



**City of Osseo**  
**Request for Proposals**  
**AMI Meter Reading Upgrade**

Osseo City Hall  
415 Central Ave  
Osseo, MN 55369

## **ADVERTISEMENT FOR BIDS**

Sealed bids for the construction of the Water Supply and Installation will be received for a single prime contract, by The City of Osseo (The Owner), at the office of: The City of Osseo, address 415 Central Ave, Osseo, MN 55369 at which time the Bids received will be publicly opened and read. The Project consists of providing and installing 900 3/4" short to 4" water meters with Smart Points and all infrastructure, integration, setup & training for a fully implemented Sensus AMI water meter reading network.

Bidders responding to this solicitation document shall submit to the Owner a signed statement under oath by an Owner or officer verifying compliance with each of the minimum criteria in Minnesota Statutes, Section 16C.285 subdivision 3.

Bid security shall be furnished in accordance with the Instructions to Bidders, in an amount not less than 5% (five percent) of the total bid. The successful bidder will be required to provide a Performance Bond & Certificate of Insurance. The Owner reserves the right to reject any or all bids, to waive irregularities and informalities and to award the contract in the best interest of the Owner.

**Complete bids are due to the City no later than October 12, 2020 at 4:00 PM.** Bids may be mailed to City Hall (Attention Riley Grams, City Administrator) or emailed to City Administrator Riley Grams ([rgrams@ci.osseo.mn.us](mailto:rgrams@ci.osseo.mn.us)). Any questions about the project should be directed to Nick Waldbillig, Public Works Director, City of Osseo ([nwaldbillig@ci.osseo.mn.us](mailto:nwaldbillig@ci.osseo.mn.us); 763-238-8640).

## **QUALIFICATIONS OF BIDDERS**

To demonstrate Bidder's qualifications to perform the work, after submitting its bid and within 5 days of Owner's request, Bidder shall submit: (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments; and (b) the following additional information:

- Evidence of Bidder's authority to do business in the state where the Project is located. Bidder's state or other Contractor license number, if applicable.
- Subcontractor and Supplier qualification information. Other required information regarding qualifications.
- Proof that the Contractor and any subcontractors have sufficient and applicable insurance coverage to complete any and all necessary Work.
- A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

## **BID RESPONSE**

We, the following undersigned as bidder, hereby propose to furnish the following materials, equipment, and training labor for the above referenced project, in accordance with the specifications as provided.

ITEM	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
<b>PRODUCT ONLY, BID A</b>				
<b>AMI INFRASTRUCTURE</b>				
M400B TGB W/INSTALLATION	EACH	1	\$	\$
SECOND M400B TGB W/INSTALLATION (backup)	EACH	1	\$	\$
SETUP & INTEGRATION	EACH	1	\$	\$
YEAR ONE SOFTWARE & SUPPORT (SaaS)	EACH	1	\$	\$
PROJECT MANAGEMENT & TRAINING	EACH	1	\$	\$
<b>PROGRAMMING DEVICES</b>				
ARCHER III HDD W/COMMAND LINK	EACH	1	\$	\$
<b>WATER METER RADIO</b>				
510M SINGLE PORT 3 WIRE	EACH	900	\$	\$
<b>WATER METERS</b>				
3/4" SHORT iPERL (3/4x5/8)	EACH	780	\$	\$
1" iPERL	EACH	60	\$	\$
1.5" OMNI C2	EACH	25	\$	\$
2" OMNI C2	EACH	25	\$	\$
3" OMNI C2	EACH	5	\$	\$
4" OMNI C2	EACH	5	\$	\$
			<b>TOTAL =</b>	\$
<b>INSTALLATION ONLY, BID B</b>				
<b>WATER INSTALLATIONS</b>				
3/4"-1" METER W/ RADIO	EACH	840	\$	\$
1.5" OMNI C2	EACH	25	\$	\$
2" OMNI C2	EACH	25	\$	\$
3" OMNI C2	EACH	5	\$	\$
4" OMNI C2	EACH	5	\$	\$
			<b>TOTAL =</b>	\$
<b>TOTAL BID</b>				\$
<b>DOLLARS CENTS</b>				\$

\* **NOTE** – Bidder acknowledges that estimated quantities above 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 final contract documents.

## **PRODUCT REQUIREMENTS**

### **SECTION A**

#### **SmartPoint Module:**

The AMI transmitter shall be connected to and be fully compatible with water meters equipped with absolute encoder registers. The transmitter designs shall include a waterproof, durable, High Density Polyethylene (HOPE) enclosure.

#### **Mechanical Specifications:**

- Environmental conditions: operating temperature range -22°F to +185°F (-30°C to +85°C); relative humidity (condensing) 5% to 95%; waterproof enclosure - IP 68 rating.
- Battery/Electronics: Battery shall be totally enclosed in a water-resistant HDPE Enclosure.
- The non-pit transmitter shall be housed in an external three (3) piece; light colored UV stable molded plastic housing. The enclosure shall house the complete transmitter unit that includes electronics, battery compartment, and wire connections. The transmitter shall also have an internal antenna. The electronics, battery and antennae shall be housed in a waterproof HDPE enclosure.
- The endpoint's battery shall be made up of a chemistry and design which is available and appropriate for consumer use and be of low toxicity.
- The transmitter shall contain wiring diagram labels within the unit to aid in and simplify installation. All wire shall be color coded and easily identifiable.
- Transmitter shall have wired two port capabilities for pit or non-pit applications.
- Programming shall be via an inductive port on the unit.
- The accepted transmitter shall be compatible to existing 2 wire touch read system and also available in a 3-wire option.

#### **Electronic/Functional Specifications**

- The transmitter shall utilize a single licensed frequency in the 900 - 950 MHZ band. The frequency shall be licensed by the FCC as a primary use frequency and owned by the manufacturer of the transmitter and sub-licensed to The City.
- The transmitter shall use high powered 2-Watt transmission in order to obtain a long range of reception at the receiver.
- The transmitter shall have full iPERL, Omni & Ally register compatibility.
- The transmitter shall obtain data from the encoder register, matching the mechanical odometer read of up to eight (8) digits.
- Vendor shall provide a 20-year pro-rated warranty for the transmitter electronics and battery.
- All messages transmitted shall include the unique transmitter ID and unique register ID and all iPERL alarms and data in iPERL smart mode.
- The transmitter shall support the UI-1203 protocol and be capable of transmitting all data generated by the register.
- Minimum programming shall be required at installation.
- A successful installation shall be confirmed by the installer with all required City personnel while still at the installation site.
- The transmitter shall have the ability to send a signal in a Normal mode, Boost mode and Buddy mode after migration to AMI fixed-base mode.

- A short-range link Radio Frequency (RF) shall enable a field technician to set the transmitter's timing interval in the field using a Hand-Held Device (HHD). The HHD shall also enable the technician to view data fields stored in the register and to initiate immediate data message transmission.
- Transmitters shall transmit four times per 24-hour period when migrated to fixed base.
- The transmitter shall transmit an error message or tamper alert if there is no communication with the register, or if communication with the register failed.
- The transmitter shall meet all FCC requirements for operation in its class.
- The transmitter shall have the capability of monitoring the water meter register for continuous usage over a set period of time and alerting and reporting possible leak situations.
- The transmitter shall provide monitoring and reporting of Sensus iPERL, Omni & Ally alarms and conditions including the following:
  - Reverse flow, Tamper, Empty pipe, Leak
  - Lifetime Power Alarms: 6 months, 1 month, Battery fails
  - Condition Monitoring Alarms: High Temp, Low Field, High Current, glide Slope, ADC Fail, EMF Range

## **WATER METER SPECIFICATION**

### **Specific Requirements**

Automatic Meter Infrastructure (AMI) Hardware Component Requirements Water Meters – 5/8", 3/4", and 1" sizes.

### **Type**

Solid state, battery operated electromagnetic flow measurement system with a hermetically sealed, glass covered, electronic register with a programmable 9-digit display.

### **Conformance to Standards**

Must conform to American Water Works Standard C-700 and C-710 as most recently revised with respect to accuracy and pressure loss requirements, or other appropriate American Water Works Standard. Must be compliant with ANSI/NSF Standard 61 Annex G.

### **Register**

The register must be an electronic device encapsulated in glass with 9 programmable digits utilizing a liquid crystal display (LCD). It will have indicators for flow direction, empty pipe, battery life and unit of measurement. The register must be hermetically sealed with a heat tempered glass cover and be tamper-resistant. The register shall not be removable from the measuring sensor. The register shall utilize a magnetic coupling technology to connect to a touch read, radio read or fixed base meter reading system in either an inside or outside installation.

### **Measuring Element**

The measuring element shall be made of a non-corrosive, lead-free glass fiber reinforced, PPS (polyphenylene sulfide) based resin. A battery powered magnetic flow sensor utilizing silver/silver chloride electrodes will be utilized to measure the velocity of the water which is linearly proportional to the volume. The measuring element will have no moving parts and will be specific for each size.

### **External Housing**

The register and measuring element will be an integrated unit housed within a thermal plastic external casing. This integrated unit will not be removable from the external housing. The systems shall have the size and direction of water flow through the system imprinted on the external housing.

### **Performance**

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows listed below without affecting long-term accuracy or causing any undue component wear. Maximum head-loss through the meter assembly shall not exceed those listed in the following table per meter size. The meter must be warranted to perform to the accuracy levels set forth below for twenty (20) years from the date of shipment.

### **Minimum Operating Characteristics**

<b>Meter Size</b>	<b>Low Flow (95% Min.)</b>	<b>Operating Range (98.5-101.5%)</b>	<b>Pressure Loss (Not to Exceed)</b>	<b>Maximum Operating Pressure</b>
5/8"	0.03 GPM	0.11 – 25 GPM	4.0 PSI @ 15 GPM	200 PSI
5/8" x 3/4"	0.03 GPM	0.11 – 35 GPM	2.0 PSI @ 15 GPM	200 PSI
3/4"	0.03 GPM	0.11 – 35 GPM	2.0 PSI @ 15 GPM	200 PSI
1"	0.11 GPM	0.4 – 55 GMP	2.0 PSI @ 25 GPM	200 PSI

### **Pressure Capability**

System shall operate up to a working pressure of 200 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected by variation of pressure up to 200 psi.

### **Advanced Reporting**

The system must be capable of having at the minimum the following reporting capabilities:

- Programmable leak detection.
- Programmable reverse flow detection.
- Empty pipe alarm.
- Tamper alarm.
- Programmable data logging capability must include:
  - Peak flows and volumes within intervals
  - Minimum of 5,000 data points
  - Intervals must be programmable from 15 minutes to daily
- Alarms must be logged including date and time of event. Logs must be downloadable.

### **Performance Warranties**

In evaluating bid submittals, warranty coverage will be considered. All bidders are required to submit their most current nationally published warranty statements for water meter main cases, registers and measuring chambers.

## Water Meters

1-1/2", 2", 3", 4"

### Scope

These specifications set forth the minimum acceptable design criteria and performance requirements for cold water meters including the following potential service applications and general considerations:

- Intended where a wide flow range is anticipated
- Measurement of water usage for critical billing applications
- Measurement intended for typical commercial and industrial applications requiring lower flow sensitivities
- Measurement of constant low to medium flows up to high flow usage
- Conformance to Standards – The meter package shall meet or exceed all requirements of ANSI/AWWA Standard C701 and C702. Each meter assembly shall be performance tested to ensure compliance.

### Main Cases

The meter main case shall be of epoxy coated ductile iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for non-lead regulation compliance.

### Performance

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands. Maximum head-loss through the meter / strainer assembly shall not exceed those listed in the following table per meter size.

### Minimum Operating Characteristics

<b>Meter Size</b>	<b>Low Flow (95% Min.)</b>	<b>Operating Range (98.5-101.5%)</b>	<b>Intermittent Flows (98.5-101.5%)</b>	<b>Pressure Loss (Not to Exceed)</b>
1-1/2"	0.25 GPM	0.5 – 160 GMP	200 GPM	6.9 PSI @ 160 GPM
2"	0.25 GPM	0.5 – 160 GPM	200 GPM	4.3 PSI @ 160 GPM
3"	0.5 GPM	1.0 – 400 GPM	500 GPM	3.2 PSI @ 400 GPM
4"	0.75 GPM	1.5 – 800 GPM	1000 GPM	6.4 PSI @ 800 GPM

### Measuring Chamber

The measuring chamber shall consist of a measuring element, removable housing, and all- electronic register. The measuring element shall be mounted on a horizontal, stationary stainless-steel shaft with sleeve bearings and be essentially weightless in water. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one main

case to another of the same size. The measuring shall be so configured to capture all flows as specified above, without the requirement of an automatic valve.

**Direct Magnetic Drive System**

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The direct drive system is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings are not acceptable.

**Electronic Register**

The meter’s register is all-electronic and does not contain any mechanical gearing to display flow and accurate totalization. The electronic register includes the following partial list of features:

- AMR resolution units fully programmable
- Pulse output frequency fully programmable
- Integral data logging capability
- Integral electronically resettable accuracy testing feature
- Large, easy-to-read LCD display
- 10-year battery life guarantee

**Maximum Operating Pressure**

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psi).

**Strainers**

The meter strainer shall be integral and cast as part of the meter’s main case. The strainer’s screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be a coated ductile iron fusion-bonded epoxy identical to that of the meter’s main case. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

<b>Meter Size</b>	<b>Maximum Operating Pressure</b>	<b>Centerline to Strainer Base</b>	<b>Overall Length (Not to Exceed)</b>
1-1/2"	200 PSIG	2-5/16"	13"
2"	200 PSIG	2-5/16"	15-1/4" or 17"
3"	200 PSIG	4-1/8"	17" or 19"
4"	200 PSIG	4-3/4"	19" or 23"

**Straightening Vanes**

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.



### **Connections**

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration. The 3" and 4" size meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling and thickness.

### **Certification and Markings**

All sizes of meter packages shall display the sizes, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter main case.

### **Guarantee and Maintenance Program**

Meters shall be guaranteed against defects in materials and workmanship for a period of one (1) year from date of shipment. In addition, the meter supplier shall submit nationally published literature clearly outlining its factory maintenance program and current price schedule covering complete measuring chamber exchange.

### **Product Warranties**

The Bidder shall provide detailed warranty information with its proposal, including warranties for all hardware, software, etc. A complete description of all warranty coverage shall be included in the proposal. The warranty information shall encompass the following:

- Solid state electromagnetic meters with 15-year full warranty replacement and 5-year prorated warranty.
- Water endpoints with 15-year full warranty replacement and 5-year prorated warranty.

## **SECTION B**

### **METER INSTALLATION SERVICES**

#### **Specific Requirements**

DESCRIPTION: This project will consist of installing water and electric meters. All work shall be according to the most recent applicable codes and statutes. Installation is anticipated to begin around April 1, 2021.

MATERIALS: The meters are as specified with remote register. The Contractor shall provide necessary miscellaneous materials to remove the existing meters and install new meters complete with remote register to the exterior of each building.

#### **Customer Information List**

The Owner will provide the Contractor with a customer information list. This list will include customer name, address, phone number and such other information as deemed appropriate by the Owner. The Contractor is required to maintain a good positive dialog with all residents.

#### **Record of Installation**

The Contractor must furnish a record of the installation that includes the identification of the installer, date of installation, new meter data such as meter size, meter serial number, unique number, location of the transponder and other information as required by the Owner. Installation records will be updated and furnished to the Owner every seven (7) days throughout the installation program.

### **Code Compliance**

Installation work shall be completed in the strict compliance with the manufacturer's specifications. The installation also will comply with all applicable plumbing, building and electrical codes.

### **Meter Installation Site**

All meters shall be positioned in a horizontal plane for optimum performance. Connection gaskets are to be installed with new rubber gaskets. All joints shall be leak tight. Further, all problems will be resolved in a manner that restores the customer's water service as quickly as is possible in accordance with the terms below:

- The Contractor shall promptly notify the Owner if defective plumbing is found that prevents a safe meter installation. If the Owner concurs, the installation shall be postponed until repairs are made by the property Owner.
- Two shut off valves shall be provided per installation. One valve upstream of the meter and one downstream of the meter.
- If the existing valve inside of the premises cannot be shut off to facilitate water meter installation, the Contractor will notify the Owner to shut off water at the curb stop.
- If the Owner cannot shut off the water service, the water service can be frozen subject to Owner authorization to proceed. Freezing shall be accomplished with the use of carbon dioxide freeze packs, dry ice or a commercial freezing agent. Any other means of freezing must be approved in advance by the Owner. If in the process of freezing, flooding occurs, the Contractor alone shall be responsible for the damage.

### **Meter Storage and Transit**

All meters shall be protected from heat and direct sunlight during storage and transit prior to installation. To ensure a safe and sanitary meter installation, the main case connections of all meters shall be capped with standard plastic plugs during storage and transit.

### **Meter Sealing**

After installation, all meters shall be sealed by the installer with sealing wire and slugs. At the Owner's request, tamperproof seal screws may also be used.

### **Remote Cable**

Remote cable used on this project shall be in accordance with the meter manufacturers' written specification. The connection between the meter and remote reader shall be installed per the meter manufactures written specification. Splicing of this cable shall be avoided whenever possible. If a splice is required, a factory approved splice kit shall be used. The cable will be installed with minimal disturbance to existing property in as inconspicuous a manner as is practical. The installed cable shall not be an obstacle or hazard to customer safety. The cable shall be securely fastened with approved fasteners so as to eliminate sagging. All interior cable should be attached to pipes with wire ties or any other clips approved by the Owner. An extra foot of cable shall be wrapped around the meter or coiled by the meter.

### **Supply of Material**

The Contractor shall be responsible for providing all the approved installation materials including valves, meter swivels, spud connections, meter setters, cable, sealing wires, slugs, fasteners, sealing items and screws. An adequate supply of installation materials shall be available at all times.

### **Qualifications of Installers**

The Contractor shall be thoroughly trained in the required work and present a neat and professional appearance. Additionally, in view of the Owner's emphasis on positive customer relations, the installer must be a person whose background indicates that they can be trusted to perform unsupervised work on private property.

The Contractor shall furnish the Owner with a list of the names of proposed individuals for installation and other background information as may be required. The Owner reserves the right to prevent the hiring of a proposed installer.

Further, the Owner will conduct a preconstruction conference to instruct the installers in the procedural requirements of the project. The Contractor shall make all installers available for this preconstruction conference. No installer shall be allowed to work on the project without first attending the preconstruction conference.

### **Electrical Continuity**

To prevent accidental electrocution of the installer, an electrical ground connection shall be set prior to cutting of the plumbing. If any spark occurs during or after the meter installation, the Owner will be informed in writing immediately of the possible hazardous situation

### **Reading System Testing**

After installation is completed, the Contractor shall immediately test the remote reader to be sure it is working properly.

### **Leak Testing**

After installation is completed, the Contractor shall immediately repair all leaks and defects. The following steps shall be taken:

- All valves opened to check for leaks.
- Verify that the meter register is functioning properly and that the meter and plumbing connections do not leak.

### **Acceptance of Work**

The meter installations will be tested by the Owner for proper operation. Inspection of interior work will be done randomly. Any metering system found to be defective in any way shall be corrected by the Contractor. The cost of any corrections shall be paid by the Contractor.

### **Identification of Installer**

The installer and field supervisors of the Contractor shall be identified by the following:

- An identification badge worn in a conspicuous manner at all times. The badge shall have the name and photograph of the installer and the words "City Water Meter Installation Program".

### **Work Hours**

Attempts to schedule an installation and the installation work itself shall be between 8:00 a.m. and 8:00 p.m. Monday through Saturday with the following exceptions:

- An appointment may be scheduled outside times and days stated above with the property Owner's approval.

### **Pre-approval of Notification Efforts**

In all service areas, the Owner emphasizes an approach of positive customer relations. To ensure that this project properly attends to customer relations, the Owner will approve both the general and individual notification materials and any other written items supplied to the customers. All materials provided to the customers must include the telephone number of the Contractor. Additionally, under no condition will any materials be left in an obtrusive location.

### **General Notification**

The Owner shall provide all affected customers with a general written announcement about the installation program and schedule. The general announcement shall be distributed prior to commencing the individual notification of customers, no less than 30 days prior to the start of installation. The Contractor shall notify each customer a minimum of 3 times prior to installation of equipment.

### **Individual Notification of Customers**

Each customer shall be contacted a minimum of three times to arrange for the installation by the Contractor. At least one of the contacts will be by written notification. The Owner will provide mailing labels for all mailed written notifications. All contact with customers shall be done in a courteous and professional manner during reasonable hours.

The three customer contacts shall be completed by the deadline for the defined area. One week following the deadline, the Contractor will furnish the Owner with a list of customers for which the installation has not been completed. This record shall be in a format prescribed by the Owner. The Owner may choose to complete the installations for these customers itself or may attempt to schedule an appointment for the Contractor. If the Owner completes the installation itself, the Contractor at the discretion of the Owner may receive no payment whatsoever for this customer.

Contractor shall provide all customers with call center service, with available staffed hours Monday-Saturday 8:00 AM to 8:00 PM to handle all customers concerns and questions. Contractor is responsible for coordination of installation schedules with customers through the call center service. Contractor shall provide weekly progress updates to Owner.

Contractor will pay for all mailings and call center expenses and all other efforts to publicize the water meter replacement project.

### **Contact with Customer**

An adult (18 or older) occupant of the property shall consent in writing prior to the Contractor entering the premise and any work being undertaken. The Contractor shall first advise the adult occupant of the required work, location of meters, wires, and remote, etc. Also, the adult occupant shall be advised that the installation may necessitate an interruption of the water service. The matter shall be referred to the Owner's project supervisor if written consent cannot be obtained.

### **Customer Complaint**

The Contractor shall meet with the property Owner if there is a disagreement regarding the installation services. Installation services include the location of the transponder, running of the cable, cleaning of the site, etc. Any customer complaint shall be reviewed by the Owner and the Contractor's field supervisor in the presence of the property Owner. The complaint shall be resolved to the satisfaction of the Owner and the property Owner. The decision of the Owner regarding the complaint shall be final. The remedial work shall be promptly performed.

### **Safety and Protection**

Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work, including any necessary Personal Protective Equipment (PPE) to protector installer and customer against COVID-19 transmission.

Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to all persons on the Site or who may be affected by the Work:

- All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
- Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, or anyone for whose acts the Contractor may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Contract Documents or to the acts or omissions of Owner or Engineer and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).

Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor shall act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof.

### **METHOD OF MEASUREMENT**

#### **Install Water Meters**

Install water meters will be measured per each unit installed per each size. A unit shall consist of the water meter, meter base, remote readout, meter- setters, meter horn, cut-ins to existing water supply two ball valves and all other necessary appurtenances necessary for a complete installation.

### **BASIS OF PAYMENT**

#### **Install Water Meters**

Install water meters shall be paid for at the contract unit price per each size complete, in place and shall be compensation in full for all costs of installing the unit complete in place, including but not limited to water meter, meter base, remote readout, meter setter, meter horn, and other necessary appurtenances.