



Village of Ada, Ohio
Water Meter Replacement

ADDENDUM 1

August 14, 2024

Planholders on the Village of Ada, Water Meter Replacement are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

SPECIFICATIONS

Replace the following specifications with the attached:

C-211 – Advertisement for Bid

C-520 – Agreement

15215 – Water Meters

Planholders should update the Table of Contents to reflect the above sections.

An updated Table of Contents will be included in the Issued for Construction Project Manual.

RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED ON PAGE B-1 OF THE BID.

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**Village of Ada
Ada, Ohio
Water Meter Replacement**

ADVERTISEMENT FOR BIDS

Sealed Bids for Water Meter Replacement project, will be received by the Village of Ada, at the Village Offices, 115 West Buckeye Avenue, Ada, Ohio 45810, until 10:00 am, local time, on September 11, 2024, at which time they will be publicly opened and read.

In general, the work consists of the replacement of approximately 1,880 residential, commercial and industrial water meters ranging in size from 5/8-inch to 4-inch, Advanced Metering Infrastructure (AMI), appurtenances, and software to integrate the new meters and infrastructure.

The issuing office is Jones & Henry Engineers, Ltd., 3103 Executive Parkway, Suite 300, Toledo, Ohio 43606, 419-473-9611. Copies of the Bidding Documents may be examined at the Owner's office listed above or the issuing office, without charge.

Technical questions regarding the project should be e-mailed to the Project Manager, Jake Meinerding, PE, jmeinerding@jheng.com at Jones & Henry Engineers, Ltd.

A pre-bid conference will be held on August 28, 2024 at 10:00 am, local time at Village Offices, 115 West Buckeye Avenue, Ada, Ohio 45810. A virtual option is available and can be attendees via the following link <https://us02web.zoom.us/j/89648787758?pwd=al4fhscQyeZfbpchP4U3INebPbnntC.1> **Addendum 1, August 14, 2024** Attendance at the conference is highly encouraged but is not mandatory.

Copies of Bidding Documents and Contract Documents may be obtained electronically from www.jhplanroom.com. There is no charge to download from the digital print-room, however, registration is required. If hard copies of the bidding documents are needed, they can be ordered from the print-room for a fee. If you have any problems using the digital print-room, you are encouraged to contact either the Engineer's Project Manager, or Eastern Engineering at 419-661-9841.

Neither Owner nor Engineer has any responsibility for the accuracy, completeness or sufficiency of any bid documents obtained from any source other than the source indicated in these documents. Obtaining these documents from any other source(s) may result in obtaining incomplete and inaccurate information. Obtaining these documents from any source other than directly from the source listed herein may also result in failure to receive any addenda, corrections, or other revisions to these documents that may be issued.

Bids must be submitted on the forms bound herein, must contain the names of every person or company interested therein, and shall be accompanied by either a Bid Guaranty and Contract Bond in the amount of 100% of the amount bid with satisfactory corporate surety, or by a certified check on a solvent bank in the amount of not less than 10% of the amount of the Bid, subject to conditions provided in the Instructions to Bidders. The successful bidder will be required to furnish satisfactory Performance Bond and Maintenance and Guarantee Bond in the amount of 100% of the Bid.

The Contractor shall be required to pay not less than the prevailing wage rates established by the Ohio Bureau of Employment Services, Wage and Hour Division.

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Any Bid may be withdrawn prior to the scheduled closing time for receipt of Bids, but no bidder shall withdraw his Bid within 60 days after the actual opening thereof.

Special Attention must be given to all requirements of Ohio Public Works Commission funding including:

1. Ohio Preference. The Recipient shall, to the extent practicable, use and shall cause all of its Contractors and subcontractors to use Ohio products, materials, services and labor in connection with the Project pursuant to Section 164.05 (A)(6) of the Revised Code;
2. Domestic Steel. The Recipient shall, to the extent practicable, use and shall cause all of its Contractors and subcontractors to comply with domestic steel use requirements pursuant to Section 153.001 of the Ohio Revised Code;
3. Prevailing Wage. The Recipient shall require that all Contractors and subcontractors working on the Project comply with the prevailing wage requirements contained in Revised Code Sections 164.07 (B) and 4115.03 through 4115.16;

Equal Employment Opportunity. The Recipient shall require that all Contractors to secure a valid Certificate of Compliance.

The Owner reserves the right to reject any or all Bids, waive irregularities in any Bid, and to accept any Bid which is deemed most favorable to the Owner.

Engineer's Estimate is \$1,360,000

Jamie Hall

Village Administrator

Dated: August 10, 2024

August 19, 2024

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**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Village of Ada, Ohio (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Water Meter Replacement

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: *replacement of approximately ~~1,700~~ 1,880 Addendum 1, August 14, 2024 residential, commercial and industrial water meters ranging in size from 5/8-inch to 4-inch, Advanced Metering Infrastructure (AMI), appurtenances and software to integrate the new meters and infrastructure*

ARTICLE 3 – ENGINEER

- 3.01 The part of the Project that pertains to the Work has been designed by Jones & Henry Engineers, Ltd.
- 3.02 The Owner has retained Jones & Henry Engineers, Ltd. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

- 4.01 *Time of the Essence*
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02 *Contract Times: Dates*
- A. The Work will be substantially completed on or before October 31, 2025, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before November 30, 2025.
- 4.03 *Liquidated Damages*
- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and

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Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$800.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$800.00 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

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6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment once each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. ~~92~~ Eight **Addendum 1, August 14, 2024** percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. ~~0~~ Eight **Addendum 1, August 14, 2024** percent of cost of materials and equipment not incorporated in the Work.
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 100 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

None.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

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- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor 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 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. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related drawings identified in the Contract 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 Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor 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 Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (C-520, Pages 1 to 8, inclusive).
 - 2. Bid Guarantee & Contract Bond (C-430, Pages 1 to 2, inclusive).
 - 3. Performance Bond (C-610, Pages 1 to 2, inclusive).
 - 4. Maintenance and Guarantee Bond (C-614, Pages 1 to 3, inclusive).
 - 5. General Conditions (C-700, Pages 1 to 73, inclusive).
 - 6. Supplementary Conditions (C-800, Pages 1 to 30, inclusive).

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7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings (not attached but incorporated by reference) consisting of 6 sheets with each sheet bearing the following general title: Water Meter Replacement.
 9. Addenda (Numbers 1 to [REDACTED], inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (C-410, Pages [REDACTED] to [REDACTED], inclusive).
 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be

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valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract 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.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

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

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CERTIFICATION OF FISCAL OFFICER

The undersigned, as _____ of
_____ hereby certifies that funds sufficient to
meet the requirement of this Contract have been lawfully appropriated for such purpose and are in the
treasury, or in the process of collection.

By: _____

Title: _____

APPROVAL BY OWNER'S LEGAL OFFICER

By: _____

Title: _____

Date: _____

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**SECTION 15215
WATER METERS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes removal, furnishing, installation and testing of water meters as indicated by these specifications or directed by the Owner.
- B. Work includes, but is not limited to:
 - 1. Service shutdown, existing meter removal, new meter installation, pit covers or pit cover alteration, startup and training services.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for review:
 - a. Manufacturer's assembly drawing and parts list for water meters and required accessories indicating materials of construction and model numbers.
 - b. Manufacturer's recommendations for installation.

1.03 MANUFACTURERS

- A. It is the specific intent of this Section to limit the equipment furnished to a product of a major water meter manufacturer that has substantial experience and expertise in fixed network advanced metering infrastructure (AMI) with an expected accuracy and read rate of at least 98.5% for all meters in the system. Manufacturer is responsible for all system functionality. Meters shall be manufactured by a company with a minimum of ten years experience in the manufacturing of water meters.
- B. All meters, AMI infrastructure, project management, IT support, software, training and annual service and subscription fees and accessories shall be furnished by a single manufacturer who has adequate experience, in the judgment of the Engineer, concerning meters compatible with AMI technology to be furnished under this section.
- C. Meters and associated network infrastructure shall be compatible with Tyler Technologies software for billing.
- D. A single contract will be award for water meters, AMI infrastructure, installation, and system maintenance.
- E. To establish a minimum of quality required, the products furnished under this Section shall be one of the following manufacturers:

1. Badger Meter
2. Master Meter
3. Neptune Technology Group
4. Sensus

1.04 QUALITY ASSURANCE

- A. The Bidder shall provide evidence of the following qualifications for the installing contractor with the Bid:
 1. The installing contractor shall be certified or licensed by the manufacturer as an installer of the specified products.
 2. The installing contractor shall be trained in all aspects of the installation of meters including installation of required accessories and appurtenances, transceivers, and meter program and start-up with the specified software.
 3. Owner name, contact information, project name and number of meters installed.
- B. The products specified herein shall comply with the listed ASTM standards and the noted design requirements.
- C. The Contractor may substitute a manufacturer or installation contractor after the accepted bid only with the written approval of the Engineer and Owner.

PART 2 PRODUCTS.

2.01 GENERAL

- A. Meter installations consists of existing service line shutoff, removal of existing lid and meter, installation of new meter, register, end points, gaskets, expansion connections, plastic top lids or lid alterations.

2.02 5/8-INCH THROUGH 1-1/2-INCH METERS

- A. Meters 5/8-inches through 1-1/2-inches in size shall be Positive Displacement, Multi-jet, or Ultrasonic type. The base bid cost for Bid Items 2a thru 2e shall be given by the Contractor based on the approved meter models in this paragraph 2.02, B, C and D. It is the intent of the Owner to obtain bids for positive displacement or Multi-jet type meters for these sizes; however if the manufacturer does not furnish a positive displacement or multi-jet type meter, an ultrasonic meter can be bid in its place.
- B. Positive Displacement (PD) Water Meters
 1. Water meters shall be provided by and installed by the Contractor. The Contractor shall coordinate the startup of water meters with the Owner's staff.

2. Water meters between the sizes 5/8-inches and 1-1/2-inches may be PD water meters
 3. Water meters shall meet AWWA C-700 size, capacity, lengths, accuracy and pressure loss requirements. The meter shall be compliant with ANSI/NSF Standard 61.
 4. Positive Displacement water meters shall be Badger M-Series, Neptune T-10 or Sensus Accustream for 5/8 to 1 inch.
- C. Multi-jet meters
1. Water meters shall be provided by and installed by the Contractor. The Contractor shall coordinate the startup of water meters with the Owner's staff.
 2. Water meters between the sizes 5/8-inches and 1-1/2-inches may be multi-jet water meters
 3. Water meters shall meet AWWA C-708 size, capacity, lengths, accuracy and pressure loss requirements. The meter shall be compliant with ANSI/NSF Standard 61.
 4. Multi-jet water meters shall be Master Meter Bottom Load Multi-jet.
- D. Ultrasonic meters
1. Ultrasonic water meters shall be provided by and installed by the Contractor. The Contractor shall coordinate the startup of water meters with the Owner's staff.
 2. 1-1/2-inch may be ultrasonic water meters.
 3. Ultrasonic meters shall meet AWWA C-715 size, capacity, meter lengths, accuracy and pressure loss requirements. The meter shall be compliant with ANSI/NSF Standard 61.
 4. 1-1/2-inch ultrasonic water meters shall be the Sensus Cordonel.

2.03 ULTRASONIC WATER METERS

- A. Ultrasonic water meters shall be provided by and installed by the Contractor. The Contractor shall coordinate the startup of water meters with the Owner's staff.
- B. Water meters between the sizes of 2-inch and 4-inch shall be ultrasonic water meters.
- C. An alternative bid item will be included for ultrasonic water meters between the sizes of 5/8-inches and 1-1/2-inches. This includes bid items Alt-2a, Alt-2b, Alt-2c, Alt-2d and Alt-2e.
- D. Ultrasonic meters shall meet AWWA C-715 size, capacity, meter lengths, accuracy and pressure loss requirements. The meter shall be compliant with ANSI/NSF Standard 61.
- E. Ultrasonic meters between the sizes of 2-inch to 4-inch shall be Badger E-Series, Neptune Mach 10, Sensus Cordonel or Master Meter Octave for meters.

- F. Ultrasonic meters between the sizes of 5/8-inch to 1-1/2-inch shall be Badger E-Series, Neptune Mach 10, or Master Meter Sonata.

2.04 REGISTER

- A. The registers will vary by manufacturer and meter style but at minimum meet the following requirements in this section. Registers must be an electronic device encapsulated in glass with 9 programmable digits utilizing a liquid crystal display (LCD). The register shall read and transmit flow in cubic feet. It will have indicators for flow direction, empty pipe, battery life and unit of measurement.
- B. The register must be hermetically sealed with a heat tempered glass cover and be tamper resistant.
- C. The electronic register shall have internal data logging capability and alarm status messaging to include reverse flow, tamper detection, empty pipe low or zero flow indication, August 14, 2024 leak detections, and battery status
- D. The register must be able to read and transmit data every 12 hours at a minimum.
- E. Registers and meters shall be capable of installation in an existing meter pit or inside residence/business.

2.05 PRESSURE CAPABILITY

- A. System shall operate up to a working pressure of 150 psi without leakage or damage to any parts and have no effect on the meter's accuracy.

2.06 METER PIT LIDS

- A. Existing lids on meter pits consist of cast iron constructed lids. It is the responsibility of the Contractor to replace or alter the existing lids to ensure read rate accuracy of the new meters and AMI system.

2.07 ADVANCED METERING INFRASTRUCTURE (AMI) SYSTEM

- A. The AMI system may utilize either:
 - 1. Radio frequency (RF) system with proper FCC licensing if operating on the applicable frequencies to transmit data to and from MIUs to the system. RF systems should include all base stations, repeaters and all infrastructure required to ensure accuracy and read rates per this specification.
 - 2. Cellular - based system to transmit data to and from transceivers to the system to transmit data to and from MIUs to the system.
- B. The AMI system shall have a 98.5% read rate accuracy.
- C. The AMI system shall be able to integrate with Tyler Technologies billing system already in use by the Village.

- D. The AMI system shall consist of
 - 1. Meter Interface Units (MIUs) capable of sending readings for collection every 12 hours at a minimum either to a base station for a RF system or directly to a cellular network with a cellular-based system.
 - 2. Base Station if a RF system is being utilized to collect data from the MIU and send to the Village's web-based platform.
 - 3. All additional infrastructure including software, billing integration, customer portal
- E. When deployed as a fixed network, the System shall provide hourly consumption interval data, time-synchronized at the host meter reading software. The host software shall provide individual account consumption interval data displayed in graphical as well as tabular formats, readily accessible to utility Customer Service Representatives to facilitate customer bill complaint resolution without the need for a truck roll.
- F. When deployed as a fixed network, the System shall provide priority alarm notification of potential leak and/or reverse flow events with user-configurable email or text messages for notification to utility personnel.
- G. When operating as a fixed network, the System shall provide the capability for a demand read initiated from the host software application. The number of demand read requests made over the lifetime of an MIU shall not impact the battery life or warranty.

PART 3 EXECUTION

3.01 INSTALLER REQUIREMENTS

- A. Contractor to implement a call-in program to meter owners and provide door hanger notification tags or direct mailing postcards at a minimum of two weeks before meter is to be replaced. The Contractor is responsible for providing and hanging the notification tags.
- B. Contractor installing the new meters and placing notification tags on private property shall have identification as follows:
 - 1. Vehicle identifying Contractor name
 - 2. Name badge identifying Contractor name

3.02 WARRANTIES

- A. The following includes the warranty period for system components starting at the date of substantial completion.
 - 1. Positive Displacement or Multi-jet Meters:
 - a. General materials and workmanship - 2 year

- b. Housings or Main Case - 15 years
 - c. Registers 20 years (10 years full/ 10 years prorated)
 - d. MIUs - 20 years (10 years full/ 10 years prorated)
 - e. Base Stations 1 year
2. Ultrasonic Meters:
- a. General materials and workmanship - 2 year
 - b. Housings or Main Case - 10 years
 - c. Registers 10 years (5 years full/ 5 years prorated)
 - d. MIUs - 20 years (10 years full/ 10 years prorated)
 - e. Base Stations 1 year

3.03 REMOVAL

- A. The Contractor shall clean and flush the inlet side of the service line thoroughly before installing the new meter. Make sure that metallic water service plumbing is properly grounded as per local electrical codes.
- B. Coordinate with the Village and shut off water supply valves if the shutoff valves in the meter pit are inoperable and remove and disassemble the existing water meter.

3.04 INSTALLATION

- A. The Contractor shall orient the new meter so that the flow arrow on the body of the meter is aligned with the flow in the plumbing system.
- B. The Contractor shall install water meters inside existing meter pits or inside residences as directed by the Village. The installation location will match the existing location. Any required relocations of meters will be performed by the Owner outside of the Work.
- C. After completing installation, the Contractor shall test for leakage and proper meter operation in accordance with the manufacturer's instructions.
- D. For each residence, a photo will be taken of the existing meter in the meter pit or inside the residence prior to removal, a photo taken after the new meter has been installed and a photo taken to show the new meter programmed and operating.

3.05 TRAINING AND SUPPORT

- A. Complete installation and operating instructions will be included for all of the supplied hardware and software equipment. The training must be supplied by the System manufacturer. The vendor will also inform the customer of what pre-installation activities are to be completed and what support material will be needed for the initial installation.

- B. Equipment vendors are required to supply information on required maintenance programs and should offer a five year maintenance contract. The vendor shall have a customer support department required to help maintain and support the system through the use of the service agreement.

PART 4 SPECIAL PROVISIONS

4.01 WATER METER SCHEDULE

Water Meter	Quantity
5/8-inch (Pit)	1605
5/8-inch (Inside)	85
¾-inch (Pit)	8
1-inch (Inside)	31
1-1/2-inch (Inside)	15
2-inch (Inside)	35
3-inch (Inside)	6
4-inch (Inside)	10

END OF SECTION

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