SECTION FOUR

COBB COUNTY WATER SYSTEM SPECIFICATIONS

MEASUREMENT AND PAYMENT

GENERAL

Only those pay items identified in the bid schedule, or added by Addendum or Supplemental Agreement, will be measured for payment by the units listed in the bid schedule and/or supplemental agreement and paid for at the Contract prices.

The cost of all Work not directly covered by the pay items shall be considered incidental to the construction and is to be included and distributed among the bid unit prices of the pay items listed in the Contract.

Contract unit prices represent the installed, complete-in-place, tested and accepted cost, including, but not limited to:

* All required labor, tools, and equipment, unless otherwise noted.
* All materials, unless specifically noted to be furnished by the Owner or by others, or specifically identified for payment under another pay item.
* All required excavation, dewatering, thrust blocking, rodding, sheeting/shoring/bracing, backfill, compaction and restoration to grade, and testing.
* All required normal traffic control.
* Acceptable bedding as detailed, specified, or as required by conditions encountered.
* Disposal of all surplus or waste materials, unsuitable materials, and debris.
* Protection of existing utilities, including but not limited to locating, diligent care in handling and working around, relocating, and repairing.
* Miscellaneous associated work necessary to complete the work in place.
* Minor meter, meter box, and valve box adjustments.
* All temporary taps necessary for sterilization and testing.
* Minor manhole adjustments.
* Preconstruction staking.
* Coordination of additional project access as may be desired.
* Project Record Drawings

ADJUST EXISTING VALVE BOX TO GRADE

Unit price each is for all required labor, tools, equipment, and material to adjust (and align for proper valve operation) an existing valve box to grade including replacement of concrete collar, if necessary.

UTILITY ALLOWANCE

Utility allowance will only be utilized at the direction of the Project Engineer, and the scope and cost must be approved prior to performance of the work.

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SPECIAL CONDITIONS

The following project specific Special Conditions take precedent over plans and specifications. Section numbers shown refer to the appropriate section of the Cobb County Water System Contract Documents. All other requirements remain in full effect.

1. If additional work is required and the bid unit prices are not applicable to the necessary additional work, the Contractor shall be compensated as follows. If the additional work is to be performed entirely by the Contractor, compensations for such extra work shall be based on the direct costs as listed in a detailed proposal, plus 15 percent of direct costs for overhead and profit, plus 1 percent of such direct costs for bond. When the extra work involves subcontractors, compensation for such work shall be based on direct costs as listed by the subcontractor plus 15 percent of such direct costs for the subcontractor's overhead and profit. The Contractor may add 5 percent to the subcontractor proposal for overhead and profit, and 1 percent for bond. The 5 percent subcontractor markup shall be applied only once regardless of the number of tiers of subcontractors. The above allowances for overhead and profit shall include full compensation for overhead, including superintendence, and additional overhead attributable to a time extension granted because of the change order. For extra work that is funded from contract allowances, the 1 percent additional cost for bonds shall not be applied.
2. In the event any of the Cobb County Water System's utilities are damaged during the course of construction by the Contractor or its subcontractors, it shall be the Contractor's responsibility to have appropriate repair fittings and pipe maintained onsite and to respond within two hours to make the necessary repairs to restore service. In the event the Contractor cannot respond within the timeframe or is judged by the Water System to not have the necessary capabilities or qualifications to repair the damage, the Water System will make the necessary repairs to restore service, and the cost for such repairs will be billed to the Contractor. The repair cost billed to the Contractor will (1) be at the actual cost incurred by the Water System if it uses one of its pre-qualified contractors to make the repair, or (2) include all labor, material, and equipment costs plus a $1,200.00 priority fee if the Water System makes the repairs with its own forces. Labor cost shall include all salary costs, payroll taxes and benefits.

END OF SPECIAL CONDITIONS

SECTION 02660 - VALVE BOX ADJUSTMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This Section addresses the adjustment to grade and/or replacement of valve box for both in-pavement and out-of-pavement situations

B. The Contractor shall be responsible for the following:

1. Furnishing all labor, equipment, and materials necessary to complete the work.

2. Compliance with Cobb County Department of Transportation and/or Georgia Department of Transportation guidelines for work zone establishment, traffic control, authorization to perform work within roadways and right-of-ways, material specifications, etc.

3. Compliance with Cobb County Community Development regulations in regards to erosion and sedimentation control.

4. Negotiations and obtaining (in writing) any necessary permission to enter private property to access work areas.

5. Protect or re-establish existing drainage ways or easements which may be impacted during work activities.

6. Repair of any valve boxes damaged as a result of work activities.

C. The Owner will provide maps of the water distribution systems (via electronic PDF format) and other location details based on the best information currently and readily available for the Contractor's use in establishing the general location of a valve box. The Contractor is responsible for further location efforts (electromagnetic devices, survey measurement/alignment, etc.) to properly identify the work order location.

D. Water supply for concrete mix preparation shall be from an authorized, metered source. Fire hydrant meter(s) are available for rental from the Cobb County Water System

1.02 WARRANTY

A. A written two-year warranty covering all workmanship and materials shall be provided by the Contractor for each adjustment from the date of the completion of the work order.

1.03 SUBMITTALS

A. Submit shop drawings for materials furnished under this section to the Owner in conformance with the requirements of Section 01300 (Submittals) of these Specifications.

B. Submit to owner the detailed mix design information (compressive strength, curing time, availability to introduce traffic loads, etc.) for the concrete

C. Submit a letter from the rapid-set cement manufacturer certifying that all products proposed for use in conjunction with the cement have been reviewed (including the dye/ staining agent, curing and sealing compound, and crack sealant) and have been determined to be compatible with the cement material when used as intended in this project.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials and products utilized in the execution of the work shall be in accordance with these Specifications and the subject to the inspection, testing, and approval of the Owner.

2.02 MATERIALS

A. Valve Box

1. Valve Box shall be approved standard cast iron adjustable with a minimum diameter of 5-1/4-inches. The casting shall be coated with coal-tar pitch varnish. The lid shall bear the word “WATER”, the letter “W”, or other applicable designation for sewer, reuse water, etc. The valve box shall be East Jordan Iron Works model 8550 or approved equal.

B. Concrete and Grout

1. Concrete for valve box adjustments in roadways shall be a rapid-setting, early strength mix meeting the requirements of section 934 - Rapid Setting Patching Materials for Portland Cement Concrete of the Georgia Department of Transportation Standard Specification and utilizing a product from the Georgia Department of Transportation’s Qualified Products List 27, “Rapid Setting Patching Materials” (latest edition) such as CTS Manufacturing Company’s Rapid Set D.O.T. Cement or approved equal. Sand, coarse aggregate, water, and other special additives shall be furnished and accurately proportioned in accordance with the patching material manufacturer’s specifications.

2. Sand-cement grout for filling of annular space between valve box and precast collar shall consist of 1 part Type III Portland cement, 2 parts sand, with a maximum of 4.5 gallons of water per sack (cubic foot) of cement.

C. An acrylic curing and sealing compound shall be applied to the concrete surface in accordance with the manufacturer's instruction. The compound shall be Rez-Seal by Euclid Chemical Company or approved equal.

D. The perimeter joint shall have a cold-pour liquid, crack sealant applied to inhibit the effects of water penetration between the newly placed concrete and the surrounding pavement. This application shall be in accordance with the manufacturer's instruction. The sealant shall be Brewer Cote of the Brewer Company, or approved equal.

E. Mesh reinforcement shall be electrically welded, cold-drawn, mild-steel, plain wire fabric conforming to ASTM A185. Wires shall be cold-drawn steel conforming to ASTM A82. Mesh reinforcement shall be supplied as flat sheets or mats.

F. Precast concrete valve collars may be used in unpaved areas instead of casting valve collar in place upon approval of the precast valve collar shop drawings. The precast collar can be square or circular in shape. The concrete shall be a minimum of 3000 psi design and a have minimum thickness of 4". The precast collar shall be a minimum 18-inch square or have a minimum diameter of 18".

PART 3 - EXECUTION

3.01 GENERAL

A. Care shall be taken in all aspects of the work, including, but not limited to the following:

1. Protection of existing water main and valves.
2. Protection of existing adjacent utilities.
3. Protection of existing adjacent trees, shrubs, landscape, etc.
4. Protection of existing adjacent roadway surfaces.
5. Protection of existing adjacent drainage ways, creeks, streams, ponds, and lakes.
6. Handling of materials.
7. Providing traffic control.

B. The Contractor shall be effectively equipped with machinery, tools, materials, traffic control devices, etc. to perform the necessary tasks for completing work in accordance with these specifications and detail drawings.

C. The Contractor shall be effectively staffed with knowledgeable, capable personnel. Experienced, trained supervisory personnel shall be present at all times to ensure the best quality work in accordance with these specifications and detail drawings.

D. In the event the Contractor encounters a valve box which has not previously been adjusted in accordance with the Specifications of this Contract, the Contractor shall inform the Owner. At the Owner's direction, the Contractor will correct the existing condition to bring the valve box to the current standards set forth by this Contract.

E. All water distribution system valves shall be exercised through their full range upon completion of valve box adjustment work. An accurate "count" of full turns to fully open and close the valve shall be recorded along with the original position (open, closed, partial) and provided to the Owner. The valve shall be returned to its original position.

F. The Contractor shall avoid allowing any debris from the work activities to enter the valve box. If such occurs, the Contractor shall immediately take action to remove debris.

3.02 ADJUSTMENT AND/ OR REPLACEMENT IN ROADWAYS AND PAVEMENT

A. The adjustment to grade and/ or replacement of valve boxes in roadways shall be performed with the following guidelines:

1. Accurately locate the valve box (if not currently visible) and its center.

2. Mechanically core or saw-cut the full depth of existing roadway pavement around the valve box. A circular core/cut with a diameter sufficient for adjustment (but not to exceed 20-inches) is required.

    a. Exceptions to this include situations in which existing, square concrete pad/patch, exposed at roadway surface is being replaced. In these instances the replacement pad/patch is to match the existing square dimensions.

3. Excavate as necessary around the existing valve box including removing it to clean debris from the box and valve nut and to center the box on the valve nut. No existing valve box shall be reused if cracked, otherwise damaged, or if found inappropriate for the location. The area of excavation shall be to the clean lines and dimensions of the pavement core/cut. Excavation below the nominal depth of the concrete collar shall be backfilled in lifts and compacted to 98% standard proctor using select materials.

4. The valve box shall be supported in place, centered accurately over the valve, and set to the elevation and slope of the adjacent roadway surface. This support and the formwork for subsequent concrete placement around the installation shall be by a proven method and deemed acceptable by the owner. The valve box shall be installed to ensure positive accessibility of the operating nut or extension stem (if required) of the valve.

5. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place the concrete along with the required reinforcing steel to the detailed clearances. Mechanically vibrate the concrete to achieve proper consolidation and the elimination of voids. The concrete collar shall be a monolithic placement, completely filling the core/cut opening and encapsulating the top 10-inches of the valve box. Screed concrete surface flush with the adjacent roadway surface. Float and/or trowel to a consistent finish. Tool a perimeter joint to a depth of 1-1/2-inch and apply a light broom finish. Following the finishing, apply a curing and sealing compound to the concrete and a crack sealant to the perimeter joint in accordance with manufacturer's.

6. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines. Curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

7. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

B. As specifically directed for coordination with select Department of Transportation roadway resurfacing projects, the Contractor shall prepare existing valve boxes prior to major road surface milling operations. The following general guideline shall apply:

1. Accurately locate the valve box (if not currently visible) and its center. Reference and record location for subsequent adjustment.

2. Expose the valve box as necessary and/or otherwise remove the valve box cover.

3. Pack the valve box with heavy paper or other suitable filler material to prevent milling residue from filling the valve box.

4. Following completion of the Department of Transportation resurfacing of the roadway, permanent adjustment to grade of the valve box shall be performed in accordance with these specifications. This work will typically include valve box clean-out and valve box replacement.

3.03 ADJUSTMENT AND/ OR REPLACEMENT OUT OF PAVEMENT

A. The adjustment to grade and/or replacement of valve boxes out of pavement shall be performed in accordance with the following guidelines:

1. Accurately locate the valve box (if not currently visible) and its center.

2. Excavate as necessary around the existing valve box including removing it to clean debris from the box and valve nut and to center the box on the valve nut. No existing valve box shall be reused if cracked, otherwise damaged, or if

found inappropriate for the location. The area of excavation shall be limited as much as practical. Excavation below the required depth of the concrete collar shall be backfilled in lifts and compacted to 98% standard proctor using select materials.

3. The valve box intended for installation shall be supported in place, centered accurately over the valve, and set to the elevation and slope of the adjacent ground. The valve box shall be installed to ensure positive accessibility of the operating nut or extension stem (if required) of the valve.

4. The final 4" shall be reserved for the valve collar:

   a. Installing the cast in place concrete valve collar. Accurately proportion the rapid-setting, high-early strength concrete mix in accordance to manufacturer's specifications. Place the concrete along with the required reinforcing mesh to the detailed clearances. The concrete shall be a monolithic placement encompassing the top 4-inches of the valve box. Screed concrete surface to be flush with the adjacent ground level. Float and/or trowel to a consistent finish and apply a light broom finish.

      i. Maintain full traffic control around the freshly placed concrete until the concrete has achieved a minimum compressive strength of 1200 psi based upon manufacturer's mix design guidelines. Curing duration will be validated by the Owner by random sampling and testing during the course of the contract.

      ii. Place concrete only if ambient and adjoining surface temperatures are 45 degrees and rising or if sufficient thermal protection is provided to maintain proper curing conditions. Appropriate curing precautions shall be taken to protect the concrete during hot weather conditions.

   b. Install approved precast concrete valve collar.

3.04 FIELD QUALITY ASSURANCE

A. Owner shall field inspect all work performed before final acceptance and payment.

B. A written two-year warranty shall be provided for the replacement work.

C. Failures considered to be warranty repairs include concrete surface spalling, cracking of the concrete, separation of the valve box from the concrete, or other obvious defects. The Owner may require the concrete mix manufacturer's involvement in examination of failures and determination of modifications necessary to avoid future defective work

D. Warranty repair consists of complete removal and replacement of the valve box in accordance with these adjustment specifications at no cost to the Owner. Critical failures that create a potential traffic hazard shall be rectified within 24 hours of notice, while less serious failures shall be addressed within 30 days of notice. The failure type shall be determined by the Owner.

END OF SECTION 02660