

SPECIFICATIONS
FOR
REPLACEMENT OF
WATER METER ENDPOINTS

FOR
VILLAGE OF COLD SPRING
PUTNAM COUNTY, NEW YORK

PREPARED BY
JAMES J. HAHN ENGINEERING, P.C.
PUTNAM BUSINESS PARK
1689 ROUTE 22
BREWSTER, NEW YORK 10509

July 2022

TABLE OF CONTENTS

SECTION	PAGE NO.
A NOTICE TO BIDDERS	A-1
B INSTRUCTIONS TO BIDDERS	B-1 - B-7
C BID PROPOSAL	C-1 - C-5
STATEMENT OF NON-COLLUSION	C-6
RESOLUTION	C-7
OFFER OF SURETY	C-8
BID BOND	C-9
HOLD HARMLESS	C-10
INSURANCE	C-11 - C-12
D AGREEMENT	D-1 - D-3
E PERFORMANCE BOND	E-1 - E-2
LABOR AND MATERIAL BOND	E-3 - E-4
F INTENTIONALLY OMITTED	
G GENERAL RELEASE	G-1 - G-2
H PREVAILING WAGE	H-1 - H-2
I COMPLIANCE WITH LABOR LAW REQUIREMENTS	I-1
J INSURANCE	J-1 - J-3
K INTENTIONALLY OMITTED	
L NON-DISCRIMINATION CLAUSE	L-1 - L-2

TABLE OF CONTENTS (continued)

SECTION	PAGE NO.
M GENERAL CONDITIONS	M-1 - M-77
101 DEFINITIONS	M-1
102 SUPERINTENDENCE BY CONTRACTOR	M-2
103 SUBCONTRACTS	M-2
104 OTHER CONTRACTS	M-2
105 RESPONSIBILITIES OF CONTRACTOR	M-3
106 FITTING & COORDINATION OF THE WORK	M-3
107 MUTUAL RESPONSIBILITY OF CONTRACTOR	M-3
108 ASSIGNMENT OR NOVATION	M-4
109 PROGRESS SCHEDULE	M-4
110 COMMUNICATIONS	M-4
111 PAYMENTS TO CONTRACTOR	M-5
112 CHANGES IN THE WORK	M-6
113 CLAIMS FOR EXTRA COST	M-9
114 NO OPTIONS PAID	M-10
115 TIME & MATERIALS WORK NOTIFICATION	M-10
116 TERMINATION; DELAYS & EXTENSIONS; LIQUIDATED DAMAGES	M-10
117 ENGINEER'S AUTHORITY	M-13
118 TECHNICAL SPECIFICATIONS & CONTRACT DRAWINGS	M-13
119 REQUESTS FOR SUPPLEMENTARY INFORMATION	M-13
120 SHOP DRAWINGS	M-13
121 SAMPLES, CERTIFICATES & TESTS	M-15
122 MATERIALS & WORKMANSHIP	M-17
123 PERMITS & CODES	M-18
124 CARE OF WORK	M-19
125 ACCIDENT PREVENTION	M-20
126 SANITARY FACILITIES	M-21
127 USE OF PREMISES	M-21
128 REMOVAL OF DEBRIS, CLEANING, ETC.	M-22
129 LAYOUT OF WORK	M-22
130 OMITTED	M-22
131 INSPECTION/ACCEPTANCE OF THE WORK	M-22
132 FINAL INSPECTION	M-23
133 INSURANCE	M-23
134 WARRANTY OF TITLE	M-23
135 GENERAL GUARANTEE	M-24
136 NO ARBITRATION	M-24

TABLE OF CONTENTS (continued)

SECTION		PAGE NO.
M	GENERAL CONDITIONS (continued)	
137	RISK OF LOSS	M-24
138	REQUIRED PROVISIONS DEEMED INSERTED	M-24
139	CORRECTIONS	M-25
140	SAFETY PROVISIONS	M-25
141	CONNECTING TO EXISTING WORK	M-25
142	EXISTING IMPROVEMENTS	M-26
143	ACCESS TO SITE	M-26
144	ACCESS TO ADJACENT PROPERTIES	M-27
145	USE OF ROADWAYS	M-27
146	INDEMNITY CLAUSE	M-28
147	DISPUTES	M-28
148	GENERAL MUNICIPAL LAWS OF N.Y.S.	M-29
149	"OR EQUAL" CLAUSE UNLESS OTHERWISE SPECIFIED	M-29
150	CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES	M-29
151	REVIEW BY OWNER	M-30
152	DEDUCTIONS FOR UNCORRECTED WORK	M-30
153	PATENTS	M-30
154	INFORMATION FROM OWNER	M-30
155	EXISTING UTILITIES, STRUCTURES AND FIXTURES	M-30
156	CONTROL OF EXISTING FLOWS	M-31
157	SEWAGE, SURFACE, GROUNDWATER, AND FLOOD FLOWS	M-32
158	WEATHER CONDITIONS/WORK IN FREEZING WEATHER	M-33
159	MAINTENANCE AND PROTECTION OF TRAFFIC	M-33
160	HOURS OF WORK	M-34
161	WATCHMAN	M-34
162	FIELD COPIES	M-34
163	EMERGENCY WORK	M-34
164	PROTECTION	M-35
165	PAYMENT FOR GENERAL CONDITIONS	M-35
166	DAMAGE TO PRIVATE PROPERTY	M-36
167	RESTORATION	M-36
168	DRUG AND ALCOHOL TESTING	M-37

TABLE OF CONTENTS (continued)

SECTION	PAGE NO.
N SPECIAL CONDITIONS	N-1 - N-4

TECHNICAL SPECIFICATIONS

SECTION	TITLE
012213	UNIT PRICE MEASUREMENT AND PAYMENT
013113	PROJECT COORDINATION
330901	WATER METER ENDPOINT INSTALLATION ENDPOINT REPLACEMENT INSTALLATION FORM

PRODUCT INFORMATION

(NOTE: Product information provided for convenience. Contractor shall be responsible for using the latest available information from the manufacturer.)

Orion Cellulare LTE Endpoint Product Data Sheet
Orion Cellular Endpoint Installation Quick Reference Guide
Orion Water Endpoints Installation Manual

ATTACHMENTS

Water Distribution, Village of Cold Spring, NY, dated 07/11/2013.

SECTION A

NOTICE TO BIDDERS

Sealed proposals for performing the work herein described will be received by the Village Board of the Village of Cold Spring, New York, at the Office of the Village Clerk, 85 Main Street, Cold Spring, New York 10516 on August 31, 2022 at 2:00 P.M. and immediately thereafter the bids will be publicly opened and read aloud in said office.

The work consists of replacing 866 water meter cellular endpoints throughout the Village of Cold Spring's water distribution system. The Village has procured and stockpiled the endpoints. The Contractor shall install and activate the endpoints. Other related work shall include advertising, notifying customers, maintaining information database, and endpoint appurtenance replacement.

Contract Documents may be obtained at the above office of the Village Clerk or from the Village website at www.coldspringny.gov on or after August 3, 2022 at 2:00 P.M. If the Village website is used to obtain documents, the Village Clerk must be notified at (845) 265-3611, or vcsclerk@coldspringny.gov, and provided with contact information.

Bids shall be made on the Proposal Forms, furnished with the Specifications and must be accompanied by a Bid Bond acceptable to the Village, a certified cashier's check, drawn on a solvent bank in the amount of not less than 5% of the total amount of the Bid. Checks shall be made payable to the Village of Cold Spring, New York, and are to be held by the Village as a guarantee for the proper execution and delivery of the Contract and bonds to secure the faithful performance thereof. In default of such execution and delivery of Contract and Bonds, the amount of the deposit represented by the check shall be forfeited to and retained by the Village of Cold Spring as liquidated damages.

Bid Proposals shall be enclosed in a sealed envelope bearing the name and address of the Bidder, addressed to the Village of Cold Spring, 85 Main Street, Cold Spring, New York 10516 and endorsed "Replacement of Water Meter Endpoints, Cold Spring, New York."

The Village of Cold Spring reserves the right to reject any and all Bids, to waive any informality in any Bid, and to award the Contract to other than the lowest Bidder if deemed in the best interest of the Village to do so.

Dated _____

By Order of The Village Board

By _____

Kathleen E. Foley
Village Mayor

SECTION B

INSTRUCTIONS TO BIDDERS

DOCUMENTS

Complete sets of Bidding Documents will be issued for bidding purposes as stated in the "Notice to Bidders". A complete set of Documents consists of the following:

- a. A bound copy of the Specifications
- b. A separate set of Bid Sheets
- c. Addenda (if any)
- d. Contract Plans

PROPOSALS

To be considered, Proposals on the forms included herein, must be in accordance with these Instructions to Bidders. All bids must be submitted on the prescribed forms which are included herein, such forms also being bound in the specifications as Section C. All blank spaces for bid prices must be filled in, in both words and figures, either typed or in ink.

Proposals that contain any omission, erasures, alterations, additions, or items not called for in itemized Proposal, or that contain irregularities of any kind, may constitute sufficient cause for rejection of the bid. In case of any discrepancy in the price or amount bid in the Proposal, the price, as expressed in words, shall govern. All bids must be submitted in sealed envelopes addressed to the Village Board, Village of Cold Spring, Putnam County, New York and be clearly identified with: (1) Project Name, (2) Name of Bidder and Address. Proposals shall be signed with name typed below signature. The Bidder's seal, if a corporation shall be affixed under the Bidder's signature. Telephone, facsimile, telegraphic, or email bids will not be accepted.

If a separate set of proposal sheets is issued, they may be used with the understanding that all instructions and conditions of the Contract Documents are the same as if these pages were bound herein.

QUALIFICATIONS OF BIDDERS

The Owner may make such investigations as he deems necessary to determine the qualifications of the Bidder to perform the work and the Bidder shall furnish information and data for this purpose as may be required. The Owner reserves the right to reject any bid if the evidence submitted by a Bidder, or the investigation of such Bidder, fails to satisfy the Owner, that such Bidder is properly qualified to carry out obligations of the Contract and to complete the work contemplated therein

within the time designated. Fraudulent statements shall cause rejections of Proposal and forfeiture of bid security.

The investigation of a Bidder will seek to determine whether the organization is adequate in size, is authorized to do business in the jurisdiction where the project is located, has had previous similar experience and where available equipment and financial resources are adequate to assure Owner that the work will be completed in accordance with the terms of the Agreement. The amount of other work to which the Bidder is committed may also be considered.

All Bidders shall be prepared to submit within five (5) days of Owner's or Engineer's request, written evidence of such information and data necessary to determine if Bidder is qualified to perform the work. Qualifications shall include a minimum of five (5) previous projects involving similar construction work. The Contractor shall have a minimum of five (5) years of work experience of similar size and scope. As a minimum, the project reference information requested in Section C of the Bid Proposal shall be provided at this time.

Technical capability and the ability to complete the project within the established time frame will also be part of the evaluation criteria along with any special status the bidder may have such as women-owned business and minority-owned business. Guidance on business classifications can be found in the Federal Acquisition Regulations (FAR) Subpart 19.1.

In evaluating Bids, the Owner will consider the qualifications of only those Bidders whose Bids are in compliance with the prescribed requirements.

CONDITIONS OF WORK

Each Bidder must be informed fully of conditions relating to the construction and labor under which work will be performed. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provisions of the Contract and to complete the work for the consideration set forth in his bid. Bidder's attention is directed to Paragraph 1 of the Bid Proposal, in which the Bidder certifies that he has examined the site. If rock probes or test borings have been made by the Owner, they will be made available to the Contractor for inspection of the same conditions and basis as described in Section 154 of the General Conditions. Bid shall include the complete costs of furnishing all materials, labor and equipment necessary to complete the work in accordance with the Drawings and Specifications and all other expenses incidental thereto. Local and State sales taxes shall not be included in the bid. Insofar as possible, any Contractor in the carrying out of his work must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor, or of the proper functioning of the existing facilities of adjacent or contingent properties.

ADDENDA AND INTERPRETATION

Every request for information or interpretation of Bidding Documents or Drawings must be addressed in writing to the Village Consulting Engineer, James J. Hahn, P.E., Putnam Business

Park, 1689 route 22, Brewster, New York, 10509 and to be given any consideration must be received at least ten (10) days prior to the date fixed for the opening of bids. Any and all such interpretations, and any supplemental instructions, will be in the form of written Addenda and will be mailed to all prospective Bidders. The failure of any Bidder to receive any such Addenda will not relieve the Bidder of any obligation under his Bid as submitted. Acknowledgment of Addenda shall be noted on the "Bid Form".

BID SECURITY

Each Bidder is required to deposit at the time of submission of his bid, a Bid Bond or certified check in an amount representing five (5%) percent of his bid payable to the Owner, which amount the Bidder agrees is to be forfeited as liquidated damages and not as a penalty if in case he is awarded the Contract and he shall thereafter fail to execute a Contract with the Owner under the conditions of this Proposal or to furnish the bonds required for the faithful performance of this Contract. Bidders who submit certified checks must accompany them with a Consent of Surety from a recognized Bonding Company agreeing to supply a Performance Bond and Labor and Materials Bond if the Contract is awarded to the Bidder.

Such bid security will be returned to all except the three lowest formal Bidders within three days after the formal opening of bids, and the remaining bid security will be returned to the other Bidders after the Owner and the accepted Bidder have executed the Contract Documents. In the event no Contract has been so executed within forty-five (45) calendar days after the date of the opening of bids, upon the demand of the Bidder, so long as he has not been notified of the acceptance of his bid, his bid security will be returned. The Bid Security of the successful Bidder will be retained until the signing of Agreement, the filing and approval of the bonds and insurance.

INSURANCE REQUIRED

The successful Bidder will be required to procure and pay for the following types of insurance, in accordance with the provisions listed in Section J:

- a. Workmen's Compensation
- b. Public Liability
- c. Owner's & Contractor's Protective
Liability
Property Damage
- d. Property Damage
- e. Automobile (Each Vehicle)
Public Liability
Property Damage
- f. Unemployment Insurance

The Subcontractors at a minimum must have the same insurance coverage as required by the Contractor or be listed on the Contractors policy.

SECURITY FOR FAITHFUL PERFORMANCE

The Contractor shall, prior to execution of the Contract and within fourteen (14) calendar days after the Notice of Intent to Award, submit two separate executed bonds with Power of Attorney, (1) a Performance Bond in an amount equal to one hundred percent (100%) of the accepted bid as security for the faithful performance of the terms, covenants and conditions of the Contract; (2) a Labor and Material Payment Bond for the full amount of the Contract price guaranteeing the full payment of all persons performing labor or furnishing material or rentals, under the Contract; and (3) a Certificate of Insurance. The bonds submitted shall, as a minimum address the following:

1. That the company issuing the bond is to be a State of New York Company, with either having filed its Certificate of Incorporation with the State of New York or if a foreign corporation having qualified itself to do business in the State of New York By the New York Secretary of the State;
2. That simultaneously with the proposed bond, the applicant is to submit a current updated financial statement of the issuing bond company, presumably identical to any financial statement filed with the State of New York;
3. The applicant is to submit written proof from a reputable reporting/rating company, (i.e. Moodys, Best, etc.) that the issuing bonding company has a rating as to its financial reliability and creditability that is satisfactory to the Village Board.

The Bonds shall be prepared as specified in Section E, Form of Performance Bond and Labor and Material Bond, and shall have as Surety thereon such Surety Company or companies as are acceptable to the Owner and are authorized to transact business in the State of New York. The Surety Company shall, at a minimum, be A rated or better by Best's.

In addition, at the time of final payment, the Contractor shall submit the completed General Release form (Section G-1) stating that all obligations incurred by the Contractor in carrying out this Agreement have been satisfied including wage and costs of subcontractors, equipment and materials.

FORM OF AGREEMENT

The form of agreement is included in these documents in Section D. This form is for general information only and will be finalized pursuant to the Bid and other specific contract details such as addendums, drawings, payment schedules, etc., prior to signing.

AWARD

The Contract will be awarded to the lowest responsible bidder pursuant to the provisions of the General Municipal Law. The Village Board reserves the right to determine responsibility based on an evaluation of the Contractor's qualifications, experience, organization, finances, past

performances, and other applicable factors. The Village Board further reserves the right to reject any or all bids.

OWNER

The Village of Cold Spring, Putnam County, New York.

SALES TAX EXEMPTION

Under Chapter 513 of the Laws of New York 1974, all materials and supplies sold to a Contractor and which are to become an integral, component part of a structure, building or real property owned by an exempt organization such as the municipality, are exempt from the payment of New York State Sales or compensatory use taxes. Therefore, the Contractor should not include any amount in its bid price to cover sales taxes for the above items.

REQUIRED SUBMISSIONS

Following the bid opening, the apparent low bidder shall submit to the Engineer within seven (7) days a preliminary schedule, financial information and experience information.

Prior to award, the successful bidder will be required to meet the following requirements:

- a. The successful bidder, if his business is not registered in New York State, must provide the Village with a certificate issued by the Secretary of State of New York stating that the Corporation is authorized to do business within the State and is presently in good standing. If the entity to whom the bid is awarded is not a corporation, it would be required that the entity's certificate of doing business, which should be on file in the County Clerk's Office, be provided. (This would also hold true in the case of joint ventures which would be required to disclose the underlying entities which make up the joint venture and the supplying of the requisite certificate of doing business of each such entity.)
- b. A statement by the successful bidder that no officer, director or stockholder (if less than 10 stockholders) of the successful bidder is an officer or employee of the Village or is a relative of any such Village officer or employee. If such officer, director or stockholder does exist, their names and relationship should be disclosed to the Village.

APPROVALS

There will not be any approvals given for any "or equals" materials, equipment or systems prior to the award of the contract.

EXISTING CONDITIONS

The Contractor is advised that existing meter and pipe conditions have not been field determined. The Owner is not responsible for the actual conditions of existing piping.

**SECTION C
BID PROPOSAL
REPLACEMENT OF WATER METER ENDPOINTSS
VILLAGE OF COLD SPRING
PUTNAM COUNTY, NEW YORK**

To:

Village Board
Village of Cold Spring
85 Main Street
Cold Spring, New York 10516

Bid Submitted By:

(Name)

(Address)

(Telephone Number)

(Email)

1. I/We do hereby declare that I/We have carefully examined the Plans and the Specifications relating to the above-entitled matter and the work, and have also examined the site.
2. I/We do hereby offer and agree to furnish all materials, to fully and faithfully construct, perform and execute all work in the above titled matter in accordance with the Plans, Drawings, and Specifications relating thereto, and to furnish all labor, tools, implements, models, forms, transportations and materials necessary and proper for the purpose for the price/prices as given on the bid forms.
3. I/We do hereby declare that the prices so stated cover all expenses of every kind incidental to the completion of said work, and the contract therefor, including all claims that may arise through damages or any other cause whatsoever.
4. I/We do hereby agree that I/We will execute a contract therefor, containing all the terms, conditions, provisions and covenants necessary to complete the work according to the Plans and Specifications therefore within 10 business days after the award of the contract and if I/We fail to execute said contract within said period of time, that the Village Board shall have the power to rescind said award. The Contract execution will serve as the official notification to commence work.

5. I/We do also declare and agree I/We will commence the work within five days after the contract execution and will complete the work fully and in every respect on or before the time specified in said contract and do authorize the said Board, in case of failure to complete the work within such specified time to employ such men, equipment and materials as may be necessary for the proper completion of said work and to deduct the cost thereof from the amount due under the contract.
6. I/We agree that the Owner reserves the right to select any one, combination of, or all the Bid items in this proposal for the Contractor to complete without affecting any of the Bid prices.
7. I/We hereby affirm that by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under the penalty of perjury, that to the best of knowledge and belief:
 - a. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
 - b. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
 - c. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not submit a bid for the purpose of restricting competition.
 - d. No member of the Village Board or any officer or employee of the Village of Cold Spring, New York, or person whose salary is payable in whole or in part from the said Village Treasure is, shall be or become interested, directly, as a contracting party, partner, stockholder, surety or otherwise, in this bid, or in the performance of the contract, or in the supplies, materials or equipment and work or labor to which it relates, or in any portion of the profits thereof.
8. I/We hereby further agree that this proposal is a firm bid and shall remain in effect for a period of at least forty-five (45) calendar days from the date of the opening of bids, and that with said period of forty-five (45) days, the Village will accept or reject this proposal, or this period may be extended by mutual agreement.
9. I/We do hereby declare that, if this is a corporate bid, I have been duly authorized to act as the signator on this proposal in behalf of this corporation.
10. I/We hereby affirm that I/We will adhere to the requirements of the “Non-Discrimination Clause”.

11. I/We hereby affirm, under penalty of perjury, the truth of all statements in this proposal.
12. I/We hereby agree that I/We accept the unit prices and/or lump sums on the following pages, for the various items of work.
13. I/We hereby agree that I/We shall make no claim on account of any variation of the approximate estimate in the quantities of work to be done, whether the actual quantities are greater, smaller or completely deleted. A change in the quantity of any item shall not be regarded as sufficient ground for a change in the price of that item.

(Legal Name of Bidder)

Date: _____

By: _____
(Authorized Signature)

Corporate Seal
(if incorporated)

Bidder acknowledges receipt of Addenda as follows:

_____	_____
	Signature
_____	_____
	Signature
_____	_____
	Signature

The following is a list of places where we have performed work of similar character and magnitude, together with references:

Project Name & Location	Approximate Cost	References & Telephone #

The full names and places of residence of all persons and parties interested as principals in the foregoing proposal are as follows:

_____	_____
(PRINT NAME)	(ADDRESS)
_____	_____
(PRINT NAME)	(ADDRESS)

Signature of Bidder: _____

Federal EIN: _____

Business Address: _____

Place of Residence: _____

Date: _____

BID PROPOSAL
REPLACEMENT OF WATER METER ENDPOINTS
VILLAGE OF COLD SPRING, NY

Name of Bidder _____
 Address _____
 City, State Zip _____

Email: _____
 Telephone: _____
 Fax: _____

Note: The Lump Sum and Unit Price amount is to be written in both words and numbers. In case of discrepancy, the amount shown in words shall govern. The price shall be in dollars and cents. The Lump Sum amount shall include all labor, materials, equipment, services, etc. required to complete the work in accordance with the Plans, Specifications and all other Contract Documents within the specified completion date

No.	BID ITEM	UNIT	EST. QUANT.	UNIT PRICE	UNIT PRICE	TOTAL PRICE
				(IN NUMBERS)	(IN WORDS)	
1.0	Mobilization	ALL.	ALLOWANCE	\$5,000.00	Five Thousand and 00/100 Dollars	\$5,000.00
2.0	Endpoint Installation and Activation	EA	866			
3.0	Extended Endpoint Wiring (Greater than 25-ft & less than 50-ft)	EA	100			
TOTAL BASE BID (in words and figures)						

The total bid shall be the sum of the extensions (unit price multiplied by estimated quantity, for each item). It is stated here only as a convenience for comparison of bids. If there are any errors in addition or multiplication, the unit prices for each item shall govern, and the bid comparison will be made on the basis of correct arithmetic applied to these unit prices. In case of a discrepancy between the unit price in words and the unit price in numbers, the unit prices in words shall govern.

The estimated quantities are not guaranteed and are only for bid comparison purposes and final payment will be made for actual quantities regardless of the estimated quantities contained herein. The contractor is further advised that the estimated quantities shown in the Bid Sheets may be reduced or deleted in order to ensure that this Contract can be completed within the budget established for this work. In the event that certain work is deleted or reduced, the Unit Price Bid shall remain in effect for this work.

STATEMENT OF NON-COLLUSION

(To be Completed by Each Bidder)

In accordance with Section 103-d General Municipal Law, effective September 1, 1966, every bid or proposal hereafter made to a political subdivision of the State or any public department, agency or official thereof or to a fire district or any agency or official thereof for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed to by the bidder and affirmed by such bidder as true under the penalties or perjury; non-collusive bidding certification.

- a. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
 - (1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or any competitor.
 - (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor.
 - (3) No attempt has been made or will be made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.
- b. The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder, as well as the person signing in its behalf.
- c. That attached hereto (if a corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signature of this bid or proposal in behalf of the corporate bidder.

RESOLUTION

Resolved that _____
(Name of Corporation)

be authorized to sign and submit the bid or proposal of this corporation for the following project

(Describe Project)

and to include in such bid or proposal the certificate as to non-collusion required by section one-hundred-three-d (103-d) of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or mis-statements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by _____
corporation at a meeting of the

Board of Directors held on the _____ day of _____, 20__.

(SEAL OF THE CORPORATION)

(SECRETARY)

Laws of New York, 1965
Ch. 751, Sec. 103-d, as amended
effective September 1, 1965

OFFER OF SURETY

(To be competed by each Bidder)

In the event the above Proposal is accepted and the undersigned is awarded the Contract for the work, the undersigned offers a surety for faithful performance, bond and/or bonds to protect labor and material men, the following surety:

SURETY COMPANY

Signed _____
(Bidder)

CERTIFICATE OF SURETY to be signed by a duly authorized official, agent or attorney of the Surety Company.

In the event that the above proposal is accepted and the contract for the work is awarded to said

(Bidder's Name) the _____
(Surety Company)

will execute the Surety Bonds as hereinbefore provided.

Signed: _____
Authorized Official, Agent or Attorney

Date: _____

IMPORTANT: THIS PAGE MUST BE FILLED OUT WHEN CERTIFIED CHECK IS SUBMITTED IN LIEU OF BID BOND, OR BID MAY BE REJECTED.



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS: that

(as Principal, hereinafter called Principal, and

a corporation duly organized under the laws of the State of
as Surety, hereinafter call the Surety, are held and firmly bound unto

as Obligee, hereinafter called Obligee, in the sum of

Dollars (\$) _____),

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with
the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract documents with good and sufficient surety for the
faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure
of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty
hereof between the amount specified in said bid and such larger amounts for which the Obligee may in good faith contract with another party to perform
the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____ 20____

(Witness) _____

(Principal) _____ (Seal)

(Title)

(Witness) _____

(Surety) _____ (Seal)

(Title)

HOLD HARMLESS AGREEMENT

(To be approved by your Attorney)

The Contractor (and all subcontractors) shall, during the performance of this work, take all necessary precautions and place proper safeguards for the prevention of accident and shall indemnify and save harmless, the Village of Cold Spring, employees of James J. Hahn Engineering, P.C., Village representatives and its employees, officers and agents from all claims, suits and actions and all damages and costs to which they may put by reason of death or injury to all persons or property of another resulting from unskillfulness, willfulness, negligence or carelessness in the performance of the work or in guarding and protecting the same or from any improper methods, materials implements or appliances used in its performance or construction or by or on account of any direct or indirect act or omission of passive or concurrent negligent act or omission by the Village of Cold Spring or any of its employees, officers or agents may have directly or indirectly caused or contributed thereto.

BIDDER/CONTRACTOR (Company Name) _____

ADDRESS _____

(Signature)

(Print Name)

(Title)

(Dated)

NOTARY:

Subscribed and sworn to before me
this _____ day of _____, 20__

Notary Public

SECTION C
INSURANCE

Contractor shall furnish a Certificate of Insurance prior to commencing work evidencing.

- a. Worker's Compensation and Employer's Liability Policy: Covering operations in New York State. Statutory Workers' Compensation, Employer's Liability and N.Y.S. Disability Benefits Insurance for all employees. Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy. Where applicable, the Maritime Coverage Endorsement shall be attached to the policy. Workers' Compensation must include a waiver of subrogation. This policy shall not exclude third part action over (a/k/a: labor law) claims. Coverage shall not exclude injuries in confined spaces. Coverage must specifically include all New York State work places.
- b. Comprehensive General Liability Policy: With limits of no less than \$1,000,000/\$2,000,000 Bodily Injury and Property Damage, and including coverage for:
 - A. Products/Completed Operations.
 - B. Independent Contractors.
 - C. Explosive, collapse and underground losses (X.C.U.).
 - D. Contractual Liability (covering Hold Harmless attached).
 - E. Broad from Property damage liability (including completed operations).
 - F. Personal Injury including hazards i, ii, iii.
 - G. Village of Cold Spring shall be named as an "Additional Insured" and provided a waiver of subrogation endorsement on the policy and the Certificate of Insurance shall show this as to the liability coverage on the certificate.
 - H. The Contractor's insurance policy is primary and non-contributory to any insurance the Village of Buchanan may maintain.
 - I. This policy shall not exclude third part action over (a/k/a: labor law) claims.
 - J. Coverage must be on a \$1,000,000 each occurrence per location or per project basis.
 - K. Coverage shall not exclude injuries in confined spaces.
- c. Comprehensive Automobile Policy: With limits no less than \$1,000,000 Bodily Injury and Property Damage liability including coverage for owned, non-owned, and hired private passenger and commercial vehicle. Village of Cold Spring and their agents, officers, directors and employees shall be included as additional insured on the auto policy. Also needs to include waiver of subrogation.
- d. Umbrella Excess Liability: With limits no less than \$5,000,000 each occurrence. This policy must provide the Village of Cold Spring as additional insurance and include a waiver of subrogation endorsement in their behalf. The Contractor's insurance policy is primary and non-contributory to any insurance the Village may maintain. This policy shall not exclude third part action over (a/k/a: labor law) claims.
- e. Owner's Protective Liability Policy: With limits no less than \$1,000,000 shall be taken out and maintained during the life of this contract which will protect the owner from claims

for damages for personal injury, liability, accidental or wrongful death, as well as property damage which may arise from operations under this contract whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either party.

- f. Property Insurance: The Contractor shall cover materials being installed onsite, in transit, and/or at any other location.
- g. Contractor's Equipment: The Contractor shall insure all equipment, tools, portable enclosures, and vehicles owned, leased or used by them and shall evidence coverage with a Certificate of Insurance. The Contractor shall hold the evidence coverage with a Certificate of Insurance. The Contractor shall hold the Owner harmless for any loss or damage to such equipment, tools, etc.
- h. Insurance Covering Special Hazards: THIS SECTION INTENTIONALLY OMITTED.
- i. All Policies and Certificate of Insurance of the Contractor shall contain the following clauses:
 - A. Insurers shall have no right to recovery or subrogation against the Owner, Architect/Engineer and Construction Manager (including its employees and other agencies), it being the intention of the parties that the insurance policies so effected shall protect both parties and be primary coverage for my and all losses covered by the above-described insurance.
- j. Certificates shall provide that thirty (30) days' written notice, by registered mail with return receipt requested, prior to cancellation or expiration be given to the Owner. Policies that lapse and/or expire during term of work shall be re-certified and received by the Owner no less than thirty (30) days prior to expiration or cancellation.

The Contractor shall furnish to the Owner Certificates of Insurance for a, b, c, d, e, f, g, h, i and j above, as evidence of coverage prior to signing of contract.

The cost of furnishing the above insurance shall be borne by the Contractor, there will be no direct payment for this work. Cost will be deemed to have been included in the price bid for all scheduled items. The Contractor shall require all subcontractors to provide this same insurance coverage.

Contractor's Signature

Date

Print Name and Title

**SEXUAL HARASSMENT WRITTEN POLICY & TRAINING CERTIFICATION
(To be Completed by Each Bidder)**

I, _____, being duly sworn, deposes and says that I am
(Name of Individual Signing this Certification)

the _____ of the _____
(Title/Position of Signer) (Name of Bidder)

and that by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of Section 201-g of the New York State Labor Law.

Print Company Name

By: _____
Signature

Title

Sworn to before me this

_____ day of _____, 20__

Notary Public

**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT
(To be Completed by Each Bidder)**

Each bidder/proposer, any person signing on behalf of any bidder/proposer and any assignee or subcontractor and, in the case of a joint bid/proposer, each party thereto, certifies, under penalty of perjury, that to the best of its knowledge and belief, that each bidder/proposer and any subcontractor or assignee is not identified on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the New York State Finance Law (the "Prohibited Entities List").

During the term of any contract awarded pursuant to this bid, should the Village of Cold Spring (the "Village") receive information that a bidder/proposer is in violation of the above-referenced certification, the Village will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the Village shall take such action as may be appropriate including, but not limited to, seeking compliance, recovering damages or declaring the bidder/proposer in default.

The Village reserves the right to reject any bid or proposal from a bidder/proposer that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any bidder/proposer that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she
(Name of Individual Signing this Certification)

is the _____ of the _____ and that neither
(Title/Position of Signer) (Name of bidder/proposer)

the bidder/proposer nor any proposed subcontractor is identified on the Prohibited Entities List.

Print Company Name

By: _____
Signature

Title

Sworn to before me this

_____ day of _____, 20____

Notary Public

SECTION D
AGREEMENT
FOR
REPLACEMENT OF WATER METER ENDPOINTS
VILLAGE OF COLD SPRING

THIS AGREEMENT, executed in quadruplicate, made this ____ day of _____, 20__, by and between the Village of Cold Spring, a municipal corporation with offices at Village Hall, 85 Main Street, Cold Spring, NY 10516, County of Putnam, State of New York, party of the first part, hereinafter designated “the Village” and _____ a business authorized to do business in New York State with offices at _____, party of the second part, hereinafter designated “the Contractor”.

WITNESSETH, that the Contractor and the Village for the consideration hereinafter named, agree as follows:

ARTICLE I - PURPOSE:

The work consists of _____. The project is located _____ in the Village of Cold Spring. Other related work shall include the _____ all in accordance with the plans and specifications as directed by the Engineer and Village. Coordination with the Water Department is required and expected throughout the duration of the construction project.

All of the above work and other related work is more fully described in the specifications and drawings.

In furtherance of this end, the Village has prepared Specifications and Supporting Data, and has solicited bids for the work. When bids were opened, the bid prepared by the CONTRACTOR was the lowest bid received in compliance with the specifications and the Village awarded the work to the Contractor on _____.

ARTICLE II - SCOPE:

The Village accepts the Contractor’s bid proposal dated _____. The work to be done is shown and detailed on the following documents, which are collectively referred to herein as the “Contact Documents”:

Notice to Bidders, Instruction to Bidders, Bid Proposal, Agreement, Performance Bond, Labor and Material Bond, Form of Maintenance Bond, General Release, Prevailing Wage, Compliance with Labor Law Requirements, Insurance, Non-Discrimination Clause,

General Conditions, Special Conditions, Technical Specifications, and Addenda

All of the above items are dated _____ unless otherwise noted, and are attached hereto labeled as “_____ Prepared by James J. Hahn Engineering, P.C., Putnam Business Park, 1689 Route 22, Brewster, New York 10509”, and made a part of this Agreement.

There is further attached hereto and made a part of this Agreement:

1. “Bid Proposal” to the Village of Cold Spring, dated _____, executed by the Contractor, attached hereto and marked “EXHIBIT A”.
2. Notice of Award letter by the Village of Cold Spring, dated _____, attached hereto and marked “EXHIBIT B”.
3. Performance and Payment Bonds No. _____, dated _____, attached hereto and marked “EXHIBIT C”.

ARTICLE III - TIME OF COMPLETION:

- (a) The Contractor shall commence work under this Agreement within _____ days of the Notice to Proceed or as soon as possible as directed by the Village.
- (b) The Contractor shall complete work by _____. The Contractor shall be responsible for completion of the Contract as required under Section 202 “Time of Completion”.
- (c) If the Contractor is unable to satisfactorily complete all work by the time of completion, the Village may grant an extension of time, if, in the opinion of the Village the delay in completing work was due to causes beyond the Contractor’s control, and not due to the Contractor’s negligence, actions or inaction.

ARTICLE IV - PAYMENT:

- (a) The Village will pay the Contractor for services under this Agreement the unit prices and lump sums as shown in “EXHIBIT A”.
- (b) It is the intention of the Agreement to include under the above unit prices and lump sums all necessary services required to complete this project. If additional work is required, such work may be done on a mutually agreed basis, and authorized in writing by the Village.
- (c) Payment to the Contractor requires execution of Contractor’s invoice. The payment

form shall be in a format prescribed by the Engineer, in accordance with AIA document G702 and G703. The Village is a tax-exempt municipality.

- (d) Vouchers are paid _____ monthly and must be received by the Engineer no later than _____ days prior to Board meetings for payment to be mailed to the Contractor within _____ days of the Board meeting.

A retainage of five (5%) percent of completed and approved contract work shall be withheld from each voucher submitted for payment by the Contractor.

- (e) Following a final site inspection of the Contract work and prior to final payment, the Contractor shall submit the General Release form from the Contract Documents and a two (2) year Maintenance Bond. The General Release shall state that all obligations incurred by the Contractor in carrying out this Agreement have been satisfied including wages and costs of subcontractors, equipment and materials. The General Release and Maintenance Bond shall be acceptable in form and sufficiency to the Attorney and Engineer, in the amount of 100% of the final Contract Price, and shall ensure satisfactory repair or replacement of defective work as required under the General Conditions.
- (f) Pursuant to approval of the General Release and two (2) year Maintenance Bond, the Contractor shall receive final payment for approved work including previous retainage withheld by the Village.

ARTICLE V - COMPLIANCE WITH LAWS AND REGULATIONS:

In carrying out the terms of this Agreement, the Contractor shall comply with all applicable laws, regulations and procedures of the United States of America, State of New York, County of Putnam and the Village. In particular, the Contractor's attention is directed to the Specifications Section H "Prevailing Wage" and Section I "Compliance With The Labor Law and other Department of Labor Regulations" and any related addenda.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

AFFIX CORPORATE SEAL

By: _____
_____, Village Mayor

STATE OF NEW YORK)
) SS.:
COUNTY OF PUTNAM)

On the ____ day of _____, 20__, before me personally came _____ to me known, who, being by me duly sworn, did depose and say that s/he resides at _____; that s/he is the Village Mayor, the municipal described in an which executed the foregoing instrument; that s/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of said municipal; and that s/he signed his/her name thereto by like order.

NOTARY PUBLIC

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

AFFIX CORPORATE SEAL

By: _____
Contractor _____, President

STATE OF NEW YORK)
) SS.:
COUNTY OF PUTNAM)

On the ____ day of _____, 20__, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that s/he resides at _____; that s/he is the _____ of _____ the corporation described in and which executed the foregoing instrument; that s/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that s/he signed his/her name thereto by like order.

NOTARY PUBLIC



AIA[®]

Document A312™ – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name

and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name

and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.



Document A312™ – 2010

Payment Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:
(Name and location)

BOND

Date:
(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____ Signature: _____

Name and Title: _____ Name and Title: _____

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

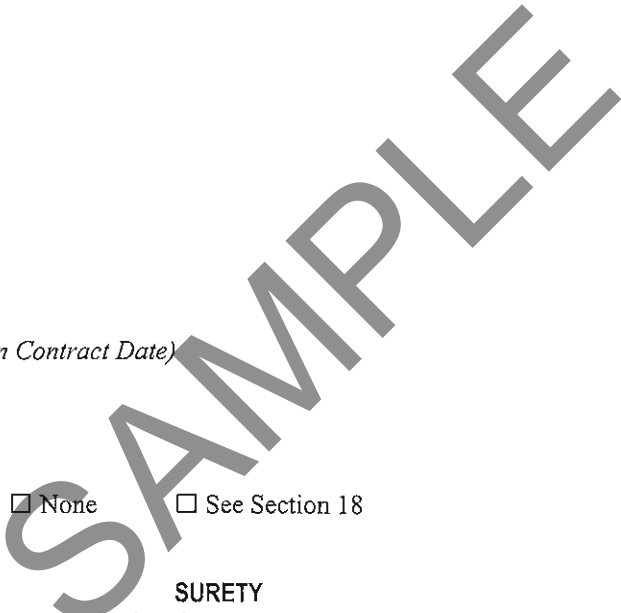
AGENT or BROKER:

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.



§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

SECTION G

GENERAL RELEASE

(To Be Submitted With Requisition For Final Payment)

KNOW ALL MEN BY THESE PRESENTS, that _____
(Contractor)

for and in consideration of the sum of _____
(Final Contract Price)

lawful money of the United States of America, to it in hand paid

by _____,
(Owner/Contracting Agency)

have remised, released, quit-claimed, and forever discharged, and by these presents do for its successors and assigns remise, release, quit-claim, and forever discharge the said

_____,
(Owner/Contracting Agency)

and its successors and assigns and administrators, of and from any and all manner of action and actions, caused and causes of action, suits, debts, dues, sum and sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contract, controversies, agreements, promises, variances, trespasses, damages, judgments, patents, extents, executions, claims and demands whatsoever in law and equity which against the said

_____,
(Owner/Contracting Agency)

now have or which heirs, executors, or administrators hereafter can, shall, or may have, for upon or by reason of any matter, cause or thing whatsoever, from the beginning of the world to the day of the date of these presents rising out of the construction, in accordance with contract entered into between parties hereto,

dated _____, two thousand and _____, any admittance or supplements thereto.

IN WITNESS WHEREOF, the undersigned corporation has caused this agreement to be signed by its _____ and its corporate seal to be hereto affixed and duly attested by its _____ this _____ day of _____.

ATTEST:

PRINCIPAL:

AFFIX CORPORATE SEAL

STATE OF NEW YORK)
) SS:
COUNTY OF PUTNAM)

On the ___ day of _____, 20__, before me personally came _____ to me known, who, being by me duly sworn, did depose and say that s/he resides at _____; that s/he is the _____ of _____, the corporation described and that s/he signed his/her name thereto.

NOTARY PUBLIC

SECTION H

STATE PREVAILING WAGE RATES

The Contractor shall ensure that workers are paid the appropriate wages and supplemental (fringe) benefits. Throughout the contract, the Contractor shall obtain and pay workers in accordance with periodic wage rate schedule updates from the NYS Department of Labor (NYSDOL). Wage rate amendments and supplements are available on the NYSDOL website at www.dol.ny.gov/public-work-and-prevailing-wage. All changes line or clarification of labor classification(s) and applicability of prevailing wage rates shall be obtained in writing from the Office of the Director, NYSDOL Bureau of Public Work.

The NYSDOL prevailing wage rate schedule for this contract has been determined and is available on the internet at the NYSDOL website. The prevailing wage rate schedule is accessed by visiting the NYSDOL website, navigating to the appropriate webpage, and entering the Prevailing Rate Case No. (PRC#). The **PRC#** is **2022008630** which is provided on NYSDOL Form PW-200 included in this contract proposal.

A copy of the project specific prevailing wage rate schedule will be provided to the successful bidder upon award of the contract. Upon written request, the schedule will be provided by the Owner or Owner's representative to prospective bidders without internet access.



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Village of Cold Spring
William Angiolillo
James J Hahn Engineering, P.C.
1689 Route 22
Brewster NY 10509

Schedule Year 2022
Date Requested 07/25/2022
PRC# 2022008630

Location Cold Spring
Project ID#
Project Type Replacing 866 water meter cellular endpoints throughout the Village's water distribution system.

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2022 through June 2023. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

SECTION I

COMPLIANCE WITH THE LABOR LAW

AND OTHER DEPARTMENT OF LABOR REGULATIONS

The Contractor shall comply with the applicable provisions of the Labor Law as amended, of the State of New York. This Contract shall be void unless applicable sections of said Labor Law are complied with. Each and every provision of law and clause required by law to be part of this Contract shall be deemed to be included herein and this Contract shall be read and enforced as though it were included herein, and if through mere mistake or otherwise any such provision is not included, then upon the application of either party hereto, the Contract shall forthwith be physically amended to make such inclusion.

Specifically, section 200-e, of the Labor Law, as so amended, prohibits in contracts, discrimination on account of race, creed, color, or national origin in employment of citizens upon public works.

There may be deducted from the amount payable to the Contractor by the Owner under this Contract a Penalty of five (\$5.00) dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of Section 200-e; provided, that for a second or any subsequent violation of the provisions of said paragraph, his Contract may be canceled or terminated by the Owner and all monies due or to become due hereunder may be forfeited.

SECTION J
INSURANCE

1. The Contractor, prior to signing of the contract, shall provide to the Owner, and maintain throughout the life of the contract, at his own cost and expense, proof of the following insurance by insurance companies licensed in the State of New York, rated A or better by Best's, and otherwise acceptable to the Owner. Refer to Section C for additional insurance requirements.
 - a. Workmen's Compensation and Employer's Liability Policy: Covering operations in New York State. Statutory Workers' Compensation, Employer's Liability and N.Y.S Disability Benefits Insurance for all employees. Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy. Workers' Compensation must include a waiver of subrogation. This policy shall not exclude third part action over (a/k/a: labor law) claims. Coverage shall not exclude injuries in confined spaces. Coverage must specifically include all New York State work places.
 - b. Comprehensive General Liability Policy: With limits of no less than \$1,000,000/\$2,000,000 Bodily Injury and Property Damage, and including coverage for:
 - a. Products/Completed Operations.
 - b. Independent Contractors.
 - c. Explosive, collapse and underground losses (X.C.U.).
 - d. Contractual Liability (covering Hold Harmless attached).
 - e. Broad from property damage liability (including completed operations).
 - f. Personal Injury including hazards i, ii, iii.
 - g. Village of Cold Spring shall be named as an "Additional Insured" and provided a waiver of subrogation endorsement on the policy and the Certificate of Insurance shall show this as to the liability coverage on the certificate.
 - h. The Contractor's insurance policy is primary and non-contributory to any insurance the Village of Cold Spring may maintain.
 - i. This policy shall not exclude third part action over (a/k/a: labor law) claims.
 - j. Coverage must be on a \$1,000,000 each occurrence per location or per project basis.
 - k. Coverage shall not exclude injuries in confined spaces.
 - c. Comprehensive Automobile Policy: With limits no less than \$1,000,000 Bodily Injury and Property Damage liability including coverage for owned, non-owned, and hired private passenger and commercial vehicle. Village of Cold Spring and their agents, officers, directors and employees shall be included as additional insured on the auto policy. Also needs to include waiver of subrogation.
 - d. Umbrella Excess Liability: With Limits no less than \$5,000,000 each occurrence.

This policy must provide the Village of Cold Spring as additional insurance and include a waiver of subrogation endorsement in their behalf. The Contractor's insurance policy is primary and non-contributory to any insurance the Village of Cold Spring may maintain. This Policy shall not exclude third part action over (a/k/a: labor law) claims.

- e. All Policies and Certificate of Insurance of the Contractor shall contain the following clauses:
 - a. Insurers shall have no right to recovery or subrogation against the Owner, Architect/Engineer and Construction Manager (including its employees and other agencies), it being the intention of the parties that the insurance policies so effected shall protect both parties and be primary coverage for any and all losses covered by the above-described insurance.
 - f. Certificates shall provide that thirty (30) days' written notice, by registered mail with return receipt requested, prior to cancellation or expiration be given to the Owner. Policies that lapse and/or expire during term of work shall be re-certified and received by the Owner no less than thirty (30) days prior to expiration or cancellation.
2. All policies and certificates of insurance of the Contractor shall contain clauses as follows:
 - a. The insurance companies issuing the policy or policies shall have no recourse against the Owner for payment of any premiums or for assessments under any form of policy.
 - b. Any and all deductibles in the above-described insurance policies shall be assumed by and be for the account of, and at the sole risk of the Contractor.
 - c. In case of cancellation or material change in any of the policies, thirty (30) days' notice shall be given to Owner, by registered mail, return receipt requested.
3. All property losses shall be made payable to and adjusted with the Owner.
4. All policies of insurance shall be acceptable to and approved by the Department of Law prior to the inception of any work.
5. Other coverages may be required by the Owner based on specific needs.
6. If, at any time, any of the said policies shall be or become unsatisfactory to the Owner, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Owner, the Contractor shall promptly obtain a new policy, submit the same to the Owner for approval and submit a certificate thereof as hereinafter provided. Upon failure of the Contractor to furnish, deliver and maintain such insurance as above provided, this Contract, at the election of the Owner, may be forthwith declared suspended,

discontinued or terminated. Failure of the Contractor to take out and/or to maintain or the taking out and/or maintenance of any required insurance, shall not relieve the Contractor from any liability under the Contract, nor shall the insurance requirements be construed to conflict with the obligations of the Contractor.

7. In the event that claims in excess of these amounts are filed by reason of any operations under the Contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due or to become due the Contractor until such time as the Contractor shall furnish such additional security covering such claims.
8. The Contractor agrees to protect, defend, indemnify and hold the Owner and its officers, employees and agents free and harmless from and against any and all losses, penalties, damages, settlements, costs, charges, professional fees of other expenses or liabilities of every kind and character arising out or relating to any and all claims, liens, demands, obligations, actions, proceedings or causes of action of every kind and character in connection with or arising directly or indirectly out of this agreement and/or the performance hereof. Without limiting the generality of the foregoing, any and all such claims, etc., relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged infringement of any patent, trademark, copyright (or application for any thereof) or of any other tangible or intangible personal or property right, or any actual or alleged violation of any applicable statute, ordinance, administrative order, rule or regulation, or decree of any court, shall be included in the indemnity hereunder. The Contractor further agrees to investigate, handle, respond to, provide defense for and defend any such claims, etc., at his sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent. In any case in which such indemnification would violate Section 5-322.1 of the New York General Obligations Law, or any other application legal prohibition, the foregoing provisions concerning indemnification shall not be construed to indemnify the Owner for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of the Owner, or its employees.

SECTION L
NON-DISCRIMINATION CLAUSE

During the performance of the Contract, the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, color, or national origin. Such action shall be taken with reference, but not limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.
- b. The Contractor will send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the Commission of Human Rights, advising such labor union or representative of the Contractor's agreement under clauses "a." through "h." hereinafter called "non-discrimination clauses", and requesting such labor union or representative to agree in writing, whether in such collective bargaining or other agreement or understanding or otherwise, that such labor union or representative will not discriminate against any member or applicant for membership because of race, creed, color, or national origin, and will take affirmative action to insure that they are afforded equal membership opportunities without discrimination because of race, creed, color, or national origin. Such action shall be taken with reference, but not be limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay, or other forms of compensation, and selection for training or retraining including apprenticeship and on-the-job training. Such notice shall be given by the Contractor, and such written agreement shall be made by such labor union or representative, prior to the commencement of performances of this contract. If such labor union or representative fails or refuses so to agree in writing, the Contractor shall promptly notify the Commission for Human Rights of such failure or refusal.
- c. The Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the Commission for Human Rights setting forth the substance of the provisions of clauses "a." and "b." and such provisions of the State's Laws against discrimination as the Commission for Human Rights shall determine.
- d. The Contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, or national origin.
- e. The Contractor will comply with the provisions of Sections 291-299 of the Executive Law and the Civil Rights Law, will furnish all information and reports deemed necessary by the Commission for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will, permit access to his books, records, and accounts by the

Commission of Human Rights, and Owner representatives/counsel for purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.

- f. The Contract may be forthwith canceled, terminated, or suspended in whole or in part, by the contracting agency upon the basis of a finding made by the Commission of Human Rights that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future contracts made by or on the behalf of the Owner/Contracting Agency until he satisfied the Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such finding shall be made by the Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor and an opportunity has been afforded him to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies otherwise provided by law.
- g. If this Contract is canceled or terminated under clause “f.”, in addition to other rights of the Owner provided in this contract upon its breach by the Contractor, the Contractor will hold the Owner harmless against any additional expenses or costs incurred by the Owner in completing the work or in purchasing the services, materials, equipment, or supplies contemplated by this contract, and the Owner may withhold payments from the Contractor in an amount sufficient for this purpose and recourse may be had against the surety on the performance bond if necessary.
- h. The Contractor will include the provisions of clauses “a.”, through “g.” in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within jurisdictional locale of the Project being contracted by the Owner. The Contractor will take such action in enforcing such provisions of such subcontract or purchase as the Owner/Contracting Agency may direct, including sanctions or remedies for noncompliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the Contracting Agency/Owner, the Contractor shall promptly so notify the Owner’s representatives/counsel, requesting him to intervene and protect the interests of the Owner (Contracting Agency’s jurisdictional area).

SECTION M

GENERAL CONDITIONS

Note: The headings of the articles herein are intended for the convenience or reference only and shall not be considered as having any bearing on their interpretation.

PART I

101 DEFINITIONS

Whenever used in any of the Contract Documents, the following meanings shall be given to the terms herein defined:

- a. The term "Contract" means the Contract executed by the Owner and the Contractor.
- b. The term "Owner" means the municipality which is authorized to undertake this Contract.
- c. The term "Contractor" means a person, firm or corporation entering into the Contract with the Owner to perform and complete the work involved in this Contract.
- d. The term "Subcontractor" means a person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with the Contractor.
- e. The term "Project Area" means the area shown on the drawings in the immediate vicinity of the work, unless otherwise defined in the Special Conditions. No private property is included unless the Owner has obtained an easement.
- f. The term "Engineer" or "Professional" means the person in charge, serving the Owner with engineering services, his successor, or any other person or persons, employed by said
- g. Owner for the purpose of administering the work embraced in this Contract, the said Engineer acting directly or indirectly through any Assistant.
- h. The term "Contract Documents" means and shall include the Documents listed in Article 3 of the Agreement.
- i. The term "Drawings" or "Contract Drawings" means the drawings listed in the Schedule of Drawings.
- j. The term "Technical Specifications" or "Supplemental Technical Specifications" means that part of the Contract Documents which describes, outlines and stipulates, the quality of materials to be furnished; the quality of workmanship required; measurement and payment.
- k. The term "Addendum" or "Addenda" means any changes, revisions or clarifications of the Contract Documents which have been duly issued by the Owner to prospective Bidders prior to the time of receiving Bids.

102 SUPERINTENDENCE BY CONTRACTOR

- a. Except where the Contractor is an individual and gives his personal superintendence to the work, the Contractor shall provide a competent superintendent, satisfactory to the Owner, for the work at all times during working hours with full authority to act for him. The Contractor shall also provide an adequate staff for the proper coordination and expediting of his work. Should, in the opinion of the Owner, any language barrier exist between the superintendent and the Owner, the Contractor will employ a qualified interpreter.
- b. The Contractor shall lay out his own work including all survey required and he shall be responsible for all work executed by him under the Contract. He shall verify all figures, elevations, etc. before proceeding with the work and will be held responsible for any error resulting from his failure to do so.

103 SUBCONTRACTS

- a. The Contractor shall not execute an agreement with any Subcontractor or permit any Subcontractor to perform any work included in this Contract until he has received written approval of such Subcontractor from the Owner.
- b. The Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. All Subcontractors must have adequate superintendence on the work site when they are performing work.
- c. The Contractor shall cause appropriate provision to be inserted in all Subcontracts relative to the work to require compliance by each Subcontractor with the applicable provisions of the Contract for the work embraced in this Contract.
- d. Nothing contained in the Contract shall create any contractual relation between any Subcontractor and the Owner.

104. OTHER CONTRACTS

The Owner reserves the right to let other contracts in connection with this work or to perform work related to this project with his own forces. The Contractor shall offer other Contractors and the Owner reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and/or coordinate his work with theirs. The Contractor shall cooperate fully with such other Contractors, by scheduling his own work with that to be performed under other Contracts as may be directed by the Owner. The Contractor shall not permit or commit any act which will interfere with the performance of work by any other Contractor as scheduled.

Wherever work being done by the Owner's forces, or other Contractors is contiguous to work covered by this contract, the respective rights of the various interests involved shall be established by the Owner, to secure the completion of the various portions of the work in general harmony.

If any part of the Contractor's work depends for proper execution or results upon the work of others, the Contractor shall inspect and promptly report to the Engineer in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results.

105 RESPONSIBILITIES OF CONTRACTOR

Except as otherwise specifically stated in the Contract Documents the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, heat, power, transportation, superintendence, temporary construction of every nature, charges, levies, fees or other expenses and all other services and facilities of every nature whatsoever necessary for the performance of the Contract and to complete this Contract in every respect within the specified time.

106 FITTING AND COORDINATION OF THE WORK

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, Subcontractors or Materialmen engaged upon this Contract. He shall be prepared to guarantee to each of his Subcontractors the locations and measurements which they may require for the fitting of their work to all surrounding work. The Contractor shall, at his own expense, effect all cutting, fitting, or patching of his work required to make the same conform to the Contract Drawings and specifications and, except with consent of the Owner, not to cut or otherwise alter the work of any other Contractor.

107 MUTUAL RESPONSIBILITY OF CONTRACTOR

If, through acts or neglect on the part of the Contractor, any other Contractor or Subcontractor shall suffer loss or damage on the work, the Contractor shall settle with such other Contractor or Subcontractor by agreement or arbitration, if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been so sustained, the Owner will notify the Contractor, who shall defend at his own expense any suit based upon such claim, and, in any judgment or claim and pay all costs and expenses, in connection therewith and will in all other respects, including, but not limited to attorney's fees and court costs, hold harmless the Owner and Engineer.

108 ASSIGNMENT OR NOVATION

The Contractor shall not assign or transfer, whether by an assignment or novation, any of its rights, duties, benefits, obligations, liabilities or responsibilities under this Contract without the written consent of the Owner; provided, however, that assignments to banks, trust companies, or other financial institutions may be made without the consent of the Owner. No assignment or novation of this Contract shall be valid unless the assignment or novation expressly provides that the assignment of any of the Contractor's rights or benefits under the Contract is subject to a prior lien for labor performed, services rendered and materials, tools and equipment supplied for the performance of the work under this contract in favor of all persons, firms or corporations rendering such labor or services or supplying such materials, tools or equipment.

109 PROGRESS SCHEDULE

The Contractor shall submit within seven (7) calendar days after execution of the Agreement, a carefully prepared realistic Progress Schedule showing the proposed dates of starting and completing of each and every item of work on each and every section of work in accordance with these Specifications if applicable to this specific Contract. The Progress Schedule shall include as a minimum:

1. The project name, number, and geographic location.
2. The Contract time, Contract beginning date, and ending date.
3. The time of beginning and completion of each significant phase of this Contract.

The initial requisition will not be approved for payment until said schedule is submitted. Said schedule will be revised or updated monthly unless otherwise permitted by the Owner. No monthly payments will be approved without a revised/updated monthly Progress Schedule approved by the Owner.

The Progress Schedule shall show the plan of construction and the proposed method of carrying out this work including a full statement of the equipment to be used.

110 COMMUNICATIONS

- a. All notices, demands, requests, instructions, approvals, proposals and claims must be in writing.
- b. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Agreement (or at such other office as the Contractor may from time to time designate) in a sealed, postage-prepaid envelope or delivered with charges prepaid to any telegraph company for transmission, each case addressed to such office.
- c. All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to the Village of Cold Spring, 85 Main Street, Cold

Spring, NY 10516 and any notice to or demand upon the Owner shall be sufficiently given if so delivered, or if deposited, in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Owner at such address as the Owner may subsequently specify in writing to the Contractor for such purpose.

- d. Any such notice shall be deemed to have been given as of the time of actual delivery or (in case of mailing) when the same should have been received in due course of post, or in the case of telegrams, at the time of actual receipt, as the case may be.

111 PAYMENTS TO CONTRACTOR

1. Partial Payments

- a. The Engineer shall prepare an estimate of the work performed for partial payment as of a mutually agreed upon date at least 30 days after beginning of work, and approximately every 30 days thereafter. The amount of the payment due the Contractor shall be determined by adding the total value of work completed to date and deducting (1) five percent (5%) of the total amount, to be retained until final payment and (2) the amount of all previous payments. The total value of work completed to date shall be based on the estimated quantities of work completed and on the unit prices, if any, contained in the Agreement.

There will be no payments or partial payments to the Contractor for materials purchased and stored/stockpiled on the project site.

- b. Monthly or partial payments made by the Owner to the Contractor are moneys advanced for the purpose of assisting the Contractor to expedite the work of construction. All materials and completed work covered by such monthly or partial payments shall remain the property of the Contractor and he shall be responsible for the care and protection of all materials and work upon which payments have been made. Such payments shall not constitute a waiver of the right of the Owner to require the fulfillment of all terms of the Contract and the delivery of all improvements in this Contract complete and satisfactory to the Owner in all details.

2. Final Payment

- a. After final inspection and acceptance by the Owner of all work under the Contract, the Contractor shall prepare his requisition for final payment which shall be based upon the carefully measured or computed quantity of each item of work at the applicable unit prices stipulated in the Agreement. The total amount of the final payment due the Contractor under this Contract shall be the amount computed without retainage, less all previous payments. Final payment to the Contractor shall be made subject to his furnishing the Owner with a release in satisfactory form of all claims against the Owner arising under and by virtue of his Contract, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release as provided elsewhere herein.

- b. The Owner, before paying the final estimate, will require the Contractor to furnish releases or receipts from all Subcontractors having performed any work and all persons having supplied materials, equipment (installed on the Project) and services to the Contractor; the Owner deems this necessary in order to protect its interest. The Owner, however, may if it deems such action advisable, make payment in part or in full to the Contractor without requiring the furnishing of such releases or receipts, any payment so made shall in no way impair the obligations of any surety or sureties furnished under this Contract.
- c. If it was necessary for the Owner to expend money for labor, materials or equipment on this project because the Contractor failed to perform satisfactorily or promptly, and a bill for such sum remains unpaid, the Owner may deduct this sum from partial payments or the final payment. Furthermore, if the specifications provide for certain work to be done by the Owner with the fee or cost to be borne by the Contractor, and a bill for such services remains unpaid, the Owner may deduct this sum from the partial or the final payment.
- d. Withholding of any amount due the Owner under the section entitled "LIQUIDATED DAMAGES" shall be deducted from the final payment due the Contractor. At the Owner's option, liquidated damages may be deducted from any partial payment.

3. Withholding Payments

Notwithstanding the above, the Owner may withhold from any payment otherwise due the Contractor so much as may be necessary to protect the Owner and if it so elects may also withhold any amounts due from the Contractor to any Subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Owner and will not require the Owner to determine or adjust any claims or disputes between the Contractor and his Subcontractors or material dealers, or to withhold any moneys for their protection unless the Owner elects to do so. The failure or refusal of the Owner to withhold any moneys from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this Contract.

4. Payments Subject to Submission of Certificates

Each payment to the Contractor by the Owner shall be made subject to submission by the Contractor of all written certifications required of him and his Subcontractors by the section entitled "CONTRACTOR'S CERTIFICATES" under the GENERAL CONDITIONS.

112 CHANGES IN THE WORK

- a. The Owner may make changes in the work required to be performed by the Contractor under the Contract by making additions thereto, or by omitting work there from, without invalidating the Contract.
- b. Except for the purpose of affording protection against any emergency endangering life or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the improvements or supply additional labor,

services or materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order from the Owner authorizing the Contractor to proceed with the change. No claim for an adjustment of the Contract price will be valid unless so ordered.

- c. The Contractor agrees to perform any of the aforementioned changed work, along with all other required work found under the Contract, without delay and in accordance with good construction practices.
- d. These changes outlined above may be made without relieving or releasing the Contractor from any of his obligations under the Contract provisions, and without affecting the validity of the guaranty bonds and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is provided otherwise.
- e. All adjustments to the Contract payment provisions will be made in accordance with the following paragraphs.
- f. If applicable unit prices are contained in the Agreement (established as a result of either a Unit Price Bid or a Supplemental Schedule of Unit Prices), the Owner may order the Contractor to proceed with desired changes in the work, the value of such changes to be determined by the measured quantities involved and the applicable unit prices specified in the Contract. Payment of unit price overruns, due to change order, may be withheld until Owner Approval is obtained. However, if the quantities are more than 125% of the estimated, then the following paragraph shall apply.
- g. If applicable unit prices are not contained in the Agreement, or the actual quantities exceeds 125% of the estimated quantity, the Owner shall, before ordering the Contractor to proceed with desired changes, request an itemized proposal from him covering the work involved in the change after which the procedure shall be as follows:
 1. If the change in the work involves additional work, the procedure shall be as follows:
 - a) If the proposal is acceptable, the Owner will prepare the Change Order in accordance therewith for acceptance by the Contractor, or
 - b) If the proposal is not acceptable and prompt agreement between the two parties cannot be reached, the Owner may order the Contractor to proceed with the work on a Cost-Plus Basis. A Cost-Plus Basis is defined as the net cost of the work to the Contractor plus an allowance to cover overhead and profit as stipulated below: “Net Cost of the Work” is defined as (1) gross cost of labor plus (2) net cost of materials plus (3) gross cost of equipment.
 - (1) “Gross cost of labor” is defined as net cost of labor plus fringe benefits.

“Net cost of labor” is defined as the cost of required labor based on the prevailing rates established by the State Labor Department and stated in the Contract Document. No part of any salary for employees above the grade of foreman, and having general supervision of this work, will be included in this item.

“Fringe Benefits” are defined as all insurances, taxes and other benefits for the employee required by law or by union contract. In lieu of an item-by-item determination of the actual value of such fringe benefits, all fringe benefits are

hereby determined to total an amount of 50% of net cost of labor, and the Contractor in submitting his bid agrees that this percentage shall be used, regardless of whether actual fringe benefits are more or less than this amount.

- (2) "Net cost of materials" shall be defined as the cost of all materials incorporated in the work, including delivery charges, less any allowable cash discounts, as shown by receipted bills.
- (3) "Gross cost of equipment" is defined as the "net cost of equipment" plus an allowance of 10% for fuel and lubricants.

"Net cost of equipment" shall be defined as a rental rate which is reasonable and based on rental rates prevailing in the area where the work is to be done. Such rental rate shall be negotiated, and shall be agreed upon in writing before the work is begun. However, in no case shall the rental exceed the rates set forth in the current edition of the "Associated Equipment Distributors Compilation of Rental Rates for Construction Equipment".

The cost of furnishing small tools and accessories and materials used for construction but not incorporated in the work shall be considered as part of the Contractor's overhead, and shall not be included in the "net cost of the work".

An allowance of 15% will be added for overhead and profit and is hereby stipulated to be in lieu of an actual determination of overhead and profit. The Contractor in submitting his bid agrees that this allowance shall be used, regardless of whether actual overhead and profit is more or less than this amount.

No percentage for overhead and profit shall be added to the amounts of equipment rental prices agreed upon, but the price agreed upon shall be the total compensation allowed for use of such equipment.

2. If the change in the work requires a reduction in the work involved, the procedure shall be as follows:
 - a) If the proposal is acceptable, the Owner will prepare the Change Order in accordance therewith for acceptance by the Contractor; or
 - b) If the proposal is not acceptable and prompt agreement between the two parties cannot be reached, the Engineer shall fix the cost value of the credit. The Owner may then order the Contractor to proceed with the work. Should the Contractor disagree with the cost value of the credit as fixed by the Engineer, he may appeal the same in accordance with the procedures outlined in the GENERAL CONDITIONS, "ARBITRATION".
- h. Each Change Order shall include in its final form:
 1. A detailed description of the change in the work.
 2. The Contractor's proposal (if any) or a confirmed copy thereof.
 3. A definite statement as to the resulting change in the Contract price and/or time.
 4. The statement that the change order is subject to the approval of the Village Board.
- i. Contractor shall not take advantage of any obvious error in the specifications or any such

error in the drawings or other Contract Documents. Any obvious error or discrepancy in or between any of the Contract Documents shall be immediately reported to the Engineer who shall make such corrections and interpretations as may be deemed necessary for the completion of the work in a satisfactory and acceptable manner.

113 CLAIMS FOR EXTRA COST

- a. All claims between the parties, including all claims for additional compensation and/or additional time, arising out of, or in any way related to this Contract and/or the performance of the same, or its interpretation, shall within ten (10) days of the event, or action giving rise to the claim be presented to the Engineer. All papers pertaining to claims shall be filed in quadruplicate. Such notice need not detail the amount of the claim but shall state the facts surrounding the claim in sufficient detail to identify the claim, together with its character and scope. In the meantime, the Contractor shall proceed with the work as directed. Any claim not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the claim is not given within ten (10) days of its commencement, the claim will be considered only for a period commencing ten (10) days prior to the receipt by the Engineer of notice thereof. The Contractor shall in no case allow any claim or dispute to delay the work.
- b. As soon as practicable after the final submission of all information the Owner shall make a determination of any claim. Said decision of the Owner shall be a condition precedent to any further action on the claim. However, upon certification in writing by the claimant that the claim has been submitted in its final form, the Owner shall be obliged to render a decision on said claim within sixty (60) days of the date of said certification. Should the Owner fail to render its decision within the aforementioned sixty (60) day period, its decision will not be a condition precedent to any further action on the part of the claimant.
- c. There shall be no added compensation paid for delay to the Contractor unless the Owner causes said delay by a material breach of Contract, and compliance with the foregoing notice provisions shall be a condition precedent to the prosecution of any such claim. In any claim for delay except for "Excusable Delays and Extensions of Time" as defined in the GENERAL CONDITIONS SECTION "TERMINATION: DELAYS AND EXTENSIONS; LIQUIDATED DAMAGES" wherein it is alleged that the Contractor's equipment was caused to remain idle, only one half of the prevailing rental rates for use of said equipment will be considered as damages for idled equipment in order to allow for the absence of fair wear and tear, which is allowed for in prevailing rental rates for equipment usage.
- d. Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, or bench marks, will not be considered unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material or performing more work, than would be reasonable estimated from the Drawings and maps issued.
- e. If, on the basis of the available evidence, the Owner determines that an adjustment of the

Contract Price and/or Time is justifiable, the procedure shall be as provided in Sections - "CHANGES IN THE WORK" or "TERMINATIONS; DELAYS AND EXTENSIONS; LIQUIDATED DAMAGES" of the GENERAL CONDITIONS.

- f. In the event of an unfavorable decision by the Owner, the Contractor shall have the right to contest said decision as provided for under the provisions of the Contract.

114 NO OPTIONS PAID

It shall be clearly understood that there will be no payment for materials incorporated into the work (other than that shown on the Contract Drawings or specified) unless ordered by the Engineer.

115 TIME AND MATERIALS WORK NOTIFICATION

Should the Contractor perform work in accordance with the GENERAL CONDITIONS, "CHANGES IN THE WORK", he shall give a minimum of 24 hours advance written notice prior to his anticipated beginning any work on a Cost-Plus Basis, to the Owner and specifically the Engineer.

116 TERMINATION; DELAYS AND EXTENSIONS; LIQUIDATED DAMAGES

A. Termination of Contract

For its own convenience the Owner may, at any time prior to the issuance of a Notice to Proceed, void the Contract by giving unequivocal and unconditional written notice of such avoidance to the Contractor and in the event of such avoidance the Owner will not be liable to the Contractor for any claims or losses, including anticipated loss of profit and moneys expended in anticipation of performance under the Contract.

At any time subsequent to the Notice to Proceed the Owner may, at its own convenience, terminate the Contract by giving unequivocal and unconditional written notice of such termination to the Contractor. In the event of such termination by the Owner, the Owner shall be responsible to the Contractor for the following moneys only, which moneys shall be subject to legitimate charges of the Owner against the Contractor:

1. All reasonable cost incurred by the Contractor in performance of or in anticipation of performance of the Contract provided the Contractor shall take all reasonable steps to mitigate such damages including the return and/or resale of materials ordered; and
2. On Lump Sum projects, a markup of 10% for profit and 10% for overhead on the reasonable cost of the work that is completed and in place in accordance with the Contract Drawings and Specifications will be allowed. On unit price Contracts, allowances for profit and overhead shall be considered to have been included in each of the Contractor's original unit price Bid. The Contractor shall remain responsible for the work completed, in accordance with the Contract

provisions.

Should any work under this Contract be subject to, or terminated by the action of any third party, governmental unit or court due to any ecological or other reason, the rights of the Contractor to recover from the Owner shall be determined as set forth above.

The Owner may give notice in writing to the Contractor and his Surety of any material breach of the Contract by the Contractor to include but not be limited to any of the following:

- a. Failure to begin the work under the Contract within the time specified.
- b. Failure to perform the work with sufficient workmen, equipment or materials to insure the prompt completion of said work.
- c. Unsuitable performance of the work or failure to perform anew such work as shall be rejected as defective and unsuitable.
- d. Neglecting or refusing to remove material rejected as defective and unsuitable.
- e. Discontinuing the suitable prosecution of the work for a period of 72 hours, excluding Sundays and holidays without written authorization of the Engineer.
- f. Failure to commence discontinued work within 48 hours after notice to resume (excluding Sundays and holidays).
- g. Becoming insolvent or declared bankrupt or commits any act of bankruptcy or insolvency.
- h. Allowing a final judgment to stand against him unsatisfied for a period of ten (10) calendar days.
- i. Making any assignment for the benefit of creditors.
- j. Violating any covenants contained in the Contract Documents.
- k. Failure to eliminate unsafe conditions within 12 hours.

The Contractor or Surety within a period of ten (10) calendar days after such notice shall take all practical action to correct said material breach. Should said action fail to meet with the approval of the Owner, the Owner may, at its discretion, order the Surety to complete the work or, without violating the Contract, take the prosecution of the work out of the hands of said Contractor and Surety.

The Owner may appropriate or use any or all materials and equipment on the ground as may be suitable and acceptable and may enter into an agreement, either by negotiation or public letting, for the completion of said contract according to the terms and provisions thereof, or use such other methods or combinations thereof, as in its opinion shall be required or desirable for the completion of said Contract in an acceptable manner. All costs and charges incurred by the Owner together with the cost of completing the work under Contract, shall be deducted from any moneys due or which may become due said Contractor. In case such expense shall exceed the sum which would have been payable under the Contract, then the Contractor and the Surety shall be liable and shall pay to the Owner the amount of said excess.

B. Excusable Delays and Extensions of Time

The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due:

1. To any acts of the Government, including controls or requisitioning of materials, equipment, tools, or by labor by reason of war, National Defense, or any other national emergency.
2. To any acts of the Owner, caused by injunction or litigation against said Owner, by a third party.
3. To causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor, in the performance of some other Contract with the Owner, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions; and
4. To any delay of any Subcontractor occasioned by any of the causes specified in subparagraphs 1, 2 and 3 of this paragraph "B".

Provided, however, that the Contractor promptly notify Owner with ten (10) days in writing of the cause of the delay. Upon receipt of such notification, the Owner shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this Contract, the delay is properly excusable, the Owner shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

No claim for damages or any claim other than for an extension of time as herein provided shall be made or asserted against the Owner by reason of any delay.

C. Liquidated Damages For Delay

If the work is not completed within the time stipulated in Section -TIME OF COMPLETION under SPECIAL CONDITIONS, including any extensions of time for excusable delays as herein provided, the Contractor shall pay to the Owner as fixed, agreed, and as liquidated damages (it being impossible to determine the actual damages occasioned by the delay) for each calendar day of delay, until the work is completed, the amount as set forth in Section - LIQUIDATED DAMAGES under SPECIAL CONDITIONS and the Contractor and his sureties shall be liable to the Owner for the amount thereof. Neither permission given by the Owner for the Contractor to continue the work after the time fixed for completion, nor the inspection and acceptance of such work, shall be deemed a waiver on the part of the Owner of any of his rights under this contract.

117 ENGINEER'S AUTHORITY

The Engineer will decide all questions which may arise in relation to the work and the construction thereof. The Engineer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative

to said Contract, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this Contract affected in any manner or to any extent by such question.

118 TECHNICAL SPECIFICATIONS AND CONTRACT DRAWINGS

Anything mentioned in the Technical Specifications and not shown on the Contract Drawings or shown on the Contract Drawings and not mentioned in the Technical Specifications shall be of like effect as if shown on or mentioned in both. In case of difference between the Contract Drawings and Technical Specifications, the matter shall be immediately submitted to the Owner without whose decision said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense. Therefore, the worst-case scenario with the highest cost will be considered included on the bid.

119 REQUESTS FOR SUPPLEMENTARY INFORMATION

It shall be the responsibility of the Contractor to make timely requests of the Owner for any additional information not already in his possession which should be furnished by the Owner under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need is approached, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing, and list the various items and latest date by which each will be required by the Contractor. The first list shall be submitted within two (2) weeks after Contract award and shall be as complete as possible at that time. The Contractor shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provisions of this Section.

120 SHOP DRAWINGS

Shop drawings are required for all manufactured items. In the case of reinforced concrete, details or reinforcing bars and form construction and materials shall be submitted in the same manner as shop drawings.

- a. All required shop drawings, machinery details, layout drawings, working drawings, material and equipment descriptions, etc., shall be submitted to the Engineer in three (3) copies for review sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting, rechecking if necessary. Two (2) weeks should be allowed for checking from the date of receipt by the Engineer. The Contractor, with the approval of the Engineer, may submit manufacturer's literature as a substitute for, or supplement to, the shop drawings, etc. The minimum size for any submission shall be 8 1/2 x 11" and the maximum size shall be 24" x 36".

- b. No construction, purchase, delivery, installation or work shall be done or made on any part or feature of this Contract which is dependent upon shop drawing review, until such review has been received from the Engineer. If the Contractor proceeds without reviewed shop drawings, it shall be at his own risk. No claim by the Contractor, for extension of the Contract time will be granted by reason of his failure in this respect.
- c. Shop drawings, etc., or printed matter shall give all dimensions, sizes, etc., to enable the Engineer to determine suitability of the construction, installation, material or layout for the purposes intended. Where needed for clarity, the drawings shall include outline, sectional views and detailed machine work, finish, etc., required. The drawings to be submitted shall be coordinated by the Contractor with any other drawings previously reviewed, with the design and function of any equipment or structure and the Contract Drawings.
- d. By submitting shop drawings, etc., the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so and that he has checked and coordinated each shop drawing, etc., with the requirements of the work and of the Contract Documents.
- e. If any drawings show variations from the requirements of the Contract because of standard shop practice and/or other reasons, the Contractor shall make specific mention of such variation in his letter of transmittal in order, that if acceptable, suitable action may be taken for proper adjustment of the Contract price and/or time; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though the drawings have been reviewed.
- f. After review, the submittals will be stamped “No Exception Taken”, “Make Corrections Noted”, “Revise & Resubmit” or “Rejected”. Two (2) prints of “No Exceptions Taken”, or “Make Corrections Noted”, drawings will be returned to the Contractor for his use and distribution to his suppliers and/or Subcontractors. In the case of those stamped “Resubmit” or “Rejected”, two (2) prints will be returned to the Contractor who shall make all indicated corrections and resubmit (3) prints.
- g. In any submission which is noted as “No Exception Taken” or “Make Corrections Noted”, the review shall not extend to details or dimensions and shall not relieve the Contractor from his responsibility for compliance with the Contract Drawings and specifications.
- h. When the Contractor proposes a revision to a previously submitted shop drawing, etc., three (3) copies shall be resubmitted for review. This resubmittal shall clearly indicate, in a revision block, the date, description and location of the revision. The letter of transmittal shall state the reasons for the revision.
- i. The Contractor shall furnish as many copies of the submittals as is necessary for the proper coordination of the work and shall maintain a complete set of the reviewed submissions at the site of the work at all times.
- j. Upon the final acceptance of the project, the Contractor shall, on request, furnish the Owner with a complete set of shop drawing tracings or reproducible cloth reproductions of the shop drawing tracings.
- k. There will be no direct payment made for any of the above submittals, or reproducible drawings if required, but the cost thereof shall be considered as included in the general cost of the work.

121 SAMPLES, CERTIFICATES AND TESTS

The Contractor shall submit all samples, materials, certified test reports, materials certificates, certificates of compliance, affidavits, etc., as called for in the Contract Documents or required by the Engineer, promptly after award of the Contract and acceptance of the Contractor's bonds. No such materials and/or equipment, etc., shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples/certificates/tests/etc., have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of the above for approval shall not be considered just cause for an extension of the Contract time.

a. Samples

Unless otherwise specified, the Contractor shall furnish the required samples without charge, and shall provide every facility for the securing of material samples. He shall provide means and assist in the verification of all scales, measures and other devices which he operates. Samples to be submitted shall be taken by the Engineer or a laboratory approved by the Owner, unless otherwise specified. All materials being used shall be subject to resampling and testing at any time during their preparation and/or use.

All samples submitted by the Contractor shall be properly identified to include, but not be limited to, the project name, project number, item number and description of material, name of the producer, place of origin, and other detailed information which will assist the Engineer passing upon the acceptability of the sample. Certified test reports, materials certificates and/or certificates of compliance required to be submitted with the sample or if permitted in lieu of samples, shall conform to the requirements stated hereafter.

b. Certified Test Report

A certified test report shall be a document containing a list of the dimensions, chemical, metallurgical, electrical and physical results obtained from an actual test of the materials involved, and shall certify that the materials meet the requirements of the Contract Drawings and specifications, and shall also include the following information:

1. Item number and description of material
2. Date of manufacture
3. Date of testing
4. Name of organization to whom the material is consigned
5. Quantity of material represented, such as batch, lot, group, etc.
6. Means of identifying the consignment, such as label, marking, lot number, etc.
7. Date and method of shipment
8. Name of organization performing tests

The certified test report shall be signed by an authorized and responsible agent for the organization supplying the material, and it shall be notarized.

c. Materials Certificate

A material certificate shall be a document certifying that the materials, components and equipment furnished, conform to all requirements of the Contract Drawings and specifications. The document shall also include the following information:

1. Project to which the material is consigned
2. Name of Contractor to whom material is supplied
3. Item number and description of material
4. Quantity of material represented by the certificate
5. Means of identifying the consignment, such as label, marking, lot numbers, etc.
6. Date and method of shipment

d. Certificate of Compliance

A certificate of compliance shall be a document certifying that the materials, components and equipment covered by the previously submitted certified test report and materials certificate, have been installed in the work and that they conform to all the requirements of the Contract Drawings and specifications. The following information shall also be required on the document:

1. Project number
2. Item number and description of material
3. Quantity represented by the certificate
4. Name of manufacturer

The certificate of compliance shall be signed by an authorized and responsible agent for the prime Contractor, and shall be notarized.

f. Tests

Tests as required by the Specifications will be made in accordance with the latest revision to the standard method in effect at the time of bidding of the American Society of Testing Materials, the New York State Department of Transportation, and American Water Works Association, the American Society of State Highway Officials or any other organization that is recognized as an authority on a particular material unless otherwise specified on the Contract Drawings or Special Conditions. Representative preliminary samples or the material proposed for use shall be submitted, without charge by the Contractor or producer for examination and tested in accordance with specified methods. All materials being used are subject to test or rejection at any time during their preparation and use.

Materials will be rejected by the Engineer whenever, in his judgment, they fail to meet the requirements of the specifications.

The Owner reserves the right to retest all materials which have been tested and accepted at the source of supply, after the same have been delivered, and to reject all materials, which when retested, do not meet the requirements of the specifications.

g. Approval/Acceptance

Approval on any materials shall be general only and shall not constitute a waiver of the Owner's right to demand full compliance with Contract Requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance, and may reject materials and accessories for cause even though such materials and articles have been given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have

the right to cause their removal and replacement by proper materials or to demand and secure such preparation by the Contractor as is equitable.

The Engineer may accept a material or combination of materials and therefore waive noncomplying test results provided that all of the following conditions are met:

1. Results of prior and subsequent series of tests of the material or materials from the same source or sources are found satisfactory.
2. The incidence and degree of nonconformance with the specification requirements are, in the Engineer's judgment within reasonable and practical limits.
3. The Contractor has diligently exercised material controls consistent with good practices in the Engineer's judgment.
4. No adverse effect on the value or serviceability of the completed work could result.

The Engineer may at his discretion waive testing of extremely minor quantities of material when such material is obtained from sources that are prevalently on test.

h. Costs

Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:

1. The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, including those samples taken on the project by the Engineer. The Owner shall pay all other testing costs of said samples.
2. The Contractor shall assume all costs of retesting.
3. The Contractor shall assume all costs of testing materials offered in substitution for those found deficient or for those specified.

122 MATERIALS AND WORKMANSHIP

- a. Unless otherwise specifically provided for in the Technical Specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the Technical Specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- b. All work performed and all materials furnished shall be in conformity with the lines, grades, cross sections, dimensions and material requirements, including tolerances shown on the Contract Drawings or indicated in the Specifications.
- c. The Contractor shall furnish to the Owner for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics and all other pertinent information as required, and shall likewise submit for approval as required full information concerning all other materials or articles which he proposes to incorporate in the work. See Section - SAMPLES, CERTIFICATES AND TESTS.

- d. Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- e. Materials specified by reference to the number or symbol of a specific standard, such as an ASTM Standard, a Federal Specification or other similar standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in such reference. The standards referred to, except as modified in the Technical Specifications, shall have full force and effect as though printed therein.
- f. The Contractor shall employ only competent and skillful workers to do the work and whenever the Engineer shall notify the Contractor, in writing, that any man on the work is, in his opinion, incompetent or disorderly, the Contractor shall forthwith remove such person and shall not again employ him on any part of the work without the written consent of the Engineer.
- g. The Owner may stop any work or any part of the work under the Contract if the methods or conditions are such that unsatisfactory work might result, if improper materials or workmanship is being used, or unsafe conditions exist. Any action by the Owner under this provision shall not be deemed a cause of delay and no extensions of permitted time will be granted because of such action.
- h. In the event the materials furnished or the work performed deviates from the requirements of the Contract Drawings and Specifications, but in the opinion of the Owner, constitutes substantial performance, the Owner may accept the same. Should the deviation in question result in a savings to the Contractor, the Owner will be entitled to a credit in the full amount of said savings. Should the deviation in question result in an additional cost to the Contractor, the Owner will not be liable to the Contractor for such additional cost.

If the materials or the finished product in which the materials are used or the work performed are not in conformity with the Contract Drawings and Specifications and have resulted in an inferior or unsatisfactory product, the work and materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

123 PERMIT AND CODES

- a. The Contractor shall give all notices required by and shall observe and comply with all Federal and State laws and Local by-laws, ordinances and regulations in any manner affecting the conduct of the work, and all such orders or decrees as may exist at present and those which may be enacted later, of bodies or tribunals having any jurisdiction or authority over the work. The Contractor shall indemnify and save harmless the Owner and Engineer and all of its officers, agents and servants against any claim or liability arising from or based on the violation of any such law, by-law, ordinance, regulation, order or decree, whether by himself or his employees. All construction work and/or utility installations shall comply with all applicable ordinances and/or codes including any and all written waivers thereto.

Before commencing any work, the Contractor shall examine the Contract Drawings and Specifications for compliance with applicable ordinances, codes, etc., and shall immediately report any discrepancy to the Owner. Where the requirements of the Contract

Drawings and Specifications fail to comply with such applicable ordinances, codes, etc., the Owner will adjust the Contract by Change Order to conform to such ordinances, codes, etc., (unless waivers covering the differences have been granted by the governing body or department) and make appropriate adjustment in the Contract Price.

Should the Contractor fail to observe the foregoing provisions and proceed with the construction or work and/or install any utility at variance with any applicable ordinance, code, etc., including any written waivers (notwithstanding the fact that such installation is in compliance with the Contract Drawings and Specifications), the Contractor shall remove such work without cost to the Owner, but a Change Order will be issued to cover only the excess cost the Contractor would have been entitled to receive if the change had been made before the Contractor commenced work on the items involved.

- b. Unless otherwise specified, the Contractor shall at his own expense, secure and pay to the appropriate department of the Local/State/Federal Government the fees or charges for all permits including but not limited to those required for the making of water taps and the supplying of any equipment required by the Regulations of the Consolidated Water District, Electrical Underwriters permits, and any other permits required by the regulatory body or any of its agencies.
- c. The Contractor shall comply with applicable Local/State/Federal laws, ordinances codes, etc., governing noise, the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the work under this Contract.

124 **CARE OF WORK**

- a. The Contractor shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance, whether or not the same has been covered in whole or in part by payments made by the Owner.
- b. Materials shall be stored so as to ensure the preservation of their quality and fitness for the work and shall be located so as to facilitate prompt inspection. When considered necessary, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground and when directed, shall be placed in weatherproof buildings.
- c. Stored materials, even though approved before storage, shall be inspected prior to their use in the work and shall meet the requirements of the specifications at the time it is proposed to use them.
- d. The Contractor shall at his sole expense and without any additional cost to the Owner provide watchmen and/or other security measures as may be reasonably required to properly protect and care for materials and work completed, and to otherwise prevent property damage and/or personal injury.
- e. In an emergency affecting the safety of life or property including adjoining property, the Contractor, without special instructions or authorization from the Owner, is authorized to act at his discretion to prevent such threatened loss or injury, and he shall so act. He shall likewise act if instructed to do so by the Owner. Any compensation claimed by the

Contractor on account of such emergency work will be determined by the Owner as provided in the Section - CHANGES IN THE WORK under GENERAL CONDITIONS.

- f. The Contractor shall avoid damage as a result of his operations to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, etc., and he shall at his own expense completely repair any damage thereto caused by his operation. If any damage is not repaired or acceptable arrangements for repair are not made within a reasonable period of time, the Commissioner may act to repair such damage by the Owner's forces or using another Contractor employed for that purpose, and the costs of such repair shall be deducted from any payment due the Contractor. If a damage claim has been referred by the Contractor to his insurance company, such referral shall in no way relieve the Contractor of his responsibilities.
- g. The Contractor shall shore up, brace, underpin, secure, and protect as may be necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owner or other party before the commencement of any work. The Contractor shall indemnify and save harmless the Owner and the Building Inspector from any damages on account of settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the Owner and the Building Inspector may become liable in consequence of such injury or damage to the work or adjoining and adjacent structures and/or their premises.

125 ACCIDENT PREVENTION

- a. The Contractor shall exercise proper precautions and safety measures at all times for the protection of persons and/or property and shall be responsible for all injuries and/or damages to all persons and/or property, either on or off the site, which occur as a result of his prosecution of the work under this Contract. The safety provisions of all applicable Local/State/Federal laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Owner may determine to be reasonably necessary.
- b. Machinery, equipment and trucks shall be properly guarded, and operational hazards shall be eliminated in accordance with the provisions and intent of the latest revised edition of the Manual, Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law. A copy of this manual shall be available for reference at all times in the Contractor's field office. The Contractor's attention is also called to the Section - SAFETY PROVISIONS of the GENERAL CONDITIONS.
- c. The Contractor shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment of the work under this Contract in accordance with the requirements of the applicable State/Local/Federal regulations. The Contractor shall

promptly furnish the Owner with reports concerning these matters.

- d. The Contractor shall indemnify and save harmless the Owner and the Building Inspector from any and all claims for damages resulting from personal injury, death and/or property damage, suffered or alleged to have suffered, by any person as a result of any work conducted under this Contract. See also the Section - INDEMNITY CLAUSE of the GENERAL CONDITIONS.

126 SANITARY FACILITIES

The Contractor shall furnish, install, and maintain ample sanitary facilities for the workmen. As the needs arise, a sufficient number of enclosed temporary toilets shall be conveniently placed as required by the Health/Sanitary Codes of the Local/State/Federal Government. Drinking water shall also be provided from an approved source, so piped or transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing Health/Sanitary regulations.

127 USE OF PREMISES

- a. The Contractor shall confine his equipment, storage of materials, and construction operations to the Contract Limits as shown on the Drawings and as prescribed by ordinances or permits, or as may be described by the Owner, and shall not unreasonably encumber the site or public right-of-ways with his materials and construction equipment.
- b. The Contractor shall comply with all instructions of the Owner, Building Inspector and the ordinances, codes, etc., of the Local/State/Federal Government, regarding signs, advertising, traffic, fires, explosives, danger signals, barricades, etc.

128 REMOVAL OF DEBRIS, CLEANING, ETC.

The Contractor shall, periodically or as directed during the progress of the work, remove and legally dispose of all surplus excavated materials and debris, and keep the Project Area and public right-of-ways reasonably clear. Upon completion of the work, prior to final inspection, he shall remove all temporary construction facilities, debris and unused materials provided for the work, and restore the whole site of the work and public right-of-ways to a condition satisfactory to the Engineer. Trash burning on the site of the work will be subject to prior approval of the Owner and existing Local/State/Federal regulations.

The cost of all required cleanup shall be included in the various prices bid under this Contract. The Contractor shall also include in the bid price the removal of snow from the project area.

129 LAYOUT OF WORK

The Contractor shall perform all layout work necessary for the satisfactory execution of the construction as shown on the Contract Drawings and all costs in connection therewith shall be included in the contract price. The Contractor shall employ competent personnel and all work shall be subject to the approval of the Engineer.

The Contractor shall be held responsible for the protecting and safe guarding of all control points and bench marks set by the Engineer and his own forces. Any replacement or reestablishment of control points or bench marks by the Engineer, shall be at the expense of the Contractor.

The required horizontal and vertical control necessary to perform this work is furnished on the Contract Drawings.

130 OMITTED

131 INSPECTION/ACCEPTANCE OF THE WORK

All materials and workmanship shall be subject to inspection, examination or test by the Owner and the Engineer to determine the acceptability of the work at any and all times during manufacture or construction and at any and all places where such manufacture or construction is carried on and the Contractor shall provide proper facilities for such access and inspection. The Owner or Engineer shall have the right to reject defective material and workmanship or require its correction. The Owner or Engineer shall have the right to reject materials which have not been approved prior to incorporation in the work, and the right to reject work that has been performed without inspection. Rejected materials shall be removed and replaced without charge. Rejected workmanship shall be corrected if possible to the Engineer's satisfaction without additional charge. If in the opinion of the Engineer correction is not feasible, or if correction has been attempted but is not satisfactory to the Engineer, the work must be removed and replaced without additional charge. If the Contractor fails to proceed at once with the correction or replacement of rejected workmanship or defective materials, the Owner may by Contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any moneys which are due or may become due the Contractor, without prejudice to any rights or remedies of the Owner.

Neither inspection, testing, approval nor acceptance of the work in whole or in part by the Owner or its agents shall relieve the Contractor or his sureties of the full responsibility for materials furnished or work performed not in strict accordance with the Contract.

The assignment of a part time inspector to this project will in no way relieve the Contractor of the requirements to comply with all of the specifications.

Where the Contractor has been directed (by the Engineer) to leave certain items of work exposed for inspection, and he fails to do so, he will be required to uncover such work, at his own expense.

132 FINAL INSPECTION

When the improvements embraced in this Contract are substantially completed, the Contractor shall notify the Owner in writing that the work will be ready for final inspection on a definite date which shall be stated in the notice. The notice will be given at least ten (10) days prior to the date stated for final inspection, and bear the signed concurrence of the representative of the Owner having charge of inspection. If the Owner determines that the status of the improvements is as represented, it will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable. The inspection party may also include the representative of the Federal Agency, other Governmental Agencies and representatives of each department of the Owner having charge of improvements of like character when such improvements are later to be accepted by the Owner.

133 INSURANCE

The insurance requirements for this Contract are specified in Section J of these documents.

134 WARRANTY OF TITLE

No material, supplies or equipment incorporated or to be incorporated in the work shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor shall warrant good title to all materials, supplies and equipment installed or incorporated in the work and upon completion of all work, shall deliver to same together with all improvements and appurtenances constructed or placed thereon by him to the Owner free from any claims, liens or charges. Neither the Contractor, nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract, shall have any right to a lien upon any improvement or appurtenance thereon. Nothing contained in this paragraph, however, shall defeat or impair the right of person furnishing materials or labor to recover under any law permitting such persons to look to funds due the Contractor in the hands of the Owner. The provisions of this paragraph shall be inserted in all Subcontracts and material Contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal Contract is entered into for such materials.

135 GENERAL GUARANTEE

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the improvements embraced in this Contract by the Owner or the public shall constitute an acceptance of work not done in accordance with any Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The

Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting there from which shall appear within a period of two (2) years from the date of final payment. If any work is done under the guarantee and maintenance provisions, the guarantee and maintenance bond shall be extended with respect to such repair or replacement work for a period of two (2) years from the date the maintenance work was completed.

136 NO ARBITRATION

All claims, counterclaims, disputes and other matters in question between the Owner and the Contractor, not otherwise resolved, arising out of or relating to this agreement or its breach shall be decided in a court of competent jurisdiction. The Owner and the Contractor hereby agree that there shall be no requirement for arbitration of any controversies or disputes hereunder, all such matters to be resolved at law.

137 RISK OF LOSS

The Owner assumes no responsibility for the condition of existing buildings and structures and other property on the Project Area nor for their continuance in the condition existing at the time of issuance of the Invitation for Bids or thereafter. No adjustment of Contract Price or allowance for any change in conditions which may occur after the Invitation for Bids has been issued will be made except as provided for herein.

138 REQUIRED PROVISIONS DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

139 CORRECTIONS

The Engineer shall have the right to correct any errors or omissions in the Contract, specifications, or Contract expression of their intent.

Such corrections shall take effect from the time that the Engineer gives notice thereof, and any alterations in the work rendered necessary thereby shall be made as corrected. Any conflict between the approved Contract Drawings and specifications, or any disagreement in measurements upon the Contract Drawings must be submitted to the Engineer before construction of the work.

140 SAFETY PROVISIONS

The safety provisions of applicable laws, building and construction codes and the safety codes approved by the State Labor Commissioner shall be observed.

The provisions of the Federal Occupational Safety and Health Administration's "Occupational Safety and Health Standards" and "Safety and Health Regulations for Construction" shall be observed.

Should at any time during the work under this Contract any Local/State/Federal safety inspector visit the site for the purpose of a safety inspection, the Contractor shall immediately notify the Engineer's representative on the job site.

141 CONNECTING TO EXISTING WORK

The Contractor shall remove such existing masonry, concrete, equipment and piping as is necessary, in order to make the proper connections to the existing work at the locations shown. Also, he shall make the necessary pipe line, roadway and other connections at the several points in order that on completion of this Contract, water, sewage, or storm water, as the case may be, will flow through the several pipe lines and structures. Unless otherwise specified herein, no extra payment will be made for this work, but the entire cost of the same shall be included in the unit or lump sum prices Bid for the various items of the work to be done under this Contract.

142 EXISTING IMPROVEMENTS

The Contractor shall conduct his work so as to minimize damage to existing improvements, except where specifically stated otherwise in the specifications or drawings; it will be the responsibility of the Contractor to restore, as nearly as practical, to their original conditions all improvements on public or private property damaged by his operations.

The utility mains, ducts, poles and services in the construction area, where shown on the Contract Drawings are at the approximate locations furnished by various utilities concerned. Whenever existing improvement information is either indicated on the drawings or supplied to the Contractor at a later date, it is understood that such information is furnished in good faith for the Contractor's convenience. The Contractor must interpret this information according to his own judgment, and must make his own determinations regarding the location of all improvements. No claim will be allowed because of incorrect or incomplete existing improvement information.

The various utility companies have been made aware of the pending construction and are generally familiar with the locations of conflicts in the case of the proposed construction. The various utility companies will make all adjustments to their own lines except where otherwise shown on the Contract Drawings or specified. The Contractor shall give ample notice to the various utilities so that existing lines can be marked in the field and adjustments made. The Contractor shall cooperate fully with the various utilities and shall plan his work so that least interference is caused for all

parties concerned. No additional payments shall be made to the Contractor for delays caused by utility interference. The Contractor shall support all utility lines uncovered during excavation.

143 ACCESS TO SITE

The Contractor shall make every effort to minimize damage to all access routes, and he shall be required to restore them to their original condition. The Contractor shall acquire all necessary permits for working in, on or from public streets or right-of-ways and for securing additional access rights thereto with respect to the County and State Agencies. No Street Opening Permits will be required by the Village, but the ordinances and rules and regulations pertaining thereto are in full force and effect as if repeated herein.

All costs of the removal and restoration to original conditions of walls, fences, structures, utility lines, poles, guy wires or anchors, and other improvements required for passage for the Contractor's equipment shall be borne by the Contractor. The Contractor shall notify the proper authorities of the Owner and all utilities of any intended modification or disruption to their property prior to the start of construction and shall cooperate with them in the scheduling and performance of his operation.

If the Contractor, by direct negotiation and bargain with any land owner, lessee or tenant, has secured for himself any right to use more space or greater privileges than the space provided by the Owner, for purposes incidental to the performance of the Contract, he shall, upon request of the Engineer, furnish to the Engineer proper evidence that such additional rights have been properly secured and assurance that no damage to or claim upon the Owner will arise therefrom. The Owner shall not be liable in any way for any expense incurred by the Contractor in securing any such right to use additional property.

The Contractor shall be responsible for reimbursing the Owner and others for any and all losses, damage or expense which the Owner and/or Local Government or those others may suffer, either directly or indirectly or through any claims of any person or party, for any trespass outside the spaces and right-of-ways provided by the Owner to the Contractor of any violation or disregard of the terms and conditions established for the use or occupancy of those rights or for negligence in the exercise of those rights.

The Owner may retain or deduct from any sum or sums due or to become due to the Contractor such amount or amounts as may be proper to insure the Owner against loss or expense by reason of the failure of the Contractor to observe the limits and conditions of the right-of-ways, rights-of-access, etc., provided by the Owner.

144 ACCESS TO ADJACENT PROPERTIES

The Contractor shall at all times maintain vehicular and pedestrian access to all properties abutting or adjacent to construction under this Contract, all at the Contractor's sole expense. In the event that normal access is cut off to a particular property due operations or proposed work called for

under the Contract, the Contractor shall, at his sole expense, make other arrangements for access to said property satisfactory to the property owner, tenant and the Building Inspector.

145 USE OF ROADWAYS

During the progress of the work, the Contractor shall make ample provision for both vehicular and foot traffic on any public road, and shall indemnify and save harmless the Owner from any expense whatsoever due to his operations on/over said roadways. The Contractor shall also provide free access to all fire hydrants, water and gas valves located along the line or in the vicinity of his work. Gutters and waterways must be kept open or other provisions made for the removal of storm water. Roadway intersections may be blocked but one half at a time and the Contractor shall lay and maintain temporary driveways, bridges and crossings, such as in the opinion of the Building Inspector are necessary to reasonably accommodate the public and to provide access to private roadways. In the event of the Contractor's failure to comply with these provisions, the Owner may cause the same to be done, and will deduct the cost of such work from any moneys due or to become due the Contractor under this Contract, but the performance of such work by the Owner or at its insistence shall serve in no way to release the Contractor from his general or particular liability for the safety of the public or the work.

146 INDEMNITY CLAUSE

The Contractor agrees to protect, defend, indemnify and hold the Owner and its employees free and harmless from and against any and all losses, claims, liens, demands and cause of action of every kind and character including, but not limited to, the amount of judgments, penalties, interest, court costs, legal fees incurred by the Owner arising in favor of any party, including claims, liens, debts, personal injuries, including employees of the Owner, death or damages to property (including property of the Owner's) and without limitation by enumeration, all other claims or demand of every character occurring or in anyway incident to, in connection with or arising directly or indirectly out of the said agreement. The Contractor agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if (claims, etc.) is groundless, false or fraudulent.

147 DISPUTES

- a. Any disputes between the parties arising out of, or in any way related to this Contract and/or the performance of the same, or its interpretation, shall within ten (10) days of the event or action giving rise to the dispute be presented to the Building Inspector. All papers pertaining to the dispute shall be filed in quadruplicate. Such notice shall state the facts surrounding the dispute in sufficient detail to identify the dispute, together with its character and scope. In the meantime, the Contractor shall proceed with the work under this Contract as directed. Any dispute not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the dispute is of a continuing

character and notice of the dispute is not given within ten (10) days of its commencement, the dispute will be considered only for a period commencing ten (10) days prior to the receipt by the Building Inspector of notice thereof. The Contractor shall in no case allow any dispute to delay the work under this Contract.

- b. As soon as practicable after the final submission of all information, the Owner shall make a determination of the dispute. Said decision of the Owner shall be a condition precedent to any further action on the dispute. However, upon certification in writing by the claimant that the dispute has been submitted in its final form, the Owner shall be obliged to render a decision on said dispute within sixty (60) days of the date of said certification. Should the Owner fail to render its decision within the aforementioned sixty (60) day period, its decision will not be a condition precedent to any further action on the part of the claimant.
- c. Each decision by the Owner will be in writing and will be mailed to the Contractor by registered or certified mail, return receipt requested, directed to this last known address.
- d. In the event of an unfavorable decision by the Owner, the Contractor shall have the right to contest said decision as provided for under the provision of this Contract. The Contractor shall in no case allow the dispute or decision to delay the work but shall notify the Owner promptly that he is proceeding with the work under protest and he may then except the matter in question from the final release.

148 GENERAL MUNICIPAL LAWS OF NEW YORK STATE

The attention of the Contractor is directed to the fact that all pertinent General Municipal Laws of the State of New York shall be adhered to. In addition, this Contract is subject to all New York State statutes, including but not limited to the Village Law, Highway Law, Real Property Law and Finance Law.

149 “OR EQUAL” CLAUSE UNLESS OTHERWISE SPECIFIED

Whenever a material, article or piece of equipment is identified on the Contract Drawings or in the specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., the intent is to establish a standard. Any material, article or equipment of other manufacturers and vendors of equally high quality (particularly with regard to points specified in the specifications) which will perform equivalently within the design ranges specified will be equally acceptable provided that the material, article or equipment so proposed is, in the opinion of the Engineer, of equal substance and function. Further, the manufacturer must agree to comply fully with the warranty requirements of the specifications. The Contractor may not assume that substitute equipment will be approved by the Engineer and non-approval of said equipment will form no basis for a claim for additional compensation by the Contractor. No substitute equipment shall be purchased or installed by the Contractor without the Engineer's written approval. If the Engineer's approval is obtained for alternate equipment, the structures, buildings, piping or electrical necessary to accommodate the equipment and if engineering is required due to substitution of other material, the Contractor shall reimburse the Owner for the Engineering

service. The Contractor must pay for any laboratory testing required to establish the equality of his proposal.

150 CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES

The Contractor's attention is directed to the State of New York, Department of Labor, Board of Standards and Appeals Industrial Code Rule 53 - "Construction, Excavation and Demolition Operation at or near Underground Facilities" effective April 1, 1975.

The Contractor will be required to comply with all applicable requirements of Industrial Code Rule 53.

Requests for copies by mail should be directed to State of New York, Department of Labor, Office of Public Information, State Office Building Campus, Albany, New York 11201; or, single copies may be obtained by applying in person at the Department's office in Albany or in New York City at the Department of Labor, Two World Trade Center, New York, New York 10047.

151 REVIEW BY OWNER

The Owner, its authorized representatives and agents shall, at all times have access to and be permitted to observe and review all work, material, equipment, payrolls, personnel records, employment conditions, material invoices and other relevant data and records pertaining to this Contract, provided, however, that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through its authorized representative or agents.

152 DEDUCTIONS FOR UNCORRECTED WORK

If the Owner deems it not expedient to require the Contractor to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the Contractor and the Owner and subject to settlement in case of dispute, as herein provided.

153 PATENTS

The Contractor shall hold and save the Owner and Engineer, their officers, and employees, harmless from liability of any nature of kind, including but not limited to court costs and attorney's fees, for or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the Contract, including its use by the Owner, unless otherwise specifically stipulated in the Technical Specifications.

154 INFORMATION FROM OWNER

In addition to showing the construction under this Contract, the drawings may show certain information obtained by the Owner regarding conditions and features which exist at the site of the work, both at and below the surface of the ground. The Owner and the Engineer expressly disclaim any responsibility for the accuracy or completeness of the information given on the drawings with regard to the existing conditions and features and the Contractor will not be entitled to any extra compensation on account of inaccuracy or incompleteness of such information. The information which is shown is only for the convenience of the Contractor, who must verify this information to his own satisfaction.

155 EXISTING UTILITIES, STRUCTURES AND FIXTURES

The Contractor will be required, at his own expense, to do everything necessary to support, protect and sustain all sewers, water, gas mains or service pipes; electric light, power poles, telephone or telegraph poles, manholes, valve boxes, conduits and any and all utilities, structures or fixtures laid across or along the site of the work. In case any of the said utilities, structures or fixtures are damaged by the Contractor, they shall be repaired by the Contractor at his own expense, or by the authorities having control of the same and the expense of said repairs shall be deducted from the moneys due or to become due the Contractor under this Contract.

Should it become necessary to remove or relocate any utilities, structures or other fixtures, due to a grade and alignment conflict which would require the proposed utility, structure or fixture (not trench excavation, sheeting or other construction features) to occupy the same space as the existing pipe, pole, conduit and/or other fixture. The Contractor shall notify the Owner of the obstruction and the Engineer of the location and the circumstances and shall cease work (which might prove detrimental to the utility, structure or fixture encountered) if necessary until satisfactory arrangements have been made with the Owners of the same to properly care for and relocate them. Should it be necessary to cease work and a delay is caused thereby, the Contractor shall have no claim for damages or any claim other than for an extension of time. See GENERAL CONDITIONS, CLAIMS FOR EXTRA COST.

The removal or relocation of such interferences may be done by the Owner of the interfering utility or structure with his own forces, or by a Contractor whom he may engage for such purpose, or by private Contract between the utility company and this Contractor; or alternately he may request the Owner to cause this work to be performed under this Contract (at the utility company's expense). In the last instance, the Contractor shall perform such work under the terms of this Contract and shall be compensated as described in GENERAL CONDITIONS - CHANGES IN THE WORK, except where SPECIAL CONDITIONS OR TECHNICAL SPECIFICATIONS provide otherwise.

If the Contractor desires temporary changes of location of his convenience for any reason whatsoever, of water lines, gas lines, sewer lines, wire lines, service connections, water and gas meter boxes, valve boxes, light standards, cableways, signals and any other utilities, structure or fixtures, he shall satisfy the Engineer and Owner that the proposed relocation does not interfere with his or other Contractor's operations, or the requirements of the Contract Drawings and does

not cause an obstruction or a hazard to traffic. The Contractor shall make his own request to the utility companies, pipe owners or other parties affected for such relocation work. Such relocation work for the convenience of the Contractor shall be made solely at the Contractor's expense.

The Contractor shall not remove or relocate any utility, structure, or fixture without the written approval of the Owner of that utility, structure or fixture unless otherwise shown on the Contract Drawings, specifications or ordered by the Engineer.

156 CONTROL OF EXISTING FLOWS

During the construction of all proposed work, the Contractor shall take every precaution and do the necessary work to maintain the flow of storm drainage, sanitary sewage and natural flows through the working areas. The Contractor is solely responsible for providing his flow control system and there shall be no separate payment for the required work. The Contractor shall be responsible for any flooding or sanitary backup on his work and to the property owners affected by such flooding or backup. The Contractor shall make such provisions as may be required by the Local, State or Federal Health officers or any other public bodies with jurisdiction over the flow of storm drainage, sanitary seepage and natural flows.

In the event the Contractor uses water from natural water sources for his operations, intake methods shall be such as to create no harmful effects; and where water is taken from a stream, reasonable flow downstream from the intake shall be maintained.

157 SEWAGE, SURFACE, GROUNDWATER, AND FLOOD FLOWS

The Contractor shall furnish all the necessary equipment, shall take all necessary precautions, and shall assume the entire cost of handling any sewage, seepage, storm, groundwater, surface and flood flows which may be encountered at any time during the construction of the work. The manner of providing for these flows shall meet the approval of the Engineer and the entire cost of said work shall be included in the unit or lump sum prices bid for the various items of the work to be done under the Contract.

The Contractor shall employ such feasible and practical methods in his operations as will prevent pollution, sedimentation or the introduction of impurities or other objectionable materials that may become suspended or dissolved in waters reaching streams, ponds, lakes, water supplies, or other water bodies.

Water shall not be disposed of by discharging it into any street gutter, drainage channel, existing drainage system, natural stream, waterway, lake, pond, or bog, etc., without the prior approval of the Authority having jurisdiction thereof. Should such approval be obtained, the Contractor shall ensure that no solids, debris, suspended soil particles, impurities, or pollutants are allowed to enter the drainage system. The Contractor shall be fully responsible for any damages to these systems resulting from his disposal methods and any necessary measures (such as but not limited to cleanup) required to return the system to preconstruction conditions. In addition to the above, disposal on private property shall be only with the prior written permission of the property Owner.

Any water used for any purpose by the Contractor shall not be discharged in such a way as to create pollution, sedimentation or other adverse effects upon the aforementioned streams or waters.

In addition, the Contractor shall provide all necessary pumps, dams, drains, ditches, flumes, well points and other means of excluding and removing groundwater or water from any other source, from trenches, tunnels and other parts of the work and for preventing the trench slopes from sliding or caving. He shall sufficiently dewater all trenches, tunnels or other excavations to completely dry out and solidify the bottom of the trench to whatever depth is necessary below said bottom of the trench to provide a firm solid, completely dry bottom on which to place foundation material, lay pipe or build a structure.

It is expressly understood that the Engineer or Owner is not responsible for any flooding, high water tables, underground water or any other water problems which may be encountered on any portion of the work called for under this Contract and that the Contractor must include all anticipated costs for dewatering all excavations in the price bid under this Contract.

158 WEATHER CONDITIONS/WORK IN FREEZING WEATHER

In the event of temporary suspension of work, or during inclement weather, or whenever the Engineer shall direct, the Contractor will, and will cause his Subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors so to protect his and their work, such materials shall be removed and replaced at the expense of the Contractor.

Unless written permission be given, work liable to be affected by frost or freezing shall be suspended during freezing weather. When work proceeds under such a condition, the Contractor shall provide approved facilities for heating the materials and for protecting the finished work.

159 MAINTENANCE AND PROTECTION OF TRAFFIC

The provisions herein shall be deemed in effect unless more stringent provisions are called for within the Technical Specifications. The Contractor will be required to protect and maintain pedestrians and vehicular traffic.

The Contractor shall maintain and protect traffic by so conducting his construction operations that the traveling public is subjected to a minimum of delay and hazard.

Residents along the existing roads and those having business along them shall have safe means of ingress and egress at all times. Traffic shall be maintained at the intersections of all roads or streets crossing the road construction. Where directed by the Commissioner, the Contractor shall provide such adequate and proper bridges over excavations as may be necessary or directed for the purpose of accommodating pedestrians or vehicles.

In the event any portion of a public road must be closed to traffic, permission shall be secured by the Contractor from the Village Superintendent of Highways or County or State Highway

Department if in their jurisdiction and notice must be given by the Contractor to the Police and Fire Departments, and adequate detour sign posted.

Approved signs shall be provided along all highways while work is in progress, and where traffic direction is required, flagmen shall be designated by the Contractor to direct traffic past the equipment, machinery or construction operations. Construction equipment shall be removed entirely from the traveled roadway when work is shut down for the day and two lanes of traffic shall be maintained at night. Barricades shall be placed wherever the safety of the traveling public requires, where a road is officially closed, where an excavation is being made, or where heavy construction equipment is operating. In addition, barricades shall be placed where they are deemed necessary in the opinion of the Commissioner of Public Works or the Chief of Police, to direct traffic or to prevent entrance to streets of areas where construction is in progress.

Barricades shall be in accordance with the Owner's Public Works Specifications, and shall be lighted as provided therein. On traveled roads, a lighted warning sign is to be placed two hundred (200') feet before the approach of barricades, or as is necessary for safety along the approach line.

Where trenches have been cut, barricades, red flags, and warning signs, all properly lighted, shall be placed at frequent intervals and maintained until the trenches have been properly backfilled and compacted.

All barricades, lights, flags, and bombs shall be maintained intact at all times overnight, over the weekends, holidays or if the project is shut down for any period of time.

160 HOURS OF WORK

No work shall be done on the job Monday to Saturday before 8:00 a.m. nor after 7:00 p.m. and Sunday before 10:00 a.m. or later than 7:00 p.m., unless written approval for other times is given by the Owner at least forty-eight (48) hours in advance. No work shall be done on Legal holidays which include: New Year's Day, Martin Luther King Jr.'s Birthday, Presidents' Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, and Christmas Day. No additional payment will be made by Owner for overtime work under any circumstances unless a prior written order has been given by the Building Inspector.

161 WATCHMAN

Contractor may, at his option and expense, employ a watchman to protect property at all times during which work is not under active supervision of his Construction Superintendent. Owner will not assume responsibility for losses or damage to property through theft or vandalism.

162 FIELD COPIES

The Contractor shall keep one copy of the specifications, plans and all shop drawings in good order, available to the Commissioner and his representative at the job location.

163 EMERGENCY WORK

If in the opinion of the Commissioner of Public Works, the work is carried on in such fashion that the public safety, private property, streets or utilities are endangered, or that the work is carried on in such a manner as to create unnecessary inconvenience to the public the Commissioner shall, immediately upon given notice, be authorized to undertake such corrective measures as he may deem to be necessary.

164 PROTECTION

The Contractor shall protect and maintain all property, structures and utilities, public or private and shall provide whatever means are required to do so, as part of this Contract. The Contractor shall take steps to protect the site and neighborhood from dust, mud, paint, and inconvenience. He shall take such steps as are necessary to prevent mud and silt from washing off the project area, prevent dust from blowing about the neighborhood, and prevent loaded trucks from spilling material upon traveled roadways. Calcium chloride shall be used to settle dust whenever required by the Engineer.

If the work is stopped for any purpose, all rigging, scaffolds, and equipment shall be made secure to prevent any danger from wind, storm or accidents.

The Contractor must put up and maintain such barriers, signs and red lights as will effectively protect his work, materials, and prevent accidents in consequence of the work. Steps shall be taken to prevent trespass wherever the public may be endangered. He shall assume all liability occasioned in any way by his acts or neglect, or those of his agents, employees or workmen.

The Contractor shall so control his operation as to prevent damage to trees and shrubs which are to be preserved. Protection may include coverings, fences and boards lashed to trees to prevent damage from blasting or machine operations or hand tunneling through root areas. The Contractor shall carefully cut off all branches of trees which may have been broken or injured during construction. All tree repairs and painting of tree wounds shall be as specified in the New York State Department of Transportation Specifications.

Should work necessitate the moving of a survey monument, the property owner, Village, County or other agency which can reasonably be assumed to have established the monument, shall be informed far enough in advance to arrange for adequate referencing. In no case, however, shall a monument be disturbed without prior approval of the Engineer.

All barricades, lights, flags, bombs and any other means set up to protect the public or the work from injury or damage shall be maintained overnight, over weekends and holidays, or for any duration during which the job is not complete but the work may be shut down. Additional precaution such as filling of trenches or installation of steel plates may be required in areas of heavy traffic, on weekends extended by legal holidays or when there is expectation of inclement weather.

165 PAYMENT FOR GENERAL AND SPECIAL CONDITIONS

The cost of the performance of any work required by these General Conditions shall be considered to be a part of the Contractor's Base Bid if the Contract is a Lump Sum Contract, and spread out among all the unit prices, if the Contract is a Unit Price Contract. There will be no additional payment for work required by these General Conditions.

Unless otherwise specified, the cost of the performance of any work required by the Special Conditions shall be considered to be a part of the Contractor's Base Bid, if the Contract is a Lump Sum Contract, and spread out among all the unit prices, if the Contract is a Unit Price Contract. There will be no additional payment for work required by the Special Conditions.

166 DAMAGE TO PRIVATE PROPERTY

If the Contractor damages private property or facilities outside the designated work area (which work area is to be restored under the restoration provisions of the Contract), he shall restore the private property or facilities promptly and completely in the same manner as specified under the restoration provisions of these specifications. If he does not do so within a reasonable period of time, as determined by the Commissioner, the Owner may retain or deduct from any sum or sums due to the Contractor such amount or amounts as are necessary to correct the condition and employ the Owner's forces or another Contractor to do the corrective work. The fact that the Contractor has referred a damage claim to his insurance carrier shall not relieve him of liability for prompt and full restoration of damage. For purposes of this section of the Contract, the Owner will treat what are essentially private facilities within a public right-of-way (including but not limited to mailboxes, shrubs, flowers and other plantings, walls, light poles, etc.) in the same manner as described above for private property.

167 RESTORATION

All man-made and natural features in the construction site disturbed or removed for the proper completion of the work shall be reset or replaced. All man-made or natural features damaged or destroyed shall be repaired or restored to a condition equal to or better than that existing at the start of the work, with materials equal to or better than the original ones.

In cases where it is impossible to replace an item with an equivalent item (large trees, exotic plants) the Contractor may, subject to the approval of the Engineer, substitute other similar items whose total value shall equal that of the destroyed one.

Where the work area extends onto private property, the Contractor shall make all reasonable attempts to satisfy the Owners. In case of dispute, the Commissioner of Public Works shall be the judge as to the reasonableness of equivalency of repaired and restored features.

If the Contract documents contain more detailed or more stringent specifications for restoration than in this section, the more detailed or stringent specifications shall take precedence over this

section. If the Contract documents do not contain detailed specifications for restoration, then this section expresses the intent of the Owner; all published specifications of the Owner containing details of construction applicable to items of restoration (e.g. grass, pavement, etc.) shall be deemed included in these Contract documents as if set forth in full, if not actually printed herein.

All restoration work shall be maintained for a period of one year after completion of the project by this Contract and secured by the maintenance bond.

If the Contract documents contain a specific payment clause for restoration, then that clause shall apply; otherwise payment for restoration shall be as described in Section 165.

168 DRUG AND ALCOHOL TESTING

As a Contractor providing services to the Owner involving the driving of commercial vehicles, we are obligated by federal law/regulation to ensure that you are in compliance with drug and alcohol testing requirements under 49 CFR Part 382. If your company's services involve driving commercial motor vehicles with a gross vehicle weight of more than 26,000 pounds (inclusive of a towed unit with a gross vehicle weight of more than 10,000 pounds), or are used in the transportation of hazardous materials in a quantity requiring "placarding," or are designed to carry more than 15 passengers including the driver, this is applicable to you.

By federal regulation, verification must be completed and submitted to the Owner every six months.

SPECIAL CONDITIONS

201 SCOPE OF WORK

The work consists of replacing 866 water meter cellular endpoints throughout the Village of Cold Spring's water distribution system. The Village has procured and stored the endpoints. The Contractor shall install the endpoints to outside wall locations with weathertight seals and enclosures. The Contractor shall activate endpoints and verify their functionality. Other related work shall include advertising, notifying customers, maintaining information database, and any endpoint appurtenances required for a complete installation, all in accordance with the Specification.

The Village of Cold Spring administers the distribution of water to 866 customers in the Village including out of district users in the Village of Nelsonville and the Town of Philipstown.

The Contractor shall coordinate with the Village's Water & Sewer Superintendent, Matt Kroog, to obtain the names and contact information for the existing customers. The Contractor shall notify the customers of the work that is going to be performed, make appointments with the customers for times to replace the endpoints, record information concerning the meters using the Village supplied form, replace the endpoints and appurtenances, test the new installation, return old endpoints, and dispose of debris resulting from the installation.

202 TIME OF COMPLETION

The Contractor shall provide the required bonds, insurance and other documents as may be required to complete this agreement within ten (10) business days (in the State of New York) of notice of award.

Work shall proceed in the field within five (5) business days of the Contract signing. Once work has started, it shall proceed continuously and diligently. All items of work shall be completed and approved within one hundred twenty (120) calendar days of the Contract, with all of the endpoints installed and activated by December 31, 2022.

203 LIQUIDATED DAMAGES

As actual damages for any delay in completion of the work which the Contractor is required to perform under this Contract are impossible to determine, the Contractor and his Sureties shall be liable for and shall pay to the Owner the sum of five hundred dollars (\$500.00) as fixed, agreed as liquidated damages for each calendar day of delay from the above stipulated completion, or as modified in accordance with the GENERAL CONDITIONS, until such work is satisfactorily completed and accepted.

204 PROGRESS SCHEDULE

The Contractor is advised that construction operations on this project are to be confined to as short a time period as possible. That is, once any work has begun in this area, the Contractor will be required to proceed diligently and continuously until all of the work in this area is completed. The Progress Schedule submitted by the Contractor under Article 109 of the GENERAL CONDITIONS shall indicate the Contractor's compliance with this requirement, and the Progress Schedule will not be approved unless such compliance is incorporated in the chronological order of the work.

205 NOTICE TO BEGIN WORK

Prior to beginning saw cutting, site excavation and other preliminary work necessary before full construction starts, the Contractor shall notify the Engineer and deliver to him a schedule in accordance with the GENERAL CONDITIONS, Article 109 "PROGRESS SCHEDULE".

206 COORDINATION WITH OTHER AGENCIES

Contractor shall allow Village Work Forces to carry out all work that is required to be completed simultaneously with his own work.

The Contractor is responsible to ensure that his work is coordinated with any outside agency for work that must be accomplished prior to installation of any resurfacing material. The Contractor will not be allowed to proceed until such coordination and work have been completed.

Refer to Specification 013113 "Project Coordination" for additional information.

207 RESTORATION

The Contractors attention is directed to the General Conditions Section 167 and the technical specifications. The Contractor shall be required to restore all disturbed areas due to project construction and shall provide all labor, materials and equipment required to satisfactorily replace items disturbed as detailed in the referenced specification. The costs related to all restoration work should be included in other bid items of work for this project.

208 RESIDENTIAL & BUSINESS ACCESS

The Contractor shall maintain at all times egress and ingress to all residential and business locations. The Contractor shall provide such adequate and proper bridging over excavations as may be necessary to maintain normal residential and business operations. The Contractor shall insure that during the course of his work that pedestrians and vehicles shall have full access to walkways, driveways and roadways within the project areas. Failure to provide proper access will

result in a Contract payment deduction as determined by the Engineer.

209 STAGING AND MOBILIZATION

The Contractor is advised to contact the Village Highway Superintendent for off-site locations that may be used for staging and mobilization. The Contractor shall not be allowed to stockpile materials or store equipment within the project area.

210 TEMPORARY SANITARY FACILITIES

As outlined in the General Conditions of the Specifications under Article 126 - Sanitary Facilities, the Contractor shall furnish, install and maintain, for the duration of the project, temporary toilet facilities or coordinate with the Village for use of Village facilities. Any costs involved for satisfying this requirement shall be included in other bid items of work. Prior to construction, the Contractor shall request approval from the Village Highway Superintendent for a safe and proper location to set up the facility for the duration of the project.

211 PRECONSTRUCTION MEETING

Prior to beginning any work, the Contractor, the Engineer, and Village Representative shall meet at the Village Hall to review scope of the project, schedule of work, equipment, safety requirements, reporting requirements, and coordination with any agencies. At this meeting, the Contractor shall identify personnel and contact information of those who will be conducting the work. The Contractor shall use this opportunity to cover any remaining questions or concerns.

Progress meetings throughout the duration of the project shall only be held ad hoc as determined by the Engineer to facilitate successful completion of the project.

212 PAYMENT REQUEST FORM

The Contractor shall be required to prepare and submit a payment request form on the Standard AIA Document G702 Application and Certificate for Payment and shall also prepare a bid item spread sheet in a format prescribed by the Engineer. Requisitions for payment will not be processed unless the proper format is used.

In addition to the required AIA documents, a Village voucher must also be submitted. The Village voucher can be obtained by request from the Engineer's office.

213 MATERIAL AVAILABILITY

The Contractor shall schedule construction work to coordinate with the availability of construction materials. The Contractor will not be permitted to begin certain phases of excavation work until

the materials required to complete the work are approved by the Engineer and are readily available for installation.

214 STORED MATERIALS

The Contractor shall not be paid for stored materials. The Contractor shall only be paid for material completely and properly installed and approved by the Engineer.

215 CLOSE OUT AND CLEAN UP

Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the Engineer: an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Village might in any way be responsible, have been paid or otherwise satisfied; data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent, and in such form as may be designated by the Village; and all required certified payrolls.

Additional requirements for project closeout and final payment shall include: general release form; evidence of payment and release of liens in accordance with conditions of the Contract; consent of surety to final payment; and, final copies of all inspection sheets and accompanying photographs for each installation if requested.

If required, the manufacturer's representatives shall provide initial training of installers to review mounting and activation of cellular endpoints and diagnosing difficulties in activating endpoints.

During the course of the work, the Contractor shall keep all work areas in clean and neat condition. At the completion of each installation, the Contractor shall dispose of all residue, debris, waste, etc. resulting from the construction work. The Contractor shall only use cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacture of the material. All clean-up shall be performed to the satisfaction of the Village and Property Owner. If the Contractor's clean-up activities are not satisfactory, the Village shall have such clean-up performed and shall deduct all costs incurred from monies otherwise due the Contractor. At the conclusion of the all work, the Contractor shall remove and haul away equipment, temporary structures, and any other refuse remaining from the project and shall leave the entire site of work and staging area in a neat and orderly condition. All waste materials shall be disposed of in a legal manner. All old endpoints and unused materials owned by the Village shall be left neatly in a location coordinated with the Village Water & Sewer Superintendent.

TECHNICAL SPECIFICATIONS

SECTION 012213 – UNIT PRICE MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 Summary: This section describes the work and/or materials included in each unit price item on the Bid Form

1.2 Price and Payment Procedures

A. Mobilization: An ALLOAWANCE is to include all project related office expenses, bonding and insurances, temporary storage and office requirements, project coordination (i.e., advertisements, making appointments with owners, etc.), project reporting, storing existing meters, disposal of meters, clean-up, etc. An allowance of \$5,000 will be provided for this item.

B. Endpoint Installation and Activation Less Than 25 ft From Meter: This EACH item is to include the labor, materials and tools needed for the Contractor to install the endpoint and connecting to the encoder with 25 ft of wire. Each unit shall have a factory mounted “nicor” push-on connector. This item is to include mounting the endpoint to an outside wall location with enclosure in a location that allows proper communication, connecting the endpoint to the encoder, cleanly routing the communication wiring from the encoder to the endpoint, recording the serial number of the endpoint, activating the endpoint, troubleshooting, and any other labor or material required to complete the work.

C. Extended Endpoint Wiring Greater Than 25 ft Less Than 50 ft: This EACH item is to include the labor, materials and tools needed to procure and connect splicing kits to provide a connection from the new endpoint to the meter encoder. The item shall include cleanly stapling/fastening the wire, staples and splices to obtain signal to the endpoint. The Contractor shall supply the required wire and splicing kits.

1.3 Payment

A. Other than Mobilization, items shall be paid for the number of EACH installed complete on the basis of the confirmed number of units installed during the requisition period.

PART 2 PRODUCTS

None This Section

PART 3 EXECUTION

None This Section

END OF SECTION

SECTION 013113 – PROJECT COORDINATION

PART 1 GENERAL

1.1 Summary

- A. This section describes minimum requirements needed to perform coordination required in the course of endpoint replacement. Coordination includes making appointments for replacing and mounting the endpoints. The Contractor must obtain the cooperation of:
1. Residents/Property Owners and Business Owners,
 2. Village of Cold Spring Staff,
 3. As required, utility companies, County Health Department, emergency services, other Contractors, etc.
- B. Agencies/Utilities involved in this work may include:
1. Village of Cold Spring Police and Putnam County Sheriff's Department,
 2. Village of Cold Spring Water & Sewer Department,
 3. Haldane Central School District,
 4. If needed, Putnam County Department of Health, New York State Department of Transportation (NYSDOT), Cold Spring Fire Company, Village of Cold Spring Highway Department, Central Hudson Gas & Electric, Verizon, Cablevision, and any other agency or utility affected.

1.2 Price and Payment Procedures

- A. All Work performed under this section shall be paid for under Mobilization/Demobilization bid item.

1.3 Action Submittals/Informational Submittals

- A. List of all contact information including Contractors' personnel managing the project, emergency contact information for the Contractor, and Village's personnel including the Engineer. This list will be distributed to the Contractors' personnel and the Village's personnel including the Engineer.
- B. Press Release for the purpose of notifying the public of the company performing the Work and the tentative schedule. Putnam County News and Recorder is the local newspaper used for public notices.

- C. Copies of driver's licenses and company identification badges for all company personnel managing and performing the Work.
- D. All standard notices to Residences/Property Owners (letters, door hangers, etc.)
- E. Database for Record of Contacts

1.4 Closeout Submittals

- A. Database of Contacts with water system customers.

1.5 Project Specific Coordination

A. Village's Responsibilities

1. It is the intent of these specifications to minimize the Village's involvement in the project to only those tasks that specifically require the Village's presence or authority.
2. At the time of the Award of the Bid, the Village will prepare a statement for the press and a letter to be mailed to all customers providing the name of the Contractor, generally describe the work to be performed, and the intended schedule for the work. This letter shall serve as a letter of introduction for the Contractor to make further contacts with the Village's water system customers included in the project.
3. The Village shall supply a list of the following information for all installations:
 - a) Name of account holder or contact and contact telephone number that is on file with the Village.
 - b) Address of service
 - c) Village Account Number
 - d) Water Distribution Map, if available

The above information shall be organized by street address and property number. This information shall remain confidential and must not be used for any purposes other than this Work.

4. The Village may provide standard inspection forms for endpoint installations. The Contractor shall record requested information on the form.

B. Contractor's Responsibilities

1. All appointment scheduling, advertisements, and public relations are the

responsibility of the Contractor.

2. Further Coordination requirements are included in Section 330901 “Water Meter Endpoint Installation.”
3. The Contractor shall be responsible for contacting the property owner to obtain access to the property and to gather any/all information missing from the Village provided lists which is required to schedule replacements. All installation appointments shall be made at the convenience of the occupant and owner of the property where the endpoint is to be installed. All appointments shall be made in a courteous and professional manner during reasonable hours, via letter notices, door hangers, telephone calls, post cards, door-to-door solicitation or by additional letters. All communications shall be in English and Spanish. The Contractor shall adhere to the following procedures in making installation appointments:
 - a) The Contractor shall provide a database, which shall include the date, time, type of contact attempted for each account, and additional information required by the Village. A sample of the database that includes a list of database field entries shall be submitted to the Village, for approval, prior to population of the database.
 - b) The Contractor shall publish newspaper advertisements notifying residents of the impending water meter endpoint installation, indicating street location, time, and scheduling procedure. The advertisement shall be in English and Spanish published in the local paper once a week or as directed by the Engineer for the duration of the project. The advertisements shall be a minimum of 4” x 2”. The Contractor shall submit a sample format of the advertisement for Village approval prior to publication. The Contractor shall be responsible for all costs associated with publication of the advertisements.
 - c) The Contractor shall also provide information to the Village concerning progress, contact information, and other data to post on the Village’s website.
 - d) The Contractor shall mail a written notice to residents within a proposed work area approximately one month in advance of the work explaining the purpose of the contact, the scheduling procedure, and a minimum of two toll free telephone numbers where the Contractor may be reached. The telephone numbers shall be backed up by adequate incoming telephone lines and attendants to allow residents to schedule appointments. Appointments shall be set up for a specific time of the day. The Contractor shall submit a sample notice for approval by the Village prior to mailing. All costs associated with mailing, including postage, are the responsibility of the Contractor.
 - e) If a property owner has not contacted the Contractor in response to the written notice within 15 days, the Contractor shall make a minimum of three phone calls at various times (AM, PM and Saturday) and document the date and time

of each attempt, verifiable by telephone records. If there is no response or a refusal to the three phone solicitations, the Contractor is to make at least three site visits; one visit in the AM; one visit in the PM and one visit on Saturday. A letter or notice shall be left each time explaining the purpose of the contact. A sample letter shall be submitted by the Contractor to the Village for approval prior to issuance. This shall be accomplished over a two-week period. The Contractor shall document all attempts to schedule an installation appointment. All appointments for installation, telephone call backs, and site visits are the Contractor's responsibility and no claim for additional payment shall be allowed.

- f) If scheduling cannot be accomplished, and access cannot be obtained, the coordination and scheduling of the installation becomes the responsibility of the Village. The Contractor shall provide the Village with a copy of all documentation of attempts to schedule an installation appointment. The Contractor shall provide the Village with an updated no-response list on a monthly basis. The Contractor shall not receive payment unless a water meter endpoint is successfully installed.
4. No installation shall occur unless an appointment has been made in advance with the property owner and tenant. No Contractor shall enter any residence unless there is an adult (18 years of age or older) present.

C. Personnel Identification

1. All personnel assigned to the project by the Contractor shall be in an approved company uniform, have a picture I.D. and wear a badge indicating the Village project. In addition, all installers must be registered with the Village of Cold Spring Police and local office of the Putnam County Sheriff's Department prior to beginning the project.
2. The Contractor shall provide a list of personnel assigned to the project including the chain of command and daytime telephone numbers. This list must be provided prior to commencement of any work.

D. Vehicle Identification

1. All vehicles to be used by the Contractor shall display identification acceptable to the Village at all times. This identification shall be permanently fixed on both sides of the vehicle.

E. Working Hours

1. Work performed under this contract shall be performed between 8:00 a.m. and 7:00 p.m., Monday through Saturday, and between 10:00 a.m. and 7:00 p.m., Sunday, unless written approval for other times is given by the Village (at no additional

expense to the Village).

2. The Contractor shall provide a minimum of twelve (12) hours of work per week to be scheduled after normal business hours to accommodate working residents (weekdays after 5:00 p.m. and weekends). No work shall be performed on holidays without prior permission from the Village. The Contractor shall not seek extras for work accomplished after normal business hours.
3. Installations for schools and industrial/commercial facilities shall be scheduled at a time acceptable to the owner of the facility. Scheduling shall be done so as not to interfere with their normal operations.

F. Employees active in the work

1. All work must be performed under the direct supervision of persons experienced in all aspects of this work. See Section 330901 "Water Meter Endpoint Installation" for further information.

G. Preapproved Schedule:

1. The Contractor shall provide the Village with a schedule of work containing proposed site locations and timetables submitted to the Engineer and Village at the preconstruction meeting. The schedule shall be revised on a monthly basis and submitted to the Engineer and Village for discussion and approval by the Village. The schedule shall be in a sequence approved by the Village.
2. The Contractor shall review with the Engineer and the Village's representatives at the Highway Department at the beginning of each day to outline installation sites prior to the day's work.
3. The Contractor shall have a tracking system that coordinates appointment scheduling with actual production totals and the monthly payment request. This system must be fully integrated with all phases of scheduling, production, customer contact documentation, inspection, accounting, and must be able to provide the Village with a hard copy of the monthly production status and "refusal/no response" list and shall be submitted with pay requests.

H. Contractor Conduct:

1. The Contractor or Contractor personnel shall in no way solicit or accept any business from the persons in whose property the work is being performed for a period of one (1) year from the date of installation.
2. The Contractor shall not allow the use, possession, or acceptance of alcohol, tobacco, or other drugs by any of its staff while performing installations.

- I. Project Office and Storage Facilities: The Contractor shall be responsible for providing a project office and storage facilities in a manner acceptable to the Village and adequate to meet the following needs:
1. Ample storage facilities for all other materials, equipment, tools and supplies required for completion of this Contract.
 2. Provisions to receive customers' calls, make appointments and process installation data. These provisions must be located in proximity to the Village of Cold Spring to facilitate the work without undue inconvenience to the water system customers.
 3. Contractor is responsible for all costs associated with the project office and storage facilities including telephone and electric costs.
- J. Contractor Response:
1. The Contractor shall have a 24-hour answering service with paging to respond to any emergency that may arise. The Contractor shall inform the Village of all emergencies as soon as possible, within 24 hours. The Contractor shall respond to all emergencies within 30 minutes of notification with the answering service required to page the Contractor immediately upon receiving the emergency call.

PART 2 PRODUCTS.

None This Section

PART 3 EXECUTION

None this Section

END OF SECTION

SECTION 330901 – WATER METER ENDPOINT INSTALLATION

PART 1 GENERAL

1.1 Summary

- A. The work in this specification shall include installing all endpoints, appurtenances, and testing equipment; inspecting and documenting existing equipment; removing existing endpoints; relocating and installing new endpoints, wiring, and appurtenances at outside locations; sealing of any holes due to the wiring; documenting installation and activation; confirming activation; troubleshooting issues; clean-up; and disposal of all waste materials. Waste materials shall be disposed of by the Contractor in a legal manner.
- B. The Contractor shall activate the endpoints, record all installation data on the Installation Form, and troubleshoot any endpoint not communicating properly.
- C. The Contractor is fully responsible for coordinating with residents to change-out the endpoints. The contractor shall provide for mailings, door hangers, phone operators, and (if used) websites needed to assist residents with making appointments.

1.2 Price and Payment Procedures: refer to Section 012213: “Unit Price Measurement and Payment.”

1.3 Action Submittals/Informational Submittals:

- A. The Contractor shall develop and provide a detailed planned procedure for the notification of Customers, procedure for scheduling of installations, installation procedures, database formats, protocol for handling non-standard installations, protocol for handling repairs, and template of work order form for review prior to performing any of the notifications and installations.
- B. Copies of all advertisements, door hangers, letters and flyers to be distributed during the contract for approval by the Village. Once approved, submit final copies for Engineer’s and Village’s records.
- C. Copy of database fields and format for approval by the Village.

1.4 Closeout Submittals: The contractor must submit all Installation Forms before final payment is made.

1.5 Quality Assurance: The Village may choose to inspect several representative installations each week that the installation process is active.

1.6 Delivery Storage and Handling: Upon request, the Contractor shall provide a daily inventory of the equipment used, which installer picked them up, and which accounts they

were installed in.

- 1.7 Workmanship: All workmanship shall be of the highest quality. All equipment, materials, and articles incorporated in the Work shall be new and the best grade, and shall only be used for intended purposes. The Village and Engineer shall have the right to reject defective materials and poor workmanship or require its correction at no additional cost to the Village.
- 1.8 Warranty: All work shall be warranted for a minimum of one (1) year against leaks and/or poor workmanship.

PART 2 PRODUCTS

2.1 Products to be Furnished by the Contractor:

A. The Contractor shall purchase mounting hardware and activation equipment, as necessary, for installation and activation; including:

- 1. Mounting Brackets
- 2. Cable
- 3. Badger Splice Kits
- 4. Infrared (IR) Communication Device (“activation key”) in the event that an encoder is suspected of not being programmed properly or is otherwise not functioning, or for immediate activation.

2.2 Products to be Provided by the Village:

A. Endpoint model E4-4E-AB-AG-TAAA-BOA by Badger Meter of Milwaukee, WI.

- | | | |
|------------------|----|------------------------------|
| 1. Product Type | E4 | Endpoint Only |
| 2. Registration | 4E | For Encoder |
| 3. Technology | AB | Orion Cellular - LTE M |
| 4. Application | AG | Pit/Remote, Thru the Lid Kit |
| 5. Wiring Method | TA | Twist Tight – 8 IN (EP) |
| 6. Quantity | | 866 |

B. Remote wall cover enclosures.

- C. The Contractor shall coordinate with the Village's Superintendent of Water and Sewer to receive above equipment. Upon receiving the equipment, the Contractor is solely responsible for it. Any equipment damaged by the Contractor shall be replaced by the Contractor at no additional cost to the Village.
- D. All unused equipment shall be returned to the Village in new condition. The Contractor shall replace any damaged equipment at no additional cost to the Village.

2.3 Caulking

- A. Caulking shall be DAP, Inc Acrylic Latex Caulk with Silicone or approved equal that provides for all features of the DAP caulk, but, especially with regards to the mildew resistance and paintability.
- B. The Contractor shall have various caulk colors available (e.g. white, clear, black, gray, etc.) and shall match caulk color to surrounding material to the extent practicable.

2.4 Identifying Tags

- A. A tags shall be white or yellow of vinyl or polypropylene material suitable for smudge proof marking using a waterproof marker.
- B. Tags shall be at least 3" x 6" in size, 10 mil in thickness and pre-wired.

2.5 Miscellaneous hardware

- A. Screws for mounting remote endpoints shall be stainless steel pan head multipurpose screws No. 8 or 10 when mounting into wood. Tapcon/UltraCon screws may be used when necessary to mount to masonry surfaces.
- B. Staples for fastening wiring between the meter and endpoint shall be insulated and hammered into place by hand or by staple gun.
- C. Zip-ties of UV stabilized material may be used for tying off signal wires to pipe.
- D. Meter seals shall be provided on each meter. The seal shall be lead with stainless steel wire. A blank die plier shall be used to crimp the seal shut.

PART 3 EXECUTION

3.1 Installers

- A. Installer shall be experienced at installing meters and electronic meter reading equipment. The lead person on the installation team shall have at least five years of experience installing, programing, and troubleshooting water meters, endpoints, and

associated equipment. Junior personnel shall have at least one year of experience.

- B. If required, all installers working on the project shall be required to attend a brief training session for installation, activation of the endpoints, and the paperwork to be completed for each installation.
- C. Each company shall have at least one plumber on the installation team that is licensed to work in Putnam County, NY. Other workers may be apprentice plumbers.

3.2 Examination

- A. Prior to beginning the installation of the meters and endpoints, the Contractor shall review the installation and activation instructions for the endpoints, hardware, and appurtenant equipment.

3.3 Existing Endpoint Removal

- A. Prior to removal of the existing endpoint:
 - 1. The Contractor shall inspect the existing plumbing prior to removal and record the type of piping 10 ft up and downstream of the meter, its condition and determine if any leaks present. This information is to be documented on the Installation Form. The purpose of this information is to alert the Village of any lead piping that may be inside of customers' buildings, unauthorized connections ahead of the water meter, or any other issues that customers may need to address.
 - 2. If the Contractor finds any leaks in the vicinity of the meter, the customer and Engineer shall be notified. If the Contractor does not inform the customer or Engineer prior to the commencement of work, the Contractor shall be held liable for repairing the leaks. The Contractor shall obtain the signature of the customer to confirm they were notified of the leaks.
 - 3. Water shall be run through the meter to ensure that it is operating properly. The meter encoder shall be observed to ensure its operation, and then shall be read at the exterior indicator and at the meter head. This information shall be recorded on the Installation Form.
 - 4. Each endpoint shall be tagged to identify address and account number.
 - 5. Photographs of the installations shall be taken with the meters and endpoints in place with the identifying tags and register readings visible and readable.
- B. The existing endpoint shall be removed. All unused wire and screw holes shall be sealed using a caulk, or other appropriate measures, that closely matches the color of the surrounding material.

- C. All removed equipment and waste materials shall be disposed of by the Contractor in a legal manner.

3.4 Endpoint Installation

- A. The contractor shall read and be familiar with the endpoint installation instructions and safety issues associated with the lithium battery provided by Badger Meter. For convenience, copies of these instructions are attached to this specification. The Contractor shall be responsible for ensuring he is using the latest available and all applicable informative materials from the manufacturer.
- B. Endpoints shall be installed in conformance with the manufacturer's requirements and recommendations. Endpoint antenna shall be installed straight up, not at an angle or upside down. Conducting objects can interfere with radio signals, such as water, electrical power sources, and metal.
- C. Outside wall mounted installations with wall covers enclosures shall be the preferred location for the endpoints. The location of outside installations shall be reviewed with the property owner. Installations shall be 24 to 36 inches above grade. Installation shall be away from plantings with nothing directly above or resting on the endpoint or enclosure that could adversely impact the endpoint.
- D. Alternative locations include: interior installations between the floor joists, on or near the meter using an integral meter encoder/ endpoint, or on the exterior of the building using a pit installation.
- E. Inside installations shall be installed in the floor joist near an outside wall and away from large metal objects for maximum propagation of the radio signal. Large metal objects include, but are not limited to, structural steel members, oil tanks, large water tanks, large furnaces, clothes washing machines and dryers, metal cellar hatches, etc. Equipment shall not be fastened or zip-tied to metal or non-structural elements, such as electrical conduits, wires, or enclosures and water or sewer pipes.
- F. In pit installations, only non-metal lids shall be used. Lids shall be set flush or slightly above grade. Enough slack in endpoint wire shall be provided such that wire is not damaged when lid is removed. Lids shall not be buried or covered over.
- G. The endpoint shall be activated per the manufacturer's instructions. Endpoints should activate automatically upon flow through the meter. An activation key may also be used.
- H. Once the endpoint is activated, the Contractor must verify the endpoint has been activated correctly and has connected to the cellular network. The Contractor shall verify the Villages database and Village personnel are receiving the correct information from the new endpoints and troubleshoot any issues that may have arisen as result of the installation.

- I. All unused equipment purchased by the Village must be returned to Village at the end of the project in new condition. The Contractor shall be responsible for replacing, at no additional cost, any broken, damaged, or lost equipment or any equipment that is in such a condition that does not satisfy the Village.
- J. Old endpoints must be returned to the Village for return shipment to Badger Meter. Stockpile location of returned endpoints shall be agreed upon with the Water Superintendent at the pre-construction meeting.

END OF SECTION

WATER METER ENDPOINT REPLACEMENT INSTALLATION FORM

Village of Cold Spring, New York

Installation Company		Installer Name	
Date of Installation		Customer No.	
Address of Installation			
Location of Meter in Building			
Inspection of Existing Meter Installation	Tag placed and Photos taken: Yes <input type="radio"/>	Meter Coupling /Horn Condition: Good <input type="radio"/> Replaced <input type="radio"/>	Any Leakage: Yes <input type="radio"/> No <input type="radio"/>
	Plumbing Street Side:	Pipe Material: Iron <input type="radio"/> , Copper <input type="radio"/> , P lastic <input type="radio"/> , Lead <input type="radio"/> , Other:	Connections: Hose Bibs: <input type="radio"/> Other:
	Plumbing House Side:	Pipe Material: Iron <input type="radio"/> , Copper <input type="radio"/> , P lastic <input type="radio"/> , Lead <input type="radio"/> , Other:	Double Check Valve Present: Yes <input type="radio"/> No <input type="radio"/> Other:
	Existing Conditions Notes:		
Endpoint Serial No.		Manufacturer:	Badger
Final Read Outside		Final Read Inside	
Notification of Existing Leak: I acknowledge that I have been made aware of a leak in the existing plumbing as described in notes above and that the installation of the meter does not appear to have made it worse.			
Homeowner Name: _____ (printed) _____ (signed) _____ (dated)			
Meter	Manufacturer:	Model:	Size:
	Serial No.:	Notes:	
Type of Meter:	Disc: <input type="radio"/> Compound: <input type="radio"/> Fire Service: <input type="radio"/> Other:		
Encoder	Manufacturer: Badger	Model No:	Unit of Measure: Gallons
Encoder Fixed 0's	Single, or for compounds, low side: 0	For compounds, High Side: 0	
Encoder Resolution	Single, or for compounds, low side: 0.001	For compounds, High Side: 0.001	
Encoder Reading		Time of Reading:	
Endpoint Serial No.		Endpoint Connection type: Nicor: <input type="radio"/> 308: <input type="radio"/> Pigtail: <input type="radio"/>	
Installation Type:	Encoder and Endpoint: <input type="radio"/> Endpoint Only: <input type="radio"/> Other:		
Endpoint Location on Building:	Exterior Wall: <input type="radio"/> Interior Basement: <input type="radio"/> Interior Above Grade Space: <input type="radio"/> Other:		
Endpoint Activated:	Yes: <input type="radio"/> No: <input type="radio"/> Reason for No:		
Photograph of:	Meter: Yes <input type="radio"/> , Endpoint: Yes <input type="radio"/>		
Notes:			

PRODUCT INFORMATION



ORION® Water Endpoints

Cellular LTE Endpoint

DESCRIPTION

The ORION® Cellular endpoint is an innovative, two-way water endpoint that utilizes existing cellular infrastructure to efficiently and securely deliver meter reading data to the utility via the reliable cellular network.

The Cellular endpoint is a member of the time-tested ORION family of products from Badger Meter, designed for maximum flexibility. Since 2002, the ORION product family has provided comprehensive Advanced Metering Analytics (AMA) for interval meter reading and data capture using both one-way and two-way communications.

FUNCTIONALITY

Operation: The endpoint communicates with the encoder and captures 15-minute interval read data and meter status information. On a regular schedule (up to twice per day) the endpoint then automatically broadcasts the information, including endpoint status information, via the cellular network to the BEACON® AMA software.

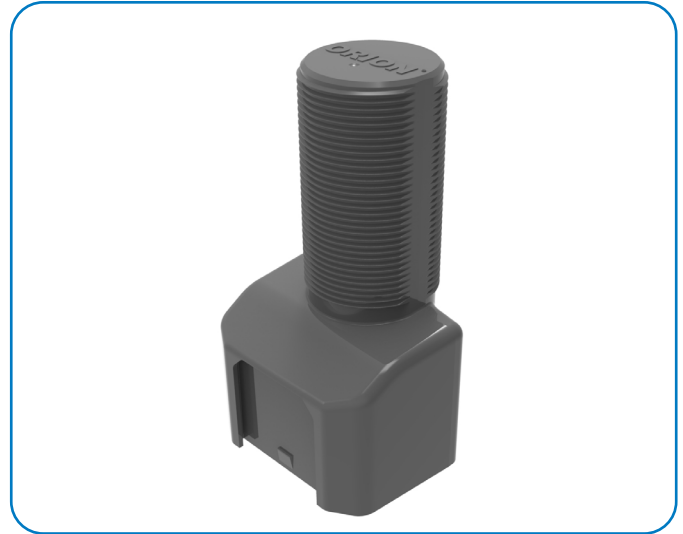
Activation: All ORION Cellular LTE endpoints are shipped in an inactive, non-transmitting state. The endpoints offer a Smart Activation feature. After installation, the endpoint begins broadcasting data when the encoder senses the first usage of water. No field programming or special tools are required. Alternatively, the Badger Meter IR Communication Device can be used to activate the endpoint and verify the encoder connection.

Successful endpoint function can be confirmed through a web app demonstrating that communication has been verified to both the encoder and the network.

Broadcast Mode: The endpoint broadcasts fixed network reading data through the secure existing cellular network within the service area. The endpoint also transmits a mobile message to support troubleshooting in the field.

Data Storage: The endpoint stores 42 days of 15-minute data.

Output Message: The endpoint broadcasts its unique serial number, meter reading data, and applicable status indicators. Each message is securely transported to the BEACON AMA software via Virtual Private Network (VPN) using Advanced Encryption Standard (AES) 256.



APPLICATION

Configurations: The endpoint is a multi-purpose endpoint that can be deployed in indoor, outdoor and pit applications. The electronics and battery assembly are fully encapsulated in epoxy for environmental integrity. The endpoint is available with a connector assembly for ease of installation.

Meter Compatibility: When attached to a Badger Meter High Resolution Encoder, the endpoint is compatible with all current Badger Meter Recordall® Disc, Turbo Series, Compound Series, Combo Series and Fire Service meters and assemblies, and with E-Series® Ultrasonic, E-Series® Ultrasonic Plus, and ModMAG® electromagnetic flow meters.

Encoder Compatibility: ORION Cellular LTE endpoints are suitable for use with Badger Meter High Resolution Encoders as well as the following Badger Meter approved three-wire encoder registers that have a manufacture date within 10 years of the current date as long as the encoder has three wires connected to it and is programmed into the three-wire output mode for AMR/AMI: Honeywell® (Elster) ScanCoder® encoder with Sensus® protocol module and evoQ4 meter (encoder output); Master Meter® Octave® Ultrasonic meter encoder output; Metron-Farnier Hawkeye; Mueller Systems 420 Solid State Register (SSR) LCD; and Sensus iPerl®.



SPECIFICATIONS

Dimensions	5.125 in. (130 mm) (H)
	1.75 in. (44 mm) Diameter at top 2.625 in. (W) x 2.875 in. (D) at base 67 mm (W) x 73 mm (D) at base
Broadcast Network	LTE cellular network, with fallback to 3G where LTE is unavailable. Mobile backup frequency is FCC-regulated 902...928 MHz frequency hopping modulation
Operating Temperature Range	
• Storage, Meter Reading and Mobile Backup	-40...60° C (-40...140° F)
• Cellular Communications	-20...60° C (-4...140° F)
Humidity	0%...100% condensing
Battery	One (1) lithium thionyl chloride D cell (nonreplaceable)

Construction: All ORION Cellular endpoints are housed in an engineered polymer enclosure with an ORION RF board, battery and antenna. To ensure long-term performance, the enclosure is fully potted to withstand harsh environments and to protect the electronics in flooded or submerged pit applications.

Wire Connections: ORION Cellular endpoints are available with in-line connectors (Twist Tight® or Nicor®) for easy installation and connection to compatible encoders/meters. The endpoints are also available with flying leads for field splice connections. Other wire connection configurations may be available upon request.

FEATURES

Communication Type	Two-way
Application Type	Control/Monitor
Reading Interval Type	15-minute
Encoder Compatibility	Absolute
Fixed Network Reading	✓
Premise Leak Detection	✓
Cut-Wire Indication	✓
Reverse Flow Indication	✓
No Usage Indication	✓
Encoder Error	✓
Low Battery Indication	✓
Remote Programming	✓
Remote Clock Synchronization	✓
Firmware Upgrades	✓

License Requirements: ORION Cellular LTE endpoints comply with Part 15, Part 22, Part 24, and Part 27 of the FCC Rules. No license is required by the utility to operate an ORION meter reading system. This device complies with Industry Canada license-exempt RSS standard(s).

Transportation: WARNING: The operation of transmitters and receivers on airlines is strictly prohibited by the Federal Aviation Administration. As such, the shipping of radios and endpoints via air is prohibited. Please follow all Badger Meter return and/or shipping procedures to prevent exposure to liability.

Warning: To reduce the possibility of electrical fire and shock hazards, never connect the cable from the endpoint to any electrical supply source. The endpoint cable provides SELV low voltage limited energy power to the load and should only be connected to passive elements of a water meter register.

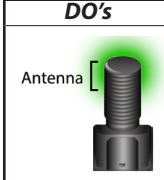

Caution: The endpoint batteries are *not* replaceable. Users should make no attempt to replace the batteries. Changes or modifications to the equipment that are not expressly approved by Badger Meter could void the user's authority to operate the equipment.

SMART WATER IS BADGER METER

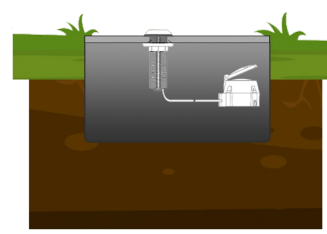
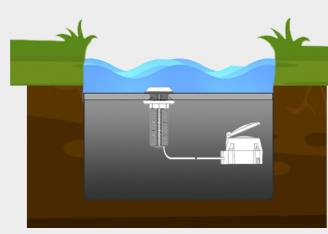
E-Series, ModMAG, ORION and Recordall are registered trademarks of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2021 Badger Meter, Inc. All rights reserved.

ORION® CELLULAR ENDPOINTS

The ORION® Cellular endpoint requires cellular coverage on the network for which it was designed and must be installed in locations where that cellular coverage has been verified through a Cellular Coverage Analysis (CCA). The clearer the signal path between the endpoint and the cell tower it communicates with, the better the endpoint will work. Temporary or permanent obstructions in the signal path can interfere with the signal. See the following installation tips for better cellular communication.


DO's	DON'Ts	
 <p>Antenna</p>		<p>Always install endpoint antenna straight up— Not on an angle or upside down</p> <p><i>Antenna is located in the top 1/3 of the threaded tube</i></p>

PIT Installation

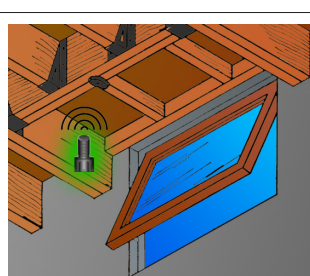
DO's	DON'Ts
<p>Do install</p> <ul style="list-style-type: none"> through a NON-METAL pit lid at or above grade level keeping endpoint wire loose to provide enough slack so wire doesn't break or disconnect when pit lid is lifted 	<p>Don't install</p> <ul style="list-style-type: none"> using a METAL OR CAST IRON pit lid below grade level 

NOTE: Also see *"Thru-the-Lid Install Kit (64394-030)" on page 2*

OUTSIDE Installation

DO's	DON'Ts
<p>Do install</p> <ul style="list-style-type: none"> at or above grade level, and ideally at least 24...36 inches above grade, within limits of the meter cable with (recommended) Wall Cover Install Kit* (64394-032) for protection from weather, animals, tampering 	<p>Don't install</p> <ul style="list-style-type: none"> near dense trees or shrubs that could grow and obstruct the endpoint under anything (don't put anything on top of the endpoint)

INSIDE Installation

DO's	DON'Ts
<p>Do install</p> <ul style="list-style-type: none"> on an outside wall or as close as possible near window, if possible as high as possible, within limits of meter cable 	<p>Don't install</p> <ul style="list-style-type: none"> on or near any large metal objects, structures near electrical wires/power box/electrical source using zip ties on a horizontal pipe

*Installation kit is included at no extra cost when purchased with an ORION Cellular endpoint.

Conducting objects can interfere with RF signals so, where possible, choose an installation away from...

...Water

...Electric Power Sources

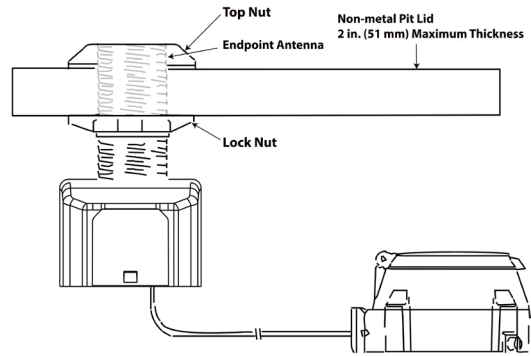
...Metal

Thru-the-Lid Install Kit (64394-030)

⚠ Always use both top nut and locking nut for secure installation.

In pit installations, a loose or missing top nut or locking nut may allow the endpoint to fall out of the pit lid opening* and into the bottom of the pit.

* standard pit lid opening diameter: 1-7/8 inches (48 mm)






Common Site Maintenance

Install endpoint antenna through a non-metal lid*. Make sure pit cover and endpoint antenna are **at grade level**.



Keep free from any obstruction (grass, mulch).

* There are two types of mounting for a composite lid. **Through the lid mounting is preferred** (v. under the lid) because the pockets under the lid can fill up with water, surround the endpoint and prevent it from communicating to the network.

YES	NO	NO
		
Non-metal pit lid and endpoint at grade level = good communication	Pit covered with grass = impaired communication	Pit covered with mulch = impaired communication

Vault Installations

Cellular endpoints can be used in vault installations by placing the endpoints outside the vault. Two examples of successful endpoint installations are shown here.

YES	YES
	
Example 1: The customer drilled a hole in the side of the vault, ran conduit to a wall and mounted three endpoints using the wall cover install kits using the outdoor cover	Example 2: The customer drilled through side of vault, installed a 4x4 post outside and mounted the endpoints using the outdoor cover. This vault has two compound meters, which is why 4 endpoints are mounted on the pole

Recommended Installation Kits

Remote Wall Cover Install Kit* PN: 64394-032 Protective enclosure for outdoor installations 	Wall Bracket Install Kit* PN: 64394-031 Secure bracket for indoor and outdoor installations 	Thru-the-Lid Install Kit* PN: 64394-030 Use both Top nut and Lock nut for secure installations 
--	--	---

*Installation kit is included at no extra cost when purchased with an ORION Cellular endpoint.

See the *ORION Water Endpoints Ordering Guide* for all installation kit information. See the *ORION Water Endpoint Installation Manual* for complete installation information. Both documents are available on the Badger Meter website, www.badgermeter.com. If you need additional help, contact Badger Meter Technical Support, 800-616-3837.

SMART WATER IS BADGER METER

ORION is a registered trademark of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2020 Badger Meter, Inc. All rights reserved.



ORION[®]
Cellular/Fixed Network Solutions

ORION[®] Water Endpoints

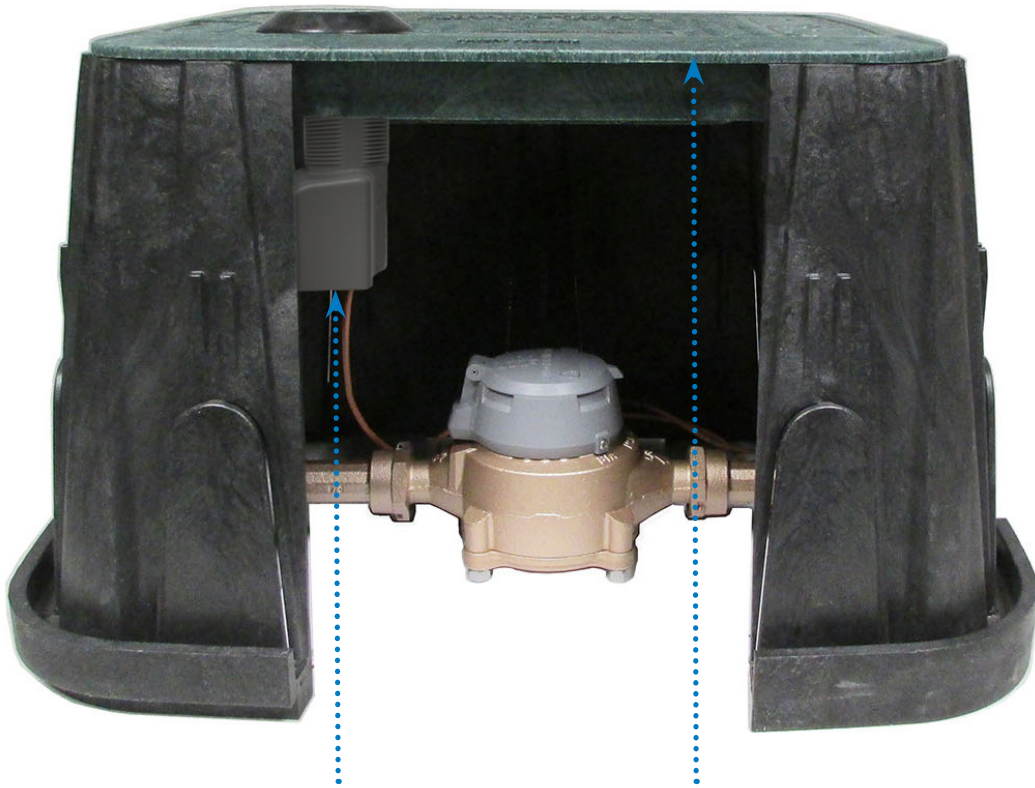


Image shown represents ORION Cellular LTE endpoint installed, as per instructions, through non-metal pit lid



Badger Meter

ORI-UM-00025-EN-26 (August 2021)

Installation Manual

CONTENTS

SCOPE OF THIS MANUAL	3
PRODUCT UNPACKING AND INSPECTION	3
LICENSE REQUIREMENTS	3
IDENTIFICATION	4
Endpoint Dimensions	4
Encoders/Register	4
ORION CELLULAR ENDPOINTS: LTE-M, LTE-MS, C, HLA, LTE	5
Endpoint Configurations	5
Installation Guidelines (Indoor, Outdoor, Pit)	6
Endpoint Activation	6
ORION FIXED NETWORK AND MIGRATABLE ENDPOINTS	7
Endpoint Configurations	7
Installation Guidelines (Indoor, Outdoor, Pit)	8
Endpoint Activation	8
ORION CLASSIC ENDPOINTS	9
Endpoint Configurations	9
Installation Guidelines (Indoor, Outdoor, Pit)	10
Endpoint Activation	10
ACTIVATING ENDPOINTS	11
CHANGING REGISTRATION FOR AN EXISTING ENDPOINT ASSEMBLY	12
ENDPOINT INSTALLATION KITS	13
64394-032 WALL COVER INSTALL KIT	14
67625-001 IR Holder for Wall Cover Install Kit	15
Outdoor Installation for Endpoint with In-line Connector	16
64394-031 WALL BRACKET INSTALL KIT - ORION CELLULAR LTE	16
69406-001 MOUNTING BRACKET INSTALL KIT FOR ORION ENDPOINT AND E-SERIES ULTRASONIC METER	17
64394-008 C-CLAMP WALL BRACKET INSTALL KIT	19
64394-003 PIPE INSTALL KIT	20
64394-023 COMMERCIAL METER MOUNTING BRACKET INSTALL KIT	21
64394-030 THRU-THE-LID INSTALL KIT	22
64394-009 INTEGRATED PIT LID HANGER INSTALL KIT	23
INTEGRAL ENDPOINT INSTALLATION	24
ENDPOINT STATUS TOOL FOR ORION CELLULAR ENDPOINTS	28
IN-LINE CONNECTORS	30
USING GEL CAPS TO CONNECT AN ENCODER	32

SCOPE OF THIS MANUAL

This manual contains installation instructions for ORION® water endpoints: ORION Cellular endpoints—LTE-M, LTE-MS, C, HLA, LTE— and the ORION Fixed Network (SE), Migratable (ME) and Classic (CE) endpoints.



ORION endpoints installation must comply with all applicable federal, state and local rules, regulations and codes.

Failure to read and follow these instructions can lead to misapplication or misuse of this product, resulting in personal injury and damage to equipment.

Proper performance and reliability of ORION endpoints depend upon installation in accordance with these instructions. Endpoints not properly installed may not be covered under warranty.

WARNING: The operation of transmitters and receivers on airlines is strictly prohibited by the Federal Aviation Administration. As such, the shipping of radios and endpoints via air is prohibited. Please follow all Badger Meter return and/or shipping procedures to prevent exposure to liability.

Related Literature

These related documents are available at www.badgermeter.com.

- *ORION Water Endpoint Installation Kits Ordering Guide*
- *ORION Cellular CDMA Endpoints Installation Manual*
- *ORION Water Endpoint Parts List*
- *ORION Cellular INTL Installation Manual*
- *ORION Endpoint Utility Software Manual*, software version 2.7.3 or later required for ORION Cellular LTE-M, LTE-MS endpoints

PRODUCT UNPACKING AND INSPECTION

Upon receipt of the product, perform the following unpacking and inspection procedures.

NOTE: If damage to shipping container is evident upon receipt, request the carrier to be present when product is unpacked. Carefully open the shipping package, following any instructions that may be marked on the exterior. Remove all cushioning material surrounding the product.

ORION Endpoints: Carefully remove the pre-wired ORION endpoint or ORION endpoint encoder assembly from the container and inspect for damage. Retain the contents of the installation kit for use in mounting the endpoint in the field.

Other products: Carefully lift the product from the package. Visually inspect the product and applicable accessories for any physical damage such as scratches, loose or broken parts or any other sign of damage that may have occurred during shipment. Retain the package and all packing material for possible use in reshipment or storage.

NOTE: If damage is found, request an inspection by the carrier's agent within 48 hours of delivery and file a claim with the carrier. A claim for equipment damage in transit is the sole responsibility of the purchaser.

LICENSE REQUIREMENTS

ORION Cellular LTE-M, LTE-MS, C, HLA and LTE endpoints comply with Part 15, Part 22, Part 24, and Part 27 of FCC Rules. ORION Fixed Network, Migratable and Classic endpoints comply with Part 15 of FCC Rules. Operation is subject to the following conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation of the device.

In accordance with FCC Regulations, "Code of Federal Regulations" Title 47, Part 2, Subpart J, Section 1091, transmitters pass the requirements pertaining to radiation exposure. However, to avoid public exposure in excess of limits for general population (uncontrolled exposure), a 20 centimeter distance between the transmitter and the body of the user must be maintained during operation.

No FCC license is required by a utility to operate an ORION meter reading system.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IDENTIFICATION

Endpoints

The ORION water endpoint is a three-wire metering device for indoor/outdoor use. Each endpoint has a unique numeric serial number on the tag attached to the cable harness (wire) and etched on the endpoint housing. Endpoints require connection to an encoder to complete the assembly. Badger Meter encoders are shown in [Figure 3](#).

Refer to "[ORION Cellular Endpoints](#)" on page 5, "[ORION Fixed Network and Migratable Endpoints](#)" on page 7 and "[ORION Classic Endpoints](#)" on page 9 to see photos of each endpoint.

Endpoint Dimensions

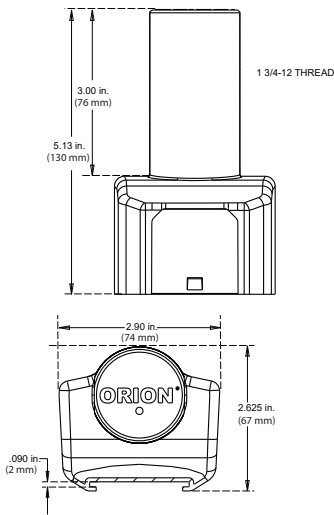


Figure 1: ORION Cellular endpoint dimensions

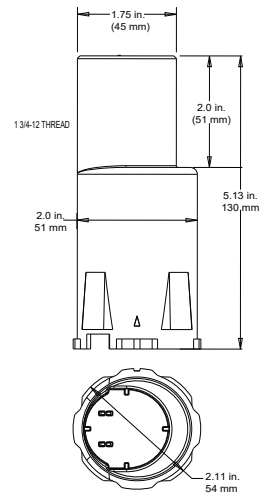


Figure 2: ORION SE, ME, CE endpoint dimensions

Encoders/Register

The encoder connects to the endpoint to complete the assembly. Each Badger Meter encoder is identified on the face of the register with an assembly number, unit of measure and meter model. Current and legacy products are shown below.

Current Products

Legacy Products



High Resolution LCD Encoder (HR-E® LCD)

E-Series® Ultrasonic Meter with High Resolution LCD Encoder

High Resolution 8-Dial Encoder (HR-E®)

Absolute Digital Encoder (ADE®)

Recordall® Transmitter Register (RTR®)

Figure 3: Encoders and register

ORION CELLULAR ENDPOINTS

This section covers configuration, encoder compatibility and installation for ORION Cellular endpoints.



Figure 4: ORION Cellular water endpoints

Serial Numbers

- ORION Cellular LTE-M and LTE-MS serial numbers range upward from 12xxxxxxx
- ORION Cellular C serial numbers range upward from 13xxxxxxx
- ORION Cellular HLA serial numbers range upward from 14xxxxxxx
NOTE: Some early release ORION Cellular HLA endpoints may have the 13xxxxxxx series.
- ORION Cellular LTE serial numbers range upward from 11xxxxxxx

The serial number is etched on one side of the endpoint base, and the FCC label is displayed on the other side. The LTE-M, C and LTE endpoints have yellow FCC labels. The HLA endpoint has an orange FCC label. The LTE-MS endpoint has a white FCC label. (See [Figure 5](#)).



Figure 5: ORION Cellular water endpoint FCC labels

Endpoint Configurations

Endpoint Configurations

Endpoint only with in-line connector
(Twist Tight® or Nicor®)

Endpoint only with flying lead for field splice

Endpoint/encoder assembly
with in-line connector

Encoder Connection

Connect the endpoint to an encoder using the in-line connector.
See ["In-line Connectors"](#) on page 30.

See [Field Wiring, Encoder Connectivity and Read Resolution](#) below.

Endpoint/encoder assemblies (endpoints connected by an in-line connector to a Badger Meter encoder) are shipped from the factory, ready for installation. See [Field Wiring, Encoder Connectivity and Read Resolution](#) and ["In-line Connectors"](#) on page 30.

Field Wiring, Encoder Connectivity and Read Resolution

ORION Cellular LTE-M, LTE-MS, C, HLA and LTE endpoints with flying leads are shipped from the factory pre-programmed. Connect all three endpoint wires to an encoder to complete installation. The endpoint connection can be made to existing wires from the encoder or directly to the encoder terminal screws, depending on the application and manufacturer. Endpoints can be connected to Badger Meter high resolution encoders and E-Series Ultrasonic meters as well as a number of competitive encoders. See the wiring chart on the next page.

NOTE: For instructions on field wiring using gel connectors, see ["Using Gel Caps to Connect an Encoder" on page 32](#). Follow the manufacturer's instructions provided with the gel cap/field splice kit you are using.

ORION endpoint wires: **Red** = Power/Clock; **Black** = Ground; **Green** = Data

Endpoint Label	Encoder Connectivity	Endpoint Wire Colors			Reading Resolution
		Red	Black	Green	
ORION Cellular LTE-M, LTE-MS, C, HLA, LTE	Badger Meter HR-E LCD or HR-E encoders or E-Series Ultrasonic and Ultrasonic Plus Meter with High Resolution output	Red	Black	Green	Up to nine (9) most significant digits
	Honeywell® (Elster) and ScanCoder® encoders with Sensus® protocol module and evoQ4 meter (encoder output)*	Green	Black	Red	Up to nine (9) most significant digits
	Metron-Farnier Hawkeye*	Red	Black	Green	Up to nine (9) most significant digits
	Mueller Systems 420 Solid State Register (SSR) LCD*	Red	Black	Green	Up to nine (9) most significant digits
	Neptune ProRead, E-coder, ARB-V* or ProCoder with encoder output	Black	Green	Red	Up to nine (9) most significant digits
	Neptune registers with Nicor connector	Red	Black	Green	Up to nine (9) most significant digits
	Sensus iPerl®	Red	Black	Green	Up to nine (9) most significant digits
	Master Meter® Octave® Ultrasonic meter (encoder output)*	Red	Black	Green	Up to eight (8) most significant digits
	Hersey Translator*	Due to the customized, factory wire configurations of the Hersey Translator, the terminal posts may not match the ORION endpoint wire colors. Please contact Hersey for the terminal post wiring schematic of your encoders to determine how the posts correspond to ORION endpoint wires.			

NOTE: Competitive encoder output is determined by the encoder configuration.

*ORION Cellular endpoints are compatible with the encoders/meters noted above that have a manufacture date within 10 years of the current date as long as the encoder has three wires connected to it and is programmed into the three-wire output mode for AMR/AMI. Encoder registers with two-wire mode of operation require programming by the Utility, including registers that support auto two- or three-wire detection systems that do not automatically switch to three-wire mode of operation when a compatible endpoint is connected for ORION connectivity.

Installation Guidelines (Indoor, Outdoor, Pit)

Install the endpoint/encoder assembly according to these guidelines:

- **Indoor/Outdoor Installation:**
 - Indoor installation is **recommended**. Mount endpoints indoors, in the floor joist on an outside wall, near a window, if possible, and away from large metal objects.
 - Outdoor installation is acceptable and may be required where signal strength does not support an indoor installation. See ["64394-032 Wall Cover Install Kit" on page 14](#) for mounting kit information.
- **Pit Installation**

IMPORTANT

- Mount ORION Cellular LTE-M, LTE-MS, C, HLA and LTE endpoints through a NON-METAL pit lid—**REQUIRED**.
- **Install at or above grade level.**

NOTE: See the installation troubleshooting document, *ORION Cellular Endpoint Installation Do's and Don'ts*, available at www.badgermeter.com. Endpoints not properly installed may not be covered under warranty.

Endpoint Activation

See ["Activating Endpoints" on page 11](#) for details of the process.

ORION FIXED NETWORK AND MIGRATABLE ENDPOINTS

This section includes configuration, encoder compatibility and installation information for ORION Fixed Network (SE) and ORION Migratable (ME) endpoints.

The serial number is engraved on the endpoint body. Serial numbers range from 30000000 to 59999999.

Endpoint Configurations

The following configuration options are available.



Figure 6: ORION Fixed Network (SE) and ORION Migratable (ME) endpoint

Endpoint Configurations

Endpoint only with in-line connector
(Twist Tight, Nicor, 308)

Endpoint only with flying lead for field splice

Endpoint/encoder assembly with
in-line connector

Prewired integral endpoint/encoder assembly

Encoder Connection

Connect the endpoint to an encoder using the in-line connector.
See ["In-line Connectors" on page 30](#).

See [Field Wiring, Encoder Connectivity and Read Resolution](#) below.

Endpoint/encoder assemblies (endpoints connected by an in-line connector to a Badger Meter encoder) are shipped from the factory, ready for installation.

Mount the assembly on the bayonet of the meter. See ["Integral Endpoint Installation" on page 24](#) for details.

Field Wiring, Encoder Connectivity and Read Resolution

ORION SE and ME endpoints with flying leads are shipped from the factory pre-programmed. Connect all three wires to an encoder to complete installation. The endpoint connection can be made to existing wires from the encoder or directly to the encoder terminal screws, depending on the application and manufacturer. Endpoints can be connected to Badger Meter high resolution encoders and E-Series Ultrasonic meters as well as a number of competitive encoders.

See the wiring chart on the next page.

NOTE: For instructions on field wiring using gel connectors, see ["Using Gel Caps to Connect an Encoder" on page 32](#). Follow the manufacturer's instructions provided with the gel cap/field splice kit you are using.

ORION endpoint wires: **Red** = Power/Clock; **Black** = Ground; **Green** = Data

Endpoint Label	Encoder Connectivity	Endpoint Wire Colors			Reading Resolution
		Red	Black	Green	
ELCD or ENC	Badger Meter HR-E LCD or HR-E encoders, or E-Series Ultrasonic Meter with High Res output	Red	Black	Green	Up to eight (8) most significant digits
ADE or ENC	Badger Meter ADE or E-Series Ultrasonic Meter with ADE output	Red	Black	Green	Up to six (6) most significant digits
RTR	Badger Meter RTR or E-Series Ultrasonic Meter with RTR output	Red	Black	Green	Up to seven (7) most significant digits
ADE or ENC	Honeywell (Elster)/AMCo ScanCoder or InVISION*and evoQ4 meter (encoder output)*	Green	Black	Red	Up to eight (8) most significant digits
C700D	Honeywell (Elster)/AMCo C700 Digital*	Red	Black	Not used – cut green wire flush with outer sheath	Up to seven (7) most significant digits
ADE or ENC	Master Meter Octave Ultrasonic meter (encoder output)*	Red	Black	Green	Up to eight (8) most significant digits
ADE or ENC	Metron Hawkeye*	Red	Black	Green	Up to eight (8) most significant digits
ADE or ENC	Mueller Systems 420 Solid State Register (SSR) LCD*	Red	Black	Green	Up to eight (8) most significant digits
ADE or ENC	Neptune ProRead, E-coder or ARB-V*	Black	Green	Red	Up to eight (8) most significant digits
ADE or ENC	Sensus Electronic Register encoder (ECR) or ICE*	Red	Black	Green	Up to eight (8) most significant digits
ADE or ENC	Hersey Translator*	Due to the customized, factory wire configurations of the Hersey Translator, the terminal posts may not match the ORION endpoint wire colors. Please contact Hersey for the terminal post wiring schematic of your encoders to determine how the posts correspond to ORION endpoint wires.			

NOTE: Competitive encoder output is determined by the encoder configuration.

*ORION SE and ME ADE or ENC endpoints are compatible with the encoders/meters noted above with a manufacture date within 10 years of the current date as long as the encoder is programmed into the three-wire output mode for AMR/AMI and has three wires connected to it. Encoder registers with two-wire mode of operation require programming by the Utility, including registers that support auto two- or three-wire detection systems that do not automatically switch to three-wire mode of operation once a compatible endpoint is connected for ORION connectivity.

Installation Guidelines (Indoor, Outdoor, Pit)

Install the endpoint/encoder assembly according to these guidelines:

- **Indoor/Outdoor Installation:** Mount outside the building, or indoors in the floor joist near an outside wall and away from large metal objects.
- **Pit Installation, ORION SE Endpoints:** Mount through a NON-METAL pit lid—**REQUIRED**.
- **Pit Installation, ORION ME Endpoints:** Mount through a NON-METAL pit lid—**Recommended**.

NOTE: Endpoints not properly installed may not be covered under warranty.

Endpoint Activation

See "[Activating Endpoints](#)" on page 11 for details of the process.

ORION CLASSIC ENDPOINTS

This section includes configuration, encoder compatibility and installation information for ORION Classic (CE) endpoints.

The serial number is engraved on the endpoint body. Serial numbers range from 70000000 to 89999999.

Endpoint Configurations

The following configuration options are available.



Figure 7: ORION Classic (CE) Endpoint

Endpoint Configurations	Encoder Connection
Endpoint only with in-line connector (Twist Tight, Nicor, 308)	Connect the endpoint to an encoder using the in-line connector. See "In-line Connectors" on page 30.
Endpoint only with flying lead for field splice	See Field Wiring, Encoder Connectivity and Read Resolution.
Endpoint/encoder assembly with in-line connector	Factory prewired endpoints, connected to a Badger Meter encoder, are shipped, ready for installation. No splicing required.
Prewired integral endpoint/encoder assembly	Mount the assembly on the bayonet of the meter. See "Integral Endpoint Installation" on page 24 for details.

Field Wiring, Encoder Connectivity and Read Resolution

ORION CE endpoints with flying leads are shipped from the factory pre-programmed. Connect all three wires to an encoder to complete installation. The endpoint connection can be made to existing wires from the encoder or directly to the encoder terminal screws, depending on the application and manufacturer. Endpoints can be connected to Badger Meter high resolution encoders and E-Series Ultrasonic meters as well as a number of competitive encoders as shown in the wiring chart on the next page.

NOTE: For instructions on field wiring using gel connectors, see ["Using Gel Caps to Connect an Encoder" on page 32.](#)

ORION endpoint wires: **Red** = Power/Clock; **Black** = Ground; **Green** = Data

Endpoint Label	Encoder Connectivity	Endpoint Wire Colors			Reading Resolution
		Red	Black	Green	
ADE	Badger Meter ADE, HR-E LCD or HR-E encoders, or E-Series Ultrasonic Meter with High Res or ADE output	Red	Black	Green	Up to seven (7) most significant digits
RTR	Badger Meter RTR or E-Series Ultrasonic Meter with RTR output	Red	Black	Green	Up to seven (7) most significant digits
UNIV*	Honeywell (Elster)/AMCo ScanCoder or InVISION	Green	Black	Red	Up to seven (7) most significant digits
UNIV*	Master Meter Octave Ultrasonic meter (encoder output)	Red	Black	Green	Up to seven (7) most significant digits
UNIV*	Metron Hawkeye	Red	Black	Green	Up to seven (7) most significant digits
UNIV*	Mueller Systems 420 Solid State Register (SSR) LCD	Red	Black	Green	Up to seven (7) most significant digits
ARB-V*/**	Neptune ARB-V for connectivity to ORION endpoint > serial number 80000000	Black	Green	Red	Up to seven (7) most significant digits
ARB-V*/**	Neptune ARB-V for connectivity to ORION endpoint < serial number 79999999	Red	Black	Green	Up to seven (7) most significant digits
UNIV*	Neptune ProRead or E-coder	Black	Green	Red	Up to seven (7) most significant digits
UNIV*	Sensus Electronic Register Encoder (ECR) or ICE	Red	Black	Green	Up to seven (7) most significant digits
UNIV*	Hersey Translator	Due to the customized, factory wire configurations of the Hersey Translator, the terminal posts may not match the ORION endpoint wire colors. Please contact Hersey for the terminal post wiring schematic of your encoders to determine how the posts correspond to ORION endpoint wires.			

NOTE: Competitive encoder output is determined by the encoder configuration.

*ORION Classic UNIV and ARB-V endpoints are compatible with the encoders/meters noted above with a manufacture date within 10 years of the current date as long as the encoder is programmed into the three-wire output mode for AMR/AMI and has three wires connected to it. Encoder registers that are currently in two-wire mode of operation require programming by the Utility, including registers that support auto two- or three-wire detection systems that do not automatically switch to three-wire mode of operation once a compatible endpoint is connected for ORION connectivity.

**A separate ORION CE Universal endpoint is available for connectivity to the Neptune ARB-V encoder. Make sure the ORION Classic endpoint has "ARB-V" on the harness label when wiring to an ARB-V encoder. Wiring differs depending on the serial number of the ORION endpoint you are connecting to the ARB-V encoder, so make sure to verify wiring is correct per the above chart.

Installation Guidelines (Indoor, Outdoor, Pit)

Install the endpoint/encoder assembly according to these guidelines:

- **Indoor/Outdoor Installation:** Mount outside the building, or indoors in the floor joist, near an outside wall, and away from large metal objects.
- **Pit Installation:** Mount through a NON-METAL pit lid—**Recommended**.

NOTE: Endpoints not properly installed may not be covered under warranty.

Endpoint Activation

See "Activating Endpoints" on page 11 for details of the process.

ACTIVATING ENDPOINTS

Activation is dependent on whether the endpoint is in “Pause” (soft sleep) or “Stop” (hard sleep) radio mode. The ORION Endpoint Utility software can be used to identify the endpoint radio mode.

Smart Activation for Endpoints in Pause Mode

All ORION endpoints offer a Smart Activation feature which utilizes consumption to automatically start an endpoint in Pause mode. After installation, the endpoint radio “wakes up” and begins broadcasting data when the encoder to which it is connected detects enough water usage from the register. No field programming or special tools are required, but the amount of water consumption depends on the encoder output and meter size so activation times will vary. Infrared (IR) activation tools are available for use if immediate activation is desired. See the *ORION Endpoint Utility User Manual*, available at www.badgermeter.com.

NOTE: Using the IR Alignment Tool (68779-001) is recommended for IR activation.

Endpoint/Encoder Assemblies

An initial encoder read is stored by the endpoint at the time the encoder and endpoint are factory connected and the endpoint is placed in Pause mode. While in Pause mode, the endpoint monitors the encoder for consumption, checking once every fifteen minutes. When the endpoint/encoder assembly is installed and sufficient water is running through the meter, the endpoint automatically “wakes up” and transitions to its operational mode when the required consumption is registered (see table below).

Encoder Output	Dial Change Required to Activate
7-dial	Any 1 unit change in the least significant digit
8-dial	Any 5 unit change in the least significant digit
9-dial	Any 5 unit change in the least significant digit

Table 1: Activation consumption thresholds

Endpoint Only

Like endpoint/encoder assemblies, ORION endpoint only configurations can be shipped in Pause mode. The initial encoder read will be established the first time an endpoint is field connected to an encoder.

NOTE: It may take up to fifteen (15) minutes for an endpoint to recognize the initial encoder read. To expedite this process, Badger Meter recommends connecting an ORION endpoint to an encoder in advance of field installation so the baseline encoder read can be captured before installing the endpoint.

After the initial encoder read is stored, the endpoint monitors the encoder for consumption, checking for a change in the encoder read once every fifteen minutes thereafter. The endpoint automatically “wakes up” and transitions to its operational mode once the required amount of consumption is registered (see [Table 1](#)).

Activation for Endpoints in Stop Mode

Endpoints in Stop mode must be manually activated via IR communication using either the Badger Meter IR Communication Device (68891-001) or the ORION Endpoint Utility software with an ORION handheld or mobile reading system. The software can also be used to identify the endpoint radio mode. For more information, see the *ORION Endpoint Utility User Manual for Handheld or Tablet/Laptop* at www.badgermeter.com.

IMPORTANT

Badger Meter IR Communication Devices that shipped prior to March 8, 2021 require a firmware update to support use with ORION Cellular C endpoints. Contact Badger Meter Utility Technical Support (800-616-3837) for help.

Confirming Installation - ORION Cellular LTE-M, LTE-MS, C, HLA, LTE

Before leaving the installation site, the installer can confirm endpoints are active and communicating.

1. BEACON® AMA users can check ORION Cellular endpoint activation status with the **ORION Endpoint Status** tool. Endpoints do not need to be provisioned in BEACON AMA to display using the tool. See "[Endpoint Status Tool for ORION Cellular Endpoints](#)" on [page 28](#) for more information.
2. The IR Communication Device (68891-001) can be used to confirm endpoint activation and verify the encoder connection. Instructions are included with the device. See the **IMPORTANT** note on [page 11](#) regarding required device firmware update.

Active endpoints automatically transition to the appropriate network.

Confirming Installation - ORION SE, ME, CE

Before leaving the installation site, the installer can use an ORION handheld or ORION Mobile Reading system to confirm the endpoint is broadcasting RF data for reading. See the appropriate handheld or ORION Mobile Reading system user manuals, available at www.badgermeter.com, for more information.

Active Endpoints

ORION Cellular LTE-M, LTE-MS, C, HLA, LTE

When the endpoint transitions to *Active* mode, it begins the network registration process. BEACON AMA assigns a daily call-in time to the endpoint as part of this process. An active operating ORION Cellular endpoint obtains a current encoder read every 15 minutes.

ORION SE, ME and CE

When the endpoint transitions to *On-Mobile* mode, it begins broadcasting its message for fixed network or mobile data collection. An active operating ORION endpoint obtains a current encoder read once an hour.

CHANGING REGISTRATION FOR AN EXISTING ENDPOINT ASSEMBLY

ORION Cellular LTE-M, LTE-MS, C, HLA, LTE

If you change the encoder connected to an ORION Cellular endpoint, the endpoint will recognize the new encoder, once connected, and report previous and current interval data.

ORION SE, ME, CE

If you change the encoder connected to an ORION Fixed Network, Migratable or Classic endpoint that has previously logged historical profile data, best practice recommends following this process:

1. Extract and save the historical profile data from the endpoint. See the *ORION Endpoint Utility User Manual* for handheld or tablet/laptop, available at www.badgermeter.com, if you need help.
2. Clear the profile data from the endpoint.
3. Connect the new encoder. Follow applicable installation instructions in this manual. The endpoint will recognize the new encoder, once connected, and record interval data.

ENDPOINT INSTALLATION KITS

Type	For Use With	Description	Kit Part Number
REMOTE	All ORION endpoints	64394-032 Wall Cover Install Kit	64394-032
REMOTE	64394-032	67625-001 IR Holder for Wall Cover Install Kit	67625-001
REMOTE	ORION Cellular LTE-M, LTE-MS, C, HLA, LTE	64394-031 Wall Bracket Install Kit - ORION Cellular LTE	64394-031
REMOTE	ORION SE, ME, CE	69406-001 Mounting Bracket Install Kit for ORION Endpoint and E-Series Ultrasonic Meter	69406-001
REMOTE or PIT	SE, ME, CE	64394-029 Wall Bracket Install Kit - ORION	64394-029
REMOTE	All ORION endpoints	64394-008 C-Clamp Wall Bracket Install Kit - ORION	64394-008
REMOTE or PIT	All ORION endpoints	64394-003 Pipe Install Kit-ORION	64394-003
REMOTE	All ORION endpoints	64394-023 Commercial Meter Mounting Bracket Install Kit-ORION	64394-023
PIT	All ORION endpoints	64394-030 Thru-the-Lid Install Kit	64394-030
PIT	ORION SE, ME, CE	64394-009 Integrated Pit Lid Hanger Install Kit	64394-009

Instructions for using each installation kit follow in this section.

Refer to the *ORION Water Endpoints Installation Kit Ordering Guide* and the *ORION Water Endpoint Parts List* for individual endpoint kit components. Both documents are available at www.badgermeter.com.

64394-032 WALL COVER INSTALL KIT

Wall Cover Install Kit (64394-032) is recommended for proper mounting of an endpoint for indoor and outdoor remote applications, and is designed to provide an environmentally protected area for gel splice connections (if needed). Outside dimensions are shown in [Figure 9](#).

For use with: All ORION endpoints



Figure 8: 64394-032 wall cover enclosure

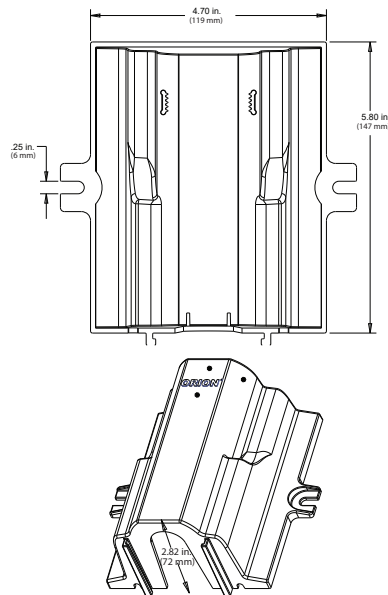


Figure 9: 64394-032 Outside dimensions

To install an ORION endpoint, follow these steps.

1. Choose an appropriate installation location within the limits of the endpoint cable/connector harness.
2. Verify the proper orientation ([Figure 10](#)). The bottom of the enclosure has an opening for IR programming. The opening gives access to the endpoint IR LED port ([Figure 13](#) and [Figure 14](#)) without having to disassemble the unit.
3. Place the endpoint into the wall cover enclosure, antenna (threaded portion) up.

Cellular LTE-M, LTE-MS, C, HLA, LTE endpoints: [Figure 10](#) shows the correct endpoint placement.

All other ORION endpoints: Make sure the flat side of the endpoint faces in and fits up against the inside wall of the enclosure.

- NOTE:** If double-sided tape is included in the kit, you can use the tape to temporarily secure the endpoint inside the enclosure before mounting.
4. Position the endpoint cable.
 - Route the endpoint cable through the cutout on the bottom of the wall cover.

NOTE: If you are drilling a hole through the wall behind the enclosure for the endpoint cable, the cable does not need to route through the cutout at the bottom.

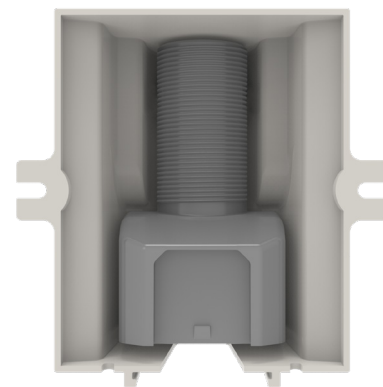


Figure 10: ORION Cellular LTE endpoint orientation

- If the endpoint has an in-line connector, place the connector *inside* with the endpoint and route the connector cable through the cutout on the bottom.

NOTE: If used, place gel splice connections inside the enclosure.

NOTE: See "[Outdoor Installation for Endpoint with In-line Connector](#)" on [page 16](#) for additional information about installing the endpoint outdoors with the wall cover enclosure.

5. Make sure the wall cover is properly positioned, with the endpoint antenna straight up and the endpoint IR LED port visible through the bottom opening.
6. Secure the wall cover using customer-supplied screws.
Installation is complete.



Figure 11: 64394-032 installation complete

67625-001 IR Holder for Wall Cover Install Kit

IR Holder for Wall Cover Install Kit (67625-001) is an optional part which can be ordered for use with the Wall Cover install kit (**64394-032**). The IR holder bracket fits on the wall cover adapter rails to hold an IR programming head in correct alignment with the endpoint LED port.

1. Place the optical head of an IR programming cable into the holder. The nubs on the optical head fit into the cutouts on the holder.



(67625-001) IR holder bracket



Optical head of the IR programming cable



Optical head in the bracket

Figure 12: IR holder and programming cable optical head

2. Slide the bracket into the adapter rails at the bottom of the wall cover enclosure (64394-032) so the IR optical head is aligned with the endpoint LED port. See [Figure 13](#) and [Figure 14](#).
3. Connect the IR programming cable to a Badger Meter mobile reading device to perform IR functions. Refer to the [ORION Endpoint Utility User Manual](#), available at www.badgermeter.com, for IR programming instructions.

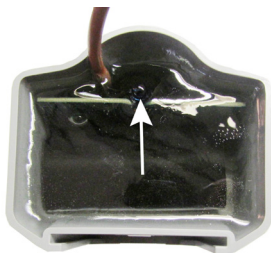


Figure 13: IR LED port ORION Cellular LTE endpoint (bottom up view)



Figure 14: IR LED port ORION ME endpoint (bottom up view)

Outdoor Installation for Endpoint with In-line Connector

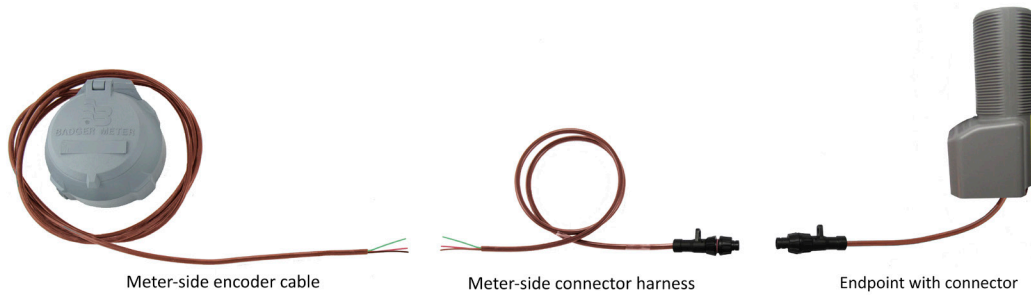


Figure 15: Outdoor endpoint installation

Meter-side connector harnesses are available with Twist Tight and Nicor connectors in the following lengths.

Harness with Twist Tight Connector

Part Number	Harness Lead Length
68307-006	10 ft harness
68307-003	25 ft harness

Harness with Nicor Connector

Part Number	Harness Lead Length
66488-006	10 ft harness
66488-003	25 ft harness

Follow these recommended installation steps for an outdoor endpoint installation and refer to the image in [Figure 15](#).

NOTE: The Twist Tight connector is pictured above. The installation steps also apply to endpoints with Nicor and 308 connectors as well. See ["In-line Connectors" on page 30](#) for more information.

1. Choose an appropriate outdoor location, within the limits of the connector harness, and mount the endpoint.

NOTE: If using a wall cover enclosure, see ["64394-032 Wall Cover Install Kit" on page 14](#) for additional information on mounting.

2. Join the endpoint connector with the connector mate of the encoder cable.
If you are using a wall cover enclosure, place the in-line connector inside the enclosure.
3. Drill a small hole in the wall of the house/structure to accommodate the endpoint/encoder cable.
4. Pass the cable end with the flying leads through the wall of the house.
5. Inside the house, connect the encoder wires. Depending on the encoder connection, use a field splice kit or connect the wires directly to the encoder terminal screws. See the appropriate wiring charts in this manual if you need help.

NOTE: Refer to the *Field Splice Kit Application Data Sheet*, available at www.badgermeter.com, for field splice instructions.

When the meter, encoder and endpoint are installed and connected, installation is complete.

64394-031 WALL BRACKET INSTALL KIT - ORION CELLULAR LTE

Wall Bracket Kit 64394-031 ([Figure 16](#)) is available for mounting ORION Cellular LTE-M, LTE-MS, C, and LTE endpoints.

For use with: ORION Cellular LTE-M, LTE-MS, C, HLA, LTE endpoints only

The bracket clips into the slot on the endpoint and can be used to attach the endpoint to a wall. A screwdriver and two (2) customer-supplied screws are required. Drill pilot holes for the screws (**recommended**) before attaching the wall bracket and endpoint.

The bracket can also be used to mount the endpoint to a pole with cable ties (customer supplied) threaded through the bracket openings.

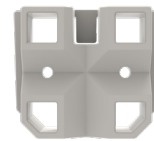


Figure 16: 64394-031

69406-001 MOUNTING BRACKET INSTALL KIT FOR ORION ENDPOINT AND E-SERIES ULTRASONIC METER

Mounting Bracket Install Kit (69406-001) is designed to securely install an ORION endpoint to an E-Series Ultrasonic meter for non-submerged indoor and outdoor remote applications. The bracket can be used for installations in any nonmetallic joist, wall or pit application.

For use with: ORION SE, ME and CE endpoints



Figure 17: Mounting bracket with locking clip in place

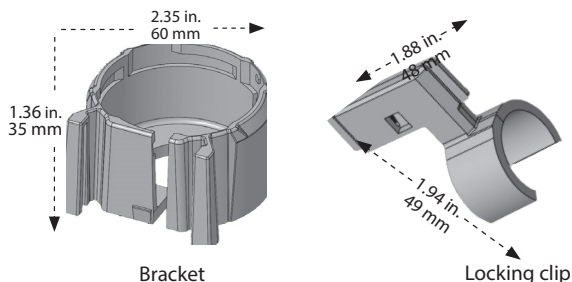


Figure 18: Mounting bracket and locking clip dimensions

To connect the bracket to the meter and endpoint, follow these steps.

NOTE: The kit components are the mounting bracket (**68789-001**) and the locking clip (**68790-001**). Keep the two pieces separate when you start.

1. Feed the endpoint wiring cable through the mounting bracket central opening.

You will see a small triangle on the underside of the bracket (Figure 19) and at the bottom of the endpoint.

Align the triangles, push the bracket and endpoint together and twist the endpoint clockwise until the endpoint clicks into place.



Figure 19: Triangle on underside of bracket

2. Align the tabs of the mounting bracket to the tabs on the side of the E-Series register (Figure 20). Then slide the mounting bracket/endpoint down into place on the register.
3. Once the endpoint is mounted on the E-Series register, insert the locking clip underneath the mounting bracket in the space between the mounting bracket and the register. The flat side of the locking clip should face the mounting bracket and fit in the mounting bracket grooves. It will click into place and lock.



Figure 20: E-Series Ultrasonic meter register tabs

NOTE: The endpoint is secure and cannot be removed until you remove the locking clip.

4. Make sure the endpoint antenna is upright in its final position.



Figure 21: ORION endpoint mounted on E-Series meter register

64394-029 WALL BRACKET INSTALL KIT

Wall Bracket Install Kit (64394-029) can be used to securely install an ORION endpoint. For non-submerged indoor and outdoor applications, the bracket can be used in any indoor or outdoor *nonmetallic* joist, wall or pit application.

For use with: All ORION endpoints **except** ORION Cellular LTE-M, LTE-MS, C, HLA, LTE endpoints

You will need the following items.

- Wall Bracket install kit
- Two customer-supplied screws
- Screwdriver and drill

To connect the bracket to the endpoint and mount, follow these steps.

1. Using the screw holes of the wall bracket as a guide, drill two pilot holes on the joist or wall where the bracket is to be installed.

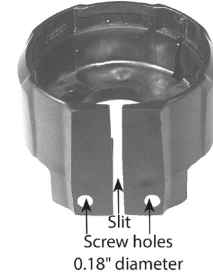


Figure 22: Endpoint wall bracket

Connect the endpoint

2. Carefully slide the encoder cable harness through the slit in the bracket with the screw holes at the bottom (Figure 23).
3. Locate the small triangle and hole underneath the bracket (Figure 24). The triangle is used to align the bracket with the endpoint.

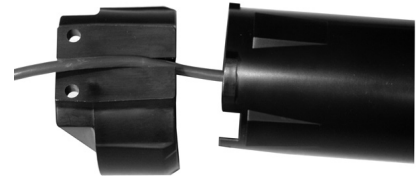


Figure 23: Threading cable harness

4. Locate the small raised triangle at the bottom of the ORION endpoint housing (Figure 25).



Figure 24: Aligning triangle



Figure 25: Housing triangle

5. Align the endpoint and bracket triangles. Then push the bracket and endpoint together. This should be easy.
6. With one hand holding the bracket, use the other hand to twist the endpoint approximately 1/4 turn clockwise until you feel it lock into place (Figure 27).

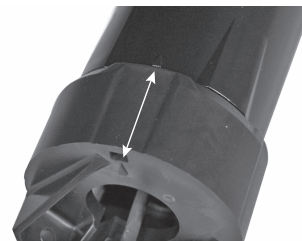


Figure 26: Align triangles and push bracket onto endpoint

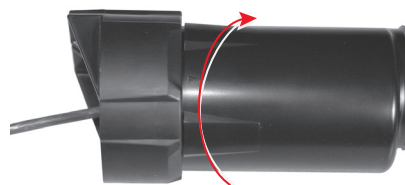


Figure 27: Twist endpoint to lock

Mount the endpoint assembly

7. Make sure the endpoint antenna is upright ([Figure 28](#)) when you place it into its final position.
8. Using two customer-supplied screws, secure the bracket assembly using the pilot holes you drilled in Step 1.

Installation is complete.



Figure 28: Endpoint positioning

64394-008 C-CLAMP WALL BRACKET INSTALL KIT

C-Clamp Wall Bracket Install Kit (64394-008) can be used when mounting an endpoint to a wall.

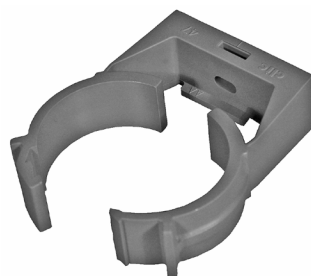
For use with: All ORION endpoints. For ORION Cellular endpoints, the kit can be used for indoor and remote installations, but should NOT be used in a vault.

To mount an ORION endpoint using this kit, follow these steps and refer to [Figure 29](#).

1. Choose an appropriate location on the wall for the endpoint. Using an appropriate size fastener and washer (customer-supplied), mount the C-clamp to the wall through the opening at the back. When mounting in a vault, install the C-clamp close to the top to prevent damage when accessing the meter is required.
- NOTE:** ORION Cellular endpoints should NOT be mounted in a vault.
2. Place the neoprene spacer from the installation kit around the endpoint, approximately 1/2 inch (13 mm) from the top of the endpoint. Hold the neoprene spacer in place with your fingers.
 3. Thread the lock nut onto the endpoint until it makes contact with the neoprene spacer.
 4. Insert the endpoint into the C-clamp, making sure the neoprene spacer stays inside the C-clamp.
 5. Close the C-clamp and lock it in place so that it closes over the neoprene spacer and securely holds the endpoint as shown in [Figure 29](#).

Installation is complete.

NOTE: ORION radio endpoints perform best with a clear line of sight. Performance varies with installation.



C-Clamp



C-Clamp around endpoint

Figure 29: C-Clamp and placement

64394-003 PIPE INSTALL KIT

Pipe Install Kit (64394-003) with mounting support bracket (*Figure 30*) is designed for pipe installations on a 3/8, 5/8 and 1/2 inch rebar or 1/2 inch schedule 40 PVC pipe.

For use with: All ORION endpoints. For ORION Cellular endpoints, the kit can be used for indoor and remote installations, but should NOT be used under a pit lid.

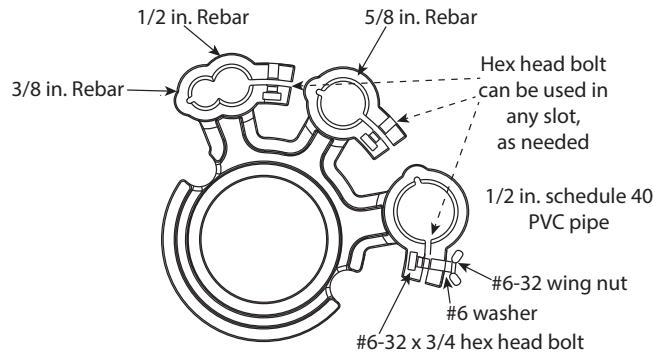


Figure 30: Support bracket (knuckles)

To install an ORION endpoint using the mounting support bracket, follow these steps.

1. Drive rebar or stake into the ground, or use a free-standing pipe or rebar.

CAUTION

DRIVE REBAR OR STAKE INTO THE GROUND PRIOR TO ATTACHING THE ENDPOINT TO AVOID DAMAGE.

2. Slide the mounting support bracket on the rebar/stake/pipe and secure using the enclosed washer, wing nut and hex head bolt provided with the bracket. The hex head bolt fits in any slot.

NOTE: The bracket can be installed with either side up, but installing with the smooth side up is recommended if installed outdoors to avoid potential rainwater build up.

3. Insert the threaded end of the endpoint up through the bottom of the bracket opening. Then thread the lock nut onto the endpoint and tighten the lock nut to secure the bracket (*Figure 31*). For pit installations, mount the endpoint a maximum of 1...2 inches (25...51 mm) below the pit lid. (NOT for ORION Cellular endpoints!)
4. Install the bracket anywhere along the length of the endpoint threaded end, as long as it is at least 0.5 in. (13 mm) below the top where the antenna is located. Installation is complete.

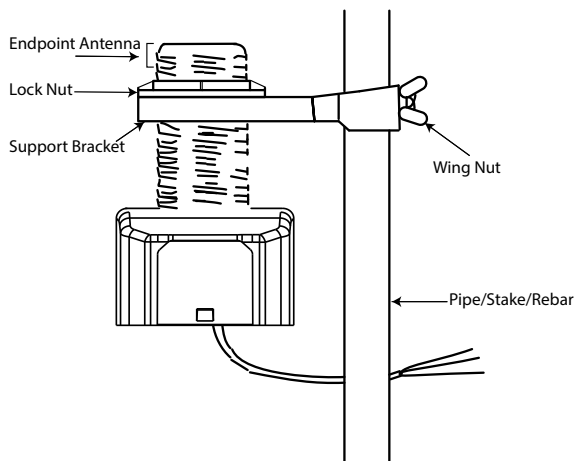


Figure 31: Pipe installation kit with ORION Cellular endpoints

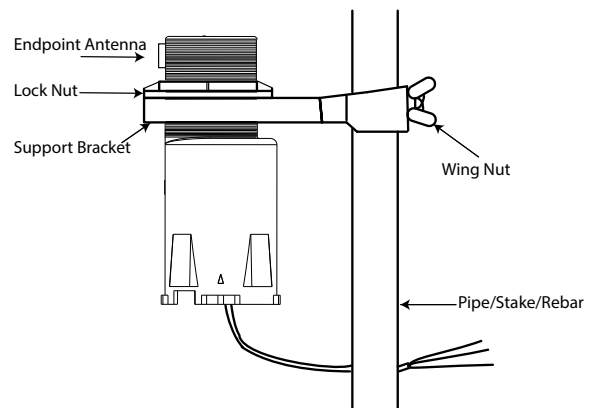


Figure 32: Pipe installation kit with ORION SE, ME, CE endpoints

64394-023 COMMERCIAL METER MOUNTING BRACKET INSTALL KIT

Commercial Meter Mounting Bracket Install Kit (64394-023) is designed for use with most Badger Meter Turbo, Compound Series and Fire Service Disc bypass meter lines. Use the kit to securely mount an ORION endpoint to a meter.

For use with: All ORION endpoints

You will need a torque wrench set for installation. The kit components are:

- Stainless steel mounting bracket 66360-001
- Lock nut 62825-001

To install the bracket, follow these steps:



Figure 33: Stainless steel mounting bracket



Figure 34: Lock nut with gussets

1. Verify that the water is turned off.
2. Slip the mounting bracket over the top of the ORION endpoint, as shown.
3. Screw the lock nut from the kit onto the threaded section of the endpoint. Hand tighten the lock nut to secure the bracket.
4. At the meter, unscrew the head assembly bolt at the location where you plan to mount the endpoint.
5. Position the bracket, reinsert the bolt and hand tighten it.

NOTE: For visual clarity, the photo in [Figure 37](#) shows the bracket without the endpoint attached.



Figure 35: Mounting bracket over endpoint

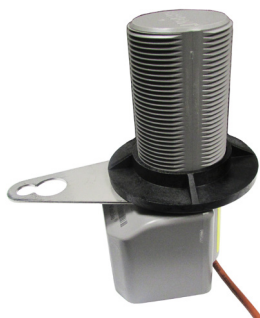


Figure 36: Tighten lock nut

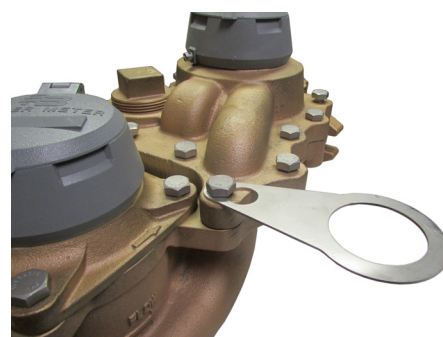


Figure 37: Bracket attached with bolt

6. Position the bracket so the endpoint is as far from the meter as possible to provide adequate space for the endpoint signal to propagate ([Figure 38](#)).

IMPORTANT

If two ORION endpoints are required for a fire series assembly or a compound meter application, mount the endpoints on OPPOSITE sides of the meter head assembly.

7. With the torque wrench, tighten the bolt as indicated in the chart that follows.

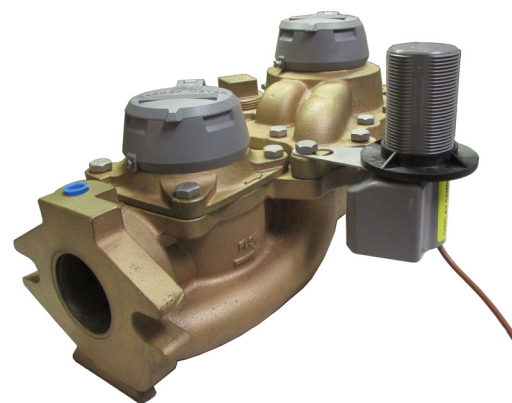


Figure 38: Endpoint connected to meter with bracket

Meter	Ft-lb	Meter	Ft-lb
2-inch Turbo Series Meter	10.9	2-inch Compound Series Meter	16.7
3-inch Turbo Series Meter	37.5	3-inch Compound Series Meter	33.3
4-inch Turbo Series Meter	37.5	4-inch Compound Series Meter	33.3
6-inch Turbo Series Meter	37.5	6-inch Compound Series Meter	33.3
		Heavy Duty Bypass M70	21.0
		Heavy Duty Bypass M170	50.0

Installation is complete. Turn the water back on.

64394-030 THRU-THE-LID INSTALL KIT

The ADA-compliant **Thru-the-Lid Install Kit (64394-030)** is designed for use with a NON-METAL PIT LID, 2 inches (51 mm) maximum thickness, with a standard hole diameter of 1-7/8 inches (48 mm).

For use with: All ORION endpoints

To install an endpoint through a non-metal pit lid, follow these steps and refer to [Figure 39](#).

1. Screw the lock nut (large diameter side up) onto the endpoint tube threads.
2. Insert the endpoint tube through the bottom of the pit lid.
3. Screw the top nut onto the endpoint tube threads.
4. Tighten the lock nut and top nut to make sure the endpoint is secure.

Installation is complete.

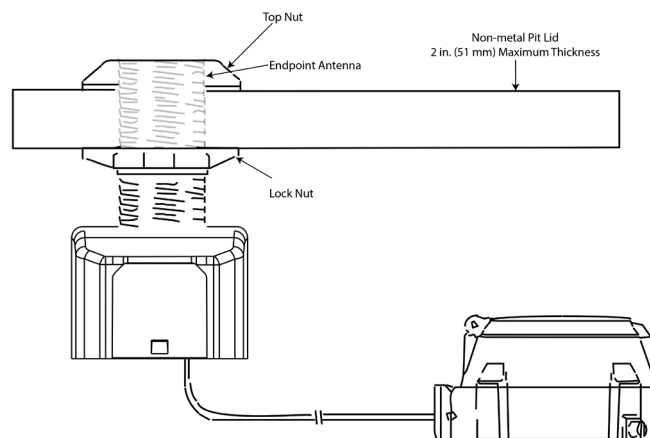


Figure 39: ORION endpoint thru non-metal pit lid

NOTE: When installing an endpoint through a thick lid, you can use a **Pit Tube Extender (67025-001)**. The Extender requires a 2 inch (51 mm) diameter hole. It screws onto the threaded portion of the endpoint. Radio frequency (RF) performance may be reduced when using the Pit Tube Extender.

Do not use Pit Tube Extender with ORION Cellular endpoints.



Figure 40: Endpoint pit tube extender – NOT for ORION Cellular endpoints

64394-009 INTEGRATED PIT LID HANGER INSTALL KIT

Integrated Pit Lid Hanger Install Kit (64394-009) is designed for ORION endpoints installed below composite and plastic lids that have an integrated AMR/AMI endpoint hanger.

For use with: ORION Fixed Network, Migratable, and Classic endpoints

To install an ORION endpoint with this kit, follow these steps and refer to [Figure 41](#).

1. Thread the lock nut onto the top of the ORION endpoint as shown.
2. Slide the endpoint into the lid bracket.
3. Tighten the lock nut so that the endpoint is held firmly in place.

Installation is complete.

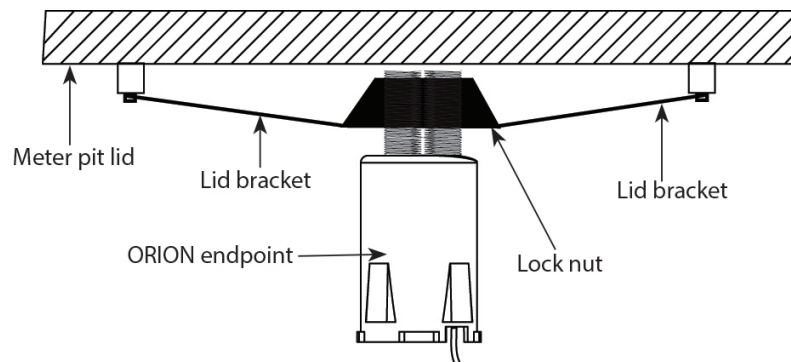


Figure 41: Integrated pit lid hanger installation

INTEGRAL ENDPOINT INSTALLATION

ORION SE, ME and CE endpoints are available in an integral configuration in which the endpoint and encoder are connected in one assembly. There are two types of integral configurations. This section includes instructions for mounting an integral endpoint on a meter and also provides instructions for disassembling both types of integrals.

Mounting an Integral Endpoint on the Meter

An integral endpoint can be installed on any Badger Meter Disc, Turbo, or Compound Series meter. Both integral configuration styles mount to the meter the same way, by placing the assembly onto the bayonet of the meter and rotating it into its locking position. See [Figure 42](#).

1. Loosen the security screw on the endpoint encoder assembly.
2. Mount the assembly housing on the meter bayonet.
3. Turn the assembly clockwise 1/4 turn to lock the assembly into place on the meter.
4. After the assembly is mounted on the meter, tighten the security screw to secure the assembly to the register.

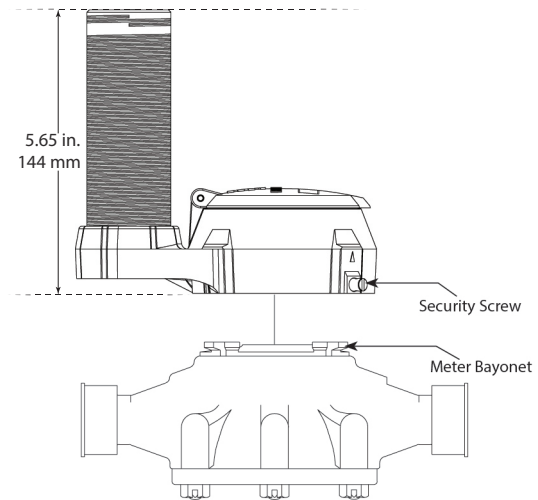


Figure 42: Integral assembly on meter

HR-E LCD Encoder Integral Configuration



Figure 43: HR-E LCD Integral

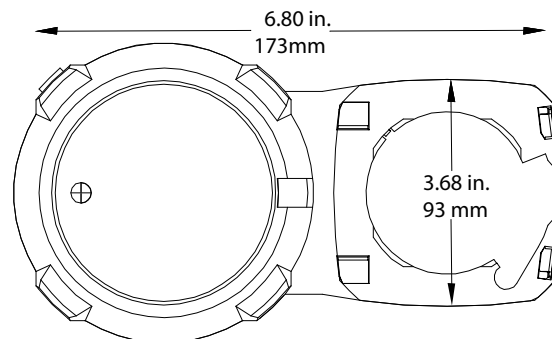


Figure 44: HR-E LCD Integral base dimensions

Configuration

The ORION HR-E LCD Integral Assembly is shown in [Figure 43](#). In an HR-E LCD integral assembly, the endpoint is factory-wired to the encoder and both are mounted to the shroud bracket. Endpoints are available with a 3-foot or 10-foot wire that is wrapped around the body of the endpoint. The endpoint wire is contained under a removable cover. With this option, the endpoint can be removed from the housing, if necessary, and mounted away from the encoder. The endpoint can also be returned to the housing assembly without damage.

Removing the Endpoint from the Assembly Housing

NOTE: The endpoint cover connects to the base with three tabs: one in the back and two in the front (closest to the encoder.)

1. Remove the integral assembly from the meter.
 - Remove the security screw at the base of the assembly. Keep the screw for remounting the encoder assembly.
 - Turn the assembly (as one piece) 1/4 turn, counter-clockwise and lift the assembly off the meter.
2. With the endpoint side of the assembly facing toward you, grasp the bottom of the cover with one hand on either side of the endpoint cover base.
3. With your thumbs, push the cover at the center of the base to release the back tab (*Figure 45*). Then lift up to release the front tabs and remove the cover from the base.



Figure 45: Push at center of endpoint base to release the cover



Figure 46: Cover tabs released, endpoint wire exposed

4. Twist the endpoint to release it from the housing and uncoil the wire.
5. Mount the endpoint according to recommended installation guidelines within the limits of the endpoint wire.

NOTE: The encoder cannot be removed from the assembly housing.

6. Remount the encoder (in the assembly housing) onto the meter bayonet.
 - Turn the assembly clockwise 1/4 turn so it locks in place.
 - Replace and tighten the security screw.

Reattaching the Endpoint

To reattach the endpoint to the assembly housing, follow these steps.

1. Wrap the wire around the endpoint. Make sure the wire is wrapped tightly and neatly around the endpoint or the cover will not fit.
2. Insert the endpoint base into the shroud bracket. Adjust the endpoint so the tabs on the endpoint base align with the openings on the bracket, and the wire at the endpoint base fits into the opening at the back of the bracket. See *Figure 47*.
3. When the endpoint is correctly inserted into the bracket opening, turn the endpoint clockwise to make sure it is secure.
4. Place the cover over the endpoint, with the single tab at the back.
5. When the cover is almost completely on, align the two front tabs with the openings on the shroud bracket (closest to the encoder) and then push down until all three tabs click into place.



Figure 47: Integral bracket without endpoint

HR-E Encoder Integral Configuration



Figure 48: HR-E Integral assembly with additional wire

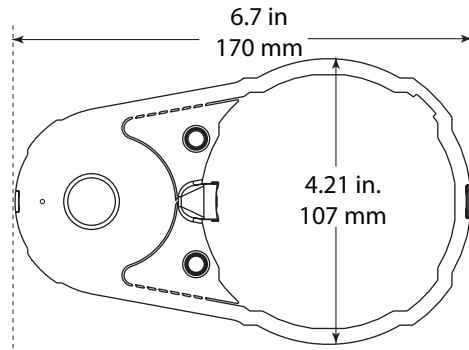


Figure 49: HR-E Integral base dimensions

Configuration

The ORION HR-E Integral Assembly is shown in [Figure 48](#). The endpoint has a 3-foot length of wire stored inside the bottom of the assembly housing. The endpoint can be removed from the housing, if necessary, and mounted away from the encoder.

NOTE: Once removed, the endpoint CANNOT be reassembled into an integral configuration.

Removing the Endpoint from the Assembly Housing

IMPORTANT

Removing the endpoint from the assembly housing can only be done once with this integral configuration.

CAUTION

PRIOR TO DISASSEMBLING AN INTEGRAL ENDPOINT, VERIFY THAT THE ENDPOINT HAS THREE FEET OF WIRE PACKAGED WITH THE ASSEMBLY. CHECK THE SERIAL NUMBER LABEL ON THE SIDE OF THE INTEGRAL BRACKET TO MAKE SURE IT INDICATES "3 FT WIRE." DO NOT CONTINUE WITH THE STEPS LISTED BELOW IF YOUR INTEGRAL ENDPOINT DOES NOT HAVE THIS DESCRIPTION ON THE SERIAL NUMBER LABEL, AS ENDPOINT DAMAGE WILL OCCUR.

1. Remove the assembly from the meter.
 - Remove the security screw at the base of the assembly. Keep the screw for remounting the encoder assembly.
 - Turn the assembly (as one piece) 1/4 turn, counter-clockwise.
 - Lift the assembly off the meter.



Figure 50: Remove assembly from meter

2. Remove the endpoint wire under the breakaway plate.
 - Turn the endpoint/encoder assembly over.
 - Grasp the pull tab located to the right of the encoder seal screw with pliers (*Figure 51*). Then pull and remove the bottom breakaway plate from the housing to expose the wire. The plate is scored to facilitate removal.
 - With your fingers, remove the three feet of endpoint wire from the housing.

NOTE: The wire is attached to the endpoint.

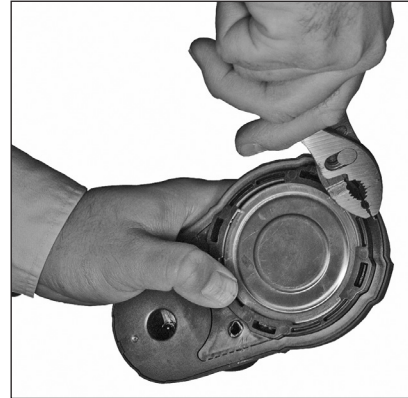


Figure 51: Pull tab to remove the breakaway plate

3. Rotate the endpoint counter-clockwise 1/4 turn and pull the endpoint and endpoint wire out from the assembly base.



Figure 52: Rotate endpoint clockwise



Figure 53: Pull endpoint away from base

4. Mount the endpoint according to recommended installation guidelines within the limits of the endpoint wire.

NOTE: The encoder cannot be removed from the assembly housing.
5. Remount the encoder (in the assembly housing) onto the meter bayonet.
 - Turn the assembly clockwise 1/4 turn so it locks in place.
 - Replace and tighten the security screw.

ENDPOINT STATUS TOOL FOR ORION CELLULAR ENDPOINTS

BEACON® AMA users can check the activation status of ORION Cellular endpoints with the ORION Endpoint Status tool. Several minutes after installation, the tool displays ORION Cellular endpoints assigned to you. Endpoints do not need to be provisioned in BEACON AMA to display.

The browser-based tool can be viewed on a computer or mobile device. An Internet connection is required. Follow these steps to use the ORION Endpoint Status tool.

1. Go to <https://orionstatus.beaconama.net>.
2. Sign in with your BEACON email address and password (Figure 54).

Result: The ORION Endpoint Status screen (Figure 55) opens showing the list of activated Cellular endpoints.

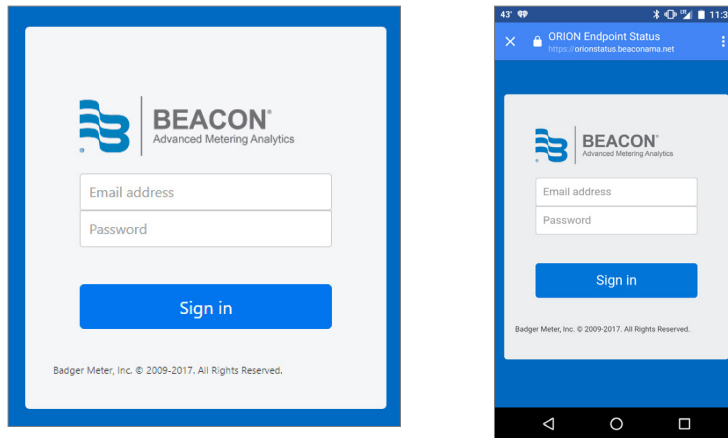


Figure 54: Tool sign in screen - computer and mobile

NOTE: It can take several minutes for a newly installed endpoint to communicate with the cellular network and display on the ORION Endpoint Status screen.

3. View the endpoint list.
The list displays endpoint serial number, activation time, and activation signal strength. The current endpoint and meter status are also shown. Endpoints are listed according to their activation time, with the most recent endpoint activation times listed first (top of list).

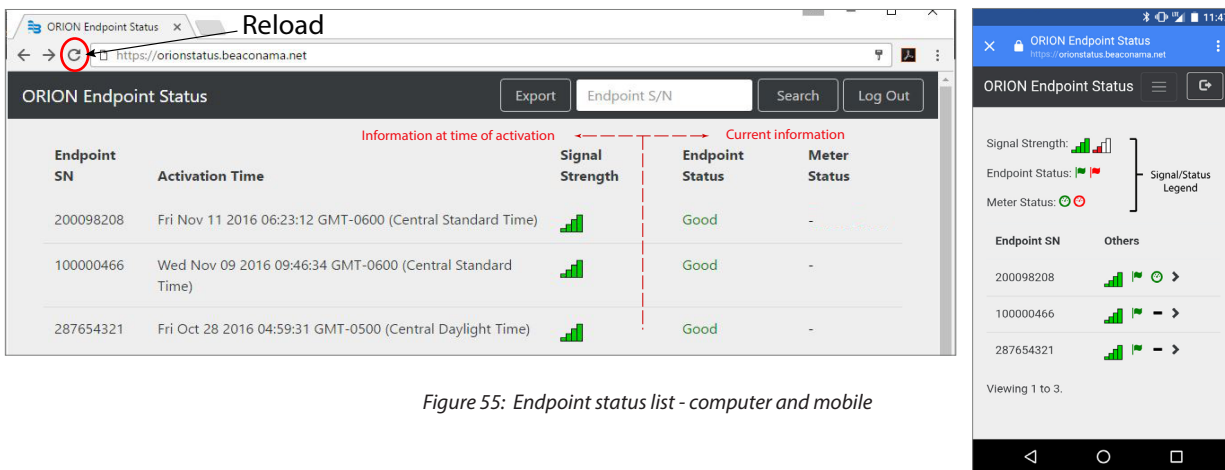



Figure 55: Endpoint status list - computer and mobile

You can also **Export** endpoints into a program such as Excel®, or **Search** to find a specific endpoint.

4. To see any new endpoints that have been added since logging in, reload/refresh the browser window. On a computer, use the reload button  at the top left of the screen. On a mobile device, swipe down the screen to refresh.

- Select an endpoint in the list to see the endpoint raw read. A window opens, like the examples shown in [Figure 56](#).

NOTE: Information in the first three fields is captured at the time of activation. Information in the next three fields is current information.

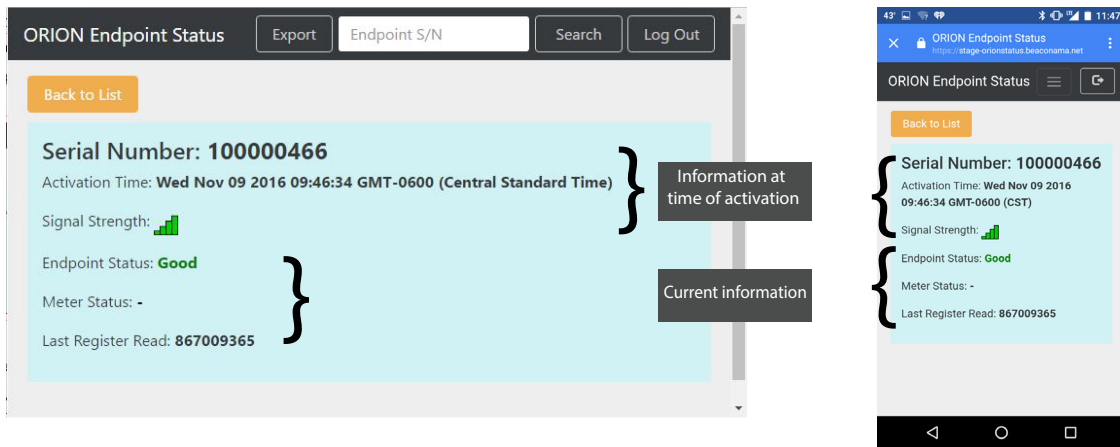


Figure 56: Status detail screen - computer and mobile

The *Endpoint Status* field displays one of the following:

Endpoint Status	Response
Good	No response required.
Endpoint Tamper or Encoder Error	Incomplete information. This message updates at the next scheduled communication.
Endpoint Tamper	Endpoint* requires attention.
Encoder Error	Encoder* requires attention.


*For additional endpoint information, see the ORION Endpoint Utility User Manual for handheld or laptop. For additional encoder information, see the appropriate encoder user manual. All documents are available at www.badgermeter.com.

The *Meter Status* field displays one of the following:

NOTE: *Meter Status* only displays for E-Series Ultrasonic meters. For other meters, the field will have a dash mark (-).

Meter Status	Response
Good	No response required.
Sensor Error	Meter* requires attention.

*For additional information, see the appropriate E-Series Ultrasonic Meter User Manual, available at www.badgermeter.com.

- Tap/click **Back to List** to return to the previous screen.
- When finished using the tool, tap the **Log Out** button or  on a mobile device.

IN-LINE CONNECTORS

In-line connectors are used to allow AMA/AMR/AMI device connectivity without the need for a field splice kit. There are three available in-line connector types: Twist Tight, 308, Nicor.

When ordered separately, the endpoint and encoder (or electronic meter) in-line connectors come with removable caps, which can be removed in the field before joining the connector ends. With the proper orientation, the connector ends go together easily. No tools are necessary.

NOTE: Additional removable caps are available for order. Part numbers are listed in [Figure 58](#), [Figure 60](#), and [Figure 62](#).

⚠ CAUTION

BEFORE JOINING, MAKE SURE ALL SURFACES OF THE CONNECTOR ENDS ARE CLEAN, DRY, AND FREE OF ANY DEBRIS OR DIRT. THIS STEP IS ESSENTIAL TO MAKE SURE THE CONNECTOR REMAINS WATER TIGHT AND SUBMERSIBLE.

Twist Tight Connector

To use the Twist Tight connector, follow these steps and refer to [Figure 58](#).

1. Remove the protective caps. Twist the rotating collar on each connector counter clockwise (left) to loosen and remove the cap.
2. Align the notches inside each connector and push the ends together until the endpoint-side is fully seated in the encoder-side connector.



Figure 57: Twist Tight in-line connector



Figure 58: Twist Tight connector ends and caps - close up view

3. On the endpoint-side connector, twist the rotating collar clockwise (right) until the ends are tightly connected. When tightly connected, the tabs at the top of the connectors should be aligned and the red O ring on the encoder-side connector should NOT be visible.

IMPORTANT

Do NOT use tools to tighten the connector ends. Hand tighten only.

Twist Tight Extension Harness

An extension harness connects in-line between the meter- and endpoint-side connectors. Extension harnesses are available in the lengths shown, with and without a cable shield. The cable shield offers extra protection for harsh environments such as pit installations.

Part Number Harness only	Extension Harness Length	Part Number Harness with Cable Shield
68307-009	5 ft extension	68883-002
68307-010	10 ft extension	68883-004

NOTE: For more information about the Twist Tight connector, refer to the *Twist Tight In-line Connector Assembly Application Data Sheet*, available at www.badgermeter.com.

308 Connector

To use the 308 connector, follow these steps and refer to [Figure 60](#).

1. Squeeze the notched area and pull to remove the cap(s).
2. Align the notches inside each connector and push the ends together. You will hear a “click” when the connector ends are firmly seated and secure.



Figure 59: 308 in-line connector

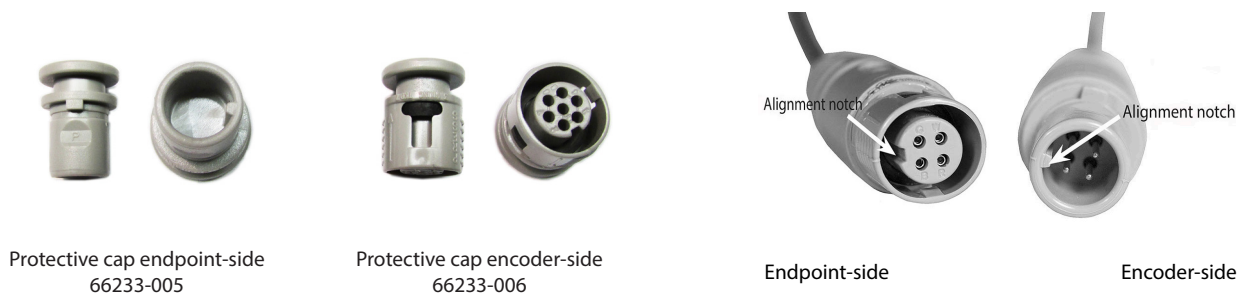


Figure 60: 308 connector ends and caps - close up view

NOTE: For additional information, refer to the *308 In-line Connector Assembly Application Data Sheet*, available at www.badgermeter.com.

Nicor Connector

To use the Nicor connector, follow these steps and refer to [Figure 62](#).

1. Pull the cap(s) straight off to remove.
2. Locate the arrow on each connector. With the arrows pointed toward each other, push the ends together until the encoder-side connector is fully seated into the endpoint-side connector. There should be no visible gap.



Figure 61: Nicor in-line connector



Figure 62: Nicor connector ends and caps - close up view

Nicor Extension Harness

An extension harness connects in-line between the meter- and endpoint-side connectors. An extension harness in this lead length is available with the Nicor connector.

Part Number	Extension Harness Length
66488-024	10 ft extension

USING GEL CAPS TO CONNECT AN ENCODER

For those connections that are not factory wired or equipped with in-line connectors, follow these guidelines for using gel caps when splicing is required, either for installation or to fix a connection after a tamper. Refer to the wiring charts for each ORION endpoint, starting on [page 6](#).

NOTE:

- For pit environments, splice connections require a field splice kit (**62084-001**), which can be ordered separately. Refer to *Field Splice Kit for Badger Meter AMR/AMI Products*, available at www.badgermeter.com.
- For all installations, excess wire should be coiled and cable tied to avoid any damage.

Required Tools

Splicing Tools (Customer Supplied)	Badger Meter Part Number
• Parallel Pliers	59983-001
• Coax Wire Stripper	59989-001
• Diagonal Cutting Pliers	n/a

Connecting an Encoder Using Gel Caps

Follow these steps when using Badger Meter supplied gel caps.

1. To connect an encoder with existing wires to an ORION endpoint, strip approximately 1-1/2 inches (38 mm) of outer insulation sheath from the encoder and endpoint cables using a coax wire stripping tool. We recommend using the Badger Meter Coax Wire Stripper (**59989-001**).

CAUTION

USE CAUTION WHEN REMOVING THE OUTER SHEATH SO THAT THE INNER SIGNAL WIRE INSULATION IS NOT NICKED OR DAMAGED.

2. Unwind the outer foil shield from the endpoint cable and cut it off even with the outer sheath using diagonal cutting pliers.
 3. Connect the ORION endpoint to an approved encoder. Verify the endpoint serial number prior to completing the wiring setup.
- Connect the encoder cable wires to the ORION endpoint wires using the insulation gel caps provided in the installation kit. Refer to the wiring charts for the endpoint type starting on [page 6](#) and determine which wires need to be connected to complete an installation.

NOTE: The terminal posts and wire colors may not match.

CAUTION

DO NOT STRIP ANY INSULATION FROM THE ENDS OF THE WIRES BEFORE YOU PUSH THEM INTO THE GEL CAP.

- Insert the wires from each cable end as far as possible into the gel cap. See [Figure 63: Wires in gel cap](#).

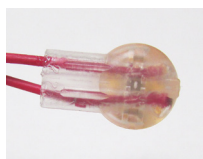


Figure 63: Wires in gel cap

- Using a crimping tool such as the Badger Meter Parallel Pliers (**59983-001**), place the gel cap with the wires into the jaws of the crimping tool.

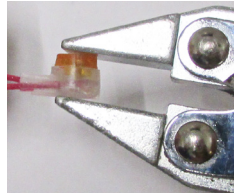


Figure 64: Gel cap in crimping tool

- Crimp the gel cap by squeezing the crimping tool handles until the gel cap is completely compressed. The Badger Meter Parallel Pliers is designed to apply just enough pressure to crimp the gel cap. Apply pressure for three seconds.

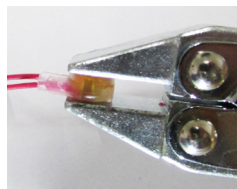


Figure 65: Compress the gel cap

- Repeat the crimping procedure for the remaining gel caps and wires.
4. Attach the two plastic cable ties and tighten securely for strain relief. Snip off the excess cable tie with the wire cutter.
 5. For remote installations, the connection is complete.

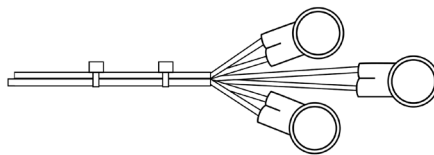
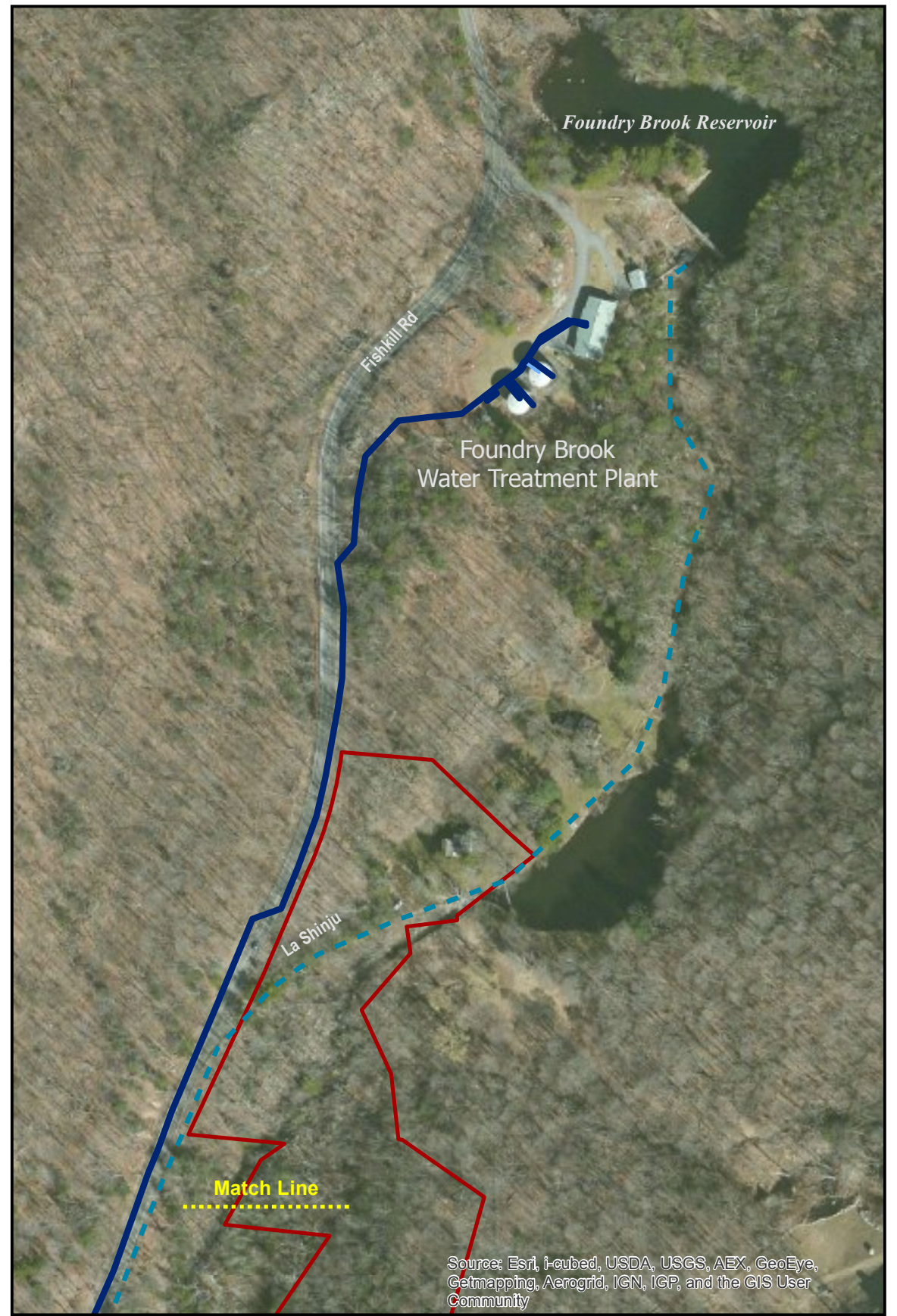
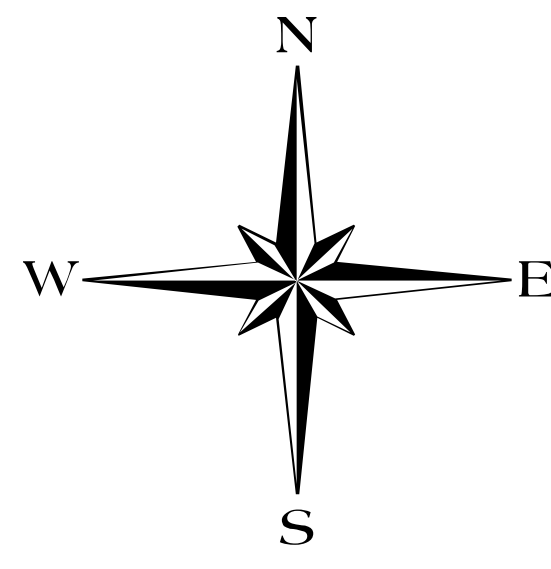


Figure 66: Cable tie attachment locations

NOTE: For pit installations, an appropriate field splice kit should be used. If using the Badger Meter Field Splice Kit, refer to the *Field Splice Kit Application Data Sheet* provided with the kit.

Testing Wire Connections

Test all wiring connections to confirm connectivity, and to verify the ORION endpoint reading and the encoder reading are the same. The connections can be tested using the Quick Read function with either an ORION handheld or mobile data collector. See the appropriate software manual, available at www.badgermeter.com, for more information.



Inset 1
Same Scale As Map

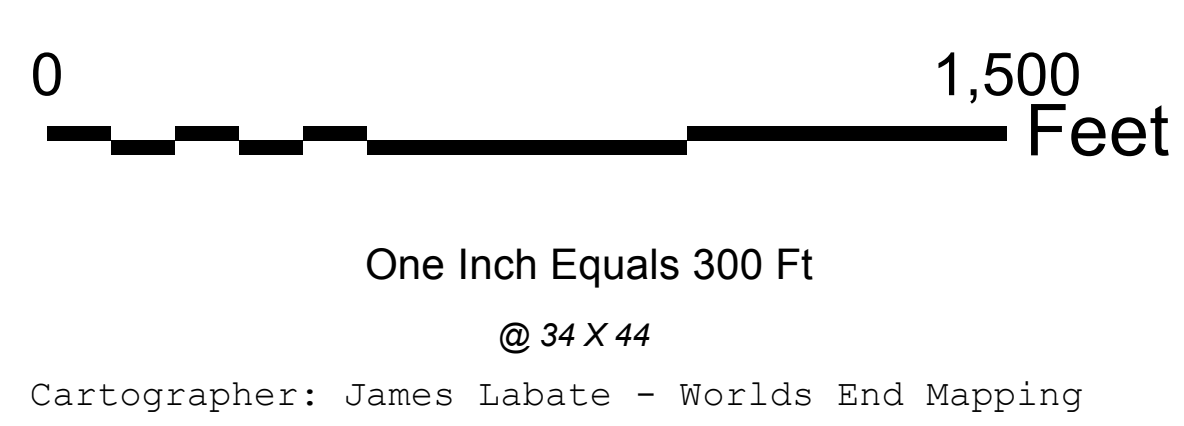


Inset 2
50 0 50 Feet

Legend:

- Parcels listed as vacant per Putnam County GIS*

*Information added to map by Chazen



Water Mains			
	12 INCH		6 INCH
	10 INCH		4 INCH
	8 INCH		1 to 2.5 INCH SERVICE
	12 INCH (UNTREATED)		10 INCH (UNTREATED)
	6 INCH (UNTREATED)		6 INCH (UNTREATED)
	CATSKILL AQUEDUCT VALVE CHAMBER		CATSKILL AQUEDUCT
	FOUNDRY BROOK		VILLAGE BOUNDARY
	OUT OF DISTRICT PROPERTIES WITH CONNECTION TO VILLAGE OF COLD SPRING WATER SERVICE		TAX PARCEL
	WATER AREA		

Notes:

- The tax parcel data was provided by Putnam County Real Tax Department based on 2013 records.
- The water line locations are approximate. Their locations are based on a combination of existing mapping and investigations in the field. Their actual locations should be determined based on exploratory excavations when the location is critical.