



**ADDENDUM NO. 2
for 21-0029-UT Reclaimed Water Piping Improvements
Clearwater, Florida**

DATE: March 18, 2022

SUBJECT: Addendum No. 2

TO: Prospective Bidders and Others Concerned

REVISIONS

1. Delete in its entirety: Bid Tab (No. 21-0029-UT); and,
Replace with: Bid Tab (No. 21-0029-UT) Addendum 1
2. Delete in its entirety: 01 22 13 Measurement and Payment; and,
Replace with: 01 22 13 Measurement and Payment Addendum 1

QUESTION AND ANSWERS

The following questions were received prior to the cutoff date. Answers follow each question.

1. Q: Would Certa-Lok restrained joint PVC be accepted as an "or equal" to HDPE for the horizontal directional drill sections of the Reclaimed Water Piping Improvements Project? Certa-Lok is accepted by the City of Clearwater in their specifications in Section 502-2.2.1 and on the approved products list under the section Pipe Section for Restrained Joint PVC Pipe for Directional Drilling. Using Certa-Lok would be favorable to the project by not having to account for more time and layout area to fuse the HDPE. Also, there would be no need to upsize the HDPE. When transitioning from Certa-Lok C900 to standard C900, they would be the same size on size.

A: Alternative products may be reviewed after the project is awarded. Please bid on the project based on the provided specifications.
2. Q: We are asking that this jobs bid date and question due date be pushed to a later date due to the extensive amount of incidental restoration needed to be quantified for the installation of the new service lines, meter boxes, and valve replacements.

A: The bidding and question date remains as originally posted.
3. Q: What is the depth of the existing reclaim line in areas G and F where the valves are proposed to be replaced?

A: The existing reclaimed line in areas G and F are not known, the City's standard is to install reclaimed water mains at 3 feet of cover.
4. Q: Can a detail be provided for valve replacement?

A: The requirements for each valve replacements may vary. As described in the specifications,

each valve replacement includes the valve, restraints, minor pipe section, fittings, and all necessary appurtenances required for complete replacement of each identified valve.

5. Q: For the service connections shown in figures G1-G8, are we connecting an existing service line to a new meter or are we connecting to the main and installing a new service line, meter, and meter box?

A: The work for service connections includes a new brass saddle connection to the main, service line, casing, meter box, corp stops, and associated appurtenances required for complete replacement of the service.

6. Q: Can a detail be provided for the meter and service line replacement?

A: Service line replacements shall be in accordance with the City standard detail included on drawing sheet 22.

7. Q: What is the depth of the existing reclaim line at each meter connection?

A: Reclaimed water main depths vary for each service connection and are unknown, the City's standard is to install reclaimed water mains at 3 feet of cover.

8. Q: Do bid items 34 and 35 include short side and long side services?

A: Bid item 34 and 35 include all services without differentiation for long or short side.

9. Q: We will additionally need to know which meters fall under each bid item as there is no description on which services are 1" or 2".

A: Quantities for services are estimated and will be adjusted based on field quantities verified by the City.

10. Q: Please advise whether or not the materials for this project are subject to the American Iron and Steel (AIS) requirements or Buy America requirements.

A: Materials for this project are not subject to the American Iron and Steel (AIS) requirements or Buy America requirements

11. Q: The water & sewer infrastructure industry is under a "Force Majeure" situation due to the continuous and significant price increases along with extremely long lead times for all the piping materials, fittings, valves, etc. All these products are experiencing rapid price increases and material shortages with extended lead times mainly caused by the worldwide disruption of the supply chains caused by the COVID 19 pandemic. The material suppliers are not committing to holding prices/quotations and have implemented a policy of "pricing to be determined at time of shipment and subject to availability". These are unprecedented times that appear to be here well into 2022. How this Force Majeure situation will be addressed by the City? The Contractor should be compensated for both time and cost since we cannot secure pricing and lead time for the piping materials, fittings, valves, etc. needed to construct this project. Please advise.

A: Price adjustments or change orders will not be permitted for any availability limitations or pricing changes of materials.

12. Q: Substantial and Final Completion?

A: Substantial completion will be 335 calendar days after NTP and final completion will be 365 calendar days after NTP (30 calendar days after substantial completion).

City of Clearwater
Reclaimed Water Pipe Improvements
City Project No.
City Plan Set No. 2020027
Mar-22
Bid Form

Item #	Description	Unit	Qty	Unit Price	Total
1	Mobilization (5%)	LS	1		\$ -
2	General Conditions (5%)	LS	1		\$ -
3	Temporary Traffic Control/Maintenance of Traffic (10%)	LS	1		\$ -
4	2-inch RCW Polyethylene Main, HDD with Associated Valves and Fittings	LF	290		\$ -
5	4-inch HDPE RCW Main, Installed Via HDD, Inclusive of Fittings, Restraints, Etc.	LF	774		\$ -
6	4-inch PVC RCW Main by Open Cut, Inclusive of Fittings, Restraints, Etc.	LF	617		\$ -
7	6-inch PVC RCW Main by Open Cut, Inclusive of Fittings, Restraints, Etc.	LF	20		\$ -
8	8-inch HDPE RCW Main, Installed Via HDD, Inclusive of Fittings, Restraints, Etc.	LF	460		\$ -
9	8-inch PVC RCW Main by Open Cut, Inclusive of Fittings, Restraints, Etc.	LF	2,645		\$ -
10	8-inch Ductile Iron RCW Main by Open Cut, Inclusive of Fittings, Restraints, Etc.	LF	386		\$ -
11	16-inch Ductile Iron RCW Main, Open Cut, Inclusive of Fittings, Restraints, Etc.	LF	10		\$ -
12	8-inch PVC Gravity Sewer Main, via Open Cut	LF	964		\$ -
13	10-inch Steel Casing	LF	10		\$ -
14	4-inch Gate Valve with Step Riser and Valve Box	EA	25		\$ -
15	6-inch Gate Valve with Step Riser and Valve Box	EA	17		\$ -
16	8-inch Gate Valve with Step Riser and Valve Box	EA	13		\$ -
17	12-inch Gate Valve with Step Riser and Valve Box	EA	9		\$ -
18	16-inch Gate Valve with Step Riser and Valve Box	EA	1		\$ -
19	20-inch Gate Valve with Step Riser and Valve Box	EA	3		\$ -
20	Fitting, Restraints and Piping for Valve Replacements per Intersection	EA	15		\$ -
21	4-inch Joint Restraint for Existing Main	EA	10		\$ -
22	8-inch Joint Restraint for Existing Main	EA	10		\$ -
23	4" Line Stop	EA	1		\$ -
24	2" Tapping Saddle with Valve with Step Riser and Valve Box	EA	5		\$ -
25	4" Tapping Saddle with Valve with Step Riser and Valve Box	EA	1		\$ -
26	6" Tee with 4" Valve with Step Riser and Valve Box	EA	1		\$ -
27	8" Tapping Saddle with Valve with Step Riser and Valve Box	EA	1		\$ -
28	12" Tapping Saddle with 8" Valve with Step Riser and Valve Box	EA	1		\$ -
29	4-inch Plug	EA	10		\$ -
30	6-inch Plug	EA	1		\$ -
31	8-inch Cap/Plug	EA	1		\$ -
32	2-inch ARV Assembly	EA	5		\$ -
33	Remove and Replace Black Poly and Galvanized Water Lines	LF	1,000		\$ -
34	1" RCW Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box	EA	925		\$ -
35	2" RCW Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box	EA	90		\$ -
36	Reconnect Existing Lateral to Gravity Main	EA	14		\$ -
37	Sanitary Sewer Lateral and Cleanout Replacement	EA	11		\$ -
38	Manhole Rehabilitation (Including Ring and Cover Replacement and Lining)	EA	4		\$ -
39	Concrete Curb	LF	423		\$ -
40	Asphalt Removal and Replacement	SY	7,741		\$ -
41	Mill and Resurface	SY	1,124		\$ -
42	Stamped Asphalt Removal and Replacement	SY	260		\$ -
43	Concrete Sidewalk Removal and Replacement	SY	94		\$ -
44	Concrete Driveway Removal and Replacement	SY	206		\$ -
45	Grout Fill and Abandon Pipe	LF	5,622		\$ -
46	Pipe Removal	LF	14		\$ -
47	Tree Removal, Tree Protection, and Tree/Root Pruning	LS	1		\$ -
48	Sodding and Landscaping Restoration	LS	1		\$ -
49	Vac-Cons for Containment (per day per Truck)	EA	39		\$ -
				Subtotal	\$ -
50	Contingency		10%		\$ -
				Total	\$ -

SECTION 01 22 13
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. General: All schedules and Schedules of Values are given for the convenience of the Engineer, Owner, and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quantity of materials and equipment to be included in Work performed under this Contract.
- B. Unit Price Contracts: The quantities of work to be performed and materials to be furnished under a Unit Price Contract, as given in the Bid Form or Schedule, are to be considered as approximate only and are to be used solely for the comparison of Bids received and determining an initial Contract Price. The Owner/Engineer do not expressly or by implication represent that the actual quantities involved will correspond exactly therewith; nor shall the Contractor plead misunderstanding or deception because of such estimate or quantities or of the character, location or other conditions pertaining to the Work. Payment to the Contractor will be made only for the actual quantities of work performed or material furnished in accordance with the Drawings and other Contract Documents, and it is understood that the quantities may be increased or diminished as provided in the General Conditions without in any way invalidating any of the unit prices bid.
- C. Lump Sum Contracts: The quantities of work to be performed and materials to be furnished, including all labor, equipment and incidentals required to complete the Work, are specified in the Contract Documents. Payment to the Contractor of the Lump Sum Price bid for the Work will be made and shall fully compensate the Contractor for the construction of the Work, completed and ready for continuous operation and use, in the manner contemplated by the Contract Documents.

1.02 SCHEDULE OF VALUES

- A. Scope of Work
 - 1. Submit to the Engineer a Schedule of Values based upon the Total Bid price total cost.
 - 2. A Schedule of Values shall be submitted based on the major items of work and structured so that the costs of the major items of work can be allocated to the various elements of the work and the total sum of the values in the schedule shall equal the Total Bid amount as stated in the Notice of Award and the Agreement.

3. The Schedule of Values shall establish the actual value of the component parts of the Work and, unless objected to by the Owner, shall be used as the basis for the Contractor's Applications for Payment.
 4. The Schedule of Values for Unit Price Contracts shall restate all unit price bid items as presented in the Bid Schedule. Lump sum bid items included within the Bid Schedule shall be separated into major work/activity items and sub-items in a format as required for Lump Sum Contracts.
- B. Form and Content
1. Type the schedule on the Owner's standard form. Contractor's standard forms and computer printout will be considered for approval by the Owner upon Contractor's request.
 2. The values listed shall be the installed values of the component parts of the Work, including material, labor, overhead and profit, and all other costs associated with the installed value of each scheduled item.
- C. Unit Price Work: For Unit Price Contracts, the Bid Schedule shall be used as the basis for the Schedule of Values. The Contractor shall resubmit the Bid Schedule in the format described herein, and if requested by the Owner, shall sub-divide the bid items in the Bid Schedule into sub-items to provide a more detailed basis of payment. Lump sum bid items included within the Bid Schedule shall be separated into major work/activity items and sub-items in a format as required for Lump Sum Contracts.
- D. Lump Sum Work: For Lump Sum Contracts or applicable Lump Sum bid items stipulated in Unit Price Contracts, the cost of the Work shall be separated into major items and sub-items as outlined below. Each item or sub-item shall be provided with associated estimated quantities and unit prices for the purpose of estimating the completion status for progress payments. The costs of Insurance, Overhead (Administration) and profit shall be distributed among all components of the Work in proportion to the respective values, or if scheduled as a lump sum shall be paid in proportion to the value of the Work completed in conformance with the Documents.
1. General Requirements (Division 1 Specification Sections)
 - a. Mobilization, Demobilization, Bonds and Permits
 - b. Construction Video and Photograph
 - c. Record Drawing Preparation
 - d. Construction Progress Schedule
 - e. All other costs associated with Contract Specifications
 2. Mobilization, Demobilization, Bonds and Permits: The amount of this item shall not exceed 5 percent of the Total Bid Price or 5 percent of any Sub-Total Bid Prices for Work which requires multiple mobilizations/demobilizations. Payment of 75 percent of the applicable lump sum price shall be made for the preparatory work and operations in mobilizing for beginning the Work on the project. Payment of the remaining 25 percent shall be made for finalization of this project, including demobilization, contract closeout documents, removal of

field office and final site clean-up. Retainage requirements as stated in the General Conditions will apply to this pay item.

3. Construction Video and Photograph: The applicable lump sum price shall be full compensation for all labor, materials and equipment necessary to furnish the audio-visual tape recording, video tape identification and log as a pre-construction record and for periodic photograph during construction. No work shall proceed until the complete video pre-construction record is received by the Engineer and the Contractor has received the Engineer's approval of such documentation.
 4. Record Drawing Preparation: This work shall include both field documentation and the updating, printing and submittal of Engineer approved reproducible Record Drawings.
 5. Construction Progress Schedule Preparation: This work shall include both schedule preparation and the updating, printing and submittal of Engineer approved schedules.
 6. Site Work: The cost of the site work, with the exception of earthwork for structures and underground piping, shall be separated by task, with estimated quantities where applicable.
 7. Structures: The cost of each structure shall be given separately, and each structure, at a minimum, shall be further separated into the major sub-items.
 8. Unit Processes: The cost of each unit process shall be given separately, and each unit process, at a minimum, shall be further separated into the major sub-items to include equipment cost, equipment installation cost, piping installed cost.
 9. Yard Piping: The cost of yard piping shall be separated by pipe size and type, valves and appurtenances. The Contractor's estimated quantities and unit prices shall be included for each sub-item.
 10. Electrical Work: The cost of electrical work shall be separated, at a minimum, into the following sub-items: Conduit, wire, ductbank, pull boxes, motor control centers, emergency power and yard lighting.
 11. Instrumentation Work: The cost of instrumentation work shall be separated, at a minimum, into the following sub-items; conduit, fiber optics, control panels, PLC and I/O modules, computer hardware/software, programming, flow meters, level and pressure sensors and other field mounted monitors / controls.
- E. Allowances: The Contractor shall include in the Total Bid Amount all cash allowances stated hereinafter. Equipment, materials, furnishings, services and other bid items under this bid category shall be covered by specific allowances established herein and shall be supplied in such amounts and by such persons as the Owner may direct. The amount of the allowance shall be adjusted accordingly by Change Order to recognize the actual cost incurred by the Contractor. The Contractor shall submit appropriate documentation to validate the actual cost of the item. An allowance is not, nor shall it

be considered as, a Lump Sum cost item. Cash allowances for the purposes of bidding shall be so reflected in the Bid Form for the designated item.

1. Electric Service: Contractor shall coordinate installation of permanent electrical power and metering with the local power company. All direct charges by the power company are to be invoiced to the Contractor. The Contractor shall be reimbursed only for the amount invoiced by the local power company, and shall submit copies of invoices with the application for payment. No additional mark-up by the Contractor shall be considered.
- F. Alternate Bid Items: When Additive or Deductive Alternates have been accepted by the Owner and are included in the Contract Amount indicated in the Notice of Award and the Agreement, each Additive or Deductive Alternate shall be individually scheduled with the corresponding Unit Price information or Lump Sum Price and sub-item breakdown.

1.03 APPLICATIONS FOR PAYMENT

- A. Applications for Payment shall be submitted by the Contractor to the Owner in accordance with the schedule established by the Contract Documents.
- B. Format
 1. Submit applications typed on forms provided by the Owner. The Contractor shall prepare itemized continuation sheets using the accepted Schedule of Values and attach them to the Application. Each item shall have an assigned dollar value for the current pay period, and a cumulative value for the project to date. Change Orders executed prior to the date of submission shall be listed at the end of the continuation sheets and shall be totaled separately.
 2. The following items shall be included with each copy of the application for payment (*Waiver and Release of Lien(s) and Affidavit(s) shall conform to Chapter 713 of the Florida Statutes, Supplement 1996. Statutory forms will be provided at the Pre-Construction Conference.*):
 - a. Progress Photographs
 - b. Stored Material Log
 - c. *Waiver and Release of Liens Upon Progress Payment (for suppliers and subcontractors)*
 - d. Consent of Surety
 - e. Invoices for Stored Material
 - f. *Affidavits*
 3. The Contractor shall certify *by affidavit*, for each current pay request, that all previous payments received from the Owner, under his Contract, have been applied by the Contractor to discharge in full all obligations of the Contractor in connection with Work covered by prior applications for payment, and all materials and equipment incorporated into the Work are free and clear of all liens, claims, security interest and encumbrances. Contractor shall attach to each application for payment like affidavits by all Subcontractors and

Suppliers. Contractor shall also attach a "Consent of Surety" to each application for payment. Additionally, a "*Waiver and Release of Lien Upon Progress Payment*" from each subcontractor and supplier shall be attached to each application for payment.

4. Submit electronic (pdf) copies of each application to the Engineer. Each copy shall include original signatures. The Engineer shall review the application and verify quantities of installed work and stored materials. When the Engineer finds the application properly completed and correct, he will transmit recommendation of payment to Owner, with copy to Contractor.
- C. The Engineer's recommendation of any payment requested constitutes a representation to the Owner that the Quality of Work is generally in accordance with the Contract Documents subject to the results of any subsequent inspections or tests required by the Contract Documents. Should subsequent inspections or tests indicate that portions of the Work is not installed in accordance with the Contract Documents, the Engineer may nullify any such payment previously recommended to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss because of Defective Work. In this regard, partial payment requests for the installation of materials and equipment shall be supported by acceptable field tests as required by each respective specification section. The supporting test or inspection results shall be submitted with the next scheduled partial payment request.
1. If the test or inspection results indicate Defective Work, the respective partial payment request shall be adjusted to nullify payment for the installation of the defective portion or segment of the Work.
 2. If supporting test or inspection results are not provided for the payment of installed materials or equipment in the subsequent partial payment request, then additional retainage shall be recommended by the Engineer for the Owner's consideration. The additional retainage shall be equivalent to the value of the tests required to be performed by the Contractor but not provided, or an amount, in the opinion of the Engineer, that maybe necessary to protect the Owner from loss.
- D. The Application for Final Payment shall be prepared in accordance with the Contract Closeout specification.

1.04 MEASUREMENT AND PAYMENT

A. Methods of Payment

1. Unit Price Contracts: Payment will be made for actual quantities of work properly installed as approved by the Engineer.
2. Lump Sum Contracts: Payment will be made for each individual item on a percentage of completion basis as estimated by the Contractor and approved by the Engineer. Quantities provided in the Schedule of Values are for the purpose of estimating the completion status for progress payments. Adjustments to costs

provided in the accepted Schedule of Values may be made only by Change Order.

B. Methods of Measurement

1. Units of measurement shall be defined in general terms as follows:
 - a. Linear Feet (LF)
 - b. Square Feet (SF)
 - c. Square Yards (SY)
 - d. Cubic Yards (CY)
 - e. Each (EA)
 - f. Sacks (SK)
 - g. Lump Sum (LS)
2. Unit Price Contracts
 - a. Linear Feet (LF) shall be measured along the horizontal length of the centerline of the installed material, unless otherwise specified. Pipe shall be measured along the length of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves or fittings. Pipe included within the limits of lump sum items will not be measured.
 - b. Square Feet (SF), Square Yards (SY), Cubic Yards (CY), Each (EA) and Sacks (SK) shall be measured as the amount of the unit of measure installed within the limits specified and shown in the Specifications and Drawings. Slope angles and elevations shall be measured using land surveying equipment. Contractor shall provide supporting documentation (i.e. drawings, truck tickets, invoices, etc.) to verify actual installed quantities.
 - c. No measurement is required for Lump Sum (LS) items.
3. Lump Sum Contracts: The Measurement of Work for lump sum contracts shall be based on the information provided in the Contract Documents and compiled through the Contractor's own field verifications, investigations and testing prior to Bidding.

C. Bid Items

1. Bid Item No. 1 – Mobilization / Demobilization
 - a. Measurement: Measurement of various items for mobilization and demobilization will not be made for payment and all items shall be included in the lump sum price. This lump sum price shall not exceed 5% of the summation of total bid prices for items 3 through 47.
 - b. Payment: Payment of 75% of the applicable lump sum price for the item shall be full compensation for the preparatory work and operations in mobilizing for beginning Work on the project including, but not limited to, multiple operations necessary for the movement of personnel, equipment, project signs, supplies and incidentals to the project site, and

for the establishment of field offices, storage sheds, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and State and local laws and regulations; and any other preconstruction expense necessary for the start of the Work; construction schedules; shop drawings; temporary facilities; lay down/storage area; construction aids; erosion control; work associated with the Contractor support during Owner/Engineer reviews and inspection; re-inspections; and any re-work resulting from same. Payment of the remaining 25% of the applicable lump sum price for the item shall be full compensation for finalization of this project including demobilization of personnel, equipment, supplies, and incidentals from the project site; project record documents; contract close-out documents; removal of field offices and storage; final site restoration; and clean-up. The Contractor shall submit invoices substantiating the cost of mobilization with each pay request. In consideration of the Contractor's Indemnity Agreement as set out in the Contract Documents, Owner specifically agrees to give the Contractor a sum of \$100.00 and other good and valuable consideration, receipt of which is acknowledged upon signing of the Agreement.

2. Bid Item No. 2 – General Conditions

- a. Measurement: Measurement of various items for general conditions including bonds, insurance, permits, preconstruction audio-visual documentation, record drawings, etc. will not be made for payment and all items shall be included in the lump sum price. This lump sum price shall not exceed 3% of the summation of total bid prices for items 3 through 47.
- b. Payment: Payment of the lump sum price of the item shall be full compensation for furnishing all labor, materials, equipment and services necessary to provide bonds, insurance and permits, payable upon approval by Owner.

3. Bid Item No. 3 – Maintenance of Traffic

- a. Measurement: This work consists of maintaining vehicular and pedestrian traffic within the limits of the project at each location specified for the duration of the construction period, including any temporary suspensions of the work. It shall include labor and equipment to furnish, install and maintain of traffic control and safety devices during construction; It shall include the construction and maintenance of any necessary detour facilities; providing necessary facilities for access to residences, businesses, pedestrian traffic, schools, etc., and any other special requirements for safe and expeditious movement of traffic as may be called for on the MOT plan. The term, Maintenance of Traffic, shall include all of such facilities, devices and operations as are required for the safety and convenience of the public, as well as for

minimizing public nuisance. The Contractor, however, shall not obstruct nor create a hazard to any traffic during the performance of the work and shall be responsible for repair of any damage to existing pavement or facilities caused by his operations. Traffic Control Devices include all types of barricades, arrow boards, variable message boards, signs, temporary pavement markers, lights, concrete barriers and permanent striping. All travel, equipment, labor, overhead or any other associated expenses in transportation and setting up the MOT will be included in the price. All MOT line items for Multi-Lane work shall include all costs for items associated with the appropriate FDOT Index (no separate payment for signs, barricades, etc. included with index will be allowed).

- b. Payment: Payment for maintenance of traffic shall be of the appropriate percentage of the lump sum price shall be full compensation for furnishing all labor, materials and equipment necessary to provide safe and effective maintenance of vehicular and pedestrian traffic including but not limited to preparation and submittal of a complete traffic control plan, temporary lanes, walks or drainage facilities, flagmen, signs, barrels, barricades, lights and other protective devices as necessary to meet FDOT standards and specifications at each location.

4. Bid Item No. 4 – 2-inch RCW Polyethylene Main (HDD) in Casing

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the horizontal distance of the directional drill, without deduction for the length of any valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary casing, fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

5. Bid Item No. 5 – 4-inch HDPE RCW Main, Installed via HDD

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type

satisfactorily furnished and installed, as measured along the horizontal distance of the directional drill, without deduction for the length of any valves and fittings.

- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

6. Bid Item No. 6 – 4-inch PVC RCW Main, Installed via Open Cut

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

7. Bid Item No. 7 – 6-inch PVC RCW Main, Installed by Open Cut

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.

- b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.
- 8. **Bid Item No. 8 – 8-inch HDPE RCW, Installed via HDD**
 - a. **Measurement:** The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the horizontal distance of the directional drill, without deduction for the length of any valves and fittings.
 - b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.
- 9. **Bid Item No. 9 – 8-inch PVC RCW Main, Installed via Open Cut**
 - a. **Measurement:** The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.
 - b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not

limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

10. Bid Item No. 10 – 8-inch Ductile Iron RCW Main, Installed Via Open Cut

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

11. Bid Item No. 11 – 16-inch Ductile Iron RCW Main, Open Cut

- a. Measurement: The quantity for payment shall be the actual number of linear feet of reclaimed water main pipe of each size and type satisfactorily furnished and installed, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation);

dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

12. Bid Item No. 12 – 8-inch PVC Gravity Sewer Main, via Open Cut

- a. Measurement: The quantity for payment shall be the actual number of linear feet of PVC gravity main pipe of each size and type satisfactorily furnished and installed via open cut, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of any valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, connection to existing manholes, and cleanup. This item also includes all necessary fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

13. Bid Item No. 13 – Steel Casing

- a. Measurement: Measurement shall be the actual number of linear feet of steel casing measured horizontally above the centerline of the casing.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment for complete installation of the casing including but not limited to clearing and grubbing (unless otherwise covered), dewatering, exaction, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation), dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading. This item shall also include any necessary items including casing spacers, end caps, locating places, locating wire, and all items incidental to the construction.

14. Bid Item No. 14 – 4-inch Gate Valve

- a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.

15. Bid Item No. 15 – 6-inch Gate Valve

- a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.

16. Bid Item No. 16 – 8-inch Gate Valve

- a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.

17. Bid Item No. 17 – 12-inch Gate Valve

- a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.

- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.
- 18. Bid Item No. 18 – 16-inch Gate Valve
 - a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.
 - b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.
- 19. Bid Item No. 19 – 20-inch Gate Valve
 - a. Measurement: The quantity for payment shall be the actual number of each size and type valve satisfactorily furnished, installed, and incorporated into the piping system.
 - b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and installing the valve complete with valve box, cover, valve box extension, operating nut extension, valve wrench, restraining devices, test station box, concrete collar, identification disk (where applicable), bedding material, adjusting top of valve box to finished grade, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work to complete this item.
- 20. Bid Item No. 20 – Fittings, Restraints, and Piping for Valve Replacements
 - a. Measurement: The quantity for payment shall be for the actual number valve replacements completed as identified in the contract documents.
 - b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment for installing each valve replacement including pipe spools, fittings, restraints, excavation, sheeting, shoring and bracing, dewatering,

backfill, compaction, grading, temporary erosion control, flushing, testing, and all incidental and related work for each valve replacement.

21. Bid Item No. 21 – 4-inch Joint Restraints for Existing Mains
- a. Measurement: Measurement will be for the weight (pounds, lbs) of restraints satisfactorily furnished, installed, and incorporated on the existing pipe as necessary to complete the proposed work.
 - b. Payment: Payment of the applicable unit price shall be full compensation for full compensation for furnishing all labor, material, and equipment for installing the joint restraints on the existing main and shall include any necessary accessories, excavation, bedding material, sheeting, shoring, bracing, dewatering, backfill, compaction, grading, temporary erosion control, and all incidental and related work for each joint restraint.
22. Bid Item No. 22 – 8-inch Joint Restraints for Existing Mains
- a. Measurement: Measurement will be for the weight (pounds, lbs) of restraints satisfactorily furnished, installed, and incorporated on the existing pipe as necessary to complete the proposed work.
 - b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, material, and equipment for installing the joint restraints on the existing main and shall include any necessary accessories, excavation, bedding material, sheeting, shoring, bracing, dewatering, backfill, compaction, grading, temporary erosion control, and all incidental and related work for each joint restraint.
23. Bid Item No. 23 – 4-inch Line Stop
- a. Measurement: Measurement will be the actual number of each linestop and linestop saddle satisfactorily furnished, installed and incorporated into the piping system.
 - b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the linestop, full body tapping saddle, temporary valve, completion plug, concrete collar, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable linestop to isolate the required

pipeline for installation and repairs without interrupting service unless otherwise specified.

24. Bid Item No. 24 – 2-inch Tapping Saddle with Valve

- a. Measurement: Measurement will be the actual number of each tapping saddle, tapping valve, and wet tap satisfactorily furnished, installed and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the tapping saddle, tapping valve, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable wet tap to complete the connections identified in the Contract Documents.

25. Bid Item No. 25 - 4-inch Tapping Saddle with Valve

- a. Measurement: Measurement will be the actual number of each tapping saddle, tapping valve, and wet tap satisfactorily furnished, installed and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the tapping saddle, tapping valve, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable wet tap to complete the connections identified in the Contract Documents.

26. Bid Item No. 26 - 6-inch Tapping Saddle with 4-inch Valve

- a. Measurement: Measurement will be the actual number of each tapping saddle, tapping valve, and wet tap satisfactorily furnished, installed and incorporated into the piping system.

- b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the tapping saddle, tapping valve, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable wet tap to complete the connections identified in the Contract Documents.
- 27. **Bid Item No. 27 - 8-inch Tapping Saddle with Valve**
 - a. **Measurement:** Measurement will be the actual number of each tapping saddle, tapping valve, and wet tap satisfactorily furnished, installed and incorporated into the piping system.
 - b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the tapping saddle, tapping valve, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable wet tap to complete the connections identified in the Contract Documents.
- 28. **Bid Item No. 28 - 12-inch Tapping Saddle with Valve**
 - a. **Measurement:** Measurement will be the actual number of each tapping saddle, tapping valve, and wet tap satisfactorily furnished, installed and incorporated into the piping system.
 - b. **Payment:** Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment, and installing the tapping saddle, tapping valve, bedding material, clearing and grubbing, excavation, bracing, shoring and sheeting; exploratory excavation; backfill, compaction, constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or

replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable wet tap to complete the connections identified in the Contract Documents.

29. Bid Item No. 29 – 4-inch Plug

- a. Measurement: Measurement will be the actual number of each size plug satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment for the complete installation of a plug including but not limited to bedding material, clearing and grubbing, excavation, compaction, construction the specified protection and adjusting of existing above ground and underground utilities, disposal of soil or other materials, hydrostatic testing, erosion control, restoration, restraints, and all other related and necessary materials, work and equipment required to install the plug.

30. Bid Item No. 30 – 6-inch Plug

- a. Measurement: Measurement will be the actual number of each size plug satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment for the complete installation of a plug including but not limited to bedding material, clearing and grubbing, excavation, compaction, construction the specified protection and adjusting of existing above ground and underground utilities, disposal of soil or other materials, hydrostatic testing, erosion control, restoration, restraints, and all other related and necessary materials, work and equipment required to install the plug.

31. Bid Item No. 31 – 8-inch Plug

- a. Measurement: Measurement will be the actual number of each size plug satisfactorily furnished, installed, and incorporated into the piping system.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment for the complete installation of a plug including but not limited to bedding material, clearing and grubbing, excavation, compaction, construction the specified protection and adjusting of existing above ground and underground utilities, disposal of soil or other materials, hydrostatic

testing, erosion control, restoration, restraints, and all other related and necessary materials, work and equipment required to install the plug.

32. Bid Item No. 32 – 2-inch ARV Assembly

- a. Measurement: Measurement for this pay item shall be the actual quantity of ARV assemblies satisfactorily removed, furnished, and installed.
- b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment for ARV assembly installation including ARV, piping, valving, tapping saddle, above ground enclosure, bedding material, clearing and grubbing, excavation, bracing, shoring, sheeting, exploratory excavation, construction the specified protection of existing above ground and underground utilities and service connections; adjusting/relocating, supporting, protecting, or replacement of existing underground or aboveground utilities including associated utility coordination; signage removal and replacement; seeding and mulching, disposal of soil or other materials; hydrostatic testing; erosion control; concrete encasement; underdrain restoration and all other related and necessary materials, work and equipment required to construct a complete operable ARV assembly to complete the connections identified in the Contract Documents.

33. Bid Item No. 33 – Remove and Replace 2” Black Poly and Galvanized Water Lines

- a. Measurement: Measurement will be the actual length of black poly and galvanized water lines satisfactorily removed and replaced, as measured along the length of the centerline of the completed pipeline, regardless of the type joint required, without deduction for the length of valves and fittings.
- b. Payment: Payment of the applicable unit price shall be full compensation for furnishing all labor, materials and equipment and constructing the pipeline's complete installation including, but not limited to; clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing reclaimed water mains and cleanup. This item also includes all necessary casing, fittings, reducers, bends, tees, wyes, caps, plugs, sleeves, restraining devices, locator plates, locate wire, street signage, and all other items incidental to the construction of the pipeline. All costs to furnish and install such items shall be included.

34. Bid Item No. 34 – 1" RCW Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box

- a. Measurement: Measurement will be the actual number of reclaimed water service connections of each size furnished, installed, and accepted.
 - b. Payment: Payment will be according to the actual service connections installed and accepted. This item includes furnishing and installing all service tubing and accessories including casing, connections, fittings, reducers, service saddle, corporation stops, meter box, curb stop, tracer wire, labor, machinery, construction equipment, roadway subbase and asphalt repair, adjusting/relocating, supporting, protecting or replacement of existing underground or aboveground utilities including associated utility coordination; and necessary materials, work and equipment required to rehabilitate a complete operable service connection.
35. Bid Item No. 35 – 2" RCW Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box
- a. Measurement: Measurement will be the actual number of reclaimed water service connections of each size furnished, installed, and accepted.
 - b. Payment: Payment will be according to the actual service connections installed and accepted. This item includes furnishing and installing all service tubing and accessories including casing, connections, fittings, reducers, service saddle, corporation stops, meter box, curb stop, tracer wire, labor, machinery, construction equipment, roadway subbase and asphalt repair, adjusting/relocating, supporting, protecting or replacement of existing underground or aboveground utilities including associated utility coordination; and necessary materials, work and equipment required to rehabilitate a complete operable service connection.
36. Bid Item No. 36 – Reconnect Existing Lateral to Sanitary Sewer Gravity Main
- a. Measurement: Measurement for this bid item shall be the actual number of existing laterals reconnected to the new gravity main. The Contractor shall complete work in a timely manner in an effort to minimize the time required for bypassing.
 - b. Payment: Payment will be according to the actual number of laterals reconnected. This item includes but is not limited to furnishing and installing all materials, equipment labor including but not limited to bypassing, clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); supporting/protecting existing underground and aboveground utilities, dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, new sewer lateral saddles, accessories, connections, and restoration.

37. Bid Item No. 37 – Sanitary Sewer Lateral and Cleanout Replacement
- a. Measurement: Measurement for this bid item shall be the actual number of existing laterals removed and replaced (from gravity main to sanitary clean out).
 - b. Payment: Payment will be according to the actual number of laterals removed and replaced. This item includes but is not limited to furnishing and installing all materials, equipment labor including but not limited to bypassing, clearing and grubbing (unless otherwise covered), dewatering, excavation, tree and landscaping protection, trimming or removal, sheeting, shoring and bracing (and/or trench box installation); supporting/protecting existing underground and aboveground utilities, dewatering, backfill, rough grading, compaction, fencing removal and replacement, finish grading, flushing, new sewer lateral saddles, accessories, connections, and restoration.
38. Bid Item No. 38 – Manhole Rehabilitation
- a. Measurement: Measurement will be the actual quantity of manholes rehabilitated as defined in the Contract documents.
 - b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment for manhole rehabilitation. This shall include but not be limited to cleaning and preparing of surfaces, rebuilding existing bench, channels, risers, etc following pipe installations, recoating the interior manhole with Raven 405, replacing the manhole ring and cover, installing rain pan, reconnection of existing gravity mains to the manhole, replacement of channel base, etc.
39. Bid Item No. 39 – Concrete Curb Removal and Replacement
- a. Measurement: Measurement will be the actual linear footage of concrete curb satisfactorily removed, furnished, and installed.
 - b. Payment: Payment shall constitute full compensation for all labor, materials and equipment for concrete curb and gutter installation, preparation of the surface, case in place formwork, rebar and metal mesh, expansion joints, joint filler, joint seal, disposal of existing concrete and waste, grout repair and smoothing, material testing and incidental work as shown on the Contract Drawings and as specified.
40. Bid Item No. 40 – Asphalt Removal and Replacement
- a. Measurement: Measurement for this item will be based on the actual square yards of asphalt satisfactorily removed and replaced. This item shall include only the areas which are for complete asphalt replacement (i.e. road base, etc.). Areas which are to be milled and resurfaced only are included in Bid item no. 39.
 - b. Payment: Payment shall constitute full compensation for all labor, materials and equipment for asphalt removal and replacement installation, preparation of the surface, install stabilization and base

materials, compaction at specified lifts and to required densities, disposal of existing asphalt and waste, smoothing, thermoplastic striping, traffic loops, material testing and incidental work as shown on the Contract Drawings and as specified.

41. Bid Item No. 41 – Milling and Resurfacing

- a. Measurement: Measurement for this item will be based on the actual square yards of asphalt milled and resurfaced. This item shall include specifically only the areas which are being milled and resurfaced. Complete asphalt replacement is included in bid item no. 22.
- b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment for asphalt milling and resurfacing installation, preparation of the surface, disposal of existing asphalt and waste, smoothing, thermoplastic striping, traffic loops, material testing, and incidental work as shown on the Contract Drawings and as specified. Payment shall be for asphalt milled and resurfaced and shall not include the areas where complete asphalt removal and replacement is specified.

42. Bid Item No. 42 – Stamped Asphalt Removal and Replacement

- a. Measurement: Measurement shall be the actual square yard of stamped asphalt removed and replaced.
- b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment for stamped asphalt removal and replacement including removal and disposal of existing stamped asphalt, preparation of surface, backfilling, compaction, smoothing, texturizing and stamping, color matching and application, etc.

43. Bid Item No. 43 – Concrete Sidewalk Removal and Replacement

- a. Measurement: Measurement shall be the actual square yard of concrete sidewalk removed and replaced.
- b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment required for demolition/removal of existing concrete sidewalk, preparation of ground surface (grading, compaction, etc.) to accept new sidewalk, preparation of the surface, cast in place formwork, rebar and/or wire mesh, expansion joints, ADA accessible ramps, detectable warning surfaces, disposal of existing concrete and waste, grout repair and smoothing, material testing and incidental work as shown on the Contract Drawings and as specified. All costs associated with the provision of an acceptable alternate (temporary) sidewalk surface or detour as required to facilitate pedestrian traffic during the course of work shall also be included.

44. Bid Item No. 44 – Concrete Driveway Removal and Replacement

- a. Measurement: Measurement shall be the actual square yard of concrete driveway removed and replaced.
 - b. Payment: Payment shall constitute full compensation for all labor, materials, and equipment required for demolition/removal of existing concrete driveway, preparation of ground surface (grading, compaction, etc.) to accept new sidewalk, preparation of the surface, cast in place formwork, rebar and/or wire mesh, expansion joints, disposal of existing concrete and waste, grout repair and smoothing, material testing and incidental work as shown on the Contract Drawings and as specified. All costs associated with the provision of an acceptable alternate (temporary) sidewalk surface or detour as required to facilitate pedestrian traffic during the course of work shall also be included.
45. Bid Item No. 45 – Grout Fill and Abandon Pipe
- a. Measurement: Measurement will be horizontally, above the centerline of the pipe. The limits of measurement shall be as shown on the plans or as directed by the Project Representative.
 - b. Payment: Payment will be according to the diameter and per linear foot cost as set forth on the Conformed Bid Form. The Unit Cost includes furnishing and installing all material, equipment, and labor required for complete abandonment grouting, including air venting, testing, temporary plugs, pipes, and all incidentals.
46. Bid Item No. 46 – Removal of Pipe
- a. Measurement: Measurement will be horizontally, above the centerline of the pipe. The limits of measurement shall be as shown on the plans or as directed by the Project Representative.
 - b. Payment: Payment will be in accordance per linear foot cost as set forth on the bid form. The unit cost includes furnishing all labor, materials, and equipment necessary for the complete removal of pipe as shown in the Contract documents.
47. Bid Item No. 47 – Tree Removal, Tree Protection, and Tree/Root Pruning
- a. Measurement: Measurement for this lump sum item will be based on the percentage of the total value of the work performed to date, proportioned to the original contract amount.
 - b. Payment: Payment of the appropriate percentage of the lump sum price shall be full compensation for furnishing all labor, materials and equipment necessary to complete tree removal, install tree protection, and tree/root pruning as necessary for the installation of the associated pipeline and materials. This item shall include but not be limited to removal and proper disposal of all removed trees/landscaping, installation of tree guying, staking, bracing materials, and other related items as specified in the contract drawings.
48. Bid Item No. 48 – Sodding and Landscape Restoration

- a. Measurement: Measurement for this lump sum item will be based on the percentage of the total value of the work performed to date, proportioned to the original contract amount.
 - b. Payment: Payment of the appropriate percentage of the lump sum price shall be full compensation for furnishing all labor, materials and equipment necessary to restore landscaping, sodding, irrigation system, and other related items for full work site remediation at the approval of the Owner.
- 49. Bid Item No. 49 – Vac-Cons for Containment
 - a. Measurement: Measurement for this item shall be based on the actual number of each (ea) vac-con truck utilized per day per truck.
 - b. Payment: Payment for this item shall be for the actual number of vac-con truck per day per truck furnished for containment and any associated work for obtaining and coordinating vac-con.

END OF SECTION