

**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 33.
 - 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 33.
- 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 – Complete 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.).
 - 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.
5. Bid Item No. 5 – Remove and Replace Concrete Sidewalk
- 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.

6. Bid Item No. 6 – Concrete Curb and Gutter 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.
7. Bid Item No. 7 – Remove and Replace Concrete Driveway
 - 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 and/or driving surface or detour as required to facilitate pedestrian and vehicular traffic during the course of work shall also be included.
8. Water Main Pipe, Inclusive of Fittings, Restraints, Bypassing, Removing and/or grouting, Etc.
 - a. Bid Item No. 8 – Replace 8-inch PVC Water Main via Open Cut or HDPE Water Main via Pipe Bursting (see “g” Measurement and “h” Payment below)
 - b. Bid Item No. 9 – Replace 4-inch Ductile Iron Water Main by Open Cut or HDPE Water Main via Pipe Bursting (see “g” Measurement and “h” Payment below)
 - c. Bid Item No. 10 – Replace 6-inch Ductile Iron Water Main by Open Cut or HDPE Water Main via Pipe Bursting (see “g” Measurement and “h” Payment below)
 - d. Bid Item No. 11 – Replace 8-inch Ductile Iron Water Main by Open Cut or HDPE Water Main via Pipe Bursting (see “g” Measurement and “h” Payment below)

- e. Bid Item No. 12 – Replace 12-inch Ductile Iron Water Main via Open Cut or HDPE Water Main via Pipe Bursting, Inclusive of Fittings, Restraints, Etc. (see “g” Measurement and “h” Payment below)
 - f. Bid Item No. 13 – 12-inch Ductile Iron Water Main, Above Ground Aerial Crossing, Inclusive of Fittings, Restraints, Pipe Supports, Coating, Etc. (see “g” Measurement and “h” Payment below)
 - g. Measurement: The quantity for payment shall be the actual number of linear feet of 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.
 - h. 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, fittings, restraints, dismantling joints, connection to existing mains, bypassing for maintaining water service, pipe supports, finish coating, finish grading, flushing, cleaning, pressure testing, disinfection, connection to existing water mains, removal of existing water mains or abandonment and grout filling (including air venting, testing, temporary plugs, pipes, and all incidentals) of water mains as directed by the City and/or Representative, 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. Gate Valve, RMJ
- a. Bid Item No. 14 – 4-inch Gate Valve, RMJ (see “e” Measurement and “f” Payment below)
 - b. Bid Item No. 15 – 6-inch Gate Valve, RMJ (see “e” Measurement and “f” Payment below)
 - c. Bid Item No. 16 – 8-inch Gate Valve, RMJ (see “e” Measurement and “f” Payment below)
 - d. Bid Item No. 17 – 12-inch Gate Valve, RMJ (see “e” Measurement and “f” Payment below)
 - e. 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.
 - f. 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.

10. TEAM InsertValve

- a. Bid Item No. 18 – 6-inch TEAM InsertValve and Valve Box (see “d” Measurement and “e” Payment below)
- b. Bid Item No. 19 – 8-inch TEAM InsertValve and Valve Box (see “d” Measurement and “e” Payment below)
- c. Bid Item No. 20 – 12-inch TEAM InsertValve and Valve Box (see “d” Measurement and “e” Payment below)
- d. 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 while maintaining constant pressure and service. Only complete Insert Valves shall be acceptable with full tapping and removal of the pipe section. Top of pipe style valves will not be acceptable.
- e. 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.

11. Bid Item No. 21 – 12-inch Tapping Sleeve with 12-inch Tapping Valve and Valve Box

- 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.

12. Joint Restraints for Existing Mains

- a. Bid Item No. 22 – 6-inch Joint Restraints for Existing Mains (see “d” Measurement and “e” Payment below)
- b. Bid Item No. 23 – 8-inch Joint Restraints for Existing Mains (see “d” Measurement and “g” Payment below)
- c. Bid Item No. 24 – 12-inch Joint Restraints for Existing Mains (see “d” Measurement and “g” Payment)
- d. Measurement: The quantity for payment shall be the actual number of each size restraints satisfactorily furnished, installed, and incorporated on the existing pipe as necessary to complete the proposed work.
- e. 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.

13. Bid Item No. 25 – 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.

14. Bid Item No. 26 – Fire Hydrant Assembly (Inclusive of Tee, Gate Valve, Fittings, and Associated Restraints)

- a. Measurement: Measurement will be for the actual number of fire hydrant assemblies of the type specified, furnished, and installed for water service.
 - b. Payment: Payment shall be for the applicable unit price (EA) and shall be full compensation for furnishing all labor, materials, and equipment for installing the fire hydrant assembly, complete, as shown on the drawings, including but not limited to piping, fittings, restraints, gate valve with valve box, concrete collar, #57 stone, fire hydrant, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, backfill, compaction, grading, temporary erosion control, testing, temporary restoration, clean up, and all other items incidental to the complete installation of the fire hydrant assembly. This shall also include the removal and proper disposal of existing fire hydrants.
15. Water Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box
- a. Bid Item No. 27 – 1" Water Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box (see “d” Measurement and “e” Payment below)
 - b. Bid Item No. 28 – 1.5" Water Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box (see “d” Measurement and “e” Payment below)
 - c. Bid Item No. 29 – 2" Water Service including Saddle, Corporation Stop, Casing, Curb Stop, and Meter Box (see “d” Measurement and “e” Payment below)
 - d. Measurement: Measurement will be the actual number of water service connections of each size furnished, installed, and accepted.
 - e. 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.

16. Bid Item No. 30 – 16” x 12” Tapping Sleeve

- 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.

17. Bid Item No. 31 – 12” Linestop

- 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.

18. Bid Item No. 32 – 6” Linestop

- 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.

19. Bid Item No. 33 – Remove and Replace Unsuitable Materials

- a. Measurement: The quantity for payment for this item shall be for the actual number of cubic yards (CY) of unsuitable soils removed and replaced with suitable fill. This bid item is a contingency and shall only be allowed at the approval/authorization of the Owner.
- b. Payment: Payment for the applicable unit price shall be full compensation for furnishing all labor, materials, and equipment to removal contaminated soils, including proper disposal, and replacement with suitable fill, and all incidental and related work to complete this item.

D. Bid Alternates

1. Bid Alternate 1 – Complete Asphalt Removal and Replacement Deduct

- a. Bid Alternate B1 shall only be used if Contractor intends to utilize Pipe Bursting as the installation method for bid items 8-12. Measurement and payment for the actual quantity of asphalt removed and replaced shall be as outlined in Bid Item No. 4.

END OF SECTION

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