

**SECTION 01 29 00 - PAYMENT PROCEDURES**  
**(Revised Addendum No. Seven)**

**PART 1 - GENERAL**

1.01 **SCOPE:**

- A. This Section covers methods of measurement and payment for items of Work under this Contract.
- B. The Contract Price shall cover all Work required by Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction plant, equipment, and tools; and performing all necessary labor and supervision to fully complete the work, shall be included in the unit and lump sum prices. All work not specifically set forth as a pay item in the Bid Schedule shall be considered a subsidiary obligation of the Contractor, and all costs in connection therewith shall be included in the schedule prices.
- C. Compliance with all permits required for the Project including but not limited to those listed in SECTION 01 11 10, shall be considered incidental to the work, and no additional payment will be made to the Contractor. This includes all work necessary to comply with such permits and any fees associated with obtaining permits.

1.02 **ESTIMATED QUANTITIES:**

- A. All estimated quantities stipulated in the Contract Documents for this portion of Work are approximate and are to be used as a basis for estimating the probable cost of the Work and for the purpose of comparing bids submitted for the Work. The actual amounts of Work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. See General Conditions if quantities exceed estimated bid quantities.

1.03 **EARTHWORK, EXCAVATION, AND TRENCHING:**

- A. Except where otherwise specified, the unit or lump sum price bid for each item of work that involves earthwork, excavation, and trenching which is classified as common excavation, shall include all costs for such work. No direct payment shall be made for excavation and trenching. All excavation and trenching shall be unclassified as to materials which may be encountered, and trenches shall be unclassified as to depth. Any rock encountered shall be removed and disposed of at no additional cost to the Owner. Contractor shall comply with all OSHA Safety Standards including all work necessary for the Contractor to comply with trench and excavation safety systems according to OSHA Part 1926 – Subpart P. All labor, materials, equipment, etc. required to meet these Standards shall be incidental to the Work and therefore no additional payment will be made under any circumstances.

1.04 DEWATERING:

- A. Except where otherwise specified, the unit or lump sum price bid for each item of work that involves dewatering shall include all costs for such work. No direct payment shall be made for dewatering. Dewatering shall include construction dewatering, un-watering, or water control as used to described the removal, draining, or control of groundwater or surface water from a riverbed, reservoir, pond, lowland, or wetland from the excavation area. All dewatering shall be at no additional cost to the Owner. Contractor shall comply with all Federal, State, and Local permit requirements including all precautions required for the Contractor to comply with the storm water pollution prevention plan (SWPPP). All labor, materials, equipment, etc. required to construct the project under wet conditions are incidental to the Work and therefore no additional payment will be made under any circumstances.

1.05 SITE SAFETY

- A. Site Safety measures are required on this project. Site Safety will be provided by the Contractor to protect the Public, City, and Contractor's forces from construction activities. All safety barricades, lighting, barrier fencing, and other materials to cordon off and protect the public from the construction activities will be provided by the Contractor. Proposed site safety and construction site protection will be coordinated with the City of Thornton; a submittal will be required. Method of measurement for this item is subsidiary to the Phase One Southern Sewer Interceptor Main Project. No direct payment shall be made for site safety.

1.06 MOBILIZATION: (BID ITEM 1)

- A. The measurement and payment for this item will be the lump sum required for mobilization and demobilization and includes all costs for insurance, permits, temporary utilities, moving construction equipment, materials and labor, establishing a field office and other necessary facilities, and all other costs incurred or labor and operations which must be performed prior to beginning the other bid items in the contract.
- B. Payment will be made to cover the costs of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site.
- C. Payment also includes the establishment of all offices, buildings, and other facilities necessary for the work on the Project and for all other work and operations which must be performed, or costs incurred prior to beginning work on the Project.
- D. Payment shall be made on the percentage of progress agreed to in the field and percentages dictated in City General and Special Conditions.

1.07 CONTRACT BONDS AND INSURANCE: (BID ITEM 2)

- A. The work will consist of providing the performance and guaranty bond and the certificates of insurance as are required in the contract documents.
- B. Payment will be made with the first pay request processed after the required performance bond and the required certificates of insurance are provided.

1.08 CONFORMANCE WITH GRADING, EROSION AND SEDIMENT CONTROL: (BID ITEM 3)

- A. The measurement and payment for development, implementation, conformance, and compliance with the approved CDPHE construction stormwater permit and associated storm water pollution prevention plan will be based on a lump sum.
- B. The lump sum bid for this item shall include all labor, materials, costs, and fees associated with planning, designing, developing, applying, and achieving a stormwater discharge permit from the Colorado Department of Public Health and Environment (CDPHE). The lump sum bid shall also cover all costs in planning, designing, engineering, and developing a Storm Water Pollution Prevention Plan (SWPPP).
- C. The lump sum bid for development, implementation, conformance, and compliance with CDPHE construction stormwater permit and associated storm water pollution prevention plan shall include all labor, materials, work, and all costs of whatsoever nature to implement and maintain the project site in compliance with the stormwater discharge permit and per the SWPPP. This shall include, but not be limited to: furnishing, installing, moving, maintaining, and removing all best management practices (BMPs) including, but not limited to: silt fence, construction fence, inlet protection, vehicle tracking pads, concrete washout areas, erosion control bales, erosion control logs, erosion control blankets, seeding, mulching, including all installation, maintenance, removal and disposal, and all other necessary material, work, and equipment required to complete this item in accordance with the CDPHE Construction Stormwater Permit and associated SWPPP.
- D. Contractor shall submit a schedule of values for each lump sum item so that verification of work value completed can be calculated.
- E. Payment shall be made on the percentage of progress agreed to in the field and bid units.

1.09 EROSION CONTROL MAINTENANCE FOR A YEAR AFTER PROJECT COMPLETION: (BID ITEM 4)

- A. The measurement and payment for this item will be lump sum
- B. The lump sum bid for this item shall include all of the Contractor's cost for all labor, materials, work, and all costs of whatsoever nature to maintain the project site in compliance with the stormwater discharge permit and per the SWPPP for a year after project initial acceptance. This shall include, but not be limited to: furnishing, installing, moving, maintaining, and removing all best management practices (BMPs) including, but not limited to: silt fence, inlet protection, erosion control bales, erosion control logs, erosion control blankets, reseeding, mulching, including all installation, maintenance, removal and disposal, and all other necessary material, work, and equipment required to complete this item in accordance with the CDPHE Construction Stormwater Permit and associated SWPPP inspecting and removing soil, organic material, buried trash items, piling, and hauling, etc. This lump sum bid shall include, but not be limited to: excavation, dewatering, hauling, labor, hours, stockpiling, and any necessary removal and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.

- D. Contractor and City to perform monthly inspections

1.10 DEMOLITION: (BID ITEM 5)

- A. The measurement and payment for this item will be lump sum
- B. The lump sum bid for this item shall include all of the Contractor's cost for inspecting and removing soil, organic material, buried trash items, piling, and hauling, etc. This lump sum shall also include construction and removal of temporary berms at existing spillway to protect reservoir for high South Platte River flows. This lump sum bid shall include, but not be limited to: excavation, dewatering, hauling, labor, hours, stockpiling, and any necessary removal and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid units.

1.11 DRILLED SHAFTS: (BID ITEM 6 AND 6A)

- A. The measurement and payment for this item will be the vertical Feet installed for each size drilled shaft.
- B. The lump sum bid for this item shall include all of the Contractor's cost for the drilled shafts of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, drilling, dewatering, material testing, site inspection by Kumar, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Payment shall be made based on the actual quantities for each size drilled shaft installed and accepted by the City and Resident Engineer.

1.12 BRIDGE STRUCTURE: (BID ITEM 7)

- A. The measurement and payment for this item will be lump sum
- B. The lump sum bid for this item shall include all of the Contractor's cost for the bridge of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, double tees, topping concrete, jersey barriers, curb stop and bollards, miscellaneous metals, handrail, conduits, lights, gate, dewatering, material testing and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid units.

1.13 WET WELL: (BID ITEM 8)

- A. The measurement and payment of this item will be lump sum.
- B. The lump sum bid for this item shall include all of the Contractor's cost for the wet well structure of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, grating, grating openings, manhole steps, anchoring bolts, gaskets, pump guides, pump slide rails, hooks for electrical cabling, penetrations, thimbles, cast in place gate guides, forming, concrete placement, dewatering, slope protection, flanges, mounting brackets, vent piping, screens for the slide gates material testing, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications. The drawing and details are intended to provide the general requirements for gate installation. Contractor shall coordinate and work with the

manufacturer of the gates being purchased regarding any and all additional materials, parts, embedment's, and installation requirements necessary to provide a system that provides the desired diversions and water tight conditions when gates are closed. The result shall be a completely functioning system with all required parts and materials provided at no additional cost to the Owner.

- C. Payment shall be made on the percentage of progress agreed to in the field and bid units.
- D. The pumps and slide gates will be paid for under separate bid items.

1.14 VALVE VAULT WITH HATCHS (BID ITEM 9)

- A. The measurement and payment of this item will be lump sum.
- B. The lump sum bid for this item shall include all of the Contractor's cost for the valve vault structure of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, manhole steps, hatches, link seal, penetrations, vent pipes, vents, coring, valve boxes, pipe supports, forming, concrete placement, dewatering, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Hatches to be provided by contractor. Secured bolt down manhole frame and lids to be furnished by the City at the IMC Facility. Contractor is responsible for relocating the manhole frame and lids from the IMC Facility to the job site.
- D. The equipment and piping inside the vault will be paid for under a separate bid item.
- E. Payment shall be made on the percentage of progress agreed to in the field and bid units.

1.15 METER VAULT WITH HATCHES: (BID ITEM 10)

- A. The measurement and payment of this item will be lump sum.
- B. The unit price bid for this item shall include all of the Contractor's cost for the meter vault structure of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, manhole steps, link seal, penetrations, hatches, vents, vent pipe, forming, concrete placement, material testing, dewatering, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Hatches to be provided by contractor. Secured bolt down manhole frame and lids to be furnished by the City at the IMC Facility. Contractor is responsible for relocating the manhole frame and lids from the IMC Facility to the job site.
- D. The meter and piping inside the vault will be paid for under separate bid items.
- E. Payment shall be made on the percentage of progress agreed to in the field and bid unit.

1.16 DISSIPATION STRUCTURE: (BID ITEM 11 THROUGH 13)

- A. The measurement and payment of this item will be for each dissipation structures installed.
- B. The unit price bid for this item shall include all of the Contractor's cost for the dissipation structure of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, link seal, penetrations, forming, concrete placement, dewatering, cofferdams, rip rap, grouted rip rap,

- grouted boulders, material testing, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.
- 1.17 EMERGENCY OVERFLOW STRUCTURE: (BID ITEM 14)
- A. The measurement and payment of this item will be lump sum.
- B. The lump sum bid for this item shall include all of the Contractor's cost for the emergency overflow discharge structure of whatsoever nature. This lump sum bid shall include, but not be limited to: excavation, concrete, steel reinforcement, link seal, penetrations, forming, concrete placement, dewatering, grating, stop log guides, grouted rip rap, material testing and all other equipment and materials required to complete this item in accordance with the Plans and Specifications.
- C. Stop logs to be paid under bid item 47.
- D. HDPE pipeline to be paid under bid item 34.
- E. Payment shall be made on the percentage of progress agreed to in the field and bid unit.
- 1.18 ELECTRICAL BUILDING: (BID ITEM 15)
- A. The measurement and payment of this item will be lump sum.
- B. The lump sum price bid for this item shall include all of the Contractor's costs for the electrical building of whatsoever nature. The lump sum price bid shall include, but not be limited to: furnishing, installing, all structural, architectural, masonry, electrical conduits, doors, skylights, hand rails, supports, stairs, handrails, landings, interior finishes, exterior finishes, drainage, roof, ramps, material testing, site grading and placement of asphalt millings and geotextile fabric in the vicinity of the electrical building, grading, excavation, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.
- 1.19 HVAC: (BID ITEM 16)
- A. The measurement and payment for this item will be lump sum.
- B. The lump sum price bid for this item shall include all of the Contractor's costs of all HVAC units, according to the mechanical schedule. The lump sum price bid shall include, but not be limited to: furnishing, installing, testing, startup, commissioning all HVAC units, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.20 ELECTRICAL SERVICE INSTALLATION AND FREIGHT: (BID ITEM 17)
- A. The measurement and payment of this item will be lump sum.
- B. *The lump sum price bid for this item shall include all of the Contractor's costs of electrical service installation and freight of whatsoever nature. The lump sum price bid shall include, but not be limited to: furnishing, installing, electrical cable and conduit (P001, P002 & P003) coming to the electrical building including trenching, excavation, compaction, material testing, coordination with power utility for transformer placement and all other related and necessary materials, work and*

*equipment required to complete this item in accordance with the Drawings and Specifications.*

- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.

1.21 METERING PANEL, MAIN SERVICE DISCONNECT, PANELBOARD, TRANSFORMER AND SAFETY DISCONNECTS: (BID ITEM 18)

- A. The measurement and payment for this item shall be lump sum.
- B. The lump sum price bid for this item shall include all of the Contractor's costs of metering panel, main service disconnect, panelboard, transformer and safety switches. The lump sum price bid shall include, but not be limited to: furnishing, installing, testing and energizing all electrical equipment, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.22 LIGHTING: (BID ITEM 19)

- A. The measurement and payment for this item shall be lump sum.
- B. The lump sum price bid for this item shall include all of the Contractor's costs of all lighting fixtures, lighting poles, photo cells, motion sensors, and all accessories specified and indicated and according to the lighting schedule and electrical plan drawings. The lump sum price bid shall include, but not be limited to: furnishing, installing, and testing all lighting fixtures, and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.23 SWITCHBOARD (SWBD1) (BID ITEM 20)

- A. *The measurement and payment of this item will be lump sum.*
- B. *The unit price bid for this item shall include all of the Contractor's costs of the SWBD1 including the breakers, meters, surge protection, and protective relaying of whatsoever nature. The unit price bid shall include, but not be limited to: furnishing, installing, the SWBD1, breakers, meters, surge protectors and variable frequency drives, testing, startup, commissioning and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.*

1.24 VARIABLE FREQUENCY DRIVE PANELS (BID ITEM 21)

- A. *The measurement and payment of this item will be lump sum.*
- B. *The unit price bid for this item shall include both VFD panels, all of the Contractor's costs including the passive filters, contactors, breakers, fuses, displays, variable speed motor controllers, and submersible pump temperature and leak detection relaying of whatsoever nature. The unit price bid shall include, but not be limited to: furnishing, installing a complete and factory tested VFD panel ready for operation. Include onsite testing for the drives, startup, commissioning and all other related and necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.*

1.25 ELECTRICAL DUCT BANK, CONDUIT, CABLING, GROUNDING AND BONDING, AND RECEPTACLES (BID ITEM 22)

- A. The measurement and payment for this item will be lump sum.

- B. *The lump sum price bid for the cable, conduit, bonding, grounding, duct bank, trenching for electrical work, this shall include all of the Contractor's costs of whatsoever nature. The lump sum price bid shall include, but not be limited to: furnishing, installing, all electrical cable not covered by other bid items, including conduit within the electrical building and coming to and from the electrical building, bridge, meter vault, pump station, trenching, excavation, compaction, material testing and all Work required to complete this item in accordance with the Drawings and Specifications.*
- 1.26 CUT OFF WALLS: (BID ITEM 23)
- A. The measurement and payment for this item will be the actual number of concrete or controlled low strength material (CLSM) cut-off walls installed.
- B. The unit price bid for the CLSM cut off walls shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing, excavation, dewatering, backfilling, materials for construction of cut off wall, formwork, placing, additional labor required for backfill, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.27 TRENCH STABILIZATION MATERIAL: (BID ITEM 24)
- A. If required, the measurement and payment of this item will be the actual tonnage of trench stabilization material installed. Delivery tickets will confirm the amount of material provided and should be provided to Resident Project Representative.
- B. The unit price bid for trench stabilization material shall include all of the Contractor's costs of whatsoever nature. The unit price shall include but not be limited to: furnishing and installation of trench stabilization material in the bottom of an unstable excavation or trench upon direction of the Owner and all other necessary material, work, and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. The use and payment for trench stabilization material shall be only where required and as approved by the Resident Field Engineer.
- 1.28 LOW FLOW CHANNEL: (BID ITEM 25)
- A. The measurement and payment of this item will be lump sum.
- B. The lump sum price bid for the low flow channel shall include all of the Contractor's costs of whatsoever nature. The unit price shall include but not be limited to: excavation, grading, forming, concrete, grouted rip rap, dewatering, slope protection, material testing, and all other equipment and materials required to complete this item in accordance with the Plans and Specifications..
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit
- 1.29 6-FOOT CHAIN LINK FENCE AND GATES: (BID ITEM 26)
- A. The measurement and payment of this item will be per linear feet of 6-foot high chain link fence and gates installed.
- B. The per linear feet bid for the chain link fence shall include all of the Contractor's costs of whatsoever nature. The unit price shall include but not be limited to: furnishing and installing fences, posts, excavation, connecting to existing fence,



- gates, gate appertenances and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.
- 1.30 SEEDING AND SURFACE RESTORATION: (BID ITEM 27)
- A. The measurement and payment for this item will be per acre of area disturbed then restored thru seeding.
- B. The unit price bid for this item shall include all of the Contractor's costs of seeding and surface restoration of whatsoever nature. The unit price bid shall include but not be limited to: determine seed type, furnishing and installing seed, mulch, tackifier, soil preparation, surface preparation, soil ammendments, maintenance, and all other necessary material, work, and equipment required to complete this item in accordance with the Plans and Specifications.
- C. Surface preparation and soil ammendments shall be per specifications and COT Standard Section 800.
- D. Unit price bid shall also include the Contractor's cost of whatsoever nature to maintain newly seeded areas until the time of final acceptance and shall include but not be limited to: watering, fertilization, re-seeding thin areas, weed control, mowing, and all other maintenance to ensure adequate growth coverage as outlined in the specifications.
- 1.31 RECYCLED ASPHALT WITH GEOTEXTILE FABRIC: (BID ITEM 28)
- A. The measurement and payment for this item will be the actual number of square yards of existing road and parking areas improved using recycled asphalt with geotextile fabric.
- B. The unit price bid for this item shall include all of the Contractor's costs of recycled asphalt with geotextile fabric of whatsoever nature. The unit price bid shall include but not be limited to: grading, fine grading, loading, transporting, hauling and installing millings provided by the City of Thornton, compaction, material testing, furnishing and installing culverts at creek crossings, and all other necessary material, work, and equipment required to complete this road item in accordance with the Plans and Specifications.
- C. Millings will be available to the Contractor at 12450 Washington Street the City IMC Facility. Contractor shall load and transport millings to the project site.
- 1.32 SLURRY WALL REPAIR (BID ITEM 29)
- A. The measurement and payment for this item will be per each slurry wall repair made as required by the contract.
- B. The unit price bid for this item shall include all of the Contractor's costs of slurry wall repairs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing, excavation, dewatering, backfilling, placing slurry repair material and all other necessary material, work, and equipment required to complete this gravel road item in accordance with the Plans and Specifications.
- 1.33 30-INCH BORED STEEL CASING AT 104<sup>TH</sup> AVENUE: (BID ITEM 30)

- A. The measurement and payment for this item will be the actual number of linear feet of bored 30-inch casing pipe installed, measured along the centerline of the pipe.
- B. The unit price bid for the bored casing shall include all of the Contractor's costs of whatsoever nature. The unit price for this item shall include but not be limited to: CDOT permit, traffic control insurance, excavation for entry and receiving pits, dewatering, boring, backfilling, furnishing and installing pipe casing, the excess costs of installing pipe in casing above the amount bid for the pipe laid in open trench, all skids, insulators, jointing materials, jacking pipe, jacking pits, casing spacers, end closures, modular pipe seals, grouting, shoring, and all other related and necessary materials, work, and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. Carrier pipe will be paid under bid item 32

1.34 OPEN CUT OF THE SOUTH PLATTE RIVER PILE/DAM DESIGN, RENTAL, INSTALL, REMOVAL FOR OPEN CUT CROSSING OF THE SOUTH PLATTE RIVER (BID ITEM 31)

- A. The measurement and payment for this item will be lump sum.
- B. The unit price bid for the open cut of the South Platte River shall include all of the Contractor's costs of whatsoever nature. The unit price for this item shall include but not be limited to: furnishing and installing all materials, cofferdams, excavation, stockpiling of material, backfilling, dewatering, sheet piling, shoring, the excess costs of installing pipe in a normal open cut trench, steel casing, casing spacers, end seals, concrete encasement of pipe, and all other related and necessary materials, work, and equipment required to complete this item in accordance with the Drawings and Specifications.
- C. Payment shall be made on the percentage of progress agreed to in the field and bid unit.

1.35 WATERLINE AND APPURTENANCES: (BID ITEMS 32 THROUGH 6)

- A. The measurement and payment for this item will be the actual number of linear feet of waterline installed for each size piping and each pipe material either with restraint or without restraint. Waterline shall be measured for payment on a horizontal plane after installation of the pipe. Where lines are laid to conform to stationing profiles, payment shall be made on linear quantities based on the pipeline stationing as determined by the surveys made after installation.
- B. The unit price for waterline and appurtenances shall include all of the Contractor's cost of whatsoever nature. The unit price for this item shall include, but not be limited to: all costs for furnishing and installation of the pipe and fittings, joint fusing (as required), excavation, pipe installation, bedding material, dewatering, potholing of all existing utilities, backfill, warning tape, tracer wire, restraining systems (including restraint joints), polyethylene wrap where applicable, flowfill, encasement, marker posts, removal of excess soil materials, removal and replacement of existing curb, gutter, fence, and sidewalk, installing gates at crossings with fences, removal and replacement of pavement within the construction trench and all costs in connection therewith, including cutting, removal and disposal of old surfacing; installation and removal of livestock fencing, construction of new surfacing; temporary and permanent pavement marking/stripping; and all extra compaction for backfill beneath surfacing, existing

utility protection and support, dewatering, material testing, testing, flushing and all other necessary materials, work and equipment required to complete this item in accordance with the Drawings and Specifications.

- C. The measurement of the length of each line or run of pipe of each size will begin and end at:
  - 1. The end of the pipe where connected to an existing pipe, fitting, or valve; or at the end of a dead-end run.
  - 2. The centerline intersection of run and branch on tees, crosses, or laterals where a branch line connecting therewith is constructed under this Contract. Where a branch fitting is installed under this Contract and the branch or connecting line is to be constructed by others at some future date or under another contract, the pay measurement will include the entire laying length of the branch or branches of such fitting.
- D. The measurement of each type pipe of each size, which is to be paid for on a unit price basis, will be continuous through and shall include the full laying lengths of all fittings and valves installed between the ends of each line; except that the laying lengths of reducers and increasers will be divided equally between the connected pipe sizes.
- E. The unit price submitted for waterline and appurtenances shall also include any other items necessary for a completely functioning piping system and to bring the site to original conditions which are not specifically called for in other bid items. Any such items shall be at no additional cost to Owner.

1.36 TRANSMISSION MAIN BLOWOFF ASSEMBLY (BID ITEM 37)

- A. The measurement and payment for this item will be the actual number of transmission main blowoff valve assemblies installed.
- B. The unit price bid for the transmission main blow valve assembly shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: excavation, dewatering, furnishing and installing all piping, fittings, valves, mechanical restraint, manhole frame and cover, frost lid, operators, extensions, thrust block, valve box, field painting, marker post, backfill around the assembly, swivel tee, bedding, material testing and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.37 14-INCH BUTTERFLY VALVE (BID ITEMS 38)

- A. The measurement and payment for this item will be the actual number of butterfly valves installed within the valve vault indicated in Bid Item 9.
- B. The unit price bid for the butterfly valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing butterfly valves, valve boxes, valve operator extensions (as needed), connection to other appurtenances in the vault, field painting, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.38 18-INCH BUTTERFLY VALVE WITH VAULT (BID ITEMS 39)

- A. The measurement and payment for this item will be the actual number of butterfly valves installed with vaults.

- B. The unit price bid for the butterfly valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing, butterfly valves, valve boxes, valve operator, operator extensions (as needed), connection to other appurtenances in the vault, combination air/vacuum valves (2), air/vac shutoff valves, saddles (if required), isolation valves to air/vac assemblies, air/vacuum valve discharge piping, air/vacuum valve inflow preventer, excavation, dewatering, concrete, reinforcing steel, precast vault sections, manhole frame and cover, steps, vent, vent piping, pipe supports, marker posts, field painting, backfill around the vault structure, compaction and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.39 14-INCH CHECK VALVE (BID ITEM 40)
- A. The measurement and payment for this item will be the actual number of check valves installed within the valve vault indicated in Bid Item 9.
- B. The unit price bid for the check valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing check valve, connecting to other appurtenances within the vault, field painting, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.40 TIDEFLEX DUCK BILL CHECK VALVE (BID ITEM 41 AND 42)
- A. The measurement and payment for this item will be the actual number of each size duck bill check valves installed.
- B. The unit price bid for the duck bill check valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing duck bill check valve, connecting to other appurtenances within dissipation structure, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.41 AIR RELEASE/VACUUM VALVES: (BID ITEM 43)
- A. The measurement and payment for this item will be the actual number of combination air release/vacuum valves and vaults.
- B. The unit price bid for the combination air vacuum and release valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing combination air release/vacuum valve, furnishing and installation of air release/vacuum valves, shutoff ball valves, drain piping, field painting, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.42 AIR RELEASE/VACUUM VALVE AND VAULT: (BID ITEM 44)
- A. The measurement and payment for this item will be the actual number of combination air release/vacuum valves and vaults.
- B. The unit price bid for the combination air vacuum and release valves shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing combination air release/vacuum valve and vaults, furnishing and installation of two (2) air release/vacuum valves, pipe supports (1), shutoff ball valves (2), drain piping, field painting, and all other

necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.43 PUMPS (BID ITEM 45)

- A. The measurement and payment for this item will be the actual number of submersible pumps installed.
- B. The unit price bid for the submersible pumps shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing submersible pumps, connecting to system, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.44 COMPRESSED AIR SYSTEM TO SLIDE GATES (BID ITEM 46)

- A. The measurement and payment for this item will be based on the installation of the compressed air system.
- B. The unit price bid for the compressed air system shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing air compressor piping and valves, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.45 SLIDE GATES (BID ITEM 47)

- A. The measurement and payment for this item will be the actual number of slide gates installed.
- B. The unit price bid for the slide gates shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing slide gates, actuators, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.46 SCREENS (BID ITEM 48)

- A. The measurement and payment for this item will be the actual number of screens installed.
- B. The unit price bid for the screens shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing screens, testing, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.47 STOPGATE (BID ITEM 49)

- A. The measurement and payment for this item will be the actual number of stopgates installed.
- B. The unit price bid for the stopgates shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing stop logs, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

1.48 14-INCH MAGNETIC FLOWMETER (BID ITEM 50)

- A. The measurement and payment for this item will be the actual number of magnetic flowmeters installed.
  - B. The unit price bid for the magnetic flow meter shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing magnetic flow meter, connecting to system, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.49 BUBBLER SYSTEM LEVEL TRANSMITTER (BID ITEM 51)
- A. The measurement and payment for this item will be the actual number of level transmitters installed.
  - B. The unit price bid for the level transmitter shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing level transmitter, furnishing and installing the instrument enclosure, furnishing and installing the instrument stand, connecting tubing, testing, startup and checkout, communications check back to the PLC, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.50 PRESSURE INDICATING TRANSMITTER (BID ITEM 52)
- A. The measurement and payment for this item will be the actual number of pressure indicating transmitter installed.
  - B. The unit price bid for the pressure indicating transmitter shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing pressure indicating transmitter, the instrument manifold valve, connecting to system, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.51 FLOAT LEVEL SWITCHES: (BID ITEM 53)
- A. The measurement and payment for this item will be the actual number of float level switches installed.
  - B. The unit price bid for the float level switch shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing float level switches, chainfall and wieght for installation, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.52 PLC PANEL, CONTROLS, SCADA AND PROGRAMMING (BID ITEM 54)
- A. The measurement and payment for this item will be lump sum.
  - B. The unit price bid for the PLC panel, controls, SCADA and programming shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing PLC panel, controls, network switch, communication via antennas and vfd's, programming control and screens on site and at the West Brown Treatment Plant, according to the P&IDs and the I/O list, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.

- 1.53 ANTENNA, RADIO, SURGE PROTECTION AND MOUNTING MASTS (BID ITEM 55)
- A. The measurement and payment for this item will be lump sum.
  - B. The unit price bid for all three antenna's, radio's, wireless cellular, surge protection and mounting equipment, shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing the antennas, programming, connecting to existing system, testing, training, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
- 1.54 BOAT RAMP IMPROVEMENTS (BID ITEM 56)
- A. The measurement and payment for this item will be lump sum.
  - B. The lumpsum bid for the boat ramp improvements shall include all of the Contractor's costs of whatsoever nature. The unit price bid shall include but not be limited to: furnishing and installing improvement materials, excavation, grading, fine grading, grouted rip rap, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
  - C. Payment shall be made on the percentage of progress agreed to in the field.
- 1.55 CONTRACTOR QUALITY CONTROL (BID ITEM 57)
- A. The measurement and payment for this item will be lump sum.
  - B. The lump sum bid for the contractor quality control shall include all of the Contractor's costs of whatsoever nature. The lump sum bid shall include but not be limited to: all project quality control required during the performance of the work, and all other necessary material, work and equipment required to complete this item in accordance with the Drawings and Specifications.
  - C. Contractor is required to secure the services of an independent testing agency and certified wel inspector as part of the quality control program.
- 1.56 OTHER ITEMS NOT INCLUDED ON PREVIOUS BID ITEMS (BID ITEM 58)
- A. The measurement and payment for this item will be lump sum.
  - B. The lump sum bid for other items not included shall include all of the Contractor's costs of whatsoever nature. The lump sum bid shall include but not be limited to: all items no speciafically desribed but required to perform and /or complete the work in accordance with the Drawings and Specifications.

PART 2 - PRODUCTS – NOT APPLICABLE.

PART 3 - EXECUTION – NOT APPLICABLE.

END OF SECTION 01 29 00