

**CITY OF LOGAN WATER DEPARTMENT
LOGAN COUNTY, WEST VIRGINIA**

CONTRACT NO. 2 – RADIO TELEMETRY SYSTEM

DECEMBER 16, 2020

ADDENDUM NO. 1

To whom it may concern:

A. BOILER PLATE

1. Bids will be received by the City of Logan Water Department, located at 730 Stratton Street, Logan West Virginia, 25601. Bid shall be mailed or hand-delivered by December 21, 2020 at 2:00 p.m.
2. Bid Opening for Contract No. 1 is 2:00 p.m. on Monday, December 21, 2020. Social distancing guidelines will be followed. Conference call information is as follows: Call-in Number: +1 (301) 715-8592; Meeting ID: 962 1765 1626; Passcode: 719367; and at the following address:
<https://zoom.us/j/96217651626?pwd=ZlgvZERaSFp0aHZuV0duMVVxY3Aydz09>.
3. The Bid Form has been revised to modify the scope of work. The revised Bid Form is included with this Addendum No. 1. **YOU MUST USE THE ATTACHED BID FORM INCLUDED WITH THIS ADDENDUM NO. 1 WHEN PREPARING YOUR BID PACKAGE.**

B. SPECIFICATIONS

1. **REPLACE** Section 011000 – SUMMARY, included with this Addendum No. 1.
2. **REPLACE** Section 012000 – PRICE AND PAYMENT PROCEDURES, included with this Addendum No. 1.
3. **ADD** Section 407113 – MAGNETIC FLOW METERS, included with this Addendum No. 1.

C. DRAWINGS

1. NOT APPLICABLE.

D. QUESTIONS AND CLARIFICATIONS

1. NOT APPLICABLE.

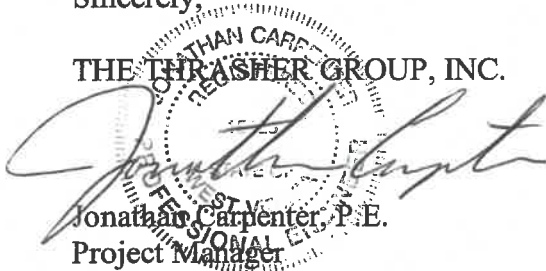
E. GENERAL

1. Wage Rates are NOT required for this project.
2. B&O Taxes are required for this project.
3. Construction efforts are limited to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated per the Summary Specification 011000.
4. Bidders are hereby notified to acknowledge receipt of all addenda in space provided on the Bid Form.

If you have any questions or need any other information, please do not hesitate to contact me.

Sincerely,

THE THRASHER GROUP, INC.



Jonathan Carpenter, P.E.
Project Manager

Enclosures

CITY OF LOGAN WATER DEPARTMENT
LOGAN COUNTY, WEST VIRGINIA
PROPOSED
CONTRACT #2 – RADIO TELEMETRY SYSTEM
THRASHER PROJECT #010-10091

BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

*City of Logan Water Department
730 Stratton Street
Logan, WV 25601*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous

Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

The total Bid cost stated includes a complete operating installation including furnishing and installation of any and all changes or additions in plans, piping, mechanical work, additional electrical work, accessories, controls, etc. necessary to accommodate alternative equipment systems or materials used in construction.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the detailed Specifications and as shown on the Plans for the complete construction and placing in satisfactory operation the Contract #2 – Radio Telemetry System. The Project "Sequence of Construction" has been detailed in the Drawings and Specification Division 1, Project Summary, Section 011000. The Bidder agrees to perform all the Work proposed for the total of the following Bid prices.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**PROPOSED
CONTRACT #2 – RADIO TELEMETRY SYSTEM
FOR THE**

**CITY OF LOGAN WATER DEPARTMENT
LOGAN COUNTY, WEST VIRGINIA
THRASHER PROJECT #010-10091**

BID SCHEDULE

NOTE: Bid Unit PRICE amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern. Bids shall include sales tax and all other applicable taxes and fees.

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
1	1 LS	A complete, operational Supervisory Control and Data Acquisition (SCADA) System via radio telemetry, for the existing water system including, but not limited to, the following equipment: the 28 Mud Fork water storage tank; the Locust Street water storage tank; the 3 Mile water storage tank; the 16 Mud Fork water storage tank; the Mall water storage tank; the 28 Mud Fork booster station; the Mall booster station and the City of Logan Water Treatment Plant; as well as the associated labor, fees, and equipment for hosting, integration, project management, software, computer(s), implementation, start-up, and training of the SCADA System. The Work shall also include the installation of a 12” Magnetic Flow Meter, as well as the associated labor, fees, wiring, equipment, and incidentals for a complete and operable magnetic flow meter at the City of Logan Water Treatment Plant.		
			Dollars	
			Cents	

TOTAL BID: _____
 _____ (\$ _____)

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

NOTE: THE CONTRACTOR'S UNIT PRICES SHALL INCLUDE PURCHASE AND INSTALLATION, COMPLETE IN PLACE, PER BID ITEM IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

METHOD OF AWARD

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceed such amount, the Owner may reject all bids.

The owner may award the contract on the Total Bid submitted by a qualified responsible Bidder less the amount(s) of the Deductive Alternate(s) subtracted in numerical order, as listed in the contract to produce the lowest bid within the funds available for financing.

- A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Bid Opening Requirements

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By: _____
[Signature]

[Printed name]
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
[Signature]

[Printed name]

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____
(where applicable)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Specification conventions.

1.2 PROJECT INFORMATION

A. Project Identification: Contract #2 – Radio Telemetry System.

1. Project Location: Logan, WV.

B. Owner: City of Logan Water Department.

1. Owner's Representative: Herb Staten, Chief Water Treatment Plant Operator.

C. Engineer: The Thrasher Group, Inc.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. The Work consists of a complete, operational Supervisory Control and Data Acquisition (SCADA) System via radio telemetry, for the existing water system including, but not limited to, the following equipment: the 28 Mud Fork water storage tank; the Locust Street water storage tank; the 3 Mile water storage tank; the 16 Mud Fork water storage tank; the Mall water storage tank; the 28 Mud Fork booster station; the Mall booster station and the City of Logan Water Treatment Plant; as well as the associated labor, fees, and equipment for hosting, integration, project management, software, computer(s), implementation, start-up, and training of the SCADA System. The Work shall also include the installation of a 12" Magnetic Flow Meter, as well as the associated labor, fees, wiring, equipment, and incidentals for a complete and operable magnetic flow meter at the City of Logan Water Treatment Plant.

1.4 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways, and Entrances: Keep driveways and entrances serving premises clear and available to the public, the Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - 2. Deliveries: Schedule deliveries to minimize use of driveways and entrances by construction operations as well as time requirements for storage of materials and equipment on-site.

1.5 SPECIFICATION CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION SEQUENCE OF EVENTS

- 1. Contact Miss Utility or "Call 811" at 1-800-245-4848 for existing utility locations.
- 2. Coordinate with Owner to determine the location of existing equipment.
- 3. Mobilization to Project site.
- 4. Install all necessary materials, equipment, and software for the Radio Telemetry System. Install additional control panels as necessary.
- 5. Perform start-up of Radio Telemetry System.
- 6. Provide all necessary auxiliary equipment.
- 7. Provide all necessary training to Owner's employees.
- 8. Conduct all cleaning, seeding, and mulching, as necessary.

9. Complete all punch list items.
10. Complete all project closeout items.
11. Demobilization from Project site.

END OF SECTION 011000

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Schedule of Values.
- B. Application for Payment.
- C. Change Procedures
- D. Defect Assessment
- E. Measurement and Payment.

1.2 SCHEDULE OF VALUES

- A. Submit printed schedule on Progress Estimate schedule on EJCDC C-620 – Contractor’s Application for Payment.
- B. Submit Schedule of Values in duplicate within 20 days after date established in Notice to Proceed.
- C. Format: Identify each line item with number and title of major Specification Section. Contractor shall submit a balanced Schedule of Values. The total value of activities shall equal the identifiable Contract Price. The Schedule of Values shall be accompanied by a proposed cash flow for the duration of the Project. Line items shall be broken down as appropriate and listed as units. Overhead and profit shall be prorated to all the activities.
 - 1. Unless otherwise specified, the Schedule of Values shall include the following percentages for the listed activities:
 - a. Mobilization, Bonds, Insurance, and Demobilization: no greater than 5%.
 - b. Punchlist: no less than 2%.
 - c. All Spare Parts Values not specifically assigned elsewhere: no less than 0.5%.
 - d. Testing: no less than 1%.
 - 2. Schedules whose non-equipment related cash flow exceeds 10% of the total Contract amount (exclusive of equipment) in any one (1) month, or 45% of the total Contract amount (exclusive of equipment) in any three (3) consecutive months shall be deemed unacceptable and require revision. Exceptions may be granted at the discretion of the Engineer for unusual circumstances or non-routine construction.
 - 3. If, in the opinion of Engineer or Owner, the Schedule of Values is unbalanced, Contractor shall submit documentation substantiating the cost allocations of those activities believed to

be unbalanced. No pay requests will be accepted until the Schedule of Values submittals has been marked “No Exceptions Taken” or “Make Corrections Noted” by Engineer.

- D. Include within each line item, direct proportional amount of Contractor’s overhead and profit.
- E. Revise schedule to list approved Change Orders with each Application for Payment.

1.3 APPLICATION FOR PAYMENT

- A. Submit five (5) copies of each Application for Payment on EJCDC C-620 – Contractor’s Application for Payment.
- B. Content and Format: Use Schedule of Values for listing items in Application for Payment.
- C. Submit updated construction schedule and payment schedule with each Application for Payment.
- D. Payment Period: Submit at intervals stipulated in the Agreement.
- E. Submit submittals with transmittal letter, as specified in Section 013300 - Submittal Procedures.
- F. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
 - 1. Current construction photographs.
 - 2. Partial release of Liens from major Subcontractors and vendors.
 - 3. Record Documents as specified in Section 017000 - Execution and Closeout Requirements, for review by Owner, which will be returned to Contractor.
 - 4. Affidavits attesting to off-Site stored products.
 - 5. Construction Progress Schedule, revised and current as specified in Section 013300 - Submittal Procedures.
 - 6. Affidavit of Previous Payments.
 - 7. Adverse Weather Day documentation.

1.4 CHANGE PROCEDURES

- A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor’s employ or Subcontractors of changes to the Work.
- B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Engineer of any error, inconsistency, omission, or apparent discrepancy.
- C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Engineer; establish procedures for handling queries and clarifications.

1. Use Request for Information Form for requesting interpretations (provided by Engineer upon request).
 2. Engineer may respond with a direct answer on the Request for Information form, separate Engineer Response, EJCDC C-942 - Field Order, or EJCDC C-940 - Work Change Directive Form.
- D. Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on EJCDC C-942 – Field Order.
- E. Engineer may issue Notice of Change including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with stipulation of overtime Work required and with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within 10 days.
- F. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on the Work by separate or other Contractors.
- G. Stipulated Sum/Price Change Order: Based on Proposal Request or Work Change Directive and Contractor’s maximum price quotation or Contractor’s request for Change Order as approved by Engineer.
- H. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of that which are not predetermined, execute Work under Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- I. Work Change Directive: Engineer may issue directive, on EJCDC C-940 - Work Change Directive, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- J. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
- K. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.
- L. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.
- M. Change Order Forms: EJCDC C-941 - Change Order.

- N. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- O. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise Progress Schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of Work affected by the change, and resubmit.
 - 3. Promptly enter changes in Record Documents.

1.5 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Engineer or Owner, it is not practical to remove and replace the Work, Engineer or Owner will direct appropriate remedy or adjust payment.
- C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Owner.
- D. Defective Work will be partially repaired according to instructions of Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Owner.
- E. Individual Specification Sections may modify these options or may identify specific formula or percentage sum/price reduction.
- F. Authority of Owner to assess defects and identify payment adjustments is final.
- G. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from transporting vehicle.
 - 4. Products placed beyond lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected products.

1.6 MEASUREMENT AND PAYMENT

- A. General Requirements
 - 1. Contractor shall take measurements and compute quantities. Engineer will verify measurements and quantities.
 - 2. Unit Quantities: Quantities and measurements indicated on Bid Form are for Contract purposes only. Actual quantities provided shall determine payment.

- a. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at Contracted unit sum/prices.
 - b. When actual Work requires 25 percent or greater change in quantity than those quantities indicated, Owner or Contractor may claim a Contract Price adjustment.
3. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.
 4. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.
- B. Measurement of Quantities
1. Weigh Scales: Inspected, tested, and certified by applicable West Virginia weights and measures department within past year.
 2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
 3. Metering Devices: Inspected, tested, and certified by applicable West Virginia department within past year.
 4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
 5. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
 6. Measurement by Area: Measured by square dimension using mean length and width or radius.
 7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
 8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.
- C. Unit Price Schedule:
1. Bid Item 1 – Radio Telemetry System
 - a. This Bid Item shall include a complete, operational Supervisory Control and Data Acquisition (SCADA) System via radio telemetry, for the existing water system including, but not limited to, the following equipment: the 28 Mud Fork water storage tank; the Locust Street water storage tank; the 3 Mile water storage tank; the 16 Mud Fork water storage tank; the Mall water storage tank; the 28 Mud Fork booster station; the Mall booster station and the City of Logan Water Treatment Plant; as well as the associated labor, fees, and equipment for hosting, integration, project management, software, computer(s), implementation, start-up, and training of the SCADA System. The Work shall also include the installation of a 12” Magnetic Flow Meter, as well as the associated labor, fees, wiring, equipment, and incidentals for a complete and operable magnetic flow meter at the City of Logan Water Treatment Plant.
 - b. Payment shall be made at the lump sum (LS) price Bid for Radio Read Meters and Appurtenances based on the approved Schedule of Values.

City of Logan Water Department
Contract #2 – Radio Telemetry System

ADDENDUM NO.1

010-10091

12/2020

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012000

SECTION 407113 - MAGNETIC FLOW METERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Magnetic flow meters.
2. Transmitters.
3. Indicators.
4. Integrators.

- B. The Contractor shall install a 12” magnetic flow meter with all associated piping, fittings, electrical conduit, incidentals, and all other associated appurtenances for a complete and operational unit. The flow meter shall have a local display and shall be equipped with a 4-20 mA output. Control wiring shall be installed from the flow meter to the new SCADA computer located in the City of Logan Water Treatment Plant.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.
2. AWWA M33 - Flowmeters in Water Supply.

B. ASME International:

1. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

C. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.3 COORDINATION

- A. Comply with Section 013000 – Administrative Requirements.
- B. Coordinate Work of this Section with Owner and Engineer.

1.4 SUBMITTALS

- A. Comply with Section 013300 – Submittal Procedures.

- B. Product Data: Submit manufacturer information for system materials and component equipment, including connection requirements.
- C. Shop Drawings:
 - 1. Indicate system materials and component equipment.
 - 2. Submit installation requirements and other details.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Source Quality-Control Submittals: Indicate results of factory tests and inspections.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Manufacturer Reports: Certify that equipment has been installed according to manufacturer instructions.
- H. Qualifications Statement: Submit qualifications for manufacturer.

1.5 CLOSEOUT SUBMITTALS

- A. Comply with Section 017000 - Execution and Closeout Requirements.
- B. Project Record Documents: Record actual locations and final orientation of equipment and accessories.

1.6 QUALITY ASSURANCE

- A. Ensure that materials of construction of wetted parts are compatible with process liquid.
- B. Materials in Contact with Potable Water: Certified to NSF 61 and NSF 372.
- C. Perform Work according to specified standards.
- D. Maintain one (1) copy of each standard affecting Work of this Section on Site.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 016000 – Product Requirements.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

- C. Store equipment according to manufacturer instructions.
- D. Protection:
 - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
 - 2. Provide additional protection according to manufacturer instructions.

1.9 WARRANTY

- A. Comply with Section 017000 - Execution and Closeout Requirements.
- B. Furnish a five (5) year manufacturer's warranty for magnetic flow meters and appurtenant devices.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Furnish sensors, field preamplifiers, signal conditioners, offset and span adjustments, amplifiers, transducers, transmitters, control devices, interconnecting cables, and unit conversions and algorithms as required for application.

2.2 MAGNETIC FLOW METERS

- A. Manufacturers:
 - 1. The Owner and Engineer believe the following manufacturers are capable of producing equipment and products, which will satisfy the requirements of this Section. This statement, however, shall not be construed as an endorsement of a particular manufacturer's product, nor shall it be construed that a named manufacturer's standard product will comply with the requirements of this Section. It shall be the responsibility of the contractor to coordinate with the "selected" equipment manufacturer by use of this specification and all related design drawings for any necessary adjustments, modifications or alterations to standard products to ensure that the product complies with all sections of this specification. Candidate manufacturers include: Rosemount, ABB, or Engineer's approved equal.
- B. Description: Low-frequency, electromagnetic induction-type flow meter, producing a linear signal directly proportional to flow rate, consisting of flow tube, signal cable, and transmitter.
- C. Performance and Design Criteria:
 - 1. Design: According to AWWA M33.
- D. Flow Meter Schedule:

1. WTP Finished Water Magnetic Flow Meter:

- a. Location: In-Line.
- b. Type: Magnetic Flow Meter.
- c. Size: 12”.
- d. Flow Rate Range: 0 to 1,000 GPM.
- e. Output Signal: 4-20mA.
- f. Process Fluid: Potable Water.

E. Flow Tubes:

1. Material: Type 304 stainless steel with polyurethane liner.
2. Length: 28” max.
3. End Connections: Flanged, ASME B16.1, carbon steel
4. Mounting pattern: 12-bolt pattern

F. Electrodes:

1. Type 316L stainless steel.
2. Self-cleaning.

G. Accuracy: Plus or minus 1 percent of actual flow rate over a 10:1 range.

H. Provide adjustment for zero and span.

I. Accessories:

1. Provide automatic, nonmechanical electrode cleaning system without taking meter out of service.
2. Furnish cable between transmitter and receiver.

2.3 TRANSMITTERS

A. Transmitter Output:

1. 4- to 20-mA dc analog signal.
2. Accuracy: Plus or minus 5 percent of full scale.

B. Housing Material: Cast aluminum.

C. HMI:

1. Touch-screen programming, functioning through enclosure window without opening enclosure.
2. Display:
 - a. Size: Four lines by 16 characters.
 - b. Type: Backlit digital display.
 - c. User-selectable engineering units.

d. Readout of diagnostic error messages.

D. Mounting:

1. Mounting Locations Less Than 4 Feet above Grade: Provide stainless-steel mounting posts.

E. Accessories:

1. Current signal output simulation.
2. Empty pipe detection.
3. Self-diagnostics.
4. Automatic zero adjustment.
5. Stainless-steel sunshield.
6. Signal Cable: Provided by flow meter manufacturer.

2.4 INDICATORS

A. Description:

1. Integrally mounted in transmitter housing.
2. Scale: Graduated.
3. Units: MGD and GPM.
4. Mounting: Wall mounted as indicated on Drawings.

2.5 INTEGRATORS

A. Description:

1. Totalize flow in specified units.
2. Interface with specified flow meter assembly.
3. Accuracy: Plus or minus 0.25 percent of full scale.

2.6 OPERATION

A. Control Power:

1. Location: Existing Control Room at the City of Logan Water Treatment Plant.
2. 120-V ac, single phase, 60 Hz.
3. Furnish local transformers as required.

B. Enclosures: NEMA 250 Type 4X.

2.7 SOURCE QUALITY CONTROL

A. Comply with Section 014000 - Quality Requirements.

B. Provide shop inspection and testing of meters according to AWWA M6.

C. Owner Inspection:

1. Make completed flow meter available for inspection at manufacturer's factory prior to packaging for shipment.
2. Notify Owner at least seven (7) days before inspection is allowed.

D. Owner Witnessing:

1. Allow witnessing of factory inspections and tests at manufacturer's test facility.
2. Notify Owner at least seven (7) days before inspections and tests are scheduled.

E. Certificate of Compliance:

1. If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Comply with Section 017000 - Execution and Closeout Requirements.
- B. Verify that items provided by other Sections of Work are ready to receive Work of this Section.

3.2 INSTALLATION

- A. Coordinate location and orientation of flow meter with final equipment installations.
- B. Ensure that instruments are located to be easily accessible for maintenance.

3.3 FIELD QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.
- B. Testing:
 1. Test and calibrate flow meter to demonstrate that it meets specified accuracy requirements.
 2. Comply with AWWA M6.
- C. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than one (1) day on Site for installation, inspection, startup, field testing, and instructing Owner's personnel in operation and maintenance of equipment.

D. Equipment Acceptance:

1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.
 2. Make final adjustments to equipment under direction of manufacturer's representative.
- E. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.

3.4 DEMONSTRATION

- A. Comply with Section 017000 - Execution and Closeout Requirements.
- B. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Owner's personnel.

END OF SECTION 407113