liner terminations
17. Material safety data sheets for all hazardous chemicals used or expected to be on-site.

00412.02 Design Parameters: Replace this subsection, except for the subsection number and title, with the following:

Contractor shall furnish CIPP tubing that meets the following design criteria.

Follow the design considerations of ASTM F1216 and meet the following:

<u>Condition</u>	<u>Parameter</u>
Service Life	Greater than 50 year
Pipe Condition	Fully Deteriorated
Load Conditions	
Soil	120 pounds/cf
Traffic	H20-Highway
Groundwater Elevation	At surface (Depth per plan)
Design Thickness.....	Cured-in-place lining shall comply with ASTM F 1216 of the intent thereof as determined by the Engineer, minimum finished liner thickness as defined by design calculation.
Pipe Ovality.....	Per Contractor's review of CCTV Inspection (assumed 2%)
Modulus of Soil Reaction...	1,000 psi
Enhancement Factor.....	7
Long-term Flexural Strength..	50% of initial (ASTM D 790)
Modulus of Elasticity	50% of initial (ASTM D 790)
Maximum Deflection	5%
Minimum Factor of Safety...	2.0
Resin Migration Allowance...	10%
maximum Allowable Deformity.....	3%

Design the CIPP wall thickness to withstand all imposed loads, including live loads and if applicable, hydrostatic pressure. Include considerations for ring bending, deflection, combined loading buckling and ovality in the design of the CIPP

00412.03 References - This section incorporates by reference the latest revisions of the following documents. They are part of this section insofar as specified and modified herein. In case of conflict between the requirements of this Section and the listed documents, the requirements of this Section shall prevail.

<u>Reference</u>	<u>Title</u>
ASTM D543	Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents

ASTM D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

ASTM D903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

ASTM D1600 Standard Terminology for Abbreviated Terms Relating to Plastics

ASTM F1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin-Impregnated Tube

ASTM F1743 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled- in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)

00412.06 Licensing and Certification

1. The Contractor or subcontractor installing the CIPP shall have a current license agreement with the product Manufacturer or Assembler.
2. Individuals installing the CIPP shall be certified by the product Manufacturer or Assembler.
3. Lining installation shall be in accordance with the requirements of the product Manufacturer or Assembler and as directed by their Technical Representative. This includes the correction of defective work.

Materials

00412.10 Replace this subsection in its entirety with the following:

00412.10 Tube: Contractor shall furnish CIPP tubing that meets the following requirements:

- (a) The CIPP shall consist of one or more layers of flexible needled felt or an equivalent non-woven material, or a combination of non-woven and woven materials capable of carrying resin, withstanding installation pressures.
- (b) The CIPP shall be continuous in length and the wall thickness shall be uniform. No overlapping sections shall be allowed in the length of the liner. No overlapping sections shall be allowed in the circumference of the liner when felt liner is used.
- (c) The CIPP will be capable of conforming to offset joints, bells, and disfigured pipe sections. It shall be able to stretch to fit irregular pipe sections and negotiate bends.
- (d) The CIPP resin shall be compatible with the liner fabric, other rehabilitation systems it may contact, and the host pipe materials.
- (e) Seams in the CIPP shall be stronger than the non-seamed felt.
- (f) The CIPP shall be marked at regular intervals along its entire length, not to exceed 5 feet. Markings shall include Manufacturer's or Assembler's name or identifying

symbol.

- (g) The CIPP liner shall be manufactured with materials from a consistent supplier. All materials of similar type shall be from a single source for the entire project.
- (h) The CIPP shall be fabricated to a size that, when installed, will tightly fit the internal circumference and length of the original pipe.
 - Allowance shall be made for circumferential stretching during the installation process.
 - The hydraulic capacity of the CIPP shall be greater than or equal to the hydraulic capacity of the original host pipe, based on hydraulic calculations with standard engineering roughness coefficients.
- (i) The liner thickness shall be designed based on the engineering formulas listed in ASTM F1216 for **fully deteriorated** pipes, assuming groundwater at the surface, HS-20 live loading, 120 pounds per cubic foot dry soil density, and depth of cover as determined by the adjacent upstream or downstream manhole, whichever is deeper. The thickness shall be sufficient to prevent groundwater from entering the pipe, while maintaining the maximum cross-sectional pipe area possible.
- (j) For liners inserted by the inversion method, the CIPP shall be coated on one side with a translucent waterproof coating of:
 - Polyvinyl chloride (PVC)
 - Polyurethane
 - Polyethylene
- (k) For liners inserted by the pull/winch method, the CIPP shall be coated on one side with a translucent waterproof coating of:
 - Polyvinyl chloride (PVC)
 - Polyurethane
 - Polyethylene
 - Polypropylene
- (l) Subject to these specifications, the following manufacturers or assemblers are acceptable:
 - Gelco Services Inc. (Salem, OR)
 - C.I.P.P. Corporation (Hudson, IA)
 - Perma-Liner Industries, Inc. (Clearwater, FL)
 - LMK Enterprises Inc. (Ottawa, IL)
 - Insituform Technologies, Inc. (Chesterfield, MO)
 - Masterliner Inc. (Hammond, LA)
 - Or approved equal.

00412.11 Resin: Delete the second paragraph starting with, “Furnish thermosetting” and replace with the following:

- (a) A general purpose, unsaturated thermosetting, polyester, vinylester, or epoxy resin compatible with the fabric liner material, host pipe material, and other rehabilitation products that the resin may contact.
- (b) Resin shall form no excessive bubbling or wrinkling during lining.
- (c) Resin shall be manufactured with materials from a consistent supplier. All materials of similar type shall be from a single source for the entire project.
- (d) The resin shall have no fillers added for the sole purpose of increasing the resin volume.

00412.12 Liner Properties: - Comply with this subsection of the standards.

Labor

00412.30 Personnel Qualifications: - Replace this subsection with the following:

Qualifications: - Product, Manufacturer/Assembler and Installer Qualification Requirements:

1. The Manufacturer: Company specializing in manufacturing the products in this section shall have a minimum of 3 years' experience or otherwise allowed prior to bid
2. The Contractor shall have a minimum of 5 years recent experience in CIPP pipe rehabilitation Contractor shall have experience with projects of similar size and complexity as this project, minimum of 50,000 feet of installed CIPP product.
3. Certification showing that the Installer is currently licensed by the manufacturer of the CIPP product system to be used on the project.

Construction

00412.40 Replace this subsection in its entirety with the following:

00412.40 General: Handle and store all liner material to ensure that the material is not torn, cut, exposed to direct sunlight or otherwise damaged. Before installing the liner, verify its condition with the Engineer. If any part of the liner material becomes torn, cut or damaged before or during insertion, repair or replace it at no additional cost to the City beforeproceeding further.

(a) Make all necessary provisions to ensure service conditions and structural conditions of host pipe are suitable for installation and warranty of the liner. Provisions shall include, but are not limited to temporary storm sewer bypassing, correction of structural, and sealing of active infiltration through pressure grouting.

(b) Bypass Pumping:

1. The Contractor shall provide bypass pumping and/or diversion for acceptable completion of the liner installation. Bypass pumping shall consist of furnishing, installing, and maintain all power, primary pumps, appurtenances and bypass piping required to maintain existing flows. No flow that will negatively affect the liner shall be allowed in pipe during CIPP installation.

2. Bypass pumping shall be done in such a manner as to not damage private or public property, or create a nuisance or public menace. The pumped storm water shall be in an enclosed hose or pipe that is adequately protected from traffic, and shall be redirected into the downstream storm drain system along the curb line. All bypass piping shall have traffic rated fully enclosed ramps specifically designed for this type installation across NE Cedar Street.
3. The Contractor shall take all necessary precautions to insure that no private residences or properties are subjected to receiving any of the bypassed storm water. After the work is completed, flow shall be restored to normal.

(c) Cleaning and Inspection of Existing Storm Sewer

The Contractor shall be responsible for cleaning, inspecting, confirming the inside diameter and determining the condition of each manhole-to-manhole segment to be lined. The cleaning process shall include the removal and disposal of any and all obstructions/materials regardless of composition. A television inspection witnessed by Owners Representative shall be performed by the Contractor after the storm sewer cleaning operation. The television inspection shall be completed in the same direction each time and shall be done with a CCTV color camera recoded in DVD format. A copy of the television inspection video discs from all televising operations shall be provided to the City for review prior to the liner installation. Installation of the new liner shall commence within 48 hours of the final cleaning for each section of pipe from manhole to manhole. Installations delayed beyond the 48 hour period will require Contractor to clean the interior with a pressure washing operation again if in the opinion of the Owner there may be additional debris present. Television inspection will not be required during the subsequent cleanings unless excessive debris in the opinion of the Owner are found in the downstream manhole for each section.

(d) Manholes

Protect all manholes to withstand forces generated by the equipment while installing the liner.

(e) Pipeline Deficiencies

The City has determined the invert of each pipe has deteriorated over time and may eventually result in collapse of the pipe. Contractor is responsible for installation of the CIPP within the existing conduit in its current condition. Following completion of new CCTV efforts by the Contractor, Contractor shall inform the City if the existing condition of the pipe invert is not suitable for installation of the CIPP and should be grouted.

00412.41 Installation: Replace this subsection in its entirety with the following:

00412.41 Installation: - Install CIPP according to ASTM F1216, ASTM 1743 and the manufacturer's recommendations.

(a) Resin Impregnation

1. The uncured resin in the original containers and the unimpregnated fiberfelt tube shall be impregnated by vacuum or other means prior to installation. The materials and 'wet-out' procedure shall be subject to inspection by the Owner. A resin and catalyst system that are compatible with the requirements of the method shall be used.
2. The impregnated liner bag shall be transported to and stored at the site in such a manner that it will not be damaged, exposed to direct sunlight, or result in any public safety hazard. The impregnated liner bag shall be kept cool during shipment and storage. All materials shall be subject to inspection and review prior to installation
3. Use a volume of resin sufficient to fill all voids in the tube material at nominal thickness and diameter. Volume should be adjusted by adding excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints of the host pipe, per Manufacturer's or Assembler's recommendations.
4. The resin impregnated tube shall be stored in such a manner that it will not be damaged, exposed to direct sunlight, exposed to any curing environment, or result in a public safety hazard. All materials shall be subject to inspection and review prior to installation.

(b) Liner Installation

1. Inversion Method:
 - a. The impregnated tube shall be inserted through an existing manhole or other access point by means of the Manufacturer's or Assembler's recommended installation process and in accordance with ASTM F1216. The application of a hydrostatic head, compressed air, or other means shall fully extend the liner to the next designated manhole or termination point and inflate and firmly adhere the liner to the pipe wall.
 - b. The rate of the liner installation shall not exceed the maximum rate recommended by the manufacturer. This installed rate shall be identified in the submittal of materials as provide in Section 00412.01.
2. When inversion is by hydrostatic head, the Contractor shall use methods which control the installation rate, accounting for the increase in hydrostatic head in

pipes which have significant elevation change.

3. Pull/Winch Method

- a. The impregnated tube shall be pulled into place in accordance with ASTM F1743 within the host pipe with the aid of a power winch power winch that for felt tubes is equipped with a device to monitor the force and prevent excessive tension and tube elongation.
- b. The maximum allowable longitudinal elongation, or stretch, of the material shall be one (1) percent. The longitudinal stretch of the tube shall be gauged by comparing marker on the fully inserted tube to the actual length of pipe being rehabilitated.
- c. The Contractor shall use a flexible and impermeable calibration hose to inflate the tube. The calibration hose may or may not remain in the complete installation. Any dry tube or inflation hose material that enters the existing pipe that has not been previously vacuum impregnated with resin cannot be included in the structural wall of the CIPP. Hose materials remaining in the installation shall be compatible with the resin system used, shall bond permanently with the tube, and shall be translucent to facilitate post-installation inspection. Hose materials that are to be removed after curing shall be of non-bondable material.

(c) Curing – Hot Water Method

1. Water

- a. After placement of the liner is complete, provide a suitable heat source the Manufacturer's or Assembler's recommendations to raise the temperature uniformly above the temperature required to affect a resin cure.
- b. The heat source shall be fitted with continuous monitoring thermocouples to measure and record the temperature of the incoming and outgoing water supply. Water temperature during the cure period shall meet the requirements of the resin Manufacturer or Assembler as measured and recorded at the heat source inflow and outflow return lines. The Contractor shall provide an additional continuous monitoring thermocouple placed between the impregnated felt tub and the pipe invert at the remote manhole to determine the temperature during the cure. The temperature during the cure shall not be less than 130 degrees F at the boundary between the pipe wall and the liner unless otherwise directed differently because of the resin system used.
- c. Provide standby equipment to maintain the heat source supply. The temperature during the cure shall not be less than 130 degrees Fahrenheit at the boundary between the pipe wall and the liner unless otherwise directed by the Manufacturer or Assembler to meet resin system requirements.
- d. The initial cure shall be deemed to be completed when inspection of the exposed portions of the liner appear hard and sound and the remote temperature sensors

indicate than an exotherm reaction has occurred. The cure period shall be of duration recommended by the resin manufacturer during which time the recirculation of the water and/or air and cycling of the heat exchanger continuously maintain the required temperature.

- e. Temperature shall be maintained during the curing period as recommended by the resin Manufacturer or Assembler, and shall follow the healing schedule supplied by the Manufacturer or Assembler.

(d) Cool Down

1. The hardened liner shall be cooled to a temperature below 100 degrees F before relieving the static head or pressure in the lined pipe and returning normal flow back in the system.
2. Care shall be taken to ensure that a vacuum is not induced which could damage the new CIPP during the release of head on the new CIPP.

(e) Sealing at the Storm Sewer Main and Manholes.

After the cool down period is complete perform final trimming and sealing of the liner at access structures. Provide a watertight seal between the CIPP and the host pipe at each manhole. Trim the finished ends of the liner to within one inch of manhole wall. Provide a smooth transition between the existing structure channel invert and the liner using a Hydrophilic joint seal around pipe penetrations in manhole wall. Swellseal® 8F by De Neef Construction Chemicals, Insignia® Hydrophilic End Seal by LMK Technologies or approved equal.

1. Care shall be taken to ensure that a vacuum is not induced which could damage the new CIPP during the release of head on the new CIPP.
2. Seal all holes and voids in manhole walls immediately surrounding the new liner with a hydrophilic rubber joint seal and the approved chemical grout identified in 00412.15 and 00412.40. Contractor shall verify with the CIPP manufacturer the mixture applied is compatible with the liner/resin system utilized. No water shall be able to migrate between the CIPP and the host pipe, otherwise the CIPP shall be considered defective and shall be repaired or replaced at the Contractor's expense.

- (f) A data logger shall continuously record temperature, pressure and time during heating, cure and cool down at the liner insertion, termination and intermediate points from the installed thermocouple. Temperature and pressure versus time shall be plotted on a line graph and provided to the Engineer for each lining.

00412.42 Service Line Reconnection: - Comply with this subsection of the standards.

00412.70 General - Comply with this subsection of the standards.

00412.71 Material Sampling and Testing – Replace this subsection in its entirety with the following:

00412.71 Material Sampling and Testing: - This section contains references to ASTM F1743 (*"The Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)"*). In case of conflict between the requirements of this section and those of ASTM F1743, the requirements of this section shall prevail.

(a) Material Testing:

1. All material testing shall be performed by a registered independent, third-party laboratory in accordance with the applicable ASTM test methods to confirm compliance with the requirements of these specifications.
2. The Contractor shall provide certified test results of the short term properties of the cured CIPP lining material from the actual installed liner as a minimum on one location per each liner insertion setup.
3. The cured CIPP liner shall be sampled and tested for flexural strength and flexural modulus (short term). Ultrasonic testing of wall thickness will not be approved as an acceptable alternative. Flexural strength and modulus shall be tested in accordance with the requirements of ASTM D790. The liner shall be in compliance with the physical properties of 00412.13. A certificate of compliance shall be provided for long term flexural modulus.
4. Minimum chemical resistance requirements shall be as stated in ASTM F1216, Section X2. Chemical solutions include Tap Water (pH 6-9), Nitric acid, Phosphoric acid, Sulfuric acid, Gasoline, Vegetable oil, Detergent and Soap at concentrations identified in Table X2.1.

(b) Field Testing;

1. Visual inspection of the CIPP shall be in accordance with ASTM F1743, Section 8.6.
2. After completion of all CIPP insertions, service reconnections, and finish work at the manholes the sewer shall be video recorded with Owner Representative witnessing and a copy of the tape provided to the Owner.
 - a. Repair CIPP per the Manufacturer's or Assembler's recommendations if defects, including infiltration of groundwater is observed.
 - b. All service connections shall be accounted for and be unobstructed.

00412.72 - Comply with this subsection of the standards.

00412.75 Warranty: - Replace this subsection in its entirety with the following:

00412.75 Warranty: - The Contractor shall warrant each pipe lined with the specified product against defects in materials, surface preparation, lining application, and workmanship for a period of 24 months from the date of final acceptance of the project.

(a) The Contractor shall, within one month of written notice thereof, repair defects in materials or workmanship that may develop during said 24-month period. Defects shall be defined as:

evidence of visible leakage of groundwater through the CIPP system, delamination of any portion of the CIPP system as visible from CCTV inspection, or separation of any part of the CIPP system from the host pipe to the extent that the CIPP system inside diameter in the separated area is 95 percent or less of the completed CIPP system inside diameter. The Contractor shall also repair any damage to other work, damage to buildings, houses or environmental damage caused by the backup of the storm runoff because of the failure of the lining system; or repairing of the same.

(b) Repairs shall include removal of the existing liner and re-lining if possible, or excavation and replacement of the section of pipe where the defect occurs.

00412.80 Measurement: - Comply with this subsection of the standards.

Payment

00412.90 Payment: Modify the following pay items

PAY ITEM	UNIT OF MEASURE
(a) 48-Inch Diameter CIPP Liner	Linear Foot
(b) 54-inch Diameter CIPP Liner	Linear Foot
(c) Service Line Reconnections	Each

00412.91 Payment Deduction -

Payment will be based upon the Contract Unity Price and test results acquired in accordance with 00412.71(d). Should test results fail to meet the specified design parameters for thickness and initial modulus of elasticity, yet comply with Conformance Standards in 00412.71 (e), a payment deduction will be made according to the Payment Formula below.

$$\text{Payment} = \text{Length Installed} \times \text{Contract Unit Price} \times (\text{actual safety Factor/Design Safety Factor})$$

The Actual Safety Factor will be calculated using the governing design equations (i.e. equations yielding the greatest minimum thickness) from ASTM F1216-Appendix X1. The measured thickness, measured flexural strength and measured initial flexural modulus will be substituted for their respective design values while the remaining parameters specified 00412.02 are held constant. The Design Safety Factor is 2.0.

No additional payment is made for CIPP exceeding required design safety factor. The CIPP will be considered Defective Work if the actual safety factor is below 1.0. The Owner reserves the right to require the Contractor to remove and replace it, at its sole discretion.

SECTION 00413 – GLASS REINFORCED PLASTIC (GRP) CURED-IN-PLACE PIPE (CIPP)

Section 00413, which is not a Standard Specification, is included in this Project by the Project Special Provision.

Description

00413.00 Scope: - This work consists of rehabilitating existing pipes by furnishing and installing pipe liners by cured-in-place (CIPP) lining methods as shown.

Contractor shall provide and install a resin impregnated glass reinforced material tube with styrene blocking inner and outer foils and a wearing surface of inner pure resin layer in all sewers identified for cured-in-place-pipe (CIPP) lining in accordance with American Society for Testing and Materials (ASTM) F2019 for the pulled-in-place and UV-cured installation method.

The existing pipe is a spiral wound aluminized steel pipe with a severely deteriorated invert that is currently exposed to the potential intrusion of exterior groundwater which has not been verified. The Contractor is responsible for insuring the CIPP product can be properly installed under conditions that may not be entirely dry if after diverting all upstream flows, groundwater is still present in the host pipe.

00413.01 Submittals: - Contractor shall submit the following,

1. Catalog data and manufacturer's technical data showing complete information on material composition, physical properties, depth of installation and dimensions of system components of the tube and resin system. Include manufacturer's recommendation for handling, storage, insertion, curing, trimming, finishing and repair of damaged liner.
2. Certification showing the Contractor is currently certified or licensed by the appropriate licensor to perform CIPP installation. Certification shall be given to Owner before any materials are delivered to the job site.
3. Certification from the manufacture that the materials meet the requirements of these specifications and intended use. Certification of test results confirming than the liner and resin meet the minimum chemical resistance requirement according to ASTM F2019.
4. Flow diversion plan for the mainline. This will include a specific plan for each individual manhole section which identifies location of bypass pipe, method of discharging against the curblines where shown on the plans, crossing street inter-section, pumping capacity and location of equipment within the street.

5. A letter identifying the cleaning methods Contractor plans to employ to remove sediment, debris, grease, scale, encrustation, mineral deposits and roots through- out the gravity pipe to be lined and in the structures to be repaired. The letter shall include a detailed explanation of the cleaning process and a schedule of activities.
6. Structural calculation for each CIPP liner size with recommended thicknesses based upon minimum physical properties in Table 1 of ASTM F2019. Values greater than this for flexural strength and flexural modulus may be used at the discretion of the Contractor. Verification of final thickness and physical properties will be determined in accordance with 00413.71. Consequences for failure to reach the submittal strength are outlined in 00413.91.
7. CCTV Inspection reports as specified in subsection 00413.40.
8. Manufacturer’s recommended installation procedures.
9. Manufacturer’s or Assembler’s certification that the liner materials and system are in compliance with the specifications, codes, and standards referenced herein.
10. Testing for chemical resistance shall be performed on a previously prepared sample of the finished product, equivalent to that proposed for this project. A certified affidavit, signed by an officer of the company, shall be provided stating that the resin the tests apply to and the resin submitted for this project are the same.
11. CIPP samples in accordance with 00412.71.
12. CIPP liner terminations.
13. Material safety data sheets for all hazardous chemicals used or expected to be on-site.

00413.02 Design Parameters: - Contractor shall furnish CIPP tubing that meets the following design criteria.

Follow the design considerations of ASTM F 2019, ASTM F1216, Appendix X1 and these specifications. All material properties used in design calculations shall be long-term (time-corrected) values.

<u>Condition</u>	<u>Parameter</u>
Service Life	Greater than 50 year
Pipe Condition	Fully deteriorated
 <u>Load Conditions</u>	
Soil	120-pounds/cf
Traffic	H20-Highway
Groundwater Elevation	At surface (Depth per plan)
Design Thickness.....	Cured-in-place fiberglass lining shall comply with

	ASTM F 1216 or the intent thereof as determined by the Engineer, minimum finished liner thickness as defined by design calculation.
Pipe Ovality.....	Per Contractor's review of CCTV Inspection (assumed 2%)
Modulus of Soil Reaction...	1000 psi
Enhancement Factor.....	7
Long-term Flexural Strength..	70% of initial (ASTMD 790)
Modulus of Elasticity	70% of initial (ASTM D 790)
Maximum Deflection	5%
Minimum Factor of Safety...	2.0
Resin Migration Allowance...	10% maximum
Allowable Deformity.....	3%

Design the CIPP wall thickness to withstand all imposed loads, including live loads and if applicable, hydrostatic pressure. Include considerations for ring bending, deflection, combined loading buckling and ovality in the design of the CIPP.

00413.03 References - This section incorporates by reference the latest revisions of the following documents. They are part of this section insofar as specified and modified herein. In case of conflict between the requirements of this Section and the listed documents, the requirements of this Section shall prevail.

Reference	Title
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ASTM D543	Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
ASTM D790	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D903	Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
ASTM D1600	Standard Terminology for Abbreviated Terms Relating to Plastics
ASTM F1216	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin-Impregnated Tube
ASTM F2019	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled- in-Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP).
ASTM D3039	Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials

00413.06 Licensing and Certification

1. The Contractor or subcontractor installing the CIPP shall have a current certification or license agreement with the product Manufacturer or Assembler.
2. Individuals installing the CIPP shall be certified by the product Manufacturer or Assembler.
3. Lining installation shall be in accordance with the requirements of the product Manufacturer or Assembler and as directed by their Technical Representative. This includes the correction of defective work.

Materials

00413.10 Tube: - Contractor shall furnish CIPP tubing that meets the following requirements:

- (a) The tube material shall meet the requirements of ASTM F2019.
- (b) The CIPP shall be continuous in length and the wall thickness shall be uniform. No overlapping sections shall be allowed in the length of the liner. Tubing: The tubing material shall be free from tears, holes, cuts, foreign materials and other surface defects.
- (c) The CIPP shall be capable of conforming to offset joints, bells and disfigured pipe sections. It shall be able to stretch to fit irregular pipe sections and negotiate bends.
- (d) Seams in the CIPP shall be stronger than the non-seamed material.
- (e) The CIPP shall be marked at regular intervals along its entire length, not to exceed 5 feet. Markings shall include Manufacturer's or Assembler's name or identifying symbol.
- (f) The CIPP liner shall be manufactured with materials from a consistent supplier. All materials of similar type shall be from a single source for the entire project.
- (g) The CIPP shall be fabricated to a size that, when installed, will tightly fit the internal circumference and length of the original pipe.
 - a. Allowance shall be made for circumferential stretching during the installation process.
 - b. The hydraulic capacity of the CIPP shall be greater than or equal to the hydraulic capacity of the original host pipe, based on hydraulic calculations with standard engineering roughness coefficients.
- (h) The liner thickness shall be designed based on the engineering formulas listed in ASTM F1216 for **fully deteriorated** pipes, assuming groundwater at the surface, HS-20 live loading, 120 pounds per cubic foot dry soil density, and depth of cover as determined by the adjacent upstream or downstream manhole, whichever is deeper. The thickness shall be sufficient to prevent groundwater from entering the pipe, while maintaining the maximum cross-sectional pipe area possible.

00413.11 Resin: UV Light Cured Fiberglass pipe liner shall meet the requirements of ASTM F2019 and compatible with the host pipe material and other rehabilitation products that the resin may contract.

- (a) Resin shall form no excessive bubbling or wrinkling during lining.

(b) Resin shall be manufactured with materials from a consistent supplier. All materials of similar type shall be from a single source for the entire project.

(c) The resin shall have no fillers added for the sole purpose of increasing the resin volume.

00413.12 Liner Properties: - Furnish liners that have the minimum physical properties stated in ASTM F2019 and ASTM D3039, and are also resistant to chemical properties typically found in municipal sanitary sewer flows. Fabricate the liner to a size that when cured, will tightly fit the pipe being rehabilitated. The finished liner system shall be homogeneous across the wall thickness containing no intermediate or encapsulated elastomeric layers.

Characteristic	Test Method	Test Value
Initial Flexural Strength	ASTM D-790	6,500 PSI
Initial Flexural Modulus of Elasticity	ASTM D-790	725,000 PSI
Tensile Strength	ASTM D-3039	9,000 PSI

00413.13 Pipe Liner End Seal: - The hydrophilic waterstop end seals completely seal the UV –CIPP liner from any annular space leakage between the UV-CIPP liner and the host pipe. Hydrophilic end seals must be one of the following:

1. Bands that are 20 mm wide and 5 mm high with a double bump on one side and flat on the other side. Product shall be Hydrotite Style DS-0520-351 or approved equal.
2. Tubular hydrophilic sleeve, 2 mm in thickness and 3.5 inches in length with a mechanical fastener with worm gear expander. Product will be Insignia End Seal by LMK Technologies, or approved equal.

Labor

00413.30 Personnel Qualifications: - Product, Manufacturer/Assembler and Installer Qualification Requirements:

1. The Manufacturer: Company specializing in manufacturing the products in this section shall have a minimum of 3 years' experience or otherwise allowed prior to bid acceptance.
2. The Contractor shall have a minimum of 5 years recent experience in CIPP pipe rehabilitation. Contractor shall have experience with projects of similar size and complexity as this project, minimum of 50,000 feet of installed UV CIPP product.
3. Certification showing that the Installer is currently licensed or certified by the manufacturer of the CIPP product system to be used on the project.

Construction

00413.40 General: Handle and store all liner material to ensure that the material is not torn, cut, exposed to direct sunlight or otherwise damaged. Before installing the liner, verify its condition with the Engineer. If any part of the liner material becomes torn, cut or damaged before or during insertion, repair or replace it at no additional cost to the City before proceeding further.

(a) Make all necessary provisions to ensure service conditions and structural conditions of host pipe are suitable for installation and warranty of the liner. Provisions shall include, but are not limited to temporary storm sewer bypassing, correction of structural, and sealing of active infiltration through pressure grouting.

(b) Bypass Pumping:

1. The Contractor shall provide bypass pumping and/or diversion for acceptable completion of the liner installation. Bypass pumping shall consist of furnishing, installing, and maintain all power, primary pumps, appurtenances and bypass piping required to maintain existing flows. No flow that will negatively affect the liner shall be allowed in pipe during CIPP installation.
2. Bypass pumping shall be done in such a manner as to not damage private or public property, or create a nuisance or public menace. The pumped storm water shall be in an enclosed hose or pipe that is adequately protected from traffic, and shall be redirected into the downstream storm drain system along the curb line. All bypass piping on shall have traffic rated fully enclosed ramps specifically designed for this type installation across NE Cedar Street.
3. The Contractor shall take all necessary precautions to insure that no private residences or properties are subjected to receiving any of the bypassed storm water. After the work is completed, flow shall be restored to normal.

(c) Cleaning and Inspection of Existing Storm Sewer

The Contractor shall be responsible for cleaning, inspecting, confirming the inside diameter and determining the condition of each manhole-to-manhole segment to be lined. The cleaning process shall include the removal and disposal of any and all obstructions/materials regardless of composition. A television inspection witnessed by Owners Representative shall be performed by the Contractor after the storm sewer cleaning operation. The television inspection shall be completed in the same direction each time and shall be done with a CCTV color camera recoded in DVD format. A copy of the television inspection video discs from all televising operations shall be provided to the City for review prior to the liner installation. Installation of the new liner shall commence within 48 hours of the final cleaning for each section of pipe from manhole to manhole. Installations delayed beyond the 48 hour period will require Contractor to clean the interior with a pressure washing operation again if in the opinion of the Owner

there may be additional debris present. Television inspection will not be required during the subsequent cleanings unless excessive debris in the opinion of the Owner are found in the downstream manhole for each section.

(d) Manholes

Protect all manholes to withstand forces generated by the equipment while installing the liner.

(e) Pipeline Deficiencies

The City has determined the invert of each pipe has deteriorated over time and may eventually result in collapse of the pipe. Contractor is responsible for installation of the CIPP within the existing conduit in its current condition. Following completion of new CCTV efforts by the Contractor, Contractor shall inform the City if the existing condition of the pipe invert is not suitable for installation of the CIPP and should be grouted.

00413.41 Installation: CIPP installation shall be in accordance with ASTM F2019 for UV light Curing Installations. Installation shall be in accordance with manufacturer's recommendations, which shall be available for verification by the Engineer.

- (a)** Curing schedules shall be strictly adhered to, per manufacturer requirements.
- (b)** The CIPP liner shall make a tight fitting seal with the existing pipe(s) in the manholes. If the CIPP liner fails to make a tight seal, the Contractor shall apply a seal at that point using a sealant or caulking material that is compatible with CIPP materials, watertight, flexible and impervious to hydrogen sulfide. The top half of the CIPP through a manhole shall be neatly cut off and not broken or sheared off. The channel in the manhole shall be a smooth continuation of the pipe(s) and shall be merged with other lines or channels. Void space between liner and channel wall shall be filled with non-shrink grout and sealed with sealant. CIPP and the existing pipe in the manhole must be sealed before proceeding on to the next manhole section and all manholes shall be individually inspected for CIPP cut-offs and sealing works. Liner shall be cut off at the pipes and all liner removed within intermediate manholes with deflection angles greater than 45 degrees.
- (c)** The finished CIPP shall be continuous over the entire length of an insertion run between two manholes and be free from visual defects such as foreign inclusions, dry spots, pinholes, and delamination. If in the opinion of the Engineer, a portion of the liner is inadequate, the Contractor shall correct the defect(s) to the satisfaction of the Engineer.
- (d)** Contractor shall terminate and seal end of CIPP liner to structures using one of the following approved methods:
 - 1. Expanding Hydrophilic Rubber Joint Seal
 - 2. CIPP manufacturer approved epoxy
- (e)** A pre-liner will be allowed without prior approval from the Owner.
- (f)** The liner shall be pulled into place via the manufacturer's instructions.

- (g) Prior to liner installation a tough, protective sliding foil shall be installed over the deteriorated CMP invert.
- (h) The liner shall be inflated with air before curing with Ultra Violet light according to the manufacturer's specifications.
- (i) The reconstruction tube will be impregnated to meet manufacturer specifications with UV Curing Resins in the manufacturing facility prior to installation. The Contractor shall allow the Owner to inspect the materials before installation.
- (j) The Pre Impregnated UV Light Fiberglass Liner shall be inserted through the existing manhole or other approved access by means of a pull in place process utilizing a winch which will fully extend it to the next designated manhole or termination point. The Fiberglass Liner shall be inflated in place slightly with air to the manufacturer's specification for installing the UV Chain. Liner cure schedule shall be adhered to per manufacturer's specifications. The Fiberglass liner will then be inspected with a camera mounted on the UV Chain as it is pulled to the end of the liner. After inspection and complete inflation to manufacturer's specifications, the UV light bulbs will be turned on. The curing will commence at a rate specified by the manufacturer according to the total dimensions of the liner.
- (k) As the liner is curing, the UV Curing System shall record all curing data in DVD format for the viewing of the Owner.
 - 1. Date and Time
 - 2. Length of Liner
 - 3. Location of Installation
 - 4. Curing Speed
 - 5. Light Sources and Wattage
 - 6. Inner Air Pressure
- (l) Initial cure shall be deemed to be complete when the UV Chain arrives at the initial entry point of insertion.

00413.42 Service Line Reconnection: - Reinstate active service laterals using an internal cutter. Open hole to a minimum of 95%, but do not exceed 105% of the service lateral diameter. Make each connection free from burrs or projections, and with a smooth and crack-free edge.

Finishing, Cleaning Up and Testing

00413.70 General: - Remove temporary dams or filtration measures after work is complete and pipe is cleaned and restored

00413.71 Material Sampling and Testing: - This section contains references to ASTM F2019 (*"The Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)"*). In case of conflict between the requirements of this section and those of ASTM F2019, the requirements of this section shall prevail.

(a) CIPP Liner Samples:

- 1. Sample Preparation: The Contractor shall prepare samples of the installed CIPP liner for subsequent testing of its physical properties. Contractor shall cut two samples

of as yet uncured for each diameter of liner being installed. Contractor shall place the uncured liner between two sheets of plexiglas and cause the liner to cure. The samples shall be identified by: Date, Project Name, Size, Thickness and Resin. Contractor shall split the liner samples with the construction manager who will keep one sample for future reference.

2. **Sample Testing:** The cured sample shall be tested by an independent testing laboratory, as recommended by the CIPP liner manufacturer and approved by Project Manager, for the bending and tensile properties, as per ASTM D790 and ASTM D638 respectively. Chain of custody documentation shall be required for the samples tracing their movement from the field to the testing lab. Final payment will not be made until test results are received. The Contractor shall be responsible for any deviation from the specified physical properties and those evaluated through testing. Failure to meet the specified physical properties may result in the CIPP liner being considered defective work that will be handled in accordance with the Contract. The Contractor shall be responsible for all costs associated with the testing of the liner physical properties.

(b) Wall Thickness: The method of obtaining the CIPP wall thickness measurements shall be in a manner according to ASTM F2019 7.1.4 and consistent with 8.1.2 of Specifications D5813. The average thickness shall be calculated using all measured values and shall meet or exceed minimum design thickness as agreed between purchaser and seller. The minimum wall thickness at any point shall not be less than 87.5 % of the average specified design thickness as agreed between purchaser and seller.

(c) CIPP Liner Handling: Contractor shall exercise adequate care during transportation, handling and installation to ensure that the CIPP material is not torn, cut, or otherwise damaged. If any part or parts of the CIPP material becomes torn, cut or otherwise damaged before or during insertion, it shall be repaired or replaced in accordance with the manufacturer's recommendations and approval by Owner before proceeding further and at the Contractor's expense.

(d) Conformance Standards and Remedies: The finished product must meet or exceed the following:

1. No radially positioned (perpendicular to flow) wrinkles, fins or other discontinuities in the lower third of the pipe which exceed ½ inches in height, or more than 3 percent of the host pipe inside diameter.
2. No radial wrinkles, fins or other discontinuities in the upper two-thirds of the pipe having a height of 5 percent or more of the host pipe inside diameter, unless approved.
3. No leakage through the liner.
4. No separation of the liner from the existing pipe.
5. No delamination of the UV-CIPP layers

6. If an installed liner has unacceptable wrinkles, fins, leakage, delamination, pinholes, soft spots, blisters, failed tests, or other defects, remedy the defect by installing a second liner, removing and re-installing a full-thickness liner, constructing a full pipe replacement, or installing a liner repair as approved.

00413.72 Repairs: - Before making repairs, provide the CIPP liner system manufacturer's recommendations for liner repairs, subject to approval. Repair or replace CIPP liners that have:

- Wrinkles, fins or other discontinuities in the lower one-third of the pipe that are perpendicular to the flow and exceed 1/2 inches in height, or are greater than 3 percent of the host pipe inside diameter.
- Wrinkles, fins or other discontinuities in the upper two-thirds of the pipe that are perpendicular to the flow and are greater than 5 percent of the host pipe inside diameter.
- Blisters or dry spots present.
- Leakage through the liner in excess of ASTM F1216 and ASTM F2019 standards.
- Separation of the liner from the host pipe.
- Delamination of CIPP layers.

00413.75 Warranty - The Contractor shall warrant each pipe lined with the specified product against defects in materials, surface preparation, lining application, and workmanship for a period of 24 months from the date of final acceptance of the project.

- (a) The Contractor shall, within one month of written notice thereof, repair defects in materials or workmanship that may develop during said 24-month period. Defects shall be defined as: evidence of visible leakage of groundwater through the CIPP system, delamination of any portion of the CIPP system as visible from CCTV inspection, or separation of any part of the CIPP system from the host pipe to the extent that the CIPP system inside diameter in the separated area is 95 percent or less of the completed CIPP system inside diameter. The Contractor shall also repair any damage to other work, damage to buildings, houses or environmental damage caused by the backup of the storm runoff because of the failure of the lining system; or repairing of the same.
- (b) Repairs shall include removal of the existing liner and re-lining if possible, or excavation and replacement of the section of pipe where the defect occurs.

Measurement

00413.80 Measurement: - The quantities of installed CIPP liners, of the various kinds, types and sizes will be measured on the length basis. The length will be measured, with no deduction for the structures or fittings, along the pipe flow line from center to center of manholes, inlets, structures, special sections, or the ends of the pipe, whichever is applicable.

The quantities of service line reconnections will be measured on the unit basis, regardless of size.

Payment

00413.90 Payment – The accepted quantities of work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

PAY ITEM	UNIT OF MEASURE
(a) 48-Inch Diameter GRP- CIPP Liner	Linear Foot
(b) 54-inch Diameter GRP- CIPP Liner	Linear Foot
(c) Service Line Reconnections	Each

Payment will be made in full for furnishing and placing all materials, and for furnishing all equipment, labor, dewatering, testing and incidentals necessary to complete the work as specified.

00413.91 Payment Deduction:

Payment will be based upon the Contract Unity Price and test results acquired in accordance with 00413.71(a) and (b). Should test results fail to meet the specified design parameters for thickness and initial modulus of elasticity, yet comply with Conformance Standards in 00413.71 (d), a payment deduction will be made according to the Payment Formula below:

$$\text{Payment} = \text{Length Installed} \times \text{Contract Unit Price} \times (\text{actual safety Factor}/\text{Design Safety Factor})$$

The Actual Safety Factor will be calculated using the governing design equations (i.e. equations yielding the greatest minimum thickness) from ASTM F1216-Appendix X1. The measured thickness, measured flexural strength and measured initial flexural modulus will be substituted for their respective design values while the remaining parameters specified 00413.16 are held constant. The Design Safety Factor is 2.0.

No additional payment is made for CIPP exceeding required design safety factor. The CIPP will be considered Defective Work if the actual safely factor is below 1.0. The Owner reserves the right to require the Contractor to remove and replace it, at its sole discretion.

SECTION 00416 - GEOPOLYMER PIPE LINER

Section 00416, which is not a Standard Specification, is included in this Project by the Project Special Provisions.

DESCRIPTION

00416.10 SCOPE - This item specifies a spin-cast geopolymer pipe (SCGP) to provide for the rehabilitation of existing stormwater pipelines, either structural or protective coating, using an approved structural geopolymer lining system. This Specification covers the general requirements for the referenced specifications, liner manufacturer and installer qualifications, submittal and guaranty guidelines, materials, pre-installation and installation procedures, and testing.

Furnish all labor, materials, equipment and incidentals required to install the monolithic geopolymer stormwater pipe lining system and appurtenances as specified herein. The lining system shall be used to rehabilitate the interior of all designated stormwater pipelines.

The existing pipe is a spiral wound aluminized steel pipe with a severely deteriorated invert that is currently exposed to the potential intrusion of exterior groundwater which has not been verified. The Contractor is responsible for insuring the product can be properly installed under conditions that may not be entirely dry if after diverting all upstream flows, groundwater is still present in the host pipe.

MATERIALS

00416.20 PRODUCT DATA - The Contractor shall submit Manufacturer's product data and installation instructions. Include required substrate preparation, on-site quality assurance recommendations and a list all materials to be used.

00416.21 SUBMITTALS - The Contractor shall submit the following:

- (a) Manufacturer's letter of certification that the product meets or exceeds all technical and packaging requirements.
- (b) Original third-party verification that materials meet physical properties specified for design at 24 hour and 28 day, minimally ASTM C-78, ASTM C-39 or C-109, ASTM C-882, and ASTM C-1090. In addition, Contractor shall submit original third-party verification of test data for ASTM C-666 testing for samples cured 28 days and subjected to 300 cycles.
- (c) Original third-party verification of material formulation via XRF (X-ray Fluorescence) data.
- (d) Manufacturer's certifications that materials have been approved for the installation conditions shown on the Drawings and as specified herein.
- (e) Manufacturer's materials warranty certificate.
- (f) Installer's certified statement from the Manufacturer that they are a certified and/or

licensed installer of the liner.

- (g) Installer's warranty certificate.
- (h) Installer's job history and reference certificate.
- (i) Flow diversion plan for the mainline. This will include a specific plan for each individual manhole section which identifies location of bypass pipe, method of discharging against curblin or other structure, crossing streets, pumping capacity and location of bypass equipment.
- (j) A letter identifying the cleaning methods Contractor plans to employ to remove sediment, mineral deposits or any other type of debris through-out the gravity pipe to be lined. The letter shall include a detailed explanation of the cleaning process and a schedule of activities.
- (k) Structural calculations for each section of pipe (stamped by a Professional Engineer) between manholes with recommended thickness based upon physical properties and third party efforts described in subsections 00418.35 and 00418.36.
- (l) Daily Logs as specified in subsection 00418.71
- (m) Acceptance testing as specified in subsection 00418.73
- (n) Material safety data sheets for all hazardous chemicals used or expected to be on-site.

00416.30 PERSONAL QUALIFICATIONS - The Contractor performing the work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner and shall be an approved installer of the geopolymer lining system as certified and licensed by the Manufacturer.

Contractor shall submit documentation and verifiable references for installation of the proposed lining system in a minimum of 1000 linear feet of large diameter (>36 inch) horizontal pipe.

Contractor shall submit a work plan showing how the work shall be scheduled and coordinated prior to the pre- construction meeting.

DESIGN

00416.35 DESIGN METHODOLOGY - Contractor shall submit liner thickness calculations to the Owner for review. The calculations will be performed by a third party registered Professional Engineer in the State of Oregon. The minimum liner thickness, independent of design, shall be 1.0 inches.

The Contractor submit liner thickness calculations to the Owner for review. The liner thickness shall be calculated using the distributed beam load over a partial ring model with the following equation:

$$t = \sqrt{\frac{0.0744 Q r r^2}{S_F} \frac{N}{c}}$$

Where:

t = Minimum Liner Thickness, inches

Q_t = Total External Load as calculated from ASTM F 1216-09 for fully deteriorated cases for soil and hydraulic loads with the addition of appropriate live load standards as specified, psi

r = Radius of the crown of the pipe, inches

N = Safety Factor

S_F = The Modulus of Rupture or Flexural Strength as determined by ASTM C78, psi

c = Ovality Reduction Factor as defined in ASTM F 1216-09

Design shall include:

Safety Factor (N) = 2.0.

Ovality (Δ), as defined in ASTM F1216-09 assumed to be 2%

Live Load = AASHTO LRFD HS20 or higher based on local conditions.

Soil Density = 120 pcf

Water Table Depth, as measured from the surface = at ground surface

00416.36 GEOPOLYMER PROPERTY VALUES - The geopolymer lining shall conform to Table 1:

Table 1

Geotextile Property	ASTM Test Method	Unit	Minimum Value
Compressive Strength – 1 Day	C-39/C-109	psi	2,500
Compressive Strength – 28 Day	C-39/C-109	psi	8,000
Flexural Strength – 1 Day	C78	psi	750
Flexural Strength – 28 Day	C78	psi	1,250
Tensile Strength – 28 Day	C496	psi	800
Shrinkage	C1090	%	0% at 65% RH

Modulus of Elasticity – 1 day	C469	psi	3,000,000
Modulus of Elasticity – 28 day	C469	psi	5,800,000
Bond Strength – 1 day	C882, Type II	psi	900
Bond Strength – 28 day	C882, Type II	psi	2,500
Freeze Thaw Durability	C666	%	Zero Loss after 300 cycles
Set Time - Initial	C807	Time	< 75 minutes
Set Time - Final	C807	Time	< 120 minutes
Abrasion Resistance	C1138	%	< 3% Loss for 5 cycles at 28 Day Maturity
Rapid Chloride Ion Permeability – 28 days	C1202		Very Low (below 1,000 Coulombs)

The SCGP lining geopolymer mortar shall be composed of at minimum 70% Pozzolanic material selected from the list of: SiO₂, MgO, Al₂O₃, Fe₂O₃ and be verified by third party certified X-ray Fluorescence (XRF) testing.

Particle size of maximum aggregate of 2.38 mm based on 100% of material (except fibers) passing the No.8 Sieve.

00416.37 REERENCES - The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Reference	Title
ASTM C-33	Standard Specification for Concrete Aggregates.
ASTM C-39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
ASTM C-78	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading). (Note: ASTM C293 – Standard Test method for Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading) – Is not a substitute test for the more conservative ASTM C78, ASTM C293 provides flexural strengths significantly higher than ASTM C78 due to relaxed loading conditions which are not appropriate for this type of structural repair).

ASTM C-109	Standard Test method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in Cube Specimens).
ASTM C-172	Standard Practice for Sampling Freshly Mixed Concrete.
ASTM C-267	Standard Test methods for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacing and Polymer Concretes.
ASTM C-469	Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression.
ASTM C-496	Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens.
ASTM C-666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
ASTM C-801	Standard Test Method for Time of Setting of Hydraulic Cement Mortar by Modified Vicat Needle.
ASTM C-882 (Type II or Type V)	Standard Test Method for Bond Strength of Epoxy- Resin Systems Used with Concrete by Slant Shear.
ASTM C-1090	Standard Test Method for measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout.
ASTM C-1138	Standard Test Method for Abrasion Resistance of Concrete (Underwater Method).
ASTM C-1202	Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration.
ASTM F-1216	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin-Impregnated Tube
ASTM F-2414	Standard Practice for Sealing Sewer Manholes Using Chemical Grouting.
ASTM F-2551	Standard Practice for Installing a Protective Cementitious Liner System in Sanitary Sewer Manholes.
ACI 305R-99	Hot Weather Concreting
ACR 306R	Cold Weather Concreting

CONSTRUCTION

00416.60 GENERAL - The Contractor shall carry out their operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform and entry into a confined space.

The Contractor shall be responsible for construction of temporary staging areas to access pipes to be lined. In addition, Contractor shall be responsible to providing water for cleaning or other work items requiring water.

All surfaces, which have been damaged by the Contractor's operations, shall be restored to a condition prior to the beginning of the Contractor's operations at the Contractor's expense. Suitable materials and methods shall be used for such restoration, and the Owner reserves the right to approve both the methods and materials. The restoration of existing property or structures shall be done as promptly as practical and shall not be left until the end of the construction period.

- (a) DELIVERY, STORAGE, AND HANDLING** - The Contractor shall deliver material in Manufacturer's original unopened and undamaged packages. The material shall clearly identify Manufacturer, brand name, contents and stock number on each package. Any packages showing indications of damage that may affect condition of contents shall not be accepted. Contractor shall store material in original packaging under protective cover and protect from damage. All materials shall be stored at temperatures recommended by manufacturer. Contractor shall handle materials in such a manner as to prevent any damage to material.
- (b) EXISTING PIPE CLEANING** - All pipe surfaces to be lined shall be properly cleaned prior to application of the geopolymer lining. All internal debris shall be removed from the existing pipes. Pipes shall be cleaned with hydraulically powered equipment, high-velocity jet cleaners, or mechanically powered equipment. The surface of the pipe to be lined shall be capable of directly receiving the lining material. All materials resulting from the cleaning of the pipe shall be removed prior to application of the geopolymer lining material. All loose or defective concrete or grout, shall be removed to provide an even surface prior to application of the geopolymer lining material.
- (c) PRE-INSPECTION** - The Contractor shall perform a pre-installation television inspection that meets NASSCO PACP requirements. Contractor shall utilize a color video inspection system (CCTV) with data recording capabilities, the entire pipe section to be lined shall be recorded on CD or DVD and two (2) copies produced. The interior of the pipe shall be carefully inspected to determine the location of any conditions, which may prevent the proper installation of the geopolymer liner. A CD, DVD or other digital recording and suitable log shall be submitted to the Owner.

A 360-degree pan-and-tilt view camera shall be used to inspect the pipe upstream. At each connection the operator will stop and turn the camera toward the lateral thereby inspecting the first 8 to 12 inches of the lateral connection. If there remains a doubt as to

whether or not the connection is live, additional “dye and flush” tests shall be performed as necessary.

Contractor shall verify that the pipe is clean and conditions are suitable for installation of the geopolymer liner application. Contractor shall notify Owner if conditions exist that may impact the geopolymer installation.

- (d) PREPARATION AND PRE-LINING REPAIRS** - The Contractor shall seal open joints with the geopolymer lining material prior to the lining of the pipe. The interior walls of the pipe shall be thoroughly cleaned and made free of all foreign materials including but not limited to dirt, grit, roots, grease, sludge and all debris or material that may be attached to the wall or bottom of the pipe.

Active leaks must be sealed prior to the application of the geopolymer lining material. The use of quick-setting mortars or chemical grouts are approved methods for stoppage of active leaks. All products employed in the stoppage of active leaks shall be approved by the Owner and used in accordance with Manufacture’s recommendations. If additional repair procedures must be undertaken by the Contractor to prepare the existing pipe for lining a plan will be submitted for approval to the Owner prior to proceeding.

The Contractor shall accurately field measure and size each individual pipe sections. The Contractor is reminded that each existing stormwater pipes designated to receive the lining may have a different configuration and varying field dimensions.

- (e) BYPASS PUMPING** - The Contractor shall provide bypass pumping as required for acceptable completion of the work. Contractor shall provide for stormwater flow maintenance around the section of pipe designated for rehabilitation. The bypass shall be made by blocking flow at the upstream structure of the pipe to be rehabilitated and diverting or pumping flow into the adjacent existing pipe. If required, the pump and bypass lines shall of adequate capacity and size to handle the anticipated flow.
- (f) PREPARATION OF GEOPOLYMER LINING MATERIAL** - The Contractor shall mix geopolymer material to Manufacture’s recommended water cement ratio. Precision metering of water in a continuous mixing chamber is required to maintain the strict water to material ratio. It is important to maintain the specified water to geopolymer ratio throughout the application process. Uniform water to polymer ratio equates to consistent strength. The ability to closely adjust and monitor the addition of water through the use of a sight tube system is required.

Mixing water temperatures must be determined before blending operations begin. The mixing water temperature must be recorded in the daily operation log at multiple times throughout the day during the installation process. If water temperatures exceed 80°F, then the water should be chilled to 80°F or lower. The ability to provide mixing water at a consistent temperature is a critical aspect of the mixing and installation process. Industrial electronic chillers are available and should be of a suitable capacity to provide the proper amount of water and at the required temperature. High temperature applications, those

greater than 80°F, require the use of water chillers to maintain the water at the proper temperature.

The geopolymer lining material shall be mixed in a high shear mixer. This ensures thorough and uniform mix of water with the material prior to pumping. Begin pumping through an adjustable rotor stator pump for continuous delivery to the appropriate application device. The mixing operations must be performed to minimize the amount of dust released into the surrounding environment.

The Contractor shall use continuous automated mixing and pumping, which minimizes mechanical issues associated with maintaining consistent water/material ratio, mix time, mix speed and dwell time prior to pumping. The automation of dry material feed rate, precise metering of water and pump rate minimizes wet/dry and thick/thin variations resulting in a uniform structure regardless of the pumping distance.

Pumps shall be equipped with multiple sensors that stop the pump if material either runs out or is overflowing. Multiple spin casting units shall be onsite to address any application issues that arise during the lining process. Multiple spin cast nozzles shall be onsite at all times to address any application issues or failure of the nozzle. Multiple nozzles may be required to produce the required depth or finish of the liner surface.

(g) SPIN-CASTING APPLICATION OF GEOPOLYMER LINING MATERIAL - The work consists of spray applying and/or centrifugally spin-casting the specified geopolymer liner material to the inside of the existing pipe. The necessary equipment and application methods to apply the liner materials shall be only as approved by the material Manufacturer and Owner. Material shall be mixed in accordance with Manufacturer's specifications to proper consistency, then the materials shall be pumped through a material plaster hose for delivery to the appropriate application device.

The mortar delivery hose shall be coupled to a high speed rotating applicator device. The rotating casting applicator shall then be positioned within the center, or positioned higher inside the pipe, as required by the diameter the pipe.

The spin cast nozzle must be cable of bidirectional operation. The spin cast nozzle shall be attached to a reciprocating head. The reciprocating head allows the spin cast mechanism and the associated selected nozzle to make multiple passes on the pipe wall in a single pass of the sled assembly.

The highspeed rotating applicator shall then be initialized, and pumping of the material shall commence. As the material begins to be centrifugally cast evenly around the interior of the cavity, the rotating applicator head shall uniformly travel back and forth at or near the center point of the pipe at a controlled frequency conducive to providing a uniform material thickness to the pipe walls. Controlled multiple passes shall then be made until the specified minimum finished thickness is attained. If the procedure is interrupted for any reason, the operator shall arrest the retrieval of the applicator head until flows are recommenced.

Spraying shall be performed by starting at the pipe end and progressing towards the entrance of the pipe. Begin at one side of the pipe, and retract the spin cast assembly at a monitored uniform rate. The retrieval rate of the spin head must be measurable and constant. At the beginning of each pipe segment the retraction device should be calibrated. The calibration process includes setting the digital readout to the desired retrieval rate. Then the retrieval system is laid out and marked to show the distance traveled in two minutes. The rate obtained must be within 5% of the expected speed and can be verified by this process.

The geopolymer liner shall be applied to a specified uniform minimum thickness and can be applied in multiple passes. Material thickness may be verified at any point with a depth gauge and shall be no less than a uniform 1/4- inch. If additional material is required at any level, the rotating applicator head shall be placed at the location and application shall recommence until that area meets the required thickness.

The geopolymer lining material shall be applied to a damp surface, with no flowing water.

- (h) **INTERNAL RECONNECTION OF LATERALS** - Contractor shall reopen any existing active connections after the final geopolymer lining pass. Restored openings shall be neatly and smoothly open and without rough edges. Care must be exercised not to damage the geopolymer lining while reinstating the lateral.
- (i) **GEOPOLYMER LINING TERMINATION AND SEALING** - Contractor shall terminate the geopolymer liner at the end of a pipe by hand applying the geopolymer liner to the outer surface of the pipe.
- (j) **CURING OF GEOPOLYMER LINING** - Contractor shall follow manufacturer's recommended cure schedule in curing of the geopolymer liner. The material must be allowed to cure a minimum of 2 hours or until the material has reached an initial set condition whichever is longer prior to the release of bypass or flow through the pipe. Proper steps shall be taken to ensure the material is cured in a moist and moderate climate. General underground conditions are usually adequate to meet this curing requirement. However, when situations of dry and/or hot conditions are present, the use of a wind barrier and fogging spray may be required. The geopolymer liner should not be placed when the ambient temperature is 37°F and falling or when the temperature is anticipated to fall below 32°F during the next 24 hours.

If necessary, Contractor shall refer to ACI 305R-99 Hot Weather Concreting. Do not apply geopolymer liner material when ambient and surface temperatures are 100°F and above. Shade the material and prepare the surface to keep it cool. To extend working time, mix the material with chilled water. Be certain the substrate is saturated surface dry (SSD) before application begins.

If necessary, Contractor shall refer to ACI 306R-88 Cold Weather Concreting. Low-substrate and ambient temperatures slow down the rate of set and strength development. At temperatures below 45°F, warm the material and monitor substrate temperatures.

Properly ventilate the area when heating. Protect the new liner from freezing in the first 6 hours after application.

- (k) POST GEOPOLYMER LINING APPLICATION INSPECTION** - Contractor shall perform a post-installation television inspection that meets NASSCO PACP requirements. The video will show the completed work, including condition of restored lateral connections. Contractor shall utilize a color video inspection system (CCTV) with data recording capabilities, the entire pipe section to be lined shall be recorded on CD or DVD or other digital method and a copy will be provided to the Owner for approval.
- (l) FINAL CLEANUP** - Upon completion of the work and testing, the Contractor shall clean and restore all areas affected by the work.

QUALITY CONTROL (QC)

00416.70 GENERAL - Contractor shall perform work by the protocol specified including ACI, ASTM, NASSCO, OSHA or other appropriate guidelines. The final results will be of the highest quality possible. All equipment and supplies shall be obtained and maintained in order to produce results of the highest quality while meeting ACI, ASTM, NASSCO, OSHA or other appropriate guidelines.

Personnel shall be fully qualified to perform the tasks assigned to them. Continuing education and monitoring of the performance of personnel and equipment will be completed by the Contractor. Corrective action will be taken immediately if a problem is identified.

All equipment calibrations must be maintained on site by the Contractor and available for inspection upon request of the Owner.

00416.71 DAILY LOGS - A daily log will be filled out completely anytime a work crew is on site. This log includes listing the personnel present at the site, when they arrived and when they left the site. Contractor shall provide data to include, but not limited to, times material was applied and under which atmospheric conditions. The ambient air temperature, the dry powder temperature, the mixing water temperature, and the temperature inside the pipe.

The operating conditions shall also be recorded in the daily logs. Measurements shall include, but are not limited to, the water addition rate taken at the meter tube, the retrieval speed of the retraction system and the pump motor speed recorded at the pump. Any special conditions are to be noted in the daily log.

A copy of all daily logs shall be provided to the Owner.

00416.72 MATERIAL INSPECTIONS - Inspections of the lining products and materials may also be made by the Owner after delivery. The lining products and materials shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though samples may have been accepted as satisfactory at the place of manufacture.

Lining materials rejected after delivery shall be marked for identification and shall be removed and replaced at the Contractor's expense.

00416.73 ACCEPTANCE SAMPLING AND TESTING - The completed liner shall be smooth and free from honeycomb and areas of segregation.

Contractor shall provide an independent third party ACI certified testing agency to conduct and report compressive strength testing of the concrete used in the rehabilitation. Concrete shall provide a minimum compressive strength (ASTM C39 or C-109) of 8,000 psi at 28-days. Additional samples shall be held for retesting at 56 days if necessary.

Testing frequency shall include the first and last day of construction and: (a) the more frequent of once every other day of application or once for every 40,000 pounds of dry geopolymer material applied.

Thickness verification shall be done with mass balance calculations where the amount of material that went in over the surface area is calculated to get an average depth. In addition, small plastic indicator tabs can be attached on the structure to verify the proper thickness is achieved if approved by the Owner. Indicator tabs shall be positioned to be just below the specified thickness and are left in place when sprayed over.

The Owner may request the contractor to remove a test core from the installed liner, at established intervals. This is at the Contractors' expense. The Contractor shall mark the core samples with the date that the liner was installed and the date that the core was removed and the location taken. When requested by the Owner, the liner shall be cored at three different clock positions, and the average thickness measured shall be taken as the actual thickness of the liner. If a sample is not within 90% of the specified minimum thickness and or 90% of the 28-day compressive strength, the liner is considered unacceptable. Submit a proposed method of repair or replacement for review and approval by the Owner. All work required to remedy nonconforming work shall be at the Contractor's expense.

For all instances, where the geopolymer liner is deemed unacceptable, Contractor shall submit a proposed method of repair or replacement for review and approval by the Owner. All work required to remedy nonconforming work shall be at the Contractor's expense.

00416.75 Warranty - The Contractor shall warrant each pipe lined with the specified product against defects in materials, surface preparation, lining application, and workmanship for a period of 24 months from the date of final acceptance of the project.

- (c) The Contractor shall, within one month of written notice thereof, repair defects in materials or workmanship that may develop during said 24-month period. Defects shall be defined as: evidence of visible leakage of groundwater through the SCGP system or separation of any part of the SCGP system from the host pipe to the extent that the SCGP system inside diameter in the separated area is 95 percent or less of the completed SCGP system inside diameter. The Contractor shall also repair any damage to other work, damage to buildings, houses or environmental damage caused by the backup of the storm runoff because of the failure of the lining system; or repairing of the same.

- (d) Repairs shall include removal of the existing liner and re-lining if possible, or excavation and replacement of the section of pipe where the defect occurs.

MEASUREMENT

00416.80 - The accepted quantity of Geopolymer Pipe Liner will be paid for at the Contract unit price per linear foot for each size identified. All measurements shall be subject to verification by the Owner.

The quantities of service line reconnections will be measured on the unit basis, regardless of size.

PAYMENT

00416.90 - Payment for Geopolymer Pipe Liner (SCGP) will be full compensation for access and staging; furnishing, transporting, handling, and placing the materials specified; bypass pumping; for cleaning, preparing, and repairing the existing pipe prior to geopolymer installation; for performing required materials sampling and testing; for performing video inspection of the completed lining; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

- | | |
|-------------------------------|-------------|
| (a) 48-inch Diameter SCGP | Linear Foot |
| (b) 54-Inch Diameter SCGP | Linear Foot |
| (c) Service Line Reconnection | Each |

SECTION 00418 - MONOLITHIC SPRAY APPLIED POLYURETHANE

Section 00418, which is not a Standard Specification, is included in this Project by the Project Special Provisions.

GENERAL

00418.10 Scope This specification covers work, materials and equipment required for protecting and/or rehabilitating concrete, metal and masonry structures by monolithic spray-applied polyurethane coating (MSAP) to eliminate infiltration, provide corrosion protection, repair voids and enhance structural integrity as required. Procedures for surface preparation, cleaning, application and testing are described herein.

Furnish all labor, materials, equipment and incidentals required to install the monolithic stormwater pipe lining system and appurtenances as specified herein. The lining system shall be used to rehabilitate the interior of all designated stormwater pipelines.

The existing pipe is a spiral wound aluminized steel pipe with a severely deteriorated invert that is currently exposed to the potential intrusion of exterior groundwater which has not been verified. The Contractor is responsible for insuring the CIPP product can be properly installed under conditions that may not be entirely dry if after diverting all upstream flows, groundwater is still present in the host pipe.

00418.12 References

- (a) ASTM D638 - Tensile Properties of Plastics.
- (b) ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics.
- (c) ASTM D695 - Compressive Properties of Rigid Plastics
- (d) ASTM D 7234 (Concrete) - Pull-off Strength of Coatings using a Portable ASTM D4541 (Steel) Adhesion Tester
- (e) ASTM D2584 - Volatile Matter Content
- (f) ASTM D2240 - Durometer Hardness, Type D
- (g) ASTM D543 - Resistance of Plastics to Chemical Reagents
- (h) ASTM C109 - Compressive Strength Hydraulic Cement Mortars
- (i) ACI 506.2-77 - Specifications for Materials, Proportioning, and Application of Shotcrete
- (j) ASTM C579 - Compressive Strength of Chemically Setting Silicate and Silica Chemical Resistant Mortars

- (k) ASTM - The published standards of the American Society for Testing and Materials, West Conshohocken, PA.
- (l) SSPC - The published standards of the Society of Protective Coatings, Pittsburg, PA
- (m) ASTM F1216 (Including Appendix XI-X7): Design Parameters for Buried Structures (structural rehabilitation) utilizing the External Buckling Equation for thickness determination.
- (n) ASTM D2990: Test Methods for Tensile, Compressive and Flexural Creep and Creep Rupture in Plastics
- (o) SSPWC 210-2.3.3 - Chemical resistance testing published in the Standard Specifications for Public Works Construction, 1997 edition (otherwise known as "The Greenbook")
- (p) NACE - The published standards of National Association of Corrosion Engineers (NACE Inter- national), Houston, TX

00418.13 Submittals

(a) The following items shall be submitted:

1. Technical data sheet on each product used, including ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications.
2. Safety Data Sheets (SDS) for each product used.
3. Project specific guidelines and recommendations.
4. Applicator Qualifications:
 - a. Manufacturer certification that Applicator has been trained and approved in the handling, mixing and application of the products to be used. Certification letter shall be dated within six months of bid date.
 - b. The Manufacturer shall provide four (4) references which demonstrate previous successful projects completed for the specified structural protective coating system or comparable, during the last two (2) years.
 - c. Certification that the equipment to be used for applying the products has been manufactured or approved by the protective coating manufacturer and Applicator personnel have been trained and certified for proper use of the equipment. Certification letter shall be dated within six months of bid date.

- d. Proof of any necessary federal, state or local permits or licenses necessary for the project.

5. Structural Design:

- a. Third party testing verifying the short term Modulus of Elasticity used on this project, minimum of 735,000 psi.
- b. Third party testing verifying Flexural Strength used on this project, minimum 14,000psi.
- c. Third party testing verifying long term Flexural Modulus of Elasticity, minimum of 529,000 psi. This third party testing will verify the long term reduction factor (Creep Analysis) of a minimum of 50%. This long term reduction factor verification shall be conducted utilizing ASTM D2990-01 via a third party, independently certified laboratory.
- d. Refer to 00418.14.

00418.14 Design Conditions

The following design conditions shall be assumed for all structures being rehabilitated with the approved resin system:

<u>Parameter</u>	<u>Design Requirement</u>
1. Structure Condition	Fully Deteriorated
2. Design Thickness	ASTM 1216-09 or Two Way Flat Wall Beam Analysis
3. Pipe Ovality	Not greater than 5%
4. Soil Load	120 lbs/cu. ft.
4. Traffic Load	AASHTO-HS-20-44 Highway
6. Soil Modulus	1000 psi.
7. Safety Factor	2.0
8. Soil Cover	Distance from grade to crown of conduit
9. Water Table	At surface (depth per plan)
10. Soil Type	Saturated

Submit wall thickness design calculations (stamped by a professional Engineer) for each pipe run to be rehabilitated utilizing the specified resin technology systems, along with supporting formulas that document that version of formula used.

Additionally, product specific strength values, including the short term flexural modulus and the long term flexural modulus strength, must be substantiated by third party testing which will be submitted with all qualified bids. The materials utilized for the contracted project shall be of a quality equal to or better than the materials used in the long term test with respect to the initial flexural modulus and the long term reduction factor used in design.

00418.15 Quality Assurance

- (a) Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE and SSPC standards and the protective coating manufacturer's recommendations.

00418.16 Delivery, Storage, and Handling

- (a) Materials are to be kept dry, protected from weather and stored under cover.
- (b) Protective coating materials are to be stored between 50 deg F and 90 deg F. Do not store near flame, heat or strong oxidants.
- (c) Protective coating materials are to be handled according to their safety data sheets.

00418.17 Site Conditions

- (a) Applicator shall conform with all local, state and federal regulations including those set forth by OSHA, RCRA and the EPA and any other applicable authorities.
- (b) Method statements and design procedures are to be provided by Owner when confined space entry, flow diversion or bypass is necessary in order for Applicator to perform the specified work.

00418.18 Warranty

- (a) Applicator shall warrant all work against defects in materials and workmanship for a period of two (2) years, unless otherwise noted, from the date of final acceptance of the project. Applicator shall, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship which may develop during said two (2) year period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the Owner.

PRODUCTS

00418.20 Repair Materials

- (a) Repair materials shall be used to; fill voids, bug holes, structurally reinforce and/or

rebuild surfaces, etc. as determined necessary by the engineer and protective coating applicator. Repair materials must be compatible with the specified coating and shall be applied in accordance with the manufacturer's recommendations.

(b) The following products may be accepted and approved as compatible repair basecoat materials for approved top coating for use within the specifications:

1. 100% solids, solvent-free grout specifically formulated for approved top coating compatibility. The grout manufacturer shall provide instructions for trowel or spray application and for approved top coating procedures.
2. Factory blended, rapid setting, high early strength, no-shrink cementitious or epoxy repair mortar that can be trowelled or pneumatically spray applied may be approved if specifically formulated to be suitable for approved top coating. Such repair mortars should not be used unless their manufacturer provides information as to its suitability for top coating with the approved top coating. Project specific submittals should be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the approved coating.
3. In the case of excessive infiltration, a hydraulic cement or plug may be used to stop the flow of the infiltration. Approved manufacturer's include Strong, or approved equal. The hydraulic cement shall be compatible with the spray applied resin coating.

00418.21 Manufacturer

Sprayroq, Inc. or Approved Equal

00418.22 Structural and Protective Coating Material

(a) The resin based material shall be used to form the sprayed structurally enhanced monolithic liner covering all interior surfaces of the structure. The finished liner shall be 100% Solids polyurethane and conform to the minimum physical requirements listed below. The physical requirements must be verified by an independent, certified, third party testing laboratory within the last five years.

Compressive strength:	ASTM D 695	> 18,000 psi
Tensile strength:	ASTM D 638	> 7,450 psi
Bond (Concrete):	ASTM D7234	> 200 psi
	Or Substrate Failure	
Bond (Steel):	ASTM D4541	> 1,600 psi

Flexural Modulus (Initial):	ASTM D 790	> 735,000 psi
Density:		87 ± pcf
Chemical Resistance:	ASTM D543	
Severe Municipal Sewer:	All types of service	
Successful Pass:	Sanitation District of L.A. County Coating Evaluation Study or SSPWC 211-2	

(b) The wall of the resin based liner is to be structurally designed to withstand the hydraulic load generated by the groundwater table. Therefore, the long term (50yr) value of the flexural modulus of elasticity will be utilized to calculate the thickness of the structural liner. The initial flexural modulus of elasticity (short term) of the submitted resin material will be utilized with the long term deformation percentage as determined by ASTM D2990 (see below) in the design equations outlined in ASTM 1216-09, Appendix X1-X7 (Circular Geometries) or Flat Wall Beam Analysis for walled structures. No adhesion to the substrate is assumed in structural calculations. The value of the long term flexural modulus of the proposed product will be certified by an independent, certified, third party testing lab, independent of the Manufacturer and submitted in accordance with 00418.13. [The definition of long term value will be identified as initial flexural modulus of elasticity less the reduction in value caused by *Creep over a fifty (50) year minimum period and verified by third party DMA testing (ASTM D2990).*] All design submittals will include this certified third party DMA testing (ASTM D2990) value in their respective design calculations for each pipe run between manholes being rehabilitated.

00418.23 Repair Mortar Spray Application Equipment (if spray applied)

(a) Spray applied repair mortars shall be applied with manufacturer approved equipment.

WORKMANSHIP

00418.30 Acceptable Applicators

(a) Repair mortar applicators shall be trained to properly apply the cementitious mortar according to manufacturer’s recommendations.

(b) Protective coating must be applied by a Certified Applicator of the protective coating manufacturer and according to manufacturer specifications.

00418.31 Examination

- (a) All structures to be coated shall be readily accessible to Applicator.
- (b) Appropriate actions shall be taken to comply with local, state and federal regulatory and other applicable agencies with regard to environment, health and safety.
- (c) Any active flows shall be dammed, plugged or diverted as required to ensure that the liquid flow is maintained below the surfaces to be coated. Flows should be totally plugged and/or di- verted when coating the invert. All extraneous flows into the manhole or vaults at or above the area coated shall be plugged and/or diverted until the coating has set hard to the touch. As an option, hot air may be added to the manhole to accelerate set time of the coating.
- (d) No leaks may be present from pipe joint seals prior to commencing and during work. Seal joints with material compatible with the new liner according to the manufacturer. .
- (e) Installation of the protective coating shall not commence until the concrete or metal substrate has properly cured in accordance with these specifications.
- (f) Temperature of the surface to be coated should be maintained between 70 deg F and 110 deg F during application. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated.

00418.32 Surface Preparation

- (a) Applicator shall inspect all surfaces specified to receive a protective coating prior to surface preparation. Applicator shall notify Owner of any noticeable disparity in the surfaces which may interfere with the proper preparation or application of the repair mortar and protective coating.
- (b) All contaminants including: oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.
- (c) All concrete or metal that is not sound or has been damaged by chemical exposure shall be re- moved to a sound surface or replaced.
- (d) Surface preparation method(s) should be based upon the conditions of the substrate, service environment and the requirements of the resin protective coating to be applied.
- (e) Surfaces to receive protective coating shall be cleaned and abraded to produce a sound surface with profile to meet as a minimum ICRI CSP4 –CSP6 profile and porosity to provide a strong bond between the protective coating and the substrate. Generally, this can be achieved with a high pressure water cleaning using equipment capable of a minimum 4,000 psi at 3.5 gpm with a turbo head jet nozzle. Other methods such as high pressure water jetting (refer to SSPC-SP 13/NACE No.6), abrasive blasting, shot

blasting, grinding, scarifying or acid etching may also be used. Detergent water cleaning and hot water blasting may be necessary to re- move oils, grease or other hydrocarbon residues from the concrete. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound clean neutralized surface that is not excessively damaged.

- (f) Infiltration shall be stopped by using a material which is compatible with the specified repair mortar and is suitable for top coating with the specified protective coating.
- (g) The area between the manhole and the manhole ring and any other area that might exhibit movement or cracking due to expansion and contraction, shall be grouted with a flexible grout or gel. A termination groove “key” cut into the substrate between the bottom of the manhole frame and concrete is recommended for placement of a flexible grout or gel. The “key” shall be a minimum $\frac{1}{4}$ ” w x $\frac{1}{4}$ ” d, cut at a minimum 45 degree (60 degree maximum) angle.
- (h) Surfaces to receive protective coating shall be dry to the touch and or with no visible dampness. This is to insure maximum adhesion to the substrate. If required, drying may be accomplished by a minimum of 20 minutes of a heated, forced air blower. The drying shall be to the specification dictated by the resin manufacturer and its trained applicator.
- (i) Surfaces to receive protective coating utilizing Flat Wall Beam Analysis design shall be pre- pared with a series of grooves cut into the substrate at a spacing and depth determined by the manufacturer to “key” or lock the protective coating to the substrate. All coating termination edges shall be “locked” in to the substrate with a termination groove “key” cut into the substrate. The “key” shall be a minimum $\frac{1}{4}$ ”w x $\frac{1}{4}$ ”d and cut at a 45 degree angle.
- (j) All surfaces should be inspected by the Inspector during and after preparation and before the repair material is applied.

00418.33 Application of Protective Lining

- (a) Application procedures shall conform to the recommendations of the protective coating manufacturer, including material handling, mixing, environmental controls during application, safety, and spray equipment.
- (b) The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials and shall be regularly maintained and in proper working order.
- (c) The protective coating material must be spray applied by a Certified Applicator of the protective coating manufacturer.
- (d) Specified surfaces shall be coated by spray application of a solvent-free, 100% solids, rigid structural lining as further described herein.

- (e) Plural component spray application equipment approved by the coating manufacturer shall be used to apply each coat of the protective coating.
- (f) If necessary, subsequent top coating or additional coats of the protective coating should occur as soon as the base coat becomes tack free, no later than the recoat window for the specified products. Additional surface preparation procedures will be required if this recoat window is exceeded.

00418.34 Testing and Inspection

- (a) **High Voltage Spark Test.** After the protective coating has set hard to the touch it shall be inspected with high-voltage holiday detection equipment continuously along the length of each pipe run within the 60" diameter sections at locations determined by the Engineer. 48" diameter pipe shall only be tested on sections within 5 feet from each manhole. Surface shall first be dried, and induced holiday shall then be made on to the coated concrete or metal surface and shall serve to determine the minimum/maximum voltage to be used to test the coating for holidays at that particular area. The spark tester shall be initially set at 100 volts per 1 mil (25 microns) of film thickness applied but may be adjusted as necessary to detect the induced holiday (refer to NACE RPO188-99). All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional protective coating material can be hand applied to the repair area. All touch-up/repair procedures shall follow the protective coating manufacturer's recommendations.
- (b) **Adhesion Testing.** The adhesion tests shall be performed on a minimum of one or 10% of all rehabilitated structures, whichever is greater, or as shown on the Plan and/or specified in the Special Provisions. Adhesion testing shall be conducted after the lining or coating system has cured per manufacturer instruction and in accordance with ASTM D4541(Steel) or ASTM 7234(Concrete). A minimum of one 20 mm dolly shall be affixed to the lined surface of the structure on each pipe run between manholes. Each testing location shall be identified by the Engineer. The adhesive used to attach the dollies to the liner shall be rapid setting with tensile strength in excess of the liner material and permitted to cure in accordance with manufacturer recommendations. The lining material and dollies shall be adequately prepared to receive the adhesive. Prior to pull test, the Contractor shall utilize a scoring device to cut through the coating until the substrate is reached. Extreme care shall be required while scoring to prevent micro cracking in the coating, since cracks may cause failures at diminished strengths. Failure due to improper dolly adhesive or scoring shall require retesting. The pull tests in each area shall meet or exceed 200 psi. and shall include subbase adhered to the back of the dolly or no visual signs of coating material in the test hole. Pull tests with results between a minimum 150 psi and 200 psi shall be acceptable if more than 50% of the subsurface is adhered to the back of the dolly. A test result can be discarded, as determined by the Engineer, if there is a valid nonstatistical reason for discarding the test results as directed by Sections 8.4 and 8.5 of ASTM D4541 and ASTM D7234. If

any test fails, a minimum of three additional locations in the section of the failure shall be tested, as directed by the Engineer. If any of the retests fail, all loosely adhered or unadhered liner in the failed area, as determined by the Engineer, shall be removed and replaced at the Contractor's expense.

NOTE: The mil thickness will be measured and confirmed with the scored and pulled test samples. In structural repairs (partially or fully deteriorated design assumptions), it is critical to confirm the design thickness with the pulled sample as adhesion is not assumed in the ASTM 1216-09 design. The primary purpose of the pull test in structural rehabilitation is to confirm applied thickness, not adhesion. Any derived adhesion is further enhancement to the final installation strength of the rehabilitated structure.

- (c) A final visual inspection shall be made by the Inspector and manufacturer's representative. Any deficiencies in the finished coating shall be marked and repaired according to the procedures set forth herein by Applicator.
- (d) The municipal sewer system may be put back into non-severe operational service as soon as the final inspection has taken place. However, for severe corrosion duty such as high concentrations of acids, bases or solvents, 4 to 8 hours may be necessary prior to returning to service. Consult coating manufacturer for further details.

MEASUREMENT

00418.80 - The accepted quantity of Monolithic Spray Applied Polyurethane Liner will be paid for at the Contract unit price per linear foot for each size identified. There will be no distinction made for varying wall thicknesses of the individual pipe runs between manholes required by 00418.14. All measurements shall be subject to verification by the Owner.

The quantities of service line reconnections will be measured on the unit basis regardless of size.

PAYMENT

00418.90 - Payment for Monolithic Spray Applied Polyurethane Liner (MSAP) will be full compensation for access and staging; furnishing, transporting, handling, and placing the materials specified; bypass pumping; for cleaning, preparing, and repairing the existing pipe prior to application of lining system; for performing required materials sampling and testing; for performing video inspection of the completed lining; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

- | | |
|-------------------------------|-------------|
| (a) 48-inch Diameter MSAP | Linear Foot |
| (b) 54-Inch Diameter MSAP | Linear Foot |
| (c) Service Line Reconnection | Each |