Bid Documents

For the

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

September 2012

CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

MANDATORY PRE-BID CONFERENCE: A **mandatory** pre-bid conference will be held at 10 am, Tuesday, September18, 2012, at West Linn City Hall, 22500 Salamo Road, West Linn, OR**.**
The goal of the conference is to discuss site location, terrain and access issues associated with the project, including the site visit.

BIDS DUE: 2:00 PM, Tuesday, September 25, 2012; West Linn City Hall, 22500 Salamo Road, Mail Stop #800, West Linn, Oregon 97068.

BID OPENING: 2:00 PM, Tuesday, September 25, 2012; West Linn City Hall, 22500 Salamo Road, West Linn, Oregon 97068.

FIRST TIER DISCLOSURE STATEMENTS DUE:
4:00 PM, Tuesday, September 25, 2012; West Linn City Hall, 22500 Salamo Road, West Linn, Oregon 97068.

CITY OF WEST LINN
Public Works
Engineering Division
22500 Salamo Road
West Linn, Oregon 97068
Phone 503 722-5501 FAX 503 656-4106

PROJECT DOCUMENTS FOR THE

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

May 2012

CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

THE OFFICIALS OF THE CITY OF WEST LINN

Mayor	John Kovash
Councilor	Jody Carson
Councilor	Teri Cummings
Councilor	Jenni Tan
Councilor	Mike Jones
City Manager	Chris Jordan
Public Works Director	Lance Calvert

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

May 2012

CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

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ADDENDA (IF ANY)

BID DOCUMENTS

ADVERTISEMENT FOR BID

Mapleton Sewer Rehabilitation Project, Phase 3
Project #PW-1214
CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

Sealed bids for the Mapleton Sewer Rehabilitation Project, Phase 3, Project #PW-1214, in the City of West Linn, Clackamas County, Oregon, will be received by Pat Rich, Engineering Administrative Assistant, City Hall, 22500 Salamo Road, West Linn, Oregon, 97068 (Telephone (503) 722-5501, Fax (503) 656-4106) until 2:00 PM, Tuesday, September 25, 2012. Bids received after 2:00 PM will not be considered. First Tier Subcontractor Disclosure forms shall be submitted not later than 4:00 PM, Tuesday, September 25, 2012. Bids shall be publicly opened and read at 2:00 PM September 25, 2012. Bids shall be clearly marked "**Mapleton Sewer Rehabilitation Project, Phase 3, Project #PW-1214**". Bids shall be valid for sixty (60) days following bid opening. A **mandatory** pre bid meeting will be held on September 18, 2012, at 10 AM, at West Linn City Hall, 22500 Salamo Road, West Linn, OR. Statements made by the City's representatives at the mandatory pre bid meeting are not binding upon the City unless confirmed by Written Addendum.

Work generally consists of rehabilitating approximately 15,000 linear feet of 8-inch diameter sanitary sewer pipe with cured-in-place pipe (CIPP). This work shall include cleaning, trimming approximately 10 protruding taps and visible roots, lining the sewer pipes, reconnecting, providing video inspections of the sewer pipes before and after lining, and providing bypass sewage pumping and temporary traffic control. **After lining, a TV inspection shall be conducted in dry line, using bypass pumping**. The project is a public works project subject to ORS 279C.800 to 279C.870.

Bidders may bid on one or both alternate cured-in-place pipe (CIPP) rehabilitation methods specified for this project: Heat-cured felt lining (CIPP Method A), and ultraviolet light-cured fiberglass lining (CIPP Method B). The lowest responsible bid shall be determined as follows: If the lowest responsive CIPP Method B bid is equal to or less than 115 percent of the lowest responsive CIPP Method A bid, then the CIPP Method B bid will be considered the lowest responsive bid for the project. If the lowest responsive CIPP Method B bid is more than 115 percent of the lowest responsive CIPP Method A bid, then the CIPP Method A bid will be considered the lowest responsive bid for the project.

The work must be completed within ninety (90) calendar days following Notice to Proceed. The estimated construction cost for this project is $500,000.

The project plans, specifications and proposed contract provisions may be reviewed at no cost through the City of West Linn's website at http://westlinnoregon.gov/rfps or obtained through the City of West Linn Engineering Division located at 22500 Salamo Road, West Linn, Oregon at a cost of $25.00 per set, plus $10 additional cost if mailed. If you wish to receive any possible future addendums for this project, please email prich@westlinnoregon.gov with your name, address, phone, fax and email address or call 503-722-5501 to be placed on the plan holders list.

Bidders for this project must identify a CIPP Contractor which meets the minimum qualifications for the CIPP rehabilitation method selected. Bidders must complete the CIPP Contractor Statement of Qualifications Form, provided with the bid documents. The form and accompanying requested information must be submitted with the bidder's bid proposal. The City shall consider no bid unless the bidder is registered with the Construction Contractor Board and the bidder has complied with all prescribed public-bidding procedures and requirements; bids not in compliance will be rejected. The City of West Linn reserves the right to reject any or all bids, to postpone the award for 90 days, to delete certain items from the proposal, and to award the contract to the lowest responsive, responsible bidder.

Boris Piatski, P.E. Dated this September 5, 2012
Project Manager
Publication Date: Daily Journal of Commerce: September 11 & 14, 2012

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

PROJECT INFORMATION

PROJECT QUESTIONS: More detailed information concerning the project may be obtained by contacting:

Boris Piatski P.E.
City of West Linn, Engineering Division
22500 Salamo Road, West Linn OR 97068
Phone (503) 722-5519
E-mail: bpiatski@westlinnoregon.gov

GENERAL DESCRIPTION: Work generally consists of rehabilitating approximately 15,000 linear feet of 8-inch diameter sanitary sewer pipe with cured-in-place pipe (CIPP). This work shall include cleaning, trimming approximately 10 protruding taps, lining the sewer pipes, reconnecting to existing sewer laterals, rebuilding manhole channels, providing video inspections of the sewer pipes before and after lining, and providing bypass sewage pumping and temporary traffic control. **After lining, TV inspection shall be conducted with dry line, using bypass pumping**. Contractor has the option of proposing between heat-cured felt lining and/or ultraviolet light-cured fiberglass lining for the cured-in-place pipe.
There is a segment of the project without the City provided TV inspection. This segment has limited access and shall be cleaned and TV inspected first. This TV inspection will be analyzed by the City and approved for lining in writing by the Project Manager with the rest of the plan.
The segment is a critical part of the project and must be completed.

MANDATORY PRE-BID CONFERENCE: A **mandatory** pre-bid conference will be held on September18, 2012, at 10 AM, at West Linn City Hall, 22500 Salamo Road, West Linn, OR. No statement made by City's agents at such meeting nor otherwise provided herein shall be binding on City unless confirmed by written addendum. The goal of the conference is to discuss site location, terrain and access issues. The project is very similar to 2010 &2011 Rehabilitation Projects.

TIME OF COMPLETION: The work must be completed within ninety (90) calendar days following Notice to Proceed. Delays and extensions of the time may be allowed in accordance with section 108.06 of the City of West Linn Standard Construction Specifications.

LIQUIDATED DAMAGES: Liquidated damages shall be per section 108.07 of the City of West Linn Public Works Design and Construction Standards (the Standards). In accordance with the Schedule of Liquidated Damages, the amount of damages for late completion is **$150.00 (one-hundred fifty dollars)** per day for every calendar day following the contract completion date during which the work remains uncompleted, for the first ten (10) calendar days after the time of completion has expired, and $500.00 (five-hundred

dollars) per calendar day beginning on the eleventh (11th) day after the time of completion has expired. These damages are not punitive and contractor, by submitting its bid, agrees the stated liquidated damages are reasonable.

BID SECURITY: Bids must be accompanied by a certified check drawn on a bank in good standing, or a bid bond issued by a surety company authorized to issue such bonds in the State of Oregon, in an amount of not less than **ten percent (10%)** of the total amount of the bid submitted. This check or bid bond shall be given as a guarantee that if awarded the contract, the successful bidder will execute the attached contract and furnish a properly executed performance bond in the full amount of the contract price within the time specified.

QUALIFICATIONS OF BIDDERS: Bidders for this project must identify a CIPP Contractor which meets the minimum qualifications for the CIPP rehabilitation method proposed. Bidders must complete the CIPP Contractor Statement of Qualifications Form, provided with the bid documents. The form and accompanying requested information must be submitted with the bidder's bid. Specific qualifications required by CIPP Contractors, and requirements for submitting qualifications statements, are described in Special Specifications Item 36, Cured-in-Place Pipe.

RECORD OF EXPERIENCE BY THE PRIME CONTRACTOR: At the time of submission of bids, all bidders must provide and certify information that clearly demonstrates a 3-year period of expanding experience. Said experience must be with products similar to that specified in this contract.

Experience must include projects of a similar size and scope of work. Information shall be provided on the form provided in the bid packet and include the project name, description of work, cost, location, point of contact, and telephone number. The City of West Linn reserves the right to reject bids that do not contain and confirm the required experience information.

Information shall be provided on the form provided in the proposal packet and include the project name, description of work, cost, location, point of contact, and telephone number. The City of West Linn reserves the right to reject bids that do not clearly conform to this requirement.

The successful bidder must also have either a City of West Linn Business License or a current Metro License and must comply with ORS 279C.505(2) relating to employee drug-testing program (refer to Section 11 of contract). Bidder shall also identify whether it is a resident Bidder as defined in ORS 279A.120.

Bidders shall comply with the provisions of ORS 279C.800 to 279C.870 as applicable. No bid will be considered by the City unless the bid contains a statement by the bidder guaranteeing compliance with ORS 279C.838 or 279C.840 or 40 U.S.C. 3141, et seq. The Prevailing Wage Rates are available on the Bureau of Labor and Industries' (BOLI) website at:
http://www.oregon.gov/BOLI/WHD/PWR/pwr_book.shtml for downloading.

Bidder shall also certify in its bid that it has not and will not discriminate against any minority, women, or emerging small business enterprise in obtaining any required subcontract for this project.

CONTRACT DOCUMENTS: The Contract Documents pertaining to this work consist of the material bound and attached herewith. Contract amount will be determined based on the available funds, selected alternatives, if applicable, and the lowest responsive bid. These Contract Documents are intended to provide all details reasonably required for the execution of the proposed work. 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 Project Manager, in writing, an interpretation thereof. Any interpretation or change in said Contract Documents should be made in writing, and a copy of such interpretation or change will be published, as shall be all other addenda, on City's Web site. Addenda may be downloaded off the City's Web site. Bidders should frequently check the City's Web site until closing, i.e., at least once weekly until the week of Closing and at least once daily the week of the Closing. City will not be responsible for any other explanation or interpretation of said Documents.

CONSTRUCTION STANDARDS APPLICABLE: The West Linn Public Works Design and Construction Standards and Standard Construction Specifications in their entirety are hereby incorporated by reference. If there is a conflict, the more restrictive requirement shall prevail.

WORK PERFORMED BY THE PRIME CONTRACTOR: At the time of submission of bids, all bidders must identify and certify their company will accomplish a minimum of 50% of on-site construction involving both labor and materials. The City of West Linn reserves the right to reject bids that do not clearly and accurately identify the minimum of on-site work to be performed by the contractor.

SUPERVISON OF WORK BY THE PRIME CONTRACTOR: Only an experienced, full-time employee of the prime contractor will supervise the work on behalf of the prime contractor. Said supervisor must have a demonstrated supervisory role of a minimum of three (3) years and be employed by the prime contractor for a minimum of twelve (12) months prior to the award of the contract.

CONTRACTING LICENSE REQUIREMENT: The bidder must be registered with the Oregon Construction Contractors Board. Each bid must contain the license number of the bidder.

PREPARATION OF BID: The bid for the work contemplated is to be submitted on the form prescribed in the bid herein. All blank spaces on the bid form must be filled in, in ink, in both words and numbers where applicable. No changes shall be made in the phrasing of the forms or in the items mentioned herein. Written amounts shall govern in cases of discrepancy between the amounts stated in writing and the amounts stated in numbers.

Bidders may bid on one or both alternate cured-in-place pipe (CIPP) rehabilitation methods specified for this project: Heat-cured felt lining (CIPP Method A), and ultraviolet light-cured fiberglass lining (CIPP Method B). Bidders may submit a completed bid proposal for either one or both CIPP specified methods, at the bidder's discretion, with their bid.

Any bid which contains omissions, erasures, alterations, additions of any kind, or items uncalled for, or which in any manner fail to conform to the conditions of the published Advertisement for Bids and associated addenda, may be rejected by the City of West Linn.

Bids made by corporations or partnerships shall contain names and addresses of the principal officers or partners.

SUBMISSION OF BIDS: All bids must be submitted at the time and place and in the manner prescribed in the Advertisement for Bids. Bids must be made on the prescribed bid forms attached herewith, and submitted intact with the bid documents. Late bids will not be considered. Faxed or e-mailed bids will not be considered. The contract must be signed by the bidder and submitted with its bid.

FIRST TIER SUBCONTRACTOR DISCLOSURE: If a bid for the project is greater than $100,000, within two working hours of the date and time the bids are due, the Bidder must submit a written disclosure of the names, addresses, Construction Contractor's Board Number, if applicable, and amount of subcontract for all first-tier subcontractors furnishing labor or labor and materials whose subcontracts are equal to or greater in value than 5% of the total project bid or $15,000, whichever is greater, and the describe the Work that each Subcontractor will perform. Bidder may not discriminate against a subcontractor in awarding a subcontract because the subcontractor is a minority, women or emerging business enterprise certified under ORS 200.055 or a business enterprise that is owned or controlled by, or that employs a disabled veteran.

WITHDRAWAL OF BID: Any bid may be withdrawn prior to the scheduled date and time for the opening of bids either by telegraph, telephone, written request, or in person. No bid may be withdrawn after the time scheduled for opening of bids unless the time specified for awarding bids has elapsed.

The City reserves the right to retain the bid security of the three (3) lowest bidders until the successful bidder has furnished a one hundred percent (100%) performance bond. Upon failure of the successful bidder to deliver performance bond within the specified time, the next lowest bid may be accepted at the City's discretion, whereupon the above instructions and requirements will apply to the said second bidder. Bid security of all bidders, except the three (3) lowest, will be returned promptly after the evaluation of bids; bid security of the three lowest bidders will be returned within three (3) days after the contract has been executed or other disposition made thereof in accordance with the provisions stated herein.

CONDITIONS OF WORK: Each bidder must inform himself of the conditions relating to the execution of the work, and it is assumed that he will inspect the site and make himself thoroughly familiar with all the Contract Documents. Failure to do so will not relieve the successful bidder of his obligation to enter into a contract and complete the contemplated work in strict accordance with the Contract Documents. Each bidder must inform himself on all laws and statutes, both Federal and State, relative to the regular execution of the work, the employment of labor, right-of-way, and access to the work, fire protection regulations, and similar requirements. Pursuant to ORS 279C.525, the City hereby alerts the bidders to federal, state and local agencies that have enacted ordinances, rules or regulations dealing with the prevention of environmental pollution and the preservation of natural resources that affect the performance of the contract by directing bidders to refer to the Commentary on page 55 of City of West Linn Resolution No. 05-03, where a list of such federal, state and local agencies is set forth.

AWARD AND REJECTION OF BIDS: The contract will be awarded to the lowest responsive, responsible bidder complying with the bid specifications and based on the Main Bid Sheet. Bidders may bid on one or

both alternate cured-in-place pipe (CIPP) rehabilitation methods specified for this project: Heat-cured felt lining (CIPP Method A), and ultraviolet light-cured fiberglass lining (CIPP Method B). The lowest responsive bid shall be determined as follows: If the lowest responsive CIPP Method B bid is equal to or less than 115 percent of the lowest responsive CIPP Method A bid, then the CIPP Method B bid will be considered the lowest responsive bid for the project. If the lowest responsive CIPP Method B bid is more than 115 percent of the lowest responsive CIPP Method A bid, then the CIPP Method A bid will be considered the lowest responsive bid for the project.

As required by ORS 279A.120, the City shall add a percent increase to each out-of-state bidders bid price equal to the percent of preference given to local bidder's in the bidder's home state. The City reserves the right to reject any or all bids or to waive any formality, informality, irregularity, or technicality in any bid. The City may reject a bid that does not comply with the City's Local Contract Review Board Rules and state law, including the requirement to demonstrate the bidder's responsibility under ORS 279C.375(3)(b). No bidder may withdraw his bid for a period of ninety (90) days after the date of opening thereof. The acceptance of a bid will be by notice in writing, mailed or delivered to the office designated in the Bid. The City may reject any bid not in compliance with all prescribed public bidding procedures and requirements, and may reject for good cause any or all bids upon a finding by the City that it is in the public interest to do so.

ADDENDA: Any addenda issued during the time of bidding and forming a part of the Contract Documents to the bidder for the preparation of his bid, shall be covered in the bid, and shall be made a part of the contract. Addenda will be handled as follows: Addenda shall be sent to all prospective bidders known to have obtained the solicitation documents, and it may be sent by e-mail to the address furnished to the City by the bidder.

PROTEST PROCESS: Any actual bidder who is adversely affected or aggrieved by the City's notice of award of the contract to another bidder on the same solicitation shall have seven calendar days after notice of award to submit to the City Manager a written protest of the notice of award. The written protest shall specify the grounds upon which the protest is based. A protest against the solicitation documents, including specifications and contract terms, or the process used in the solicitation, must specify an acceptable ground for the protest pursuant to LCRB 30.140(A) and meet the requirements for a protest in LCRB 30.140(B). In order to be adversely affected or aggrieved, a bidder must itself be eligible for award of the contract as the lowest bidder and must be next in line for award. The City shall not entertain a protest submitted after the time period established above. Possible remedies shall include award of the contract or another appropriate remedy based on the kind of relief requested in the protest.

EXECUTION OF CONTRACT: The contract is executed upon signature of the submitted contract document by the City Manager.

PERFORMANCE, PAYMENT AND PUBLIC WORKS BOND: The successful bidder shall file with the City performance and payment bonds in the full amount of the contract price of the contract within five (5) working days of notification of award of the contract by the City. The surety company furnishing this bond shall have a sound financial standing and a record of service satisfactory to the City and shall be authorized to do business in the State of Oregon. The Attorney-in-Fact (Resident Agent) who executes

this performance and payment bond in behalf of the surety company must attach a copy of his power-of-attorney as evidence of his authority. A notary shall acknowledge the power as of the date of the execution of the surety bond which it covers. Prior to commencing work, Contractor shall also furnish proof of filing of a public works bond in the form and amount specified in ORS 279C.836, with the Construction Contractor's Board.

FAILURE TO FURNISH BOND: Should the successful bidder fail or refuse to execute the contract and furnish the performance and payment bonds, then the bid security deposited by said bidder shall be retained as liquidated damages by the City. It is agreed that this said sum is a fair estimate of the amount of damages the City will sustain in case the bidder fails to comply as provided herein and is not a penalty. Bid security deposited in the form of a certified check shall be subject to the same requirement as a bid bond.

RESPONSIBILITY OF PUBLIC AGENCY (CITY OF WEST LINN): The City of West Linn shall advertise and accept bids for the project; award and administrate the contract; inspect the project for compliance with contract plans and specifications; and provide payment as provided for in this contract.

CHANGES: City may at any time, and without notice, issue a written Change Order requiring additional work within the general scope of this Contract, or any amendment thereto, or directing the omission of or variation in work. If such Change Order results in a material change in the amount or character of the work, an equitable adjustment in the Contract price and other provisions of this Contract as may be affected may be made. Any claim by Contractor for an adjustment under this section shall be asserted in writing within thirty (30) days from the date of receipt from the City's project manager by Contractor of the notification of change, or the claim shall be deemed waived by Contractor. The issuance of information, advice, approvals, or instructions by City's project manager or other City personnel shall not constitute an authorized change pursuant to this section. Whether made pursuant to this section or by mutual agreement, no change shall be binding upon City until a written Change Order is executed by the City's project manager, which expressly states that it constitutes a Change Order to this Contract. Nothing contained in this section or any claim by the Contractor shall excuse the Contractor from proceeding with the prosecution of the work in accordance with the Contract.

CONTRACTOR'S RESPONSIBILITY: The Contractor shall complete the work as represented in these plans and specifications, and as modified by change order or written direction of the City. It is understood that the plans, specifications, and other contract documents do not purport to control the method of performing the work, but only the requirements as to the nature of the completed work. The Contractor assumes the entire responsibility for the method of performing and installing the work. Suggestions as to the method included in the contract documents shall be deemed advisory only and the feasibility of such methods or the lack thereof shall not affect the Contractor's liability or status as an independent Contractor under this contract.

PAYMENTS: The City will make monthly payments as specified in the General Conditions, and as may be agreed by Contractor and City's project manager. Progress payments may be submitted monthly to the City project manager. Projects lasting less than thirty (30) days in duration will not receive progress payments. If the City is notified that payment has not been made for labor or materials invoiced to the

City, the City may withhold monies from payment to the Contractor in a sum sufficient to pay for such labor or materials. With the final contract payment request, the contractor must include a statement certifying that all persons/subcontractors/suppliers supplying labor and material, which costs are included with the current payment request, have been paid in full. Progress payments, less a five percent retainage as authorized by ORS 279C.555, shall be made to the Contractor within twenty (20) days of the City's receipt of the statement of services.

FINAL PAYMENT: The Contractor shall notify the City in writing when the Contractor considers the project complete and submit the final TV reports. Within fifteen (15) working days after receiving the written notice and TV reports, the City shall review all required submittals for compliance with the quality assurance requirements, verify completeness of the project through site inspections, and notify the Contractor that the work is accepted or provide the Contractor with a list of work yet to be performed on the contract.

Insert Process Used to Determine if the Work is Acceptable. Upon acceptance by the City, the entire balance due to the Contractor, including the retained percentage, shall be paid to the Contractor, by the City within 30 days after the date of said final acceptance.

The City shall pay to the Contractor interest at the rate of one and one-half percent per month on the final payment due the Contractor, to commence 30 days after the work under the Contract has been completed and accepted and to run until the date when final payment is tendered to the Contractor. If the City does not, within fifteen (15) working days after receiving written notice of completion and TV reports, notify the Contractor of work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run thirty (30) days after the end of the fifteen (15) working day period.

As a further condition of final acceptance, the City may require the Contractor to submit evidence, satisfactory to the city's project manager, that all payrolls, material bills, and other indebtedness connected with the project have been paid, except that in case of any disputed indebtedness or liens, the Contractor may submit in lieu of evidence of payment, a surety bond satisfactory to the City guaranteeing payment of all such disputed amounts when adjudicated in cases where such payment has not already been guaranteed by surety bond.

"AS BUILT" PLANS: The Contractor shall maintain a set of "as built" plans noting the actual work performed, including dimensions, depths, thickness, materials, and other pertinent information marked in red ink on a clean set of project plans. The contractor shall include detailed drawings and changes as necessary to supplement the plan information. The contractor shall record in the as built plans the depth, location, type of pipe, and other information about other utilities or facilities encountered while constructing this project. The contractor shall note the products, and manufacturers (where possible) of installed materials.

WATER SUPPLY: The Contractor shall be responsible for providing for all water necessary for this project. The City of West Linn is the purveyor of water in this area. A locked water supply hydrant is available to contractors at 2042 8th Avenue in West Linn. Contact the City of West Linn, telephone 503-

656-4261, to set up an account for this water source. Contractor shall comply with the instructions for use of City Water. Costs for handling the water shall be considered incidental to this contract.

PROJECT WORK AREA CLEANLINESS: It is understood that the cleaning of the work areas is required at the end of each working day and after project completion is considered incidental and that no additional compensation will be paid individually for this work. Pavement areas will be swept clean and all construction debris will be disposed of in a way approved by the City's project manager.

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

CITY OF WEST LINN, CLACKAMAS COUNTY, OREGON

SPECIAL SPECIFICATIONS

1. GENERAL INFORMATION:

These special specifications and provisions are for the work as described herein in conjunction with the associated project plans and other related documents. The construction drawings are to be considered a part of these specifications bound herein. It is understood that these improvements are intended to become the property of the City of West Linn upon completion and acceptance by the City Engineer.

Contact the following organizations before excavating in any area:

Name of Utility	Telephone No.	Utility Lines
Utility Notification Center	800 332-2344	Water, Sanitary Sewer, Stormwater, Electric, Gas, Cable TV, Telephone, and others

The contractor shall be responsible for repairing all damage to identified utility lines located within the construction limits. The City of West Linn holds no liability for the locations of sanitary sewer lateral service lines.

Estimated quantities for each bid item shall be as shown in the bid, and as broken down in the bid item quantity spreadsheet included in these documents. Actual quantities may vary and contract will be adjusted based upon bid unit prices on amounts not to exceed 25% of total estimated quantities.

Construction of the facilities shown in the plans and specifications for this project shall be in conformance with established good construction practices, any permit conditions, the Oregon Standard Specifications for Construction, the City of West Linn Public Works Design and Construction Standards, Oregon State Department of Environmental Quality Rules and Standards, PGE rules and specifications, and product manufacturers' recommended procedures. Where any of these rules or standards is in conflict with one another, the City Engineer shall determine which rules or standards shall govern.

Payment for each bid item shall be as set forth in the bidder's bid and shall include, but is not limited to, providing all materials, labor, and equipment necessary to perform the work listed herein. Work listed in each bid item shall be performed in accordance with the appropriate sections of the standard specifications, special specifications, standard details, and construction plans, except as modified herein.

2. PRE-CONSTRUCTION CONFERENCE: Pre-construction conference is required prior to start of this project. Traffic control plans and construction schedule shall be submitted to the City at least five (5) working days prior to pre-construction conference for approval.

3. CONTRACTOR'S NOTIFICATION RESPONSIBILITY PRIOR TO BEGINNING WORK: It is the contractor's responsibility to notify the City's Project Manager ten (10) working days prior to beginning work on any portion of this project. It is also understood that it is the contractor's responsibility to notify residents within the project vicinity at least five (5) working days prior to beginning work. It is also the contractor's responsibility to notify the residents at each address a minimum 48 hours in advance to commencement of work and again immediately prior to the disruption of their service.
Traffic control plan shall be submitted and approved three (3) weeks prior to beginning work with all the required signs to be installed at least two (2) weeks prior to beginning work.

Approval of the extent and duration of all temporary street closures by the City Engineer is required prior to any such closure.

4. LIMIT ON WORKING HOURS: Working hours shall be limited as follows unless specifically authorized by the City Engineer:

Monday through Friday - 7:00 am to 6:00 pm,
Saturday - 9:00 am to 5:00 pm,
Sunday and Holidays per the City's schedule - no work is permitted

5. CORRECTION OBLIGATION PERIOD: The Contract will execute its work in strict accordance with the Contract Documents in a sound and workmanlike manner. Contractor warrants and guarantees its work against all defects and deficiencies in material and workmanship. The Contractor agrees to correct all defects appearing in the work or developing in the materials furnished for a period of **eighteen (18) months** after the date of final acceptance of the work by the City and further agrees to indemnify and save the City harmless from any costs encountered in correcting such defects and damage occurring as a result of the defects or deficiencies. Further, if defects are corrected during the correction obligation period, a new eighteen (18) month period for that portion of the work will commence upon acceptance of the corrected work by the City.

6. TIME LIMIT OF UNSETTLED DISPUTES: No action, suit or other legal proceedings shall be maintained by Contractor arising out of the contract or breach thereof or anything done in connection therewith, unless commenced within **eighteen (18) months** of the final acceptance of the project. All claims or causes of action by or of Contractor in any way resulting from this contract shall be deemed barred unless action or suit thereon shall have been commenced within such time.

7. COMPLIANCE WITH OREGON REVISED STATUTES: The contractor must comply with all of the Oregon Revised Statutes for Public Works contracts, which are incorporated herein by this reference. Contractor shall comply with all applicable provisions of ORS 279C.505, ORS 279C.510, ORS 279C.515, ORS 279C.520, and ORS 279C.530. The contractor is specifically reminded that Performance and Payment bonds in a form acceptable to the City are required.

8. PAYMENT OF MINIMUM WAGE RATE: The contractor shall comply fully with all statutory requirements for payment of prevailing wage rates on public works projects. The hourly rate of wage to be paid workers on this project shall not be less than the specified minimum hourly rate of wage in accordance with ORS 279C.838 and 279C.840, and it shall not be less than the prevailing rate of wage for an hour's work in the same trade or occupation in the locality of the project. This requirement shall apply to all workers employed on the project by the prime contractor, subcontractors, or other persons doing or contracting to do the whole or any part of the work required for the project. The existing prevailing rates of wages as established by the Commissioner of the Bureau of Labor and Industries pursuant to ORS 279C.815 are hereby incorporated into these Specifications. The contractor shall obtain copies of applicable schedules of prevailing wage rates from the Bureau of Labor, 1400 Southwest Fifth Avenue, Room 514, Portland, OR 97201 or online at:
http://www.oregon.gov/BOLI/WHD/PWR/pwr_book.shtml.
When a contractor or subcontractor is a party to a statewide collective bargaining agreement in effect with any labor organization, the rate of wages provided for in such agreement shall be considered to be the prevailing rate of wage to be paid to the workers on this project.

In conformance with State of Oregon regulations, the contractor or its surety and every subcontractor or its surety shall submit a statement in writing to the City in a form prescribed by the State Labor Commissioner certifying under oath the hourly rate of wage paid each classification of workers employed for work on the project, and further certifying that no worker has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in this contract. These statements are to be submitted to the City's Project Manager.

There is no representation on the part of the City that labor can be obtained at the hourly rates required by this contract. It is the responsibility of the contractor to be aware of local labor conditions and perspective changes or adjustments of wage rates. No increase in the contract price shall be allowed or authorized on account of a payment of wage rates in excess of the prevailing wage rates.

9. WORKERS' COMPENSATION INSURANCE AS REQUIRED BY ORS 656.017: The contractor, its subcontractors, and all employers working under this project subject to the Oregon Workers Compensation Law, shall comply with ORS 656.017, which requires them to provide workers' compensation coverage for all their subject workers. Evidence of contractor compliance with this requirement shall be submitted and approved by the City prior to payment.

10. PERMITS: The Contractor shall obtain all permits and licenses, including a City business license (if required), and pay any fees connected therewith, having to do with his construction operations except those permits specifically stated to be obtained by the City. The contractor shall confine his operations to within the permanent or construction easement limits, and street right-of-way limits. Any damage to private property, either inside or outside of the aforementioned limits, shall be the responsibility of the Contractor. The city shall waive the cost of a public works permit.

11. OSHA: During performance of the contract, the contractor or vendor is required to comply with the conditions of the Federal Occupational Safety and Health Act (OSHA) and the standards and

regulations issued there under. The contractor shall further agree to hold the City, its employees, agents, City Councilors, and assigns harmless and free from liability for failure to comply with said standards and regulations. It shall be the sole responsibility of the contractor or vendor to remain familiar with said standards and regulations and maintain their enforcement.

12. CONSTRUCTION SEQUENCING: Construction sequencing requirements for this contract is as follows: The contractor shall propose a plan of work that is acceptable to the City Project Manager, and update the plan as necessary to remain current and responsive throughout the project.

13. EXISTING UNDERGROUND UTILITIES: There are existing underground utilities in the project area. There may be conflicts between existing utilities and the planned improvements. The City Project Manager and the contractor shall cooperate as necessary to make adjustments to successfully construct the project. Minor adjustments will be considered incidental to the project, and will be included under unit price items. Significant added costs will be covered under extra work or other payment method as may be agreed upon between the contractor and City Project Manager.

14. TRAFFIC CONTROL AND PROTECTION: The following section supplements the requirements as described in section 202 of the City of West Linn's Public Works Standards.

The Contractor shall maintain traffic control and protection in the work areas twenty-four (24) hours per day. Traffic control shall conform to the standards set forth in the "Oregon Manual on Uniform Traffic Control Devices for Streets and Highways" issued by the Oregon Department of Transportation.

The Contractor shall conduct its operations so as to keep one lane of traffic open for public and private access at all times on City streets, County and Public Roads. No lane closures on Willamette Drive (Highway 43) will be allowed prior to 9 AM or after 3 PM on weekdays and no lane closures will be allowed on weekends or holidays.

Prior to beginning construction, the Contractor shall submit a detailed street closure and traffic control plan to the City's project manager for approval. As construction proceeds, the Contractor shall notify the City's project manager as to the status of street closures and detours.

All work shall be carried on with due regard for safety to the public. All open trenches shall be sufficiently plated prior to completion of the work day.

15. FIELD CHANGES, ALIGNMENT AND GRADE: Changes of alignment and grade shall be made during the course of work in order to avoid interference with unforeseen obstructions. The Contractor shall locate existing utilities to be crossed, by potholing ahead of the pipe installation, of sufficient distance to avoid conflicts through pipe joint deflection if possible. All costs for minor field changes of alignment and grade shall be borne by the Contractor. The City's project manager will endeavor to make prompt decisions on such matters. Contractor shall anticipate a minimum of 72 hours for any decision requiring significant piping change.

16. SALVAGE AND DEBRIS: Unless otherwise indicated on the drawings or in the specifications, all castings, pipe, equipment, demolition debris, spoil or any other discarded material or equipment shall become the property of the Contractor and shall be disposed of in a manner compliant with applicable Federal State and local laws and regulations governing disposal of such waste products. No burning of debris or any other discarded material will be permitted.

17. SUBMITTALS: The following section supplements the requirements as described in section 104.03 of the City of West Linn's Public Works Standards.

The Contractor shall provide shop drawings, schedules and such other drawings as may be necessary for the prosecution of the work in the shop and in the field as required by the contract documents or City's project manager instruction.

Required submittals include items listed below. List is provided for Contractor convenience only and may not be complete in all respects. Contractor shall provide all submittals required, whether or not specifically listed herein.

A. Schedules – The Contractor shall prepare and submit to the City's project manager, within fifteen days after Notice to Proceed, a practicable schedule showing the order in which the Contractor proposes to carry out the work, the dates on which the important features of the work will start, and the contemplated dates for completing same. The time-scaled bar chart shall include the following:

- Construction activities
- Submittal and approval of material samples and shop drawings
- Procurement of critical materials
- Fabrication, installation, and testing of special material and equipment
- Duration of work, including completion times of all stages and their sub-phases

B. Shop Drawings – The Contractor shall provide shop drawings, schedules and such other drawings as may be necessary for the prosecution of the work in the shop and in the field as required by the contract documents or City's project manager's instruction.

C. Pipe Installation Method and Sequencing – The Contractor shall submit a plan that details the planned installation method(s) and the sequence of installation. The plan shall identify the method intended to be used for each run of pipe, and will include all other submittal requirements as required in the following specifications regarding cured-in-place-pipe.

D. Erosion Control Plan – The Contractor shall obtain and submit an approved Erosion and Sedimentation Control Plan approved by the City

E. Materials Lists – Lists of all materials to be used on the project shall be submitted, **including MSDS for the resin used and anything that causes odor**

F. Contractor Contact Persons

G. Material Safety Data Sheets **MSDS for the resin used and anything that causes odor**

H. Traffic Control Plan

I. Miscellaneous Materials and Other Submittals (See Specifications)

18. TEMPORARY UTILITIES FOR CONSTRUCTION PURPOSES: The Contractor shall make all arrangements necessary to provide all temporary utilities for construction purposes and shall pay all costs associated those temporary utilities. The Contractor shall furnish all valves, hoses, connections and other devices as necessary to obtain sufficient water for construction and for filling and testing of water lines as required. Fire hydrant use is allowed only by permission of the City's project manager. Backflow protection is required. See General conditions for further information.

19. FIELD SERVICE BY MANUFACTURER'S REPRESENTATIVE: The Contractor will be required to furnish the services of a manufacturer's or material's representative for all major equipment and materials furnished by the Contractor or Owner under this contract, to check, place in operation and test the installation, and train operating personnel. The manufacturer's representative shall be qualified and authorized to perform repairs and maintenance on the equipment. The above gives a general scope of the services desired from the manufacturer's representative. It will be the responsibility of the Contractor and the equipment manufacturer to determine detailed requirements. Costs for services of the manufacturer's representative shall be included in the proposal of the Contractor. The operator training mentioned above shall include sufficient time during the Contractor's operation and testing period to fully explain to the operating personnel the features of the equipment and maintenance thereof.

20. CONSTRUCTION WITHIN PRIVATE EASEMENTS: When portions of the work contemplated are within easements held by the Owner on private property, the Contractor shall ascertain for itself to what extent the width, status and special conditions attached to easements may have on its operations and all costs resulting there from shall be included and absorbed in the unit prices of the Contractor's bid. Contractor shall coordinate with private property owners and businesses if required. Landscaping, surface restoration and fence restoration shall be completed within 24 hours following piping and conduit installation and other construction work. Temporary fencing shall be provided continuously until such private fencing is properly restored.

In anticipation of this project, the Owner is expected to obtain rights-of-entry to properties adjacent to the sewer installation work where adequate space for construction is not available. Copies of those rights-of-entry obtained at the time of advertisement are included in these documents. Any conditions included in these rights-of-entry are hereby made part of these contract conditions. As the City's agent, any deviation from these conditions will become the liability of the Contractor. Any corrective measures necessary to adhere to the contract conditions will also be the responsibility of the Contractor. The Contractor shall be responsible for obtaining any additional access needs and coordination with private property owners as needed during construction.

21. PRIVATE ROADS AND DRIVEWAYS: Bridges at entrances to business properties where vehicular traffic is necessary shall be provided and maintained. Bridges shall be adequate in width and strength for the service required. No private road or driveway may be closed without approval of the City's project manager unless written authority has been given by the owner whose property has been affected. Driveways shall be left open and ready for use at the end of the work shift. All expenses involved in providing for construction, maintenance, and use of private roads or driveways, shall be borne by the Contractor and the amount thereof absorbed in the unit prices of the Contractor's bid.

22. UTILITY PROPERTIES AND SERVICE: In areas where the Contractor's operations are adjacent to or near a utility and such operations may cause damage which might result in significant expense, loss and inconvenience, the operations shall be suspended until all arrangements necessary for the protection thereof have been made by the Contractor with the affected utility.

The Contractor shall notify all utility offices which may be affected by the construction operation at least 48 hours in advance. Before exposing any utility, the utility having jurisdiction shall grant permission and may oversee the operation. Should service of any utility be interrupted due to the Contractor's operation, the proper authority shall be notified immediately. It is of the utmost importance that the Contractor cooperates with the said authority in restoring the service as promptly as possible. Any costs shall be borne by the Contractor.

23. SANITARY FACILITIES: The Contractor shall provide and maintain sanitary facilities for its employees and its subcontractors' employees that will comply with the regulations of the local and State Departments of Health and as directed by the City's project manager.

24. STREET CLEANUP: The Contractor shall clean daily all dirt, gravel, construction debris and other foreign material resulting from its operations from all streets and roads.

25. VEHICLE PARKING: The vehicles of the Contractor's and subcontractors' employees shall be parked in accordance with local parking ordinances.

26. RECORD DRAWINGS: Contractor shall maintain at the site one set of specifications, full size drawings, shop drawings, equipment drawings and supplemental drawings which shall be corrected as the work progresses to show all changes made. Drawings shall be available for inspection by the City's project manager. Upon completion of the contract and prior to final payment, specifications and drawings shall be turned over to the City's project manager.

27. SURVEYS: The following section supplements the requirements as described in section 105.06 and 105.07 of the City of West Linn's Public Works Standards.

No additional construction survey information will be provided by the Owner. Based upon the information provided by the Contract Documents, the Contractor shall develop and make all detail surveys necessary for layout and construction, including exact component location, working points, lines and elevations. Prior to construction, the field layout shall be approved by the City's project

manager. The Contractor shall have the responsibility to carefully preserve bench marks, reference points and stakes, and in the case of destruction thereof by the Contractor or resulting from its negligence, the Contractor shall be charged with the expense and damage resulting therefore and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points and stakes. After clearing and grubbing is complete and prior to excavation, the Contractor shall confirm the presence of any survey monuments, including but not limited to property corners, that may be impacted during construction. Any monuments disturbed during construction shall be replaced at the Contractor's expense, with appropriate surveys filed with the County surveyor.

28. EROSION AND SEDIMENTATION CONTROL: Temporary construction site erosion control measures shall be designed and constructed in accordance with City of West Linn Standards and per the contract plans. The Contractor shall submit for approval an erosion and sedimentation control plan to the City of West Linn. Work shall not commence until the approved Erosion and Sedimentation Control Plan is obtained from the City.

Erosion control measures shall be maintained throughout the project site until approved permanent cover such as a healthy stand of grass, other permanent vegetation, or other ground covering is established. When approved permanent ground cover is established, all temporary erosion control measures shall be removed from the construction site. Erosion control measures shall be installed as approved, per the above referenced documents. Erosion control measures including stabilized construction entrances and sediment barriers must be established in conjunction with site clearing and grading.

During construction, and until permanent vegetation or other ground covering is established, the erosion control facilities shall be upgraded as needed for unexpected storm events or site conditions and with the purpose of retaining sediment and sediment-laden water on the construction site.

29. INTERFERENCES, OBSTRUCTIONS AND SEWER CROSSINGS: The following section supplements the requirements as described in section 105.05 of the City of West Linn's Public Works Standards.

At certain places, power, light and telephone poles may interfere with excavation and the operation of the Contractor's equipment. Necessary arrangements shall be made with utility companies for moving or maintaining such poles. The utility company affected by any such interferences shall be notified thereof so that the necessary moving or proper care of poles and appurtenances may have appropriate attention.

All costs resulting from any other interferences and obstructions, or the replacement of such, whether or not herein specifically mentioned, shall be included and absorbed in the unit prices of the Contractor's bid.

30. STORAGE AND PROTECTION OF EQUIPMENT AND MATERIALS: The following section supplements the requirements as described in section 106.06 of the City of West Linn's Public Works Standards.

Materials and equipment stored overnight shall be placed neatly on the job site. Unusable materials (i.e. rejected or damaged liner material, old concrete chunks, metal scraps, etc.) shall be expeditiously removed from the job site.

Provide appropriate barricades, signs, and traffic control devices in like-new condition where necessary to protect the public from any hazards associated with the storage of materials and equipment used for this project.

No equipment and/or materials shall be stored outside the immediate work area on public right-of-ways, in the following locations, or in the following manner:

1. In any maintained landscaped or lawn area.
2. In a manner that would totally eliminate an individual residents' street parking.
3. In front of any business.

The "immediate work area" is the area where work is taking place or will be taking place within one calendar day. The Contractor shall immediately move stored material or equipment which causes a nuisance or creates complaints.

31. COMPETENT PERSON DESIGNATION: The following section supplements the requirements as described in section 107.12 of the City of West Linn's Public Works Standards.

Contractor shall designate a qualified and experienced "competent person" at the site whose duties and responsibilities shall include enforcement of Oregon - OSHA regulations regarding excavations, the prevention of accidents, and the maintenance and supervision of construction site safety precautions and programs.

32. EMERGENCY MAINTENANCE SUPERVISOR: The Contractor shall submit to the City's project manager the names, addresses and telephone numbers of at least two employees responsible for performing emergency maintenance and repairs when the Contractor is not working. These employees shall be designated, in writing by the Contractor, to act as its representatives and shall have full authority to act on its behalf. At least one of the designated employees shall be available for a telephone call any time an emergency arises.

33. SANITARY SEWER MAIN CLEANING AND TV INSPECTION

PART 1 GENERAL

A. Description

1. This section includes all labor, materials, equipment, and incidentals necessary for cleaning and internal TV inspection of sanitary sewer main lines. Work under this section shall include, but not be limited to: cleaning of mainlines and manholes and TV

inspection of designated sanitary sewer main lines, traffic control as shown or required by all local, state, and federal agencies, and all other incidental work specified or shown in the Contract Documents.

2. CONTRACTOR shall perform all work in accordance with Federal OSHA and State safety requirements, including those for confined space entry.

B Submittals

1. Submittals shall be in accordance with the requirements of these Contract Documents, and shall include the following:

2. Information on all cleaning and TV inspection equipment proposed for use by the CONTRACTOR, including a listing of size, type, and capabilities of each piece of equipment.

3. A traffic control plan that shall include but not be limited to: staging sites, impacts to traffic patterns, considerations of bus traffic, as well as proposed signs, detours, and flaggers. See special specifications.

C. CONTRACTOR's Record Drawings

1. The CONTRACTOR shall maintain a detailed record, including a neatly marked set of construction drawings if applicable, of the sanitary sewer pipes associated with this work, including but not limited to: any differences in alignment, pipe size, and manhole or cleanout location discovered during the progress of the work. Records and drawings shall be kept current with the work as it progresses and shall be subject to inspection by the City's project manager at any time.

2. The location, alignment, lengths, and sizes of the sanitary sewer lines shown on the drawings are compiled from available records and/or field surveys. The City's project manager does not guarantee the completeness of such records. All dimensions shall be verified by the CONTRACTOR.

PART 2 PRODUCTS

A. Water for Cleaning

The City will approve a hydrant for use. The Contractor's shall provide a double check valve and appropriate water truck meeting AWWA and the City requirements.
The Contractor will keep a log of water use and provide it to the City.

B. Cleaning Equipment

1. General - The CONTRACTOR shall furnish and utilize a combination of high velocity hydraulic cleaning equipment and a vacuum unit as specified or required. High velocity cleaning equipment shall be used to clean all sewer mainlines unless otherwise specified or approved by the City's project manager. Low velocity or mechanical cleaning equipment shall not be used in lieu of high velocity equipment.

2. High Velocity Cleaning Equipment with Vacuum Pickup of Materials

   a. High velocity cleaning equipment shall be capable of providing minimum 60 or higher gallons per minute at 2,000 pounds per square inch (psi) of working pressure. CONTRACTOR shall provide a minimum of 500 feet of 1-inch ID high-pressure hose with at least two cleaning nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. The equipment shall also include a high velocity "gun" for cleaning manhole walls and bottoms. The equipment shall be complete including 1,200 gallon water tanks suitable for holding corrosive or caustic chemicals, pumps, hose, hydraulically driven hose reel, auxiliary engines, controls, and all safety features required by law.

   b. The cleaning equipment shall have an integral vacuum unit to allow the material cleaned from the pipes to be vacuumed directly from the manhole.

   c. CONTRACTOR shall provide additional cleaning equipment, including root cutters, as required to satisfactorily clean the pipe.

C. TV Inspection Equipment

1. A closed circuit color television (CCTV) camera capable of providing still pictures and videos shall be used on all lines. The CCTV equipment shall be specifically designed for sewer inspection operations and shall be operative in 100 percent humidity conditions. Lighting and camera quality shall be suitable to allow a clear focused picture a minimum of six linear feet in front of the camera of the entire inside periphery of the pipe. The camera shall have an adjustable focus distance from six inches to infinity, and the camera lights shall be variable intensity, with light, focus, and aperture remotely controlled by the operating technician at the monitoring station.

2. Camera travel speed shall be from 1.8 to 30 feet per minute (fpm) with smooth, uniform motion. Sudden stops and starts will not be acceptable. Camera shall be capable of stopping and reversing direction as necessary to document sewer conditions. Video pictures shall be clear, sharp, and free from vibratory or electrical interference when the camera is in operation.

3. A CCTV camera with pan-tilt capabilities shall be used on all lines larger than six-inches in diameter. The CCTV camera shall be a tractor-powered camera being able to inspect dead end lines, and shall be remotely controlled by an operating technician.

4. The monitoring station shall be truck-mounted, capable of seating two viewing personnel and one operating technician. The monitoring station shall be fully enclosed within a rigid weatherproof enclosure on the TV truck.

5. A minimum of two color display monitors (minimum 650 lines horizontal resolution) operating simultaneously shall be used in the monitoring station. The monitors shall be of a proper size to allow all viewing personnel in the monitoring station a satisfactory view, and shall continuously display the current date, manhole designation of the mainline being inspected, and a continuous forward and reverse read-out of the camera distance from the manhole of reference.

PART 3 EXECUTION

A. Temporary Traffic Control

Provide temporary traffic control as specified elsewhere in the Special Specifications.

B. Maintaining Sewer Flows and Cleaning Precautions

1. All sanitary sewer system components shall remain in service through the cleaning and TV inspection operations unless specific exceptions are approved in writing by the City's project manager.

2. During cleaning operations, precautions shall be taken by the CONTRACTOR in the use of cleaning equipment. When hydraulically propelled cleaning tools which retard the flows in the sewer lines are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. Precautions shall be taken to protect the sewer lines and manholes from damage that may result from the improper use of cleaning equipment. The CONTRACTOR shall be solely responsible for the repair of any damage to structurally sound lines or damage to properties connected to the sewer which results from the cleaning operations.

3. The methods used to maintain flows shall be at the CONTRACTOR'S option and may include use of flow-through plugs with periodic release of sewage flow or bypass pumping. The bypass system, if used, shall be capable of conveying flows when the sewers are flowing full.

C. Cleaning

1. Clean all sewer lines and manholes designated on the drawings or directed by the City's project manager prior to CCTV inspection including the manholes at both ends of the section to be inspected. Equipment as specified shall be used for cleaning.

2. All dirt, sand, grease, rocks, roots, or other accumulations shall be removed from pipe walls and manholes. Existing lines shall be protected from damage caused by cleaning operations. Hydraulic cleaning operations shall be conducted with care to avoid damage to pipes and manholes, or flooding of adjacent property.

3. All sewers shall be cleaned with high velocity equipment unless the City's project manager allows otherwise. The City's project manager may order the use of other methods or equipment when it appears necessary.

4. All materials removed from the pipes during the cleaning operations shall be collected by a vacuum unit from the manhole downstream of the section being cleaned and removed by the CONTRACTOR. Passing accumulated materials from manhole section to manhole section shall not be permitted.

5. The CONTRACTOR shall be responsible for the proper and legal disposal of all materials removed from the sewers and in a manner acceptable to the City's project manager.

6. Manhole and sewer cleaning reports shall be submitted on forms matching or similar to the format of the cleaning report forms included at the end of this section. All reports shall be completely filled out and provide all essential data, including:

    a. Location of mainline segment or manhole being cleaned (street name and manhole designation as shown on the drawings);

    b. Diameter of sewers, in inches;

    c. Estimated amount and type of material removed from pipe or manhole.

7. Two copies of the typed Mainline Cleaning Report forms shall be furnished to the City's project manager as specified below.

8. Acceptance of the cleaning work will not be made until after the submittal of the cleaning reports and the CCTV inspection reports and records. Lines will be considered acceptably clean when sufficient material has been removed to restore the sewer line to 95 percent of its original flow capacity.

D. Sewage Flow Controls

1. The methods used to maintain flow shall be at the CONTRACTOR'S option and may include the use of flow-through plugs or bypass pumping.

2. During periods of very high flows when lines flow greater than half full, the CONTRACTOR, with the City's project manager's approval, shall suspend sewer cleaning operations until flows are again less than half full.

3. Depths of flow at the downstream manhole during television inspection shall not exceed those shown below when performing television inspection of the lines.

Pipe Diameter (inches)	Maximum Flow Depth % of Pipe Diameter
6 – 10	10
12 – 24	15
30 - 42	20
48 - 72	25

4. When the sewage depth of flow at the downstream manhole of the mainline section being inspected is above the maximum allowable for television inspection, the CONTRACTOR shall provide flow-through plugs or other means where necessary to ensure that the flows are reduced to the levels specified above.

E. CCTV Inspection

1. Internal CCTV inspection of sanitary sewer mainlines as shown on the drawings shall be performed only after the sewers have been thoroughly cleaned so that service connections, cracks, leaks and structural failures may be located.

2. The CCTV inspection shall be performed on one mainline section at a time and between two manholes. Each mainline section being inspected shall be isolated from the remainder of the line as necessary by the use of line plugs or bypass pumping to insure viewing of the inside periphery of the pipe. The TV inspection shall be performed by moving the television camera through the line along the axis of the pipe. The inspection shall be performed in a forward and/or backward direction, according to line conditions at the time the inspection is made.

3. The pan-tilt camera shall be turned to view directly up the axis of each service lateral encountered.

4. During the CCTV inspections, a record shall be kept which shows clearly the exact location in relation to the centerline of the adjacent manhole of each service connection, crack, leak or structural fault discovered. To insure accurate measurement, the measurement shall be made at or above ground level by means of a meter device.

Marking on a cable or the like which would require interpolation for the depth of the manholes shall not be used. Accuracy of the distance meter shall be checked by use of a walking meter, measuring wheel, or other suitable device, and the accuracy shall be satisfactory to the City's project manager.

5. The TV inspection record shall be submitted on forms matching or similar to the format of the report forms included at the end of this section. All reports shall be completely filled out and provide all essential data, including:

    a. Location of mainline segment being tested (street name and designation as shown on the drawings);

    b. Pipe diameter in inches;

    c. Type and condition of the pipe;

    d. Length and type of joints;

    e. Presence and location of roots or visible leaks;

    f. Location and description of any cracks, breaks, misalignments, or obstructions;

    g. Location and diameter of service laterals, including clock position as viewed from the camera;

    h. Condition of the portion of lateral visible from pan-tilt camera;

    i. Estimates of flows from service pipes and estimates of whether flow is domestic or I/I.

6. Two copies of the printed Television Inspection Report form shall be furnished to the City's project manager.

7. All video inspections shall be recorded on a digital portable hard drive together with voice transmissions of sewer conditions. The video records shall be accurately referenced to the corresponding inspection report and shall be organized and catalogued so that specific faults can easily be located.

8. The video shall be created in a format compatible with the majority of PC players sold in the past five years. Inspection runs shall be numbered sequentially. Each file shall have a label which lists the date, the run number including MHs, and all runs (including run number and mainline segment) included on the disk. The hard drive shall become the property of the OWNER upon payment for the line segments inspected.

F. Report Submittals

All cleaning and TV inspection and manhole inspection reports shall be typed and organized by manhole numbers and submitted to the Project Manager.

34. CURED-IN-PLACE PIPE

A. Description

This Section includes the work necessary to furnish and install cured-in-place pipe (CIPP). The project locations are shown in the Drawings. The CONTRACTOR shall provide all materials, labor, equipment, and services necessary for handling of sewage flow including bypass pumping, cleaning and inspection of the existing pipe system, CIPP installation, testing of the lined pipe system, and reconnection of service connections, all as specified herein.

B. Reference Specifications, Codes, and Standards

The following references are part of this Specification, in case of conflict between the requirements of this Specification and those of the listed documents, the requirements of this Specification shall prevail. The latest edition of the following references shall be used:

ASTM F1216-07b	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
ASTM F2599	Standard Practice for the Sectional Repair of Damaged Pipe by Means of an Inverted Cured-In-Place Liner
ASTM D790	Test methods for flexural properties of non-reinforced plastics
ASTM F1743	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled-in Place Installation of Cured-In-Place Thermosetting Resin Pipe (CIPP)
ASTM D5813	Standard Specifications for Cured-In-Place Thermosetting Resin Pipe (CIPP)
ASTM F 2454-05	Practice for Sealing Lateral Connections and Lines from the Mainline Sewer Systems by the Lateral Packer Method, Using Chemical Grouting.

ASTM F2019	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Resin Pipe (CIPP)
ASTM D543	Test Method for Resistance of Plastics to Chemical Reagents
ASTM D578	Standard Specification Glass Fiber Strands
ASTM D638	Standard Test Method for Tensile Properties of Plastics.
ASTM D2122	Standard 1 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
ASTM D3567	Standard Practice for Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings

C. CIPP Contractor Qualifications

To be eligible to perform CIPP work required in this contract, the Contractor must demonstrate to the City's project manager their capabilities for installing one of the specified lining products in full accordance with the plans and specifications. Approval will be made based on the City's project manager's evaluation of the proposed CIPP Contractor's past experience. The proposed CIPP rehabilitation process must be a proven technology, which is defined as a minimum of 100,000 lineal feet of successful sanitary sewer and/or storm water collection system installations in the U.S., documented to the satisfaction of the city's project manager.

For a CIPP Contractor to be considered as qualified, the Contractor must satisfy all insurance, financial, and bonding requirements of the Owner, and the Project Supervisor (See items D.4 & D.12 of this section) must have successfully installed at least 50,000 feet of the cured-in-place rehabilitation process proposed by the Contractor for use on this project. Acceptable documentation of these minimum installations must be submitted to the Owner. Furthermore, the Contractor's Project Superintendent must have a minimum of 3 years of CIPP installation experience, and must be on-site during the installation of the CIPP products.

The Statement of Qualification shall consist of the following:

1. A completed Statement of Qualifications Form signed by the CIPP Contractor that identifies the CIPP rehabilitation method(s) proposed, and the qualifications of the Contractor for accomplishing the CIPP work using the proposed CIPP method. The Form shall be submitted to the City with the sealed bid documents proposal. A blank copy of this form is enclosed with supplementary information near the back of this document.

2. A list of similar projects completed. The list shall also include the name of the project, the type of rehabilitation process used, the type and total length of pipe rehabilitated, the date

completed, the city's project manager, and the name of the Owner (include the Owner's address, phone number and contact person).

3. Certifications and experience resumes of individual installers and field supervisor(s) to be appointed to the project.

4. Manufacturer information on the CIPP products proposed for the project.

5. The city's project manager shall have the right to require a prospective CIPP Contractor to clarify any portion of their Statement of Qualification. Response to such a request must be made in writing and shall become a part of the Statement of Qualification. Failure to respond to such a request shall be cause for rejection of the Statement of Qualification.

6. Upon completion of the evaluation process and within seven calendar days of the bid opening date, the City's project manager will notify the winning CONTRACTOR of their approval status. Contractors who have not successfully completed the qualification process will not be eligible to perform CIPP work on this project.

D. Contractor Submittals

The following submittals shall be provided as per the Special Specifications. The following list is not the final list and the City's project manager may request additional information and or shop drawings.

1. Certification by the lining system manufacturer that the installer is fully licensed and certified as competent to perform the work.

2. Certification from the manufacturer that the materials meet the requirements of these specifications and intended use. Certification of test results confirming that the liner and resin meet the minimum chemical resistance requirements according to ASTM F 1216 and ASTM F 1743.

3. Catalog data, and manufacturer's technical data showing complete information on material composition, physical properties, 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. **MSDS for the resin used and anything that causes odor**.

4. A list of the key qualified personnel who are assigned to and will work on this project and Certification of worker training for installing CIPP liners.

5. Flow diversion plan for the mainline including service laterals.

6. Detailed method for samplings, including recommended location and size of each sample, method of removal, and method of liner repair including a procedure to repair the cured liner when core/plate samples are taken.

7. Design calculations stamped by a registered professional engineer in the State of Oregon certifying that the structural design requirements outlined in Part 2 of these specifications have been met.

8. Detailed description of the wet out process. Include tube and resin manufacturer's wet out recommendations including the roller gap, material feed speed and vacuum requirements for each liner size and thickness. If wet out occurs off-site, provide certification by the person in responsible charge that the entire wet out process including handling and delivery to the site followed the defined procedures.

9. Detailed narrative description and sketches to describe all proposed manhole preparation, modification, preservation, and restoration activities.

10. A plan for the process of removing resin impregnated uncured liner from the host conduit, including protection of the host system from escaping resin.

11. Independent third party test results for the gravity CIPP product for approval supporting the structural performance (short-term and long-term) of the product. Test samples shall be prepared so as to simulate installation methods and trauma of the product.

12. Statement of experience of the manufacturer's representative(s) who will be on site during the work is required from Contractors who are not a Certified Installer. Contractors who are Certified Installers by manufacturer – disregard this requirement. Superintendents who meet the experience requirements shall be on the jobsite at all times.

13. Resin manufacturer installation procedures including curing and cooling temperature and time requirements and sequences

14. The manufacturer's certification of field measurements, and pipe sizing calculations which demonstrate that the CIPP liner has been properly sized to avoid the creation of wrinkles or folds.

15. The CONTRACTOR shall submit sewage bypass pumping and/or sewage diversion plans for review by the City's project manager at least 5 working days prior to commencement of the work. The CONTRACTOR'S plans for sewage bypass pumping and/or sewage diversion shall be approved by the City's project manager before the CONTRACTOR shall commence the bypass pumping and/or sewage

diversion. The CONTRACTOR shall notify the City's project manager 24 hours prior to commencing with the bypass pumping operation. See item number 30 of this section, Sewage Diversion, for more specific requirements.

16. The CONTRACTOR shall submit a traffic control plan for the work that shall include but not be limited to: work areas, staging areas, impacts to traffic patterns, considerations of bus traffic, as well as proposed signs, detours, and flaggers.

17. Detailed narrative description and sketches to describe all methods, material, equipment, and procedures proposed to seal the annular space between the liner and the existing pipe at the manholes and reinstated service connections, in accordance with the requirements described in Part 3, Item D of this specification. Include proposed manhole preparation, modification, preservation, and restoration activities.

18. Certified copies of all cure logs of the installed liner, submitted upon completion of each lined segment.

19. Detailed narrative description and sketches to describe all methods, material, equipment, and procedures proposed to install and test service lateral grout if required.

E. Quality Assurance

1. The finished liner shall be continuous over the entire length of an insertion/inversions run between two manholes or access points and shall be free from visual defects such as foreign inclusions, dry spots, de-laminations and lifts. Entire length of the liner shall be visible on the final TV report with waterstop gaskets to be visible at both ends of the new liner and called out.

   If the final TV report discovers the finished liner pipe in violation of the above written requirements – the City reserves the right to reduce payment for the defective run from MH to MH up to 100%, or request replacement of the entire pipe or a section of the pipe at the contractor expense at the discretion of the City Engineer.

2. Wrinkles in the finished liner pipe that cause a backwater of 1/4-inch or more or in any way reduce the hydraulic capacity of the pipe, and are not the result of pre-existing conditions, are unacceptable and shall be removed and repaired by the CONTRACTOR at the CONTRACTOR'S expense. The CONTRACTOR shall remove a section of pipe, if so directed by the City's project manager, to determine if a void between wrinkle and pipe wall exists. If it is so proven that a void does exist, the CONTRACTOR shall repair and replace that section of pipe at the CONTRACTOR'S

expense. If a void does not exist, the CONTRACTOR shall repair and replace that section of pipe at the OWNER'S expense. Methods of repair shall be proposed by the CONTRACTOR and submitted to the City's project manager for review and approval.

E. Warranty

The CONTRACTOR shall provide a warranty to be in force and effect for a period of 18 months from the date of final acceptance. The warranty shall cause the CONTRACTOR to repair or replace the liner should failure result from faulty materials or installation.

PART 2 PRODUCTS

A. Felt Liner with Heat-Cured Resin (CIPP Method A)

1. Liner Tube

a. The liner tube shall consist of one or more layers of flexible needled felt or an equivalent woven and/or non-woven material and shall meet the requirements of ASTM F1216-07b, Section 5.1.

b. The liner tube shall be capable of carrying resin, withstanding installation pressures and curing temperatures, and shall be compatible with the resin system used. The liner shall be fabricated to a size that, when installed, will fit the internal circumference of the existing pipe.

c. The liner shall be fabricated from materials which when cured, will be chemically resistant to and will withstand internal exposure to sewage gases containing quantities of hydrogen sulfide, carbon monoxide, methane, petroleum hydrocarbons, saturation with moisture, diluted sulfuric acid, and other similar chemical reagents.

d. The minimum tube length shall be that deemed necessary by the CONTRACTOR to effectively span the distance from the inlet to the outlet of the respective manholes, or access points, unless otherwise specified. The CONTRACTOR shall verify the lengths in the field before impregnation of the tube with resin. Individual insertion/inversions runs may be made over one or more manhole sections as determined in the field by the CONTRACTOR and as reviewed and accepted by the City's project manager.

e. Prior to insertion/inversions, the liner shall be free of all visible tears, holes, cuts, foreign materials, and other defects.

f. Prior to insertion/inversions, the CONTRACTOR shall provide data on the maximum allowable stresses and elongation of the tube. The manufactured tube shall be marked along its length at regular intervals not to exceed five feet. These marks shall be used as a gauge to measure elongation during insertion. Should the overall elongation of a reach exceed five percent, the liner tube shall be rejected and replaced.

2. Resin

a. Unless otherwise specified, provide a general purpose, unsaturated, thermosetting, polyester, vinyl ester, or epoxy resin able to cure in the presence or absence of water, and a catalyst system compatible with the insertion process.

b. Resin shall not be subjected to ultraviolet light and shall form no excessive bubbling or wrinkling during lining.

3. Structural Requirements

a. The heat-cured CIPP liner shall be designed to support hydraulic, soil and live loads. The liner system shall be designed per ASTM F1216-07b, Appendix X.1. The required structural CIPP wall thickness shall be based on the physical properties in Section A.3.b below at a minimum or greater and upon a fully deteriorated gravity pipe condition in accordance with the design equations in Paragraph X1.2.2, Fully Deteriorated Gravity Pipe Condition of Appendix X1. - Design Considerations of ASTM F1216-07b, and the design parameters in Section A.3.c below. The liner wall thickness shall not exceed 8 mm.

b. The heat-cured CIPP shall conform to the structural properties as listed below.

Property	Test Method	Minimum Value per ASTM F1216-07b
Flexural strength	ASTM D790	4,500 psi
Flexural modulus	ASTM D790	250,000 psi
Flexural modulus (enhanced)		400,000 psi
Tensile strength (for pressure pipes only)	ASTM D638	3,000 psi

c. The felt lining with heat-cured resin CIPP shall be designed with the following structural design parameters for the fully deteriorated gravity pipe condition:

1. Design Safety Factor (N) = 2.0

2. Retention Factor for Long-Term Flexural Modulus = 50%
3. Ovality (calculated from (X1.1of ASTM F1216-07b) = 2%
4. Soil density = 120 lbs./cubic foot
5. Live load = HS-20
6. Soil modulus = 1,000 psi
7. Vacuum condition = 0
8. Pipe Condition = Fully Deteriorated
9. Minimum service life = 50 years
10. Groundwater Depth = Assume at surface
11. Soil Depth (above the crown) See Drawings for Existing Sewer Depths
12. Poisson's ratio = 0.3

B. Fiberglass Liner with Ultraviolet (UV)-Cured Resin (CIPP Method B)

1. Liner Tube

a. The fiberglass within the liner shall be non corrosion (E-CR Glass) material and shall be free from tears, holes, cuts, foreign materials and other surface defects. Its glass fibers must extend in a longitudinal direction to insure no longitudinal stretching during the pull-in process.

b. The liner shall be constructed to withstand installation pressures as required by Manufacturer's recommendations.

c. The liner shall be manufactured to a size that when installed will tightly fit the internal circumference and the length of the original pipe. The tube be able to stretch to fit irregular pipe sections and negotiate bends of up to 20 degrees and shall have sufficient strength to bridge missing pipe sections, with the use of a canvas sleeve if necessary.

d. The liner shall be fabricated from materials which when cured, will be chemically resistant to and will withstand internal exposure to sewage gases containing quantities of hydrogen sulfide, carbon monoxide, methane, petroleum hydrocarbons, saturation with moisture, diluted sulfuric acid, and other similar chemical reagents.

e. Interior and exterior plastics shall be styrene resistant to protect and contain the resin used in the liner.

f. The exterior plastic shall be ultra violet light resistant and translucent to allow visual inspection of the impregnation of the resin within the glass fibers.

g. The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with CCTV inspection may be made.

h. The nominal liner wall thickness shall be constructed to the nearest 0.5mm increment.

i. The minimum tube length shall be that deemed necessary by the CONTRACTOR to effectively span the distance from the inlet to the outlet of the respective manholes, or access points, unless otherwise specified. The CONTRACTOR shall verify the lengths in the field before impregnation of the tube with resin. Individual insertion/inversions runs may be made over one or more manhole sections as determined in the field by the CONTRACTOR and as reviewed and accepted by the City's project manager.

j. Prior to insertion/inversions, the liner shall be free of all visible tears, holes, cuts, foreign materials, and other defects.

k. Prior to insertion/inversions, the CONTRACTOR shall provide data on the maximum allowable stresses and elongation of the tube. The manufactured tube shall be marked along its length at regular intervals not to exceed five feet. These marks shall be used as a gauge to measure elongation during insertion. Should the overall elongation of a reach exceed five percent, the liner tube shall be rejected and replaced.

2. UV-Cured Resin

a. The resin used to impregnate the liner shall produce a cured liner pipe resistant to shrinkage, corrosion, abrasion and shall have a proven resistance to municipal wastewater.

b. The resin shall be a chemically resistant UV cured isophthalic polyester resin or vinyl ester resin (as allowed by the city's project manager). When cured the resin/liner system shall meet the structural and chemical resistance requirements of ASTM F2019.

3. Structural Requirements

a. The thickness of each liner installed shall be determined using calculation methods that are consistent with applicable ASTMs. The Contractor shall submit stamped and signed designs prior to the installation of any liner. The designs shall include a step by step calculation that shows all equations, defines all

variables, lists all assumptions, and clearly indicates all values used for the design.

b. The design engineer shall set the lon 1 g term (50 year extrapolated) Creep Retention Factor at 50% of the initial design flexural modulus as determined by ASTM D790 test method.

c. The CIPP shall be designed to support hydraulic, soil and live loads. The CIPP shall be designed per ASTM F1216-07b, Appendix X.1. The required structural CIPP wall thickness shall be based on the physical properties in Section B.3.d below at a minimum or greater and upon a fully deteriorated gravity pipe condition in accordance with the design equations in Paragraph X1.2.2, Fully Deteriorated Gravity Pipe Condition of Appendix X1. - Design Considerations of ASTM F1216-07b, and the design parameters in Section B.3.e below.

d. The fiberglass liner with UV-cured resin CIPP shall conform to the structural properties as listed below.

Property	Test Method	Minimum Value
Wall thickness	ASTM D2122 per ASTM F2019	To be determined during design; to a maximum thickness of 8 mm
Flexural strength	ASTM D790	20,000 psi
Flexural modulus	ASTM D790	1,200,000 psi

e. The CIPP shall be designed with the following structural design parameters for the fully deteriorated gravity pipe condition:

1. Design Safety Factor (N) = 2.0
2. Retention Factor for Long-Term Flexural Modulus = 60%
3. Ovality = 2%
4. Soil density = 120 lbs./cubic foot
5. Live load = HS-20
6. Soil modulus = 1,000 psi
7. Vacuum condition = 0
8. Pipe Condition = Fully Deteriorated
9. Minimum service life = 50 years
10. Groundwater Depth = Assume at surface
11. Soil Depth (above the crown) See Drawings for Existing Sewer Depths
12. Poisson’s ratio = 0.3

PART 3 EXECUTION

A Preparation

1. Sewage Bypass Pumping and/or Sewage Diversion

a. The CONTRACTOR shall provide sewage bypass pumping and/or sewage diversion when required for acceptable completion of the liner installation. Bypass pumping and diversions shall be per Special Specification Section 35.

b. Bypass pumping shall be done in such a manner as not to damage private or public property, or create a nuisance or public menace. The pumped sewage shall be in an enclosed hose or pipe that is adequately protected from traffic, and shall be redirected into the sanitary sewer system. Dumping or free flow of sewage on private property, gutters, streets, sidewalks, or into storm sewers is prohibited.

c. The CONTRACTOR shall take all necessary precautions including constant monitoring of bypass pumping and diversions to insure that no private residences or properties are subjected to a sewage backup or spill. The CONTRACTOR shall be liable for all cleanup, damages, and resultant fines in the event of a spill. After the work is completed, flow shall be restored to normal. See Special Specification 35, Sewage Bypass Pumping and Diversion, for more specific requirements.

2. Coordination with Collection System Customers

See Special Specifications.

3. Cleaning and Inspection of the Existing Sewer

The CONTRACTOR shall clean, inspect, and confirm the inside diameter and determine the condition of each manhole to manhole segment to be lined. The cleaning process shall include the removal of all roots, protruding laterals and mineral deposits and other matter. A video inspection shall be performed by the CONTRACTOR after the sewer cleaning operation and point repairs and grouting are completed. The television inspection shall be completed in the same direction each time and shall be done with a CCTV color camera recorded in DVD format. A pivot-head camera shall be used for all pipe lines that are 6-inches in diameter or greater to allow detailed lateral inspection. A copy of the television inspection DVD's and written reports from all video inspections shall be provided to the City's project manager for review prior to the liner installation. See Special Specification 33, Sanitary Sewer Main Cleaning and TV Inspection, for more specific requirements.

4. Point Repairs or Removal of Line Obstructions

Point repairs or removal of line obstructions shall be performed by the CONTRACTOR where video inspections reveal heavy solids, dropped or offset joints, protruding taps, or collapsed pipe that cannot be removed by conventional sewer cleaning equipment and may prevent the proper completion of the lining process. The work shall include verifying the location of the point repair, locating all interfering utilities, temporary flow bypassing, traffic control, excavation, shoring, dewatering, pipe repairs or replacements, connections to the existing pipe, backfilling and surface restoration, the work will be considered incidental to the CIPP installation project and will not constitute extra work or extra pay item. If the work was unforeseen from the conducted TV inspections and if such repairs are not previously indicated on the drawings or elsewhere in the contract documents then the work may constitute extra work when approved by the City's project manager.

5. Manholes

The CONTRACTOR shall protect the manholes to withstand forces generated by equipment, water or air pressure used during the liner installation process.

B. Installation

1. Felt Liner with Heat-Cured Resin (CIPP Method A)

a. Resin Impregnation

1. The uncured resin in the original containers and the unimpregnated 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 City's project manager. A resin and catalyst system that is compatible with the requirements of the method shall be used. The manufacturer shall provide certification that this process has been completed correctly.

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.

b. Liner Installation

1. The impregnated tube shall be inserted/inverted through an existing manhole or other access approved by the City's project manager. The liner

may be pulled in place prior to inflation or may be fully extended to the next designated manhole by the application of hydrostatic head or air pressure.

2. The liner shall be installed at a rate not greater than ten feet per minute.

3. The Contractor shall staff this project with the key individuals who were approved by the city and who will be available for the project duration. Failure to produce the listed individuals during the Project shall be cause for terminating the Contract or for delaying at no cost to the Owner until said individuals are available. Delay claims caused by such failure shall NOT be allowed. Contract time shall NOT be extended due to the above mentioned personnel being unavailable to work on this Project at all times.

c. Heat Curing

1. A suitable heat source and distribution method shall be provided. The equipment shall be capable of circulating hot water or steam throughout the section by means of a pre-strung hose which has been perforated in accordance with the manufacturer's recommendations or other methods acceptable by the City's project manager to raise the temperature uniformly above the temperature required to cure the resin. This temperature shall be determined by the manufacturer based on the resin/catalyst system employed.

2. The heat source piping shall be fitted with continuous monitoring thermocouples to gauge the temperature of the incoming and outgoing water, steam, and/or air supply. Water, steam, or air temperature during the cure period shall meet the requirements of the resin manufacturer as measured at the heat source inflow and outflow return lines. The CONTRACTOR shall provide standby equipment to maintain the heat source supply.

3. The initial cure shall be deemed to be completed when inspections of the exposed portions of the liner appear hard and sound and the remote temperature sensors indicate that an exothermic reaction has occurred. The cure period shall be of duration recommended by the resin manufacturer during which time the recirculation of the water, steam, and/or air and cycling of the heat exchanger continuously maintain the required temperature.

4. Temperature shall be maintained during the curing period as recommended by the resin manufacturer, and shall follow the heating schedule supplied by the manufacturer and reviewed by the City's project manager. The

temperature shall not exceed the manufactures recommended curing temperature.

5. Cool Down

i. The hardened liner shall be cooled to a temperature below 100 degrees Fahrenheit before relieving the static head or pressure in the lined pipe and returning normal sewage flow back into the system. The cool down may be accomplished by introducing cool water or air into the lined pipe. Care shall be taken in the release of the static head or pressure so that a vacuum will not develop which could damage the newly installed liner.

ii. If the liner fails to make a tight seal at the manhole walls, a seal consisting of a resin mixture compatible with the liner/resin system shall be applied in accordance with manufacturer specifications and approved by the City's project manager.

2. Fiberglass Liner with UV-Cured Resin (CIPP Method B)

a. Resin Impregnation

1. The uncured resin in the original containers and the unimpregnated 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 City's project manager. A resin and catalyst system that is compatible with the requirements of the method shall be used. The manufacturer shall provide certification that this process has been completed correctly.

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.

b. Liner Installation

Liner installation shall be in accordance with applicable ASTM F2019, Section 6.4, and the following:

1. Liner protection – Prior to inserting the Liner, a plastic sheet 10 mil thick will be pulled into the host pipe to protect the Liner from damage as the Liner is pulled in.

2. The Liner shall be pulled-in through an existing manhole or approved access point and fully extend to the next designated manhole or termination point. The pulling speed shall not exceed 15 ft/min. Care shall be exercised not to damage the tube during the pulling phase.

3. Liner Inflation – The Liner shall then be inflated with air with sufficient pressure to hold the Liner tight to the host pipe wall.

4. The Contractor shall staff this project with the key individuals who were approved by the city and who will be available for the project duration. Failure to produce the listed individuals during the Project shall be cause for terminating the Contract or for delaying at no cost to the Owner until said individuals are available. Delay claims caused by such failure shall NOT be allowed. Contract time shall NOT be extended due to the above mentioned personnel being unavailable to work on this Project at all times.

5. Liner Inspection – The Contractor will video record the Liner prior to commencement of the curing process, and make the recording available to the city's project manager upon request.

c. UV Light Curing

CIPP curing shall be in accordance with applicable ASTM F2019, Section 6.6 and 6.7, with the following modifications:

1. The ultraviolet curing lamps shall operate in a sufficient frequency range to insure the required curing of the resin.

2. A camera must be located on the ultraviolet light assembly to enable the video inspection of the Liner and to insure that the Liner has been properly inflated and any liner problems can be identified before curing begins.

3. The Contractor will submit a documented record of time, rate of travel of the ultraviolet light assembly, and internal temperatures and pressures during the curing process to the City's project manager upon request.

C. Finished CIPP Requirements

a. The finished CIPP shall be continuous over the entire length of an installation run, and be free of material defects. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe.

b. Any defect, which will or could affect the structural integrity, strength, capacity, or future maintenance of the installed liner, shall be repaired at the Contractor's expense, in a manner approved by the City's project manager.

D. Watertight End Seals

Two (2) hydrophilic Rubber Gaskets shall be installed in the host pipe at both the upstream end and the downstream end of the liner. Outside drop MHs shall have gasket installed upstream from the drop pipe.
The Hydrophilic Rubber gasket shall be Hydrophilic Expandable Waterstop HYDROTITE CJ-0725-3K or approved equal and shall be glued with LEAKMASTER LV-1 or approved equal.

The seal shall be a material composed of an extended hydrophilic rubber compounded from chloroprene (neoprene) rubber and a hydrophilic resin which expands upon contact with water. The seal should have the ability to swell up to eight times its original volume if necessary and mold itself to completely fill all gaps and exert pressure evenly to ensure a watertight seal. The rubber joint seal shall be bonded with adhesive on one face to hold it in place during assembly. The Contractor may propose an alternative sealing material or products in lieu of a hydrophilic rubber joint seal. The proposed alternate shall provide a positive seal between the liner and the existing host pipe, ensuring no tracking through the annulus space and into the manhole. The product must remain in place prior to and during liner installation. <u>If the sealing material is washed away or diluted by flow through the host pipe prior to liner installation, it must be reapplied before installation is allowed to proceed</u>. **Any alternative must be approved by the Engineer prior to installation.**

Both ends of the cured liner shall be cut flush at the inlet and outlet points in the manhole. In some cases, when the liner is carried through a straight channel MH, a cut out can be made through the top of the liner inside the MH with the Project Manager approval only. In this case the bottom of the liner will serve as a continuation of the MH's channel and the edges of the cut out will be sealed watertight with approved epoxy.
A watertight seal shall be installed at each end using an epoxy or resin mixture compatible with the CIPP system. Seals will be incidental to the CIPP liner. Sealing material and installation method shall be submitted and approved by the city's project manager prior to start of construction, and shall conform to the detail drawings provided on the plans. Mortar shall be used: Euclid Chemical "HEY'DI PWDER X" grout or approved equal. Hydraulic cements and quick-set cement products are not acceptable.

E. Service Line Reconnection

1. The Contractor shall locate and verify all live sanitary service lines and any connections found to be direct inflow of storm water shall not be reinstated. The Contractor is required

to notify the resident(s) at each address a minimum of 48 hours in advance to the commencement of work and again immediately prior to the disruption of their service

2. After pipe liner has cured, reinstate all active services and those to vacant lots**.** **All previously capped laterals shall remain capped and uncut.** This work is considered to be incidental and is not a pay item.

a. Perform reconnection from interior of pipeline without excavation using internal inspection camera with robotic cutter head. Finish by brushing is required.

b. Holes cut through liner: CONTRACTOR shall provide a nearly full-diameter hole, free from burrs or projections and with a smooth and crack-free edge by brushing. The hole shall be 95 percent minimum and 100 percent maximum of the original service connection diameter. The invert of the service connection shall match the bottom of the reinstated service opening.

c. Coupons shall be recovered at downstream manhole and removed.

3. Do not open abandoned service connections except at City's project manager's direction. If abandoned service connection is opened without City's project manager's approval, perform an internal spot repair to close connection, at no additional cost to the owner.

4. No grouting for service laterals will be required after connection opening.

5. An estimate of the number of service connections to be reconnected by the CONTRACTOR is provided in the bid schedule.

F. Testing

1. Material Testing

Samples removed for testing will be individually labeled and logged to record the following:
- .....Project Number and Title
- .....Sample Number
- .....Segment number of line as noted on plans
- .....Date and Time of Sample
- .....Name of Contractor
- .....Chain of Custody

a. Samples removed for testing shall be taken at the City's project manager's choice of location and line being rehabilitated. If the Contractor samples from inside the line, the location of the coupon shall be repaired. The point repair spot shall be

repaired with a method approved by the City's project manager. The point repair is at no additional cost to the City.

b. All lines shall be tested for thickness from upstream, downstream and the cored holes from the lateral connections. An average thickness shall be submitted at the completion of each line. Core holes shall be labeled with address and submitted to the owner.

"No Dig" option: At City's project manager's option, in lieu of excavation for core samples, the liner shall be run through an 18" long section of line-sized pipe, or an appropriate restraint, to act as a mold for the liner and cured.

c. The CONTRACTOR shall provide certified test results of the short term properties of the cured lining material from the actual installed liner at a minimum of one location per each liner insertion setup.

d. The cured liner shall be sampled and tested for flexural strength and flexural modulus (short term). 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 stated under Part 2 of this specification. A certificate of compliance shall be provided for long-term flexural modulus.

2. Field Testing

After completion of all liner insertion, service reconnections, and finish work at the manholes, the sewer shall be televised with a color CCTV tilt-head camera recorded in DVD acceptable format. Please pay attention that every gasket shall be visible. A portable hard drive shall be provided to the City's project manager. See Special Specifications for Sanitary Sewer Main Cleaning and TV Inspection for more specific requirements.

G. Reconstruct Manhole Channel

Manholes, where liner was installed in upstream and downstream lines - remove obstructions and irregularities in the channel with appropriate tools and pressure washer then grout the entire channel so the bottom of the channel is even with the newly lined pipes to improve flow through the manhole. In manholes use only an approved by the City hydraulic cement grout from the QPL to fill and smooth the surfaces. Prepare surfaces according to manufacturers requirements prior to application. Finished surfaces shall provide an even slope through the manhole with no rise in elevation or protrusions that might inhibit flow.

H. Sectional (Short) Repairs

Sectional (short) repairs shall be performed in accordance with ASTM F2599 and all the other requirements of this section.

35. SEWAGE DIVERSION REQUIREMENTS

A. The CONTRACTOR shall submit a "Flow Diversion and By-Pass Pumping Plan" to the City's project manager prior to the start of construction. Under no circumstances shall sewage be allowed to flow or leak onto the ground surface, into gutters or onto streets, over sidewalks, or into storm inlets. All diverted sanitary sewage and storm drainage shall be discharged back to the existing sanitary or storm sewer system. The Flow Diversion and By-Pass Pumping Plan shall outline the CONTRACTOR's proposed method of handling all flows during all elements of construction. The flow through the pipe shall be diverted and pipe shall be flushed prior to insertion of the CIPP. The plan shall show all flow inputs (connections) in the work area and how the flow from each connection will be managed. Flow inputs shall be confirmed by the contractor during initial field surveys and television inspections. The contractor shall provide complete diversion regardless of flow rate. Additionally the plan shall contain, at a minimum, a plan view of each proposed diversion on a site map and the individual components of the diversion including but not limited to:

1. Pumps: type, size and placement
2. Diversion pipe: size, type, and placement
3. Power supply to pumps
4. Method of damming the flow
5. Facilities for redundancy

B. When necessary to provide for the construction on an existing sewer system, the flow shall be diverted by the use of pumps to a manhole downstream of the construction. The CONTRACTOR shall have adequate pumps and piping or alternative methods to divert flow to the downstream conveyance lines. The pumping or transportation capacity shall be sufficient to maintain normal flows plus additional flows that may occur during a rainstorm.

C. Flow diversion piping shall be buried or arranged such that the piping is protected from traffic loads, traffic is maintained at driveways and roadways, and sidewalks are free of obstruction unless otherwise approved by the City's project manager. All sewage diversion piping shall be water-tight. Surface restoration that is required for installing flow diversion piping and other appurtenances is incidental to the flow diversion and by-pass pumping pay item.

D. The CONTRACTOR shall use critically silenced generators and pump units with hospital-grade mufflers and shall meet or exceed the requirements of any local noise ordinances. Such approved generators and accompanying pumps shall be continuously monitored while in operation and shall be placed to minimize disturbances to residential areas. If necessary to meet noise ordinances, sound baffles and temporary sound walls shall be installed to deflect sound from generators and bypass-pumps away from residential areas or as directed by the City's project manager. No

variance from any local noise ordinances will be allowed unless the CONTRACTOR secures a noise variance at no additional expense to the OWNER.

E. Noise-generating diversion equipment, including pumps and generators, shall not be operated overnight. At the end of each working day, the CONTRACTOR shall make all provisions necessary to restore normal sewer operation without the use of noise-generating diversion equipment.

F. Diversion of all flows shall be maintained at all times. The CONTRACTOR shall provide a qualified operator who is capable of making emergency repairs or who is able to mobilize forces to handle power, pump or other problems. This operator shall be on site immediately near the pumping system at all times. The CONTRACTOR shall be responsible for continuity of sewer service to each facility connected to the section of the sewer being impacted during the execution of the work. Diversion pumping equipment and piping shall be tested for leaks prior to pumping sewage. Leak testing shall be performed any time the diversion pumping system is disassembled, reassembled and/or modified. No leaks in the diversion piping shall be permitted. Only potable water shall be used for leak testing of pipes. Diversion pipes shall be cleaned and disinfected prior to disassembly and the liquid shall be discharged into an existing sanitary sewer. Service connections or laterals shall not be disconnected or plugged overnight. Service must be restored to service connections or laterals within the normal work day.

G. Each flow diversion pump shall be powered by a dedicated power generator and shall operate as a single pumping unit. For system redundancy, the CONTRACTOR shall have on site an equivalent back-up flow pumping unit for each pumping operation.

H. Flow diversion piping and pumps shall be free of leaks. Leaking pipes and pumps shall be replaced immediately. Sewage spills shall be cleaned up immediately. If a sewage release occurs during any sewage diversion activity, the CONTRACTOR shall be responsible for taking immediate action to cease, contain, and clean up the release, and to notify the proper authorities. The CONTRACTOR shall have sufficient equipment and materials at the work site to cease, contain and cleanup any sewage release that occurs during diversion operations and will be responsible for all costs associated with sewage spill cleanup including associated fines. The CONTRACTOR shall be responsible for cleanup, repair, property damage costs and claims.

I. No flow diversion operations may proceed unless the CONTRACTOR has, at the work site, the following items:

1. Dry granular lime, of sufficient quantities, to be spread on any release for purposes of disinfectant. A 10% bleach solution may also be used as a disinfectant. Disinfectants may not be directly applied to any surface waters, streams, creeks, etc.
2. Equipment to secure the area of sewage release and isolate the public from accessing the release site. As a minimum this shall include barricades and caution tape.
3. The equipment and materials on hand to stop the release and repair the failed item.
4. Equipment and materials to clean the site, rake up solid debris and to dispose of material properly.

J. In case of sanitary sewage release during diversion operations, the CONTRACTOR shall immediately contact the City of West Linn On-Site Project Inspector notifying them of the release:

If the Project Inspector is not capable of being immediately notified, then contact the City of West Linn Public Works Operations. The following telephone numbers shall be used:

a. (503) 656-6081
b. (503) 742-8620
c. (503) 849-5038

The representative of the City of West Linn shall report the sewage spill within 24 hours to the Oregon Department of Environmental Quality and any other appropriate entities. Even if a sewage spill or release is contained within an excavation, the spill or release must be reported.

Failure by the CONTRACTOR to report a spill or release to the appropriate City representative will result in liquidated damages in the amount of $500.00 per incident plus an amount sufficient to reimburse the City for any civil and administrative penalties paid by the City as a result of the CONTRACTOR's failure to report as described above.

K. The CONTRACTOR shall be responsible for providing the following information to the authorities in case of a spill or release:

1. Release location
2. Date and time release found or started and time stopped
3. Release flow rate and estimated total volume
4. Receiving stream, if any
5. Action taken to stop release
6. Cause of release
7. Clean-up actions taken
8. Any other information as requested by relevant authorities

L. Upon completion of construction, all flow diversion piping and pumps and related facilities shall be removed and all affected areas restored to their prior condition.

36. MEASUREMENT AND PAYMENT

Measurement and payment will be on a lump sum/unit price basis in accordance with the prices set forth in the bid sheet for individual work items. Where work is required but does not appear as a separate item in the bid sheet, the cost for that work shall be included and absorbed in the unit prices named in the bid sheet. CONTRACTOR shall make a careful assessment of the work required when preparing the bid. Shown quantities may vary up to 25%.

BID

Bid item Descriptions

BID ITEM 1 - MOBILIZATION/DEMOBILIZATION

Payment for mobilization/demobilization will be made as a portion of the lump sum price. The bid item for mobilization/demobilization shall not exceed **ten percent (10%)** of the total of all bid items not including Mobilization/Demobilization. Actual percentage shall be shown in the Estimated Quantities column. The actual payment amount for "Mobilization/Demobilization" included in partial payments will be determined as follows:

Fifty percent (50%) of the mobilization/demobilization lump sum item will be paid with the first payment request; another fifty percent (50%) of the lump sum item will be paid as part of the final payment.

Mobilization shall include temporary signing and traffic control devices. Demobilization shall include final cleanup, removal of signs and equipment, tools, and materials, property repairs, and other cleanup and punch list work as necessary.

BID ITEM 2 - TRAFFIC CONTROL

Payment for “Traffic control” shall be made from the lump sum price as set forth in the Bidder’s Bid. Actual percentage of Traffic Control to the total of the bid not including traffic control shall be shown in the Estimated Quantities column.

The actual payment will be made based on the percentage of the project completeness at the time of payment request submittal.

Traffic control system shall be in accordance with Part VI, "Traffic Controls for Street Highway Construction, Maintenance, Utility and Emergency Operations," of MUTCD, the provisions under “Temporary Protection and Direction of Traffic” of the Standard Specifications and these special provisions.

A Traffic Control plan shall be submitted to the City five (5) working days prior to the pre-construction meeting for review and approval. Suitable method such as cones, signs, barricades, flagging, and flaggers shall be used as necessary to direct all types of traffic through the construction zone. Consideration must be given to cars exiting driveways during construction onto unfinished surfaces.

Notification of the City and residents shall be done per Special Specifications / Contractor’s Notification Responsibilities Prior to Beginning Work.

Street closures will not be allowed. Traffic shall not be delayed more than ten (10) minutes while routing through the construction site. The total hour of ten (10) minute delays shall not exceed two (2) hours in any workday. The City reserves the right to restrict work for specific holidays or events.

The contract lump sum price paid for temporary traffic control system shall include full compensation for furnishing all labors (include flagging costs), materials, tools, equipment, and

incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving traffic devices to the new locations, replacing of the traffic control devices required for temporary protection and direction of traffic and for traffic control system of closing traffic lanes through or around the work area.

- **BID ITEM 3 – SANITARY SEWER PIPE CLEANING,** Payment for the cleaning of the sanitary sewer pipes that are to be lined will be paid for on a per linear foot basis. Payment for cleaning shall include all equipment, supplies, and workers. Removal of obstructions and roots will be considered incidental to this item. Measurement will be based on the total length of sewer pipe cleaned. See Special Specifications, Sanitary Sewer Main Cleaning and TV Inspection.
  The contract price paid per linear foot for sanitary sewer pipe cleaning shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

BID ITEM 4 – VIDEO INSPECTION OF SANITARY SEWER PRIOR TO CIPP INSTALLATION

Payment for performing a video inspection of the sewer pipe following the cleaning, but prior to the installation of the cured-in-place pipe, and recording onto DVD, will be on a per linear foot basis. Measurement will be based on the total length of sewer pipe videoed, and shall be confirmed by a hand wheel measurement from manhole to manhole. See Special Specifications, Sanitary Sewer Main Cleaning and TV Inspection. The contract price paid per linear foot for video inspection of sanitary sewer pipe prior to CIPP installation shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

BID ITEM 5 – FURNISH AND INSTALL 8-INCH DIAMETER CURED IN PLACE PIPE (METHOD A SIMILAR TO METHOD B)

Payment for furnishing and installing the cured-in-place pipe including gaskets and all work and materials will be on a per linear foot basis. Payment for required testing of materials, in accordance with the Special Specifications, shall be considered incidental to this bid item. Measurement will be based on the total length of cured-in-place pipe installed, all private property documentation and surface restoration shall be considered incidental to the installation cost. See Special Specifications, Cured-in-Place Pipe. The contract price paid per linear foot for installation of 8-inch cured in place pipe, complete in place, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

BID ITEM 6 – VIDEO INSPECTION OF SANITARY SEWER PIPE FOLLOWING THE CIPP INSTALLATION.

Payment for performing a video inspection of the sewer pipe following the installation of the CIPP and recording onto DVD will be on a per linear foot basis. Measurement will be based on the total length of cured-in-place pipe videoed. Waterstop gaskets shall be seen at both ends of new liner.

See Special Specifications, Sanitary Sewer Main Cleaning and TV Inspection. Flow by-pass shall be conducted during final Video Inspection and will be considered incidental to this pay item. The contract price paid per linear foot for video inspection of sanitary sewer pipe following CIPP installation shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

BID ITEM 7 - BYPASS SANITARY SEWER PUMPING

Payment for providing necessary sanitary sewer bypass pumping in accordance with all local, state, and federal regulations will be paid on a lump sum basis. Measurement will be based on the percentage of the CIPP work completed. See Special Specifications, Sewage Diversion Requirements. The contract lump sum price paid for bypass sanitary sewer pumping shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

Actual percentage of Bypass Sanitary Sewer Pumping to the total of the bid not including Bypass Sanitary Sewer Pumping shall be shown in the Estimated Quantities column.

BID ITEM 8 - TRIMMING PROTRUDING LATERALS

Payment for trimming protruding service laterals and ensure that no edges exist for material to catch on will be on an individual basis. Measurement will be based on the total number of service laterals trimmed. The contract price paid per trimming protruding service laterals complete in place, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the process and complete clean up.

BID ITEM 9 – FORCE ACCOUNT

Force Account or extra work as directed by the Project Manager. Predetermined amount ($25,000) set aside for costs and work performed determined by the Project Manager as necessary to complete the project. Costs may be by lump sum, force account, or unit measure as agreed upon by the Contractor and Engineer.

SPECIAL NOTE **The winning bidder will be determined using the Main Bid Sheet (A or B). All Attachments shall be filled out. Unit Prices on all Attachments shall match to Unit Prices on the Main Bid Sheet. Mobilization/Demobilization, Temporary Traffic Control and Bypass sanitary sewer pumping items shall have Lump Sums percentage shown and calculated similar to the Main Bid and matching precisely to Main Bid Sheet. Total funds available to the City for this project are $500,000. The City reserves the right to add any or all of the described by attachments projects to the main bid for implementation by the contractor based on submitted bids and available funds.**

BID BOND

Mapleton Sewer Rehabilitation Project, Phase 3
Project #PW-1214

KNOW ALL MEN BY THESE PRESENTS, that

_____,
hereinafter called the Principal, and

_____,
a Corporation duly organized under the Laws of the State of Oregon, having its principle place of Business at

_____,

in the State of _____, and authorized to do business in the State of Oregon as Surety, are held and firmly bound unto the City of West Linn Engineering Department, hereinafter called the Engineering Department, in the penal sum of

_____ Dollars

($_____), for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the Principal herein is herewith submitting his Bid for the above noted project in the City of West Linn, Oregon, said Bid, by reference thereto, being hereby made a part hereof.

NOW, THEREFORE, if the said Bid submitted by the said Principal be accepted, and the Contract be awarded to said Principal, and if the said Principal shall execute the proposed Contract as required by the bidding and the Contract Documents within the time set by said Documents, then this obligation shall be void. If the Principal shall fail to execute the proposed Contract, the Surety hereby agrees to pay to the Engineering Department the penal sum as liquidated damages.

Signed and sealed this _____ day of _____, 20_____

_____
Principal

By: _____

_____

Surety

By: _____

Attorney-in-Fact (A Certified Copy of the Agent's Power of Attorney must be attached)

BID CHECKLIST

Mapleton Sewer Rehabilitation Project, Phase 3
Project #PW-1214

NOTE: This checklist has been prepared as an aid to contractors in preparing and checking bids for completeness. However, it is not intended to incorporate all requirements of the bid documents. The contractor is responsible for familiarizing himself with the documents and completing all requirements for bidding.

BID

- ¤ **Attend Pre-Bid Mandatory meeting**. Familiar with conditions of work and documents
- ¤ All bid items entered in WORDS AND NUMBERS
- ¤ Main Bid Sheet for one or both CIPP rehabilitation process methods shall be completely filled out with all three Attachments.
- ¤ Bid shall be signed by authorized representative with Title shown
- ¤ All blank spaces filled in
- ¤ Copies of addenda attached and SIGNED (if any)
- ¤ Registered with Construction Contractors Board, and license number noted
- ¤ Resident Bidder statement completed
- ¤ Written clarification MAY be attached
- ¤ Certified check or bid bond in the amount of 10% of Base Bid Total bid
- ¤ Contract Agreement
- ¤ Bid SEALED and SIGNED.
- ¤ Statement of Qualification submitted with bid submission
- ¤ Three Year Experience Record

PROJECT NOTES:
Workers Comp Insurance
Prevailing Wage Rate

QUESTIONS?
Contact: Boris Piatski, P.E. (503) 722-5519

BIDS DUE: **2:00 PM, Tuesday, September 25, 2012**
City Hall, 22500 Salamo Road, West Linn, OR 97068

MAIN BID SHEET

Mapleton Sewer Rehabilitation Project, Phase 3

Project #PW-1214

NOTE: Bidder shall provide a complete Bid Sheet for one or both CIPP Methods, at the Contractor's option.

Bid Sheet for CIPP Method A:

Heat-Cured Felt Lining CIPP Rehabilitation Process

Item No.	Description	Estimated Quantity	Units	Unit Price	Total Price
1	Mobilization/Demobilization	%	LS	---	$_____
2	Temporary traffic control	%	LS	---	$_____
3	Sanitary sewer pipe cleaning	12500	LF	$_____	$_____
4	Video inspection of sanitary sewer pipe prior to CIPP installation	12500	LF	$_____	$_____
5	Furnish and install 8-inch diameter cured-in-place pipe using CIPP Method A	12500	LF	$_____	$_____
6	Video inspection of sanitary sewer pipe following installation of CIPP using CIPP Method A	12500	LF	$_____	$_____
7	Bypass sanitary sewer pumping	%	LS	---	$_____
8	Trimming protruding laterals	10	EA	$ _____	$_____
9	Force Account		LS		$25,000

TOTAL for CIPP Method A:

$**_____ (in writing) **$_____ (numeral)

SIGNATURE OF BIDDER

TITLE

MAIN BID SHEET

Bid Sheet for CIPP Method B:

Ultraviolet Light-Cured Fiberglass Lining CIPP Rehabilitation Process

Item No.	Description	Estimated Quantity	Units	Unit Price	Total Price
1	Mobilization/Demobilization	%	LS	---	$_____
2	Temporary traffic control	%	LS	---	$_____
3	Sanitary sewer pipe cleaning	12500	LF	$_____	$_____
4	Video inspection of sanitary sewer pipe prior to CIPP installation using CIPP Method B	12500	LF	$_____	$_____
5	Furnish and install 8-inch diameter cured-in-place pipe using CIPP Method B	12500	LF	$_____	$_____
6	Video inspection of sanitary sewer pipe following installation of CIPP using CIPP Method B	12500	LF	$_____	$_____
7	Bypass sanitary sewer pumping	%	LS	$ ---	$_____
8	Trimming protruding laterals	10	EA	$ _____	$_____
9	Force Account		LS		$25,000

TOTAL PRICE for CIPP Method B:

$**_____ **$_____

(in writing) (numeral)

SIGNATURE OF BIDDER

TITLE

Attachment #1 (Kapteyns St.)

Item No.	Description	Estimated Quantity	Units	Unit Price	Total Price
1	Mobilization/Demobilization	%	LS	---	$_____
2	Temporary traffic control	%	LS	---	$_____
3	Sanitary sewer pipe cleaning	1730	LF	$_____	$_____
4	Video inspection of sanitary sewer pipe prior to CIPP installation using CIPP Method A or B	1730	LF	$_____	$_____
5	Furnish and install 8-inch diameter cured-in-place pipe using CIPP Method A or B	1730	LF	$_____	$_____
6	Video inspection of sanitary sewer pipe following installation of CIPP using CIPP Method A or B	1730	LF	$_____	$_____
7	Bypass sanitary sewer pumping	%	LS	---	$_____

TOTAL PRICE for Attachment #1

$**_____ (in writing) **$_____ (numeral)

SIGNATURE OF BIDDER

_____

TITLE

_____

Attachment #2 (Marylhurst Cir.)

Item No.	Description	Estimated Quantity	Units	Unit Price	Total Price
1	Mobilization/Demobilization	%	LS	---	$_____
2	Temporary traffic control	%	LS	---	$_____
3	Sanitary sewer pipe cleaning	725	LF	$_____	$_____
4	Video inspection of sanitary sewer pipe prior to CIPP installation using CIPP Method A or B	725	LF	$_____	$_____
5	Furnish and install 8-inch diameter cured-in-place pipe using CIPP Method A or B	725	LF	$_____	$_____
6	Video inspection of sanitary sewer pipe following installation of CIPP using CIPP Method A or B	725	LF	$_____	$_____
7	Bypass sanitary sewer pumping	%	LS	---	$_____

TOTAL PRICE for Attachment #2

$**_____ **$_____

(in writing) (numeral)

SIGNATURE OF BIDDER

_____

TITLE

_____

Attachment #3 (Sunset Ave.)

Item No.	Description	Estimated Quantity	Units	Unit Price	Total Price
1	Mobilization, bonds, insurance and demobilization	%	LS	---	$_____
2	Temporary traffic control	%	LS	---	$_____
3	Sanitary sewer pipe cleaning	1815	LF	$_____	$_____
4	Video inspection of sanitary sewer pipe prior to CIPP installation using CIPP Method A or B	1815	LF	$_____	$_____
5	Furnish and install 8-inch diameter cured-in-place pipe using CIPP Method A or B	1815	LF	$_____	$_____
6	Video inspection of sanitary sewer pipe following installation of CIPP using CIPP Method A or B	1815	LF	$_____	$_____
7	Bypass sanitary sewer pumping	%	LS	---	$_____

TOTAL PRICE for Attachment #3:

$**_____ **$_____

(in writing) (numeral)

SIGNATURE OF BIDDER

_____

TITLE

_____

BID ATTACHMENT

Mapleton Sewer Rehabilitation Project, Phase 3
Project #PW-1214

The Bidder agrees that the lump sum prices and the unit prices represent a true measure of the labor and materials required to perform the work, including all allowances for overhead and profit for each type and unit of work called for in these Contract Documents. The Bidder agrees to pay the higher of the applicable state or federal prevailing rate of wage to all workers on the public works contract, in compliance with ORS 279C.838, ORS 279C.840, or 40 USC 3141, et seq. The amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

It is agreed that if the Bidder is awarded the Contract for the work described herein and fails or refuses to execute the Contract and furnish the specified Performance and Payment Bond within ten (10) calendar days after receipt of notification of acceptance of the Proposal, then, in that event, the bid security in an amount not to exceed ten percent (10%) of the bid, or _____ DOLLARS ($_____), deposited herewith according to the conditions of the Advertisement for Bids and Information for Bidders, shall be retained by the Owner, as liquidated damages; and it is agreed that the said sum is a fair measure of the amount of damage the Owner will sustain in case the Bidder shall fail or refuse to enter into the Contract for the said work and to furnish the Performance and Payment Bond as specified in the Contract Documents. Bid security in the form of a certified check shall be subject to the same requirements as a bid bond.

If the Bidder is awarded a construction Contract on this Proposal, the Surety that will provide the Performance and Payment Bond is:

_____

whose address is:

_____

The name of the Bidder who is submitting this Proposal is:

_____

doing business at:

_____,

which is the address where the contract and all communications concerned with this proposal shall be sent.

The names of the principal officers of the corporation submitting this Proposal, or of the partnership, or of all persons interested in this Proposal as principals are as follows:

_____

_____

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

Mapleton Sewer Rehabilitation Project, Phase 3
Project #PW-1214

BID CLOSING: Date: Tuesday, September 25, 2012 Time: 2:00 PM

This form must be submitted at the location 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 materials and that 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	DOLLAR VALUE	CATEGORY OF WORK
1) _____	$_____	_____
2) _____	$_____	_____
3) _____	$_____	_____
4) _____	$_____	_____

Failure to submit this form by the disclosure deadline will result in a non-responsive bid. A non-responsive bid will not be considered for award. By submitting this form, Bidder certifies that it has complied with ORS 279A.110(1), which states that a bidder may not discriminate against a subcontractor in awarding a subcontract because the subcontractor is a minority, women or emerging business enterprise certified under ORS 200.055 or a business enterprise that is owned or controlled by, or that employs a disabled veteran.

Form submitted by (bidder name): _____

Contact name: _____ Phone no.: _____

CIPP CONTRACTOR
STATEMENT OF QUALIFICATIONS FORM

CIPP Contractor Name:

Address:

Telephone:

Contact Name:

Proposed CIPP Rehabilitation Method (circle all that apply)

CIPP Method A – Felt Lining with Heat-Cured Resin CIPP

CIPP Method B – Fiberglass Lining with UV-Cured Resin CIPP

Similar CIPP Rehabilitation Projects Completed

#1 (Project Name, Location, Contract Cost)

_____

Project description: _____

_____

Project completion date: _____

Contact name: _____

Telephone: _____

#2 (Project Name, Location, Contract Cost)

Project description:

Project completion date:

Contact name:

Telephone:

#3 (Project Name, Location, Contract Cost)

Project description:

Project completion date:

Contact name:

Telephone:

Attach additional sheets if needed.

Attach Certifications and experience resumes of individual installers and field supervisor(s) to be appointed to the project.

Attach manufacturer information on the CIPP products proposed for the project.

THREE YEAR EXPERIENCE RECORD

Recent projects first

#1 (Project Name, Location, Contract Cost)

_____

Project description: _____

_____

_____

Project completion date: (contract) _____ (actual) _____

Contact name: _____

Telephone: _____

#2 (Project Name, Location, Contract Cost)

_____

Project description: _____

_____

_____

Project completion date: (contract) _____ (actual) _____

Contact name: _____

Telephone: _____

#3 (Project Name, Location, Contract Cost)

_____

Project description: _____

_____

_____

Project completion date: (contract) _____ (actual) _____

Contact name: _____

Telephone: _____

Attach additional sheets if needed.

RECYCLED MATERIALS

Following is a list of the bid items in which recycled materials is to be used by the Contractor along with the percentage of recycled materials contained within the finished product:

_____

_____

_____

RESIDENT BIDDER STATUS

Is the Bidder a resident bidder, as defined in ORS 279A.120 _____.

If not, list the state of residence of the bidder:_____.

CONTRACTOR'S LICENSE NUMBER

List Contractor's License Number: _____

Tax I.D. : _____

ATTACHMENTS

GENERAL TECHNICAL SPECIFICATIONS (PUBLIC WORKS STANDARDS)

The Public Works Standards can be found under the following link: http://westlinnoregon.gov/publicworks/design-construction-policies

PROJECT PLANS

SUPPLEMENTARY INFORMATION