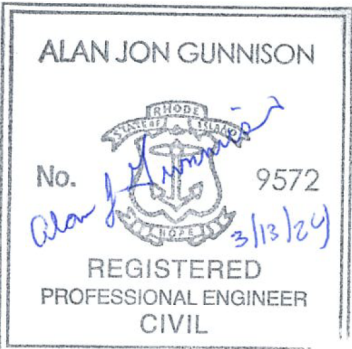


Warwick Water Division
Warwick, Rhode Island

Warwick Lead Service Line Replacements

Bid No. 2024-418
March 2024

**Bidding Requirements, Bond Forms, Contract Agreement,
Conditions of the Contract and Technical Specifications**



Professional Registration No.: 9572



701 George Washington Highway
Lincoln, Rhode Island 02865
401.333.2382
www.BETA-Inc.com

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DIVISION 0

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SECTION 00100

NOTICE TO BIDDERS
CITY OF WARWICK, Rhode Island
WARWICK LEAD SERVICE LINE
REPLACEMENTS PROJECT

The City of Warwick, Rhode Island, acting through its Department of Public Works Water Division invites sealed bids for "City of Warwick, Rhode Island, **Warwick Lead Service Line Replacements Project**", in accordance with the Contract Documents prepared by BETA GROUP, INC., Consulting Engineers, **701 George Washington Highway, Lincoln, Rhode Island, 02865**

Submissions:

All bids should be submitted with one (1) original and two (2) copies in a sealed envelope (total of three (3) copies), which should read: YOUR COMPANY NAME plainly marked on the exterior of the envelope as well as "**Warwick Lead Service Line Replacements, Bid No. 2024-418**" No bids will be accepted via Facsimile or email. All bids must be sealed. Sealed bids will be received by the Purchasing Division no later than **11:00 AM, Wednesday April 17, 2024**. The bids will be opened publicly commencing at 11:00 AM on the same day at 65 Centerville Road, Meeting Room 2.

Delivery:

If delivering to the Purchasing Division in person or sent by delivery service (FedEx/UPS/DHL etc.) use physical address 65 Centerville Road, Warwick, RI 02886, Suite D. If sent to the Purchasing Division via United States Postal Service use mailing address 3275 Post Road Warwick, Rhode Island 02886.

The location, general characteristics, and principal details of the Work are indicated in a set of drawings, entitled "City of Warwick , Rhode Island , **Warwick Lead Service Line Replacements, Bid No. 2024-418**".

The work in this Contract includes, but is not limited to, the removal of 151 lead water service lines, construction of approximately 3,550 linear feet of water service lateral and appurtenant work associated therewith in the City of Warwick, Rhode Island.

Bids will be compared on the basis of the lowest evaluated or responsive bid price. The City of Warwick Water Department has stipulated a Contract completion date before (October 1, 2024) which is prior to the date federal rules go into effect for Lead Service removal. With that understanding the City reserves the right to award this Contract (or portions thereof) to multiple Contractors, if it is in their best interest to do so. Distribution of the Work will be based on qualifications and availability of the Contractor to complete the work within the scheduled timeframe of the Owner.

Bids shall be on a **Unit Price** basis.

Time for Completion for this project shall be **194** consecutive calendar days from the date stipulated in the Notice to Proceed to commence the Work.

Plans & Specs will only be available electronically on or after **March 27, 2024**. Bid documents can be downloaded from the following locations [BidNet Direct - SSO Login \(www.bidnetdirect.com\)](#) or [Open Bids | warwickri \(www.warwickri.gov/bids\)](#) There is no charge for electronic bid documents. Provide the requested information to received bid documents (company name, contact person, phone number, email address, etc.). Addendum will be sent to email provided for Contract Documents request.

Bid Security: Certified, treasurer's or cashier's check or bid bond in the sum of five (5) percent of the Total Bid is required.

Direct all inquiries to:

**Alan Gunnison, P.E.,
Senior Project Manager,
BETA Group, Inc.,
Phone #: (401) 602-2202].**

Attention of Bidders is particularly referred to the Federal and State requirements as to conditions of employment to be observed and wage rates to be paid under the Contract as determined by the Department of Labor and Industries under the provision of Chapters 12 and 13 of Title 37, General laws of Rhode Island, 1956, as amended.

For a bid to be awarded to a corporation, limited liability company or other legal entity, prior to commencing work under the awarded bid, that corporation, company or legal entity may be required to provide to the Purchasing Agent a **Certificate of Good Standing** from **The Rhode Island Secretary of State** dated no more than thirty (30) days prior to the date upon which the bid approval was made. **Please note that no other State's Certificate of Good Standing will be accepted.**

If required, the successful bidder will provide said **Certificate of Insurance, bonds and State of Rhode Island's Certificate of Good Standing** within ten (10) calendar days after notification or the City reserves the right to rescind said award.

Bidder's shall be required to comply with the President's Executive Order No. 11246 and State of Rhode Island Executive Order No. 85-11, as amended.

The Bidders attention is also called to the "Equal Opportunity Clause", the "Nondiscrimination in Employment", and the State requirements of the Contract.

The successful bidder will be required to conform to all provisions of the Federal Davis-Bacon and Related Acts contractor's and subcontract's to pay prevailing wage rates and fringe benefits, as determined by the Secretary of Labor, for corresponding classes of work.

All bids shall comply with the provisions of RIGL §37-2-18.

Each bidder must submit a copy of their bid proposal to be available for public inspection upon the opening of the bids.

No Bidder may withdraw his bid within Ninety (90) days after the actual date of the opening thereof.

The successful Bidder must furnish 100 percent Performance and Labor and Materials Bonds.

The Owner and Engineer, being considered the sole and only judge, reserves the right to waive any informalities in, or to reject, any or all bids, should the Owner deem it to be in the owner's best interest to do so.

**City of Warwick, Rhode Island,
Warwick Department of Public Works
Water Division**

SECTION 00200

INFORMATION FOR BIDDERS

- 1.01 Receipt and Opening of Bids
- 1.02 Location and Work to be Done
- 1.03 Contract Documents
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RECEIPT AND OPENING OF BIDS

- A. The **City of Warwick Department of Public Works Water Division**, Rhode Island , herein called the Owner, acting through its Purchasing Division invites sealed bids for "City of Warwick, Rhode Island , **Warwick Lead Service Line Replacements Project Bid No. 2023-418**", in accordance with the Contract Documents prepared by BETA Group, Inc., Consulting Engineers, **701 George Washington Highway, Lincoln, Rhode Island, 02865**.

B. Such Bids, submitted in sealed envelopes labeled as indicated below.

Submissions:

All bids should be submitted with one (1) original and two (2) copies in a sealed envelope (total of three (3) copies), which should read: YOUR COMPANY NAME plainly marked on the exterior of the envelope as well as “**Warwick Lead Service Line Replacements, Bid No. 2024-418**” No bids will be accepted via Facsimile or email. All bids must be sealed. Sealed bids will be received by the Purchasing Division no later than **11:00 AM, Wednesday April 17, 2024**. The bids will be opened publicly commencing at 11:00 AM on the same day at 65 Centerville Road, Meeting Room 2.

Delivery:

If delivering to the Purchasing Division in person or sent by delivery service (FedEx/UPS/DHL etc.) use physical address 65 Centerville Road, Warwick, RI 02886, Suite D. If sent to the Purchasing Division via United States Postal Service use mailing address 3275 Post Road Warwick, Rhode Island 02886.

C. The Owner may consider informal, any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities in or reject any and all Bids. Conditional or qualified Bids will not be accepted. Any Bid received after the time and date specified shall not be considered. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the Bidder.

D. All bids shall comply with the provisions of RIGL §37-2-18 which provides as follows:

§ 37-2-18. Competitive sealed bidding

(a) Contracts exceeding the amount provided by § 37-2-22 shall be awarded by competitive sealed bidding unless it is determined in writing that this method is not practicable or that the best value for the state may be obtained by using an electronic reverse auction as set forth in § 37-2-18.1. Factors to be considered in determining whether competitive sealed bidding is practicable shall include whether:

(1) Specifications can be prepared that permit award on the basis of either the lowest bid price or the lowest evaluated bid price; and

(2) The available sources, the time and place of performance, and other relevant circumstances as are appropriate for the use of competitive sealed bidding.

(b) The invitation for bids shall state whether the award shall be made on the basis of the lowest bid price or the lowest evaluated or responsive bid price. If the latter basis is used, the objective measurable criteria to be utilized shall be set forth in the invitation for bids, if available. All documents submitted in response to the bid proposal are public pursuant to chapter 38-2 upon opening of the bids. The invitation for bids shall state that each bidder must submit a copy of their bid proposal to be available for public inspection upon the opening of the bids. The burden to identify and withhold from the public copy that is released at the bid opening any trade secrets, commercial or financial information, or other information the bidder deems not subject to public disclosure pursuant to chapter 38-2, the Access to Public Records Act, shall rest with the bidder submitting the bid proposal.

(c) Unless the invitations for bid are accessible under the provisions as provided in § 37-2-17.1,

public notice of the invitation for bids shall be given a sufficient time prior to the date set forth therein for the opening of bids. Public notice may include publication in a newspaper of general circulation in the state as determined by the purchasing agent not less than seven (7) days nor more than twenty-eight (28) days before the date set for the opening of the bids. The purchasing agent may make a written determination that the twenty-eight (28) day limitation needs to be waived. The written determination shall state the reason why the twenty-eight (28) day limitation is being waived and shall state the number of days, giving a minimum and maximum, before the date set for the opening of bids when public notice is to be given.

(d) Bids shall be opened and read aloud publicly at the time and place designated in the invitation for bids. Each bid, together with the name of the bidder, shall be recorded and an abstract made available for public inspection.

(e) The chief purchasing officer shall adopt and file regulations governing the bidding of highway and bridge construction projects in the state not later than December 31, 2011.

(f) Immediately subsequent to the opening of the bids, the copies of bid documents submitted pursuant to subsection 37-2-18(b) shall be made available for inspection by the public. Any objection to any bid on the grounds that it is nonresponsive to the invitation for bids must be filed with the purchasing agent within five (5) business days of the opening of the bids. The purchasing agent shall issue a written determination as to whether the subject bid is nonresponsive addressing each assertion in the objection and shall provide a copy of the determination to the objector and all those who submitted bids at least seven (7) business days prior to the award of the contract. If a bid is nonresponsive to the requirements in the invitation to bid, the bid is invalid, and the purchasing agent shall reject the bid. The purchasing agent shall have no discretion to waive any requirements in the invitation to bid which are identified as mandatory. Nothing in this section shall be construed to interfere with or invalidate the results of the due diligence conducted by the division of purchasing to determine whether bids are responsive and responsible.

(g) Subsequent to the awarding of the bid, all documents pertinent to the awarding of the bid that were not made public pursuant to subsection 37-2-18(e) shall be made available and open to public inspection, pursuant to chapter 38-2, the Access to Public Records Act, and retained in the bid file. The copy of the bid proposal provided pursuant to subsection 37-2-18(b) shall be retained until the bid is awarded.

(h) The contract shall be awarded with reasonable promptness by written notice to the responsive and responsible bidder whose bid is either the lowest bid price, lowest evaluated, or responsive bid price.

(i) Correction or withdrawal of bids may be allowed only to the extent permitted by regulations issued by the chief purchasing officer.

(j) As of January 1, 2011, this section shall apply to contracts greater than one million dollars (\$1,000,000); on January 1, 2012 for all contracts greater than seven hundred fifty thousand dollars (\$750,000); on January 1, 2013 for all contracts greater than five hundred thousand dollars (\$500,000); and on January 1, 2014 for all contracts awarded pursuant to this section.

1.02 LOCATION AND WORK TO BE DONE

- A. The location, general characteristics, and principal details of the Work are indicated in a set of drawings, entitled "**City of Warwick, Rhode Island , Warwick Lead Service Line Replacements Project Bid No. 2024-418**".
- B. Details bound in the Contract Drawings, sometimes referred to herein as the "Drawings".
- C. Additional drawings showing details in accordance with which the Work is to be done will be furnished from time to time by the Engineer, if found necessary, and shall then become part of the Drawings.
- D. The Contractor shall furnish all labor, services, materials, equipment, plant machinery, apparatus, appliances, tools, supplies and all other things necessary to perform all work required for the completion of each item of the Work and as herein specified.
- E. The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described but shall include all incidental work necessary or customarily done for the completion of that item.

1.03 CONTRACT DOCUMENTS

- A. The Contract Documents, INFORMATION FOR BIDDERS, SPECIFICATIONS, and forms for BID, AGREEMENT, and BONDS, may be examined and obtained at the locations designated in the "Notice to Bidders".

1.04 PAYMENT FOR DRAWINGS AND DOCUMENTS

- A. Payment for Drawings and Documents as stated in "Notice to Bidders"

1.05 QUESTIONS REGARDING DRAWINGS AND DOCUMENTS

- A. In general, no answer will be given to prospective bidders in reply to an oral question of the intent or meaning of the Drawings or other Contract Documents, or the equality or use of products or methods other than those designated or described on the Drawings or in the Specifications. Any information given to bidders other than by means of the Drawings and other Contract Documents, including Addenda, as described below, is given informally, for information and the convenience of the bidder only and is not guaranteed. The bidder agrees that such information shall not be used as the basis of nor shall the giving of any such information entitle the bidder to assert any claim or demand against the Owner or the Engineer on account thereof.
- B. To receive consideration, such questions shall be submitted to Alan Gunnison, P.E. by email to AGunnison@Beta-inc.com at least seven calendar days before the established date for receipt of Bids. If the question involves the equality or use of products or methods, it must be accompanied by drawings, specifications or other data in sufficient detail to enable the

Engineer to determine the equality or suitability of the product or method. In general, the Engineer will neither approve nor disapprove particular products prior to the opening of Bids; such products will be considered when offered by the Contractor for incorporation into the Work.

- C. The Engineer will set forth as Addenda, which shall become a part of the Contract Documents, such questions received as above provided as in his sole judgement are appropriate or necessary and his decision regarding each. At least five days prior to the receipt of Bids, he will send a copy of these Addenda to those prospective bidders known to have taken out sets of the Drawings and other Contract Documents.
- D. The Contractor agrees to use the products and methods designated or described in the Specifications as amended by the Addenda.

1.06 PRE-BID CONFERENCE

- A. A pre-bid conference will **not** be held for this project.

1.07 BIDDERS TO INVESTIGATE

- A. Bidders are required to submit their Bids upon the following express conditions, which shall apply to and be deemed a part of every Bid received, viz.:

Bidders must satisfy themselves by personal examination of the Work and by such other means as they may wish, as to the actual conditions there existing, the character and requirements of the Work and difficulties attendant upon its execution, and the accuracy of all estimated quantities stated in the Bid.

1.08 INFORMATION NOT GUARANTEED

- A. All information given on the Drawings or in the other Contract Drawings relating to subsurface and other conditions, natural phenomena, existing pipes and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.
- B. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes or other structures encountered during construction will be the same as those indicated on the Drawings or in the other Contract Documents.
- C. It is agreed further and understood that no bidder or Contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other conditions, natural phenomena, existing pipes or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

1.09 CONDITIONS OF WORK

- A. Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now or will be performed; failure to do so will not relieve the successful bidder of his obligation to furnish all materials and all labor necessary to carry out the provisions of the Contract Documents and to complete the contemplated Work for the consideration set forth in his bid. Insofar as possible, the Contractor, in the carrying out of his work, shall employ such methods or means as will not cause any interruption of or interference with: the operation of the existing sewer; traffic; use of existing facilities and utilities; locations of existing utilities and structures affecting the work or other similar conditions at the site; character of equipment and facilities needed preliminary to and during prosecution of the work; requirements of owners and controlling authorities, having jurisdiction over the various lands, existing structures, facilities, and utilities; and all other conditions affecting the work to be done, and the labor and materials needed; and he shall make his bid in sole reliance thereon; and shall not, at any time after submission of a bid, assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

1.10 BLANK FORM FOR BID

- A. Each bid must be submitted on the prescribed form, accompanied by the Bid Security and any other requested information. All blank spaces for bid prices must be filled in, in ink or typewritten, both in words and numerical figures, and be signed by the bidder with his business address and place of residence. Where both written words and numerical figures are given, the written words shall apply in the event of conflict. All bids shall be prepared in conformity with, and based upon and submitted subject to, all requirements of the Specifications and Drawings, together with all addenda thereto.

- B. **Bidders shall remove and submit the Bid pages (section 00300) and Bid Bond pages (Section 00400) only. All pages shall be correctly assembled, and submitted in accordance with Section 00100.** All erasures or other changes in the Bid must be properly initialed by an authorized representative of the Bidder.

1.11 WITHDRAWAL OF BIDS

- A. Except as hereinafter in this subsection otherwise expressly provided, once his Bid is submitted and received by the Owner for consideration and comparison with other bids similarly submitted, the bidder agrees that he may not and will not withdraw it within Ninety (90) consecutive calendar days after the actual date of the opening of Bids.
- B. Upon proper written request and identification, Bids may be withdrawn only as follows:
 - 1. At any time prior to the designated time for the opening of Bids.
 - 2. Provided the Bid has not theretofore been accepted by the Owner, at any time subsequent to the expiration of the period during which the bidder has agreed not to withdraw his Bid.
- C. Unless a Bid is withdrawn as provided above, the bidder agrees that it shall be deemed open for acceptance until the AGREEMENT has been executed by both parties thereto or until the Owner notifies a bidder in writing that his Bid is rejected or that the Owner does not intend to

accept it, or returns his Bid deposit. Notice of acceptance of a Bid shall not constitute rejection of any other Bid.

1.12 BID SECURITY

- A. Each bid must be accompanied by a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company and payable to the order of the Owner, or by a bid bond prepared on the form of BID BOND attached hereto duly executed and acknowledged by the bidder, as Principal, and by a surety company qualified to do business in the State of **Rhode Island** and satisfactory to the Owner, as Surety. The check or bid bond shall be in the sum of five (5) percent of the total bid and shall be enclosed in the sealed envelope containing the Bid.
- B. Each such check or bid bond may be held by the Owner as security for the fulfillment of the bidder's agreements as hereinabove set forth and as set forth in the BID. Should the bidder fail to fulfill such agreements, his bid check shall become the property of the Owner or if a bid bond was furnished, the bid bond shall become payable to the Owner, as liquidated damages; otherwise, the bid check shall be returned to the bidder as hereinafter provided, or if the security is a bid bond, the bid bond shall become null and void.
- C. Bid checks will be returned to all except the three lowest bidders within five days, Sundays and legal holidays excluded, after the opening of Bids, and to the three lowest bidders within five days, Sunday and legal holidays excluded, after the Owner and the accepted bidder have executed the AGREEMENT. In the event that the AGREEMENT has not been executed by both the accepted bidder and the Owner within 90 consecutive calendar days after the opening of Bids, the bid check will be returned promptly upon demand of any bidder who has not been notified of the acceptance of his Bid.
- D. Bid checks accompanying Bids, which are rejected, will be returned within five days, Sundays and legal holidays excluded, after rejection.
- E. None of the three lowest Bids shall be deemed rejected, notwithstanding acceptance of any Bid, until the AGREEMENT has been executed by both the Owner and the accepted bidder.

1.13 INTERESTED PARTIES TO CONTRACT

- A. The undersigned declares; that the only person interested in this Bid as principals are named herein as such; that no official of the Owner and no person acting for or employed by the Owner is interested directly or indirectly in this Bid, or in any contract which may be made under it, or in any expected profits to arise therefrom; that this Bid is made in good faith, without fraud, collusion or connection with any other person bidding or refraining from bidding for the same work; that he has examined carefully the said instructions and all other documents bound herewith and the Contract Drawings relating to the Contract covered by this Bid and hereby makes them part of this Bid; that he has informed himself fully in regard to all conditions pertaining to the work and place where it is to be done; and that he has made his own examination and carefully checked his estimates for cost and from them makes this Bid.

1.14 ABILITY AND EXPERIENCE OF BIDDER

- A. No award will be made to any bidder who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the Work successfully within the time named. The Engineer and the Owner may make such investigation as they deem necessary to determine the ability of the bidder to perform the work; and the bidder shall furnish to the Engineer and the Owner all such information and data for this purpose as the Engineer and the Owner may request.
- B. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein within the time stated. The Owner's decision or judgement on these matters shall be final, conclusive, and binding for all parties involved.

1.15 BIDS

- A. The Owner reserves the right to waive any informalities in, or to reject any or all Bids which in its sole judgement are either incomplete, conditional, obscure, or not responsive or which contain additions not called for, erasures not properly initialed, alternative, or similar irregularities, or the Owner may waive such omissions, conditions, or irregularities as he may feel appropriate.
- B. Conditional bids will not be accepted. Bidder(s) will be disqualified if more than one proposal is received from an individual, firm, partnership, corporation or association, under the same or different names and such proposals will not be considered.
- C. The Owner reserves the right to reject any or all Bids, should the Owner deem it to be in the public interest to do so.

1.16 COMPARISON OF BIDS

- A. **Bids will be compared on the basis of the lowest evaluated or responsive bid price.** The City of Warwick Water Department has stipulated a Contract completion date before (October 1, 2024) which is prior to the date federal rules go into effect for Lead Service removal. With that understanding the City reserves the right to award this Contract (or portions thereof) to multiple Contractors, if it is in their best interest to do so. Distribution of the Work will be based on qualifications and availability of the Contractor to complete the work within the scheduled timeframe of the Owner.
- B. The term, "Lowest evaluated or responsive bid price," shall mean the bidder(s) possessing the skill, ability, integrity, and available workforce necessary for the faithful performance of the Work; who shall certify that he is able to furnish labor and materials to complete the assignment within the stipulated time frame (prior to October 1, 2024).
- C. Bids should be made on each separate item of work shown in the bid (proposal) with reasonable relation to the probable cost of doing the work included in such items. The Owner reserves the right to reject, wholly, any bid on which an item or items thereof are obviously unbalanced or appear to the Owner to be so unbalanced as to affect or to be liable to affect adversely any interests of the Owner. The attention of the bidder is called to the fact that

unbalancing of bids may adversely affect the Contractor if certain portions for the Work are increased or decreased as provided in the Contract Documents.

- D. A bidder shall state the proposed price for the work by which the bids will be compared. This price is to cover all the expenses incidental to the completion of the work in full conformity with the Contract, Specifications, and Drawings. In the event that there is a discrepancy between the unit prices and the extended totals, the unit prices shall govern. In the event that there is a discrepancy between the lump-sum or unit prices written in words and numerical figures, the prices written in words shall govern. No bid will be accepted which does not contain a unit price or lump sum as indicated for each of the applicable items enumerated in the proposal form.

1.17 ITEMS AND INDETERMINATE ITEMS

- A. The Work to be done under this Contract has been divided into parts or items to enable each bidder to bid on different portions of the work in accordance with his estimate of their cost and so that the actual quantity of work executed under each item may be paid for at the price bid for that particular item, even though such quantity is greater or less than the estimated quantity stated in the BID.
- B. The quantities listed in the bid (proposal) are approximate. The Owner does not expressly or by implication represent that the actual amounts of work will even approximately correspond therewith, but does call particular attention to the uncertainty in the quantities of the work involved which can not be predicted in advance. The work under certain items may be materially greater or less than those given in the Bid as may be necessary in the judgment of the Owner complete the work contemplated in the Contract. Attention is particularly called to the fact that the quantity of work to be done under some bid items may be largely dependent on subsurface ground conditions encountered and, therefore, the quantities of work to be done under the various items may vary substantially from the estimated quantities or may even be omitted.
- C. Certain items in the BID cover classes of work of doubtful necessity or work for which it is impractical to estimate approximate quantities. Such items have been marked "Indeterminate". Prices for certain of such items may have been stipulated in advance by the Owner as stated in the BID.
- D. Only such quantities of the respective items of work actually performed and accepted will be paid for. An increase or decrease in quantity for any item shall not be regarded as grounds for an increase or decrease in the bid prices.

1.18 REDUCTION IN SCOPE OF WORK

- A. The Owner reserves the right to decrease the scope of the work to be done under this Contract and to omit any work in order to bring the cost within available funds. To this end, the Owner reserves the right to reduce the quantity of any items or omit all of any as set forth in the BID, either prior to executing the Contract or at any time during the progress of the Work. The Owner further reserves the right, at any time during the progress of the Work, to restore all or part of any items previously omitted or reduced. Exercise by the Owner of the above rights shall not constitute any ground or basis of claim for damages or for anticipated profits on the work omitted.

- B. Additionally, the Owner reserves the right to decrease the scope of work if the Contractor is not completing a minimum quota of service replacements required to meet the project deadline.

1.19 CONTRACT BONDS

- A. The Bidder whose Bid is accepted agrees to furnish the Contract Bonds in the forms which follow in Section 00600, titled CONTRACT BONDS, each in the sum of the full amount of the Bid and/or Contract Price as determined by the Engineer, and duly executed and acknowledged by the said bidder as Principal and by a surety company qualified to do business under the laws of **Rhode Island** and satisfactory to the Owner, as Surety, for the faithful performance of the contract and payment for labor and materials. The premiums for such Bonds shall be paid by the Contractor.
- B. Surety Companies executing the Contract Bonds must also appear on the U.S. Treasury Department's most current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (Amended) by the Audit Staff Bureau of Accounts.

1.20 POWER OF ATTORNEY

- A. Attorneys-in-fact who sign Bid Bonds or Contract Bonds must file with each Bond a certified and effectively dated copy of their power of attorney.

1.21 EXECUTION OF AGREEMENT

- A. The Bidder whose Bid is accepted will be required and agrees to duly execute the AGREEMENT and furnish the required CONTRACT BONDS within the time limit stated in the BID after notification that the AGREEMENT is ready for signature.
- B. The Bidder whose Bid is accepted upon his failure or refusal to duly execute the AGREEMENT and furnish the required CONTRACT BONDS within the time limit stated in the BID, shall forfeit to the Owner as liquidated damages for such failure or refusal, the surety deposited with his BID.

1.22 INSURANCE CERTIFICATES

- A. The Contractor will not be permitted to start any construction work until he has submitted certificates covering all insurances called for under that subsection of the AGREEMENT, titled "Insurance." The Contractor shall submit said certificates using the forms supplied by the Engineer under said subsection.

1.23 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- A. The bidder must agree to commence work on or before the date specified in the written "NOTICE TO PROCEED" issued by the Owner, and/or Engineer acting on behalf of the Owner, and to fully complete the project within the time specified in Table A of the Agreement, after the date specified in the written "NOTICE TO PROCEED" as stipulated in Table A of the AGREEMENT. The bidder must further agree to pay as liquidated damages

to the Owner, the sum as specified in Table A of the Agreement for each consecutive calendar day thereafter as hereafter provided in the AGREEMENT.

1.24 LAWS AND REGULATIONS

- A. The bidder's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and rules and regulations or authorities having jurisdiction over construction of the project, shall apply to the Contract throughout, and shall be deemed to be included in the Contract the same as though herein written out in full.

1.25 WORK ON STATE, MUNICIPAL, AND PRIVATE PROPERTY

- A. Particular attention is hereby directed to the fact that portions of the Work included under this Contract will be done within the limits of properties that are State-owned, municipal-owned, or privately owned. The Contractor shall be responsible for coordinating the prosecution of the Work of this Contract with the property owner and for providing work in accordance with any additional requirements as specified herein.

1.26 DATUM OR LEVELS

- A. The figures given in the Contract and Specifications or upon the Drawings after the word elevation are based on the vertical datum NAVD88.

1.27 STATE SALES AND USE TAX

- A. Materials and equipment purchased for installation under this Contract are exempt from the **Rhode Island** Sales Tax. The Contractor shall file for exemption on behalf of the Owner with the State of **Rhode Island** Department of Taxation as required by law. The exemption from the Sales Tax shall be taken into account by the Contractor during bidding.

1.28 MANUFACTURER'S EXPERIENCE

- A. Wherever it may be written that an equipment manufacturer must have a specified period of experience with his product, equipment which does not meet the specified experience period may be considered by the Owner and/or Engineer if the equipment supplier or manufacturer is willing to provide a sufficient bond or cash deposit as determined by the Owner and/or Engineer for the duration of the specified time period which will guarantee full replacement of that equipment in the event of failure at no additional cost to the Owner.

1.29 PROTECTION OF LIVES AND HEALTH

- A. The project is subject to all of the Safety and Health Regulations as promulgated by the United States Department of Labor (Title 29, Part 1926/1910 CFR, 1985 revisions); the Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.) as supplemented by the Department of Labor Regulations (Title 29 CFR Part 5); and OSHA 2207, 1983 revisions; and all subsequent amendments thereto. Contractors are urged to make themselves familiar with the requirements of these regulations.

1.30 NONDISCRIMINATION IN EMPLOYMENT

- A. Contracts for work under this bid (proposal) will obligate the Contractors and subcontractors not to discriminate in employment practices.
- B. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, handicap, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex, age, handicap, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading; demotions, or transfers; recruitment or recruitment advertising, layoffs, or terminations; rates of pay or other forms of compensation; selection for training including apprenticeship; and participation in recreational and education activities. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notice to be provided setting forth the provisions of this non-discrimination clause. The Contractor will in all solicitations or advertisements for employees placed by or on behalf on the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, handicap or national origin. The Contractor will cause the foregoing provisions to be inserted in all sub-contracts for any work covered by this Contract so that such provisions will be binding upon each sub-contractor and upon sub-contracts for standard commercial supplies or raw materials.
- C. The Contractor shall keep such records and submit such reports concerning the racial and ethnic origin of applicants for employment and employees as the Owner may require as consistent with Federal and State law. The Contractor agrees to comply with such rules, regulations, or guidelines as the State of **Rhode Island** may implement these requirements. The Contractor further warrants, that he will comply with the President's Executive Order No. 11246 or any preceding similar Executive Order relating thereto.
- D. Bidders and Contractors must, if required, submit a compliance report (EPA Form 5720-4) concerning their employment practices and policies in order to maintain their eligibility to receive award of the Contract.
- E. Successful bidders and Contractors must, if required, submit a list of all Subcontractors who will perform work on the project, and written signed statements from authorized agents of labor pools with which they will or may deal with for employees on the work, together with any information to the effect that such labor pools' practices or policies are in conformity with said Executive Order that they will affirmatively cooperate in or offer no hindrance to the recruitment, employment, and equal treatment of employees seeking employment and performing work under this Contract; or a certification as to when such agents or labor pools have failed or refused to furnish them, prior to award of the Contract.
- F. The successful bidder will be required to comply with Equal Opportunity Requirements and to abide by the prevailing wage rates for Public Work Projects for all employees on the job. It is the responsibility of Bidders to inform themselves as to the local labor conditions, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustment of wage rates. Information is available at the Department of Labor.
- G. The successful bidder must be prepared to comply with the provisions of the General Laws of Rhode Island and attention is called to Title 37, Chapter 13, Section 1-16, relative to the payment of wages, obligations and charges by Contractors on public works projects. Non-

resident Contractors are subject to Section 44-1-6 of the RI General Laws, as amended, regarding OUT-OF-STATE CONTRACTORS.

1.31 SEQUENCE OF OPERATIONS

- A. The Contractor must submit to the Engineer within fourteen (14) calendar days after execution of the Contractor Documents, a sequence of operations, giving detailed plans and schedules of his operation including any elements for by-pass pumping and/or flow diversion during the Work. Said sequence of operations shall be reviewed and must be approved by the Owner and Engineer prior to the start of the Work. The Owner reserves the right to limit or, if found necessary and/or required, delay construction, or certain activities thereof, in certain areas of the Contract should the Owner deem it to be in the public's best interest to do so.
- B. The Contractor shall have no claim for additional compensation or damage on account of any such delays and/or required sequence of operations.
- C. The Contractor shall maintain uninterrupted utility services at all times, and plan his work accordingly.
- D. The Contractor shall coordinate his activities with any other contract and/or contractor to complete the Work as detailed on the Plans and Specifications.

1.32 WETLANDS AND WATERWAYS

- A. The Contractor's attention is directed to the fact that a portion of the work is located within and/or immediately adjacent to wetlands and waterways. Work within these areas is subject to the jurisdiction of the Rhode Island Department of Environmental Management and Coastal Resource Management Council. All requirements and/or control measures deemed necessary by the Department shall be strictly adhered to throughout the duration of this Contract.
- B. The Contractor shall not have or assert any claim for nor shall he be entitled to any additional compensation or damages on account of requirements set forth by the Department of Environmental Management and Coastal Resource Management Council regarding the wetlands and waterways encountered during construction.

END OF SECTION

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SECTION 00300

BID

**To the City of Warwick, RI, herein called the "Owner", for
" Warwick Lead Service Line Replacements Project Bid No. 2024-418"**

The Undersigned, as a bidder herein referred to as singular and masculine, declares as follows:

- (1) The only parties interested in this BID as Principals are named herein;
- (2) this BID is made without collusion with any other person, firm, or corporation;
- (3) no officer, agent, or employee of the Owner is directly or indirectly interested in this BID;
- (4) he has carefully examined the site of the proposed Work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed Work, the difficulties attendant upon its execution and the accuracy of all estimated quantities stated in this BID, and he has carefully read and examined the Drawings, the annexed proposed AGREEMENT and the Specifications and other Contract Documents therein referred to and knows and understands the terms and provisions thereof;
- (5) he understands that information relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty or guarantee, expressed or implied, that the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered will be the same as those shown on the Drawings or in any of the other Contract Documents and he agrees that he shall not use or be entitled to use any such information made available to him through the Contract Documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Owner or the Engineer arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered during the construction work, and he has made due allowance therefore in this BID;
- (6) and he understands that the quantities of work tabulated in this BID or indicated on the Drawings or in the Specifications or other Contract Documents are only approximate and are subject to increase or decrease as deemed necessary by the Engineer/Owner; and he agrees that, if this BID is accepted he will contract with the Owner, as provided in the copy of the Contract Documents deposited in the office of the Engineer, this BID form being part of said Contract Documents, and that he will perform all the work and furnish all the materials and equipment, and provide all labor, services, plant, machinery, apparatus, appliances, tools, supplies and all other things required by the Contract Documents in the manner and within the time therein prescribed and according to the requirements of the Engineer as therein set forth, and that he will take in full compensation therefore the total dollar amount tabulated from the actual measured quantities of said work and each unit or lump sum price stated in this BID as hereinafter set forth.

(Note: All entries in the entire BID must be made clearly and in ink; price bid must be written in both words and figures.)

PLEASE COMPLETE THIS PAGE & SUBMIT WITH YOUR BID

Acknowledgement of Addendum (if applicable)

Addendum Number **Signature of Bidder**

_____ _____
_____ _____

COMPANY NAME: _____

COMPANY ADDRESS: _____

COMPANY ADDRESS: _____

BIDDER'S SIGNATURE: _____

BIDDER'S NAME (PRINT): _____

TITLE: _____ TEL. NO.: _____

EMAIL ADDRESS: _____*

*Please include your email address. Future bids will be emailed, unless otherwise noted.

=====

II. AWARD AND CONTRACT:

The CITY OF WARWICK, acting as duly authorized through its Purchasing Agent/Finance Director/Mayor, accepts the above bid and hereby enters into a contract with the above party to pay the bid price upon completion of the project or receipt of the goods unless another payment schedule is contained in the specifications. All terms of the specifications, both substantive and procedural, are made terms of this contract.

DATE: _____

Bid 2024-418

Purchasing Agent

PLEASE COMPLETE THIS PAGE & SUBMIT WITH YOUR BID

CERTIFICATION & WARRANT*FORM*

This form must be completed and submitted with scaled bid. Failure to do so will result in automatic rejection.

Any and all bids shall contain a certification and warrant that they comply with all relevant and pertinent statutes, laws, ordinances and regulations, in particular, but not limited to Chapter 16- Conflicts of Interest, of the Code of Ordinances of the City of Warwick. Any proven violation of this warranty and representation by a bidder at the time of the bid or during the course of the contract, included, but not limited to negligent acts, either directly or indirectly through agents and/or sub-contractors, shall render the bidder's contract terminated and the bidder shall be required to reimburse the City for any and all costs incurred by the City, including reasonable attorney fees, to prosecute and/or enforce this provision.

Signature

Date

Company Name

Address

Address

***This form cannot be altered**

<u>Item Number</u>	<u>Estimated Quantity</u>	<u>Brief Description: unit or lump-sum price bid in both words and figures.</u>	<u>Total in Figures</u>
1A	1,300 lin. ft.	Construct 1-inch Water Service (Main to curb City Street), per linear foot, _____dollars and _____cents (\$ _____) \$ _____	
1B	130 lin. ft.	Construct 1-inch Water Service (Main to curb State Road), per linear foot, _____dollars and _____cents (\$ _____) \$ _____	
1C	78 each.	Construct 1-inch water curb stop per each, _____dollars and _____cents (\$ _____) \$ _____	
1D	16 each.	Construct 1-inch water corporation stop per each, _____dollars and _____cents (\$ _____) \$ _____	
1E	137 each	Construct 1-inch Water Service (Curb stop to meter pulled), per each, _____dollars	
1F	600 lin. ft.	Construct 1-inch Water Service (Curb to meter excavated), per linear foot, _____dollars	
1G	130 each	Construct 1-inch interior plumbing (Residential), per each. _____dollars and _____cents (\$ _____) \$ _____	

<u>Item Number</u>	<u>Estimated Quantity</u>	<u>Brief Description: unit or lump-sum price bid in both words and figures.</u>	<u>Total in Figures</u>
1H	7 each	Construct 1-inch interior plumbing (Commercial), per each. _____dollars and _____cents (\$ _____) \$ _____	
2A	30 lin. ft.	Construct 2-inch Water Service (Main to curb stop), per linear foot, _____dollars and _____cents (\$ _____) \$ _____	
2B	2 each	Construct 2-inch water curb stop per each _____dollars and _____cents (\$ _____) \$ _____	
2C	2 each	Construct 2-inch water corporation stop per each _____dollars and _____cents (\$ _____) \$ _____	
3	100* cu. yd.	Earth Excavation and Backfill for Test Pits As directed, per cy. yd. _____dollars and _____cents (\$ _____) \$ _____	
4	100* cu. yd.	Earth Excavation Below Normal Grade As directed, per cy. yd. _____dollars and _____cents (\$ _____) \$ _____	
5	100* cu. yd.	Rock Excavation and Disposal, per cu. yd. _____dollars	

<u>Item Number</u>	<u>Estimated Quantity</u>	<u>Brief Description: unit or lump-sum price bid in both words and figures.</u>	<u>Total in Figures</u>
6	100* cu. yd.	Additional Gravel Borrow, per cubic yard, _____dollars	and _____ cents (\$ _____) \$ _____
7	100* cu. yd.	Additional Crushed stone, per cubic yard, _____dollars	and _____ cents (\$ _____) \$ _____
8	100* cu. yd.	Additional Controlled Density Fill, per cubic yard, _____dollars	and _____ cents (\$ _____) \$ _____
9	100* cu. yd.	Additional Concrete, per cubic yard, _____dollars	and _____ cents (\$ _____) \$ _____
10A	300* square yd.	Additional Bituminous Sidewalk (3" thickness), per square yard, _____dollars	and _____ cents (\$ _____) \$ _____
10B	300* square yd.	Additional Concrete Sidewalk (4" thickness), per square yard, _____dollars	and _____ cents (\$ _____) \$ _____
10C	300* Lin. Ft. .	Additional reset granite curb per linear foot, _____dollars	and _____ cents (\$ _____) \$ _____
11	100* Lin. Ft. .	Straw wattles per linear foot, _____dollars	and _____ cents (\$ _____) \$ _____

<u>Item Number</u>	<u>Estimated Quantity</u>	<u>Brief Description: unit or lump-sum price bid in both words and figures.</u>	<u>Total in Figures</u>
12	1** allowance.	Utility Relocation per allowance, Twenty-five Thousand dollars and Zero cents (\$ 25,000.00)	\$ 25,000.00
13	1** Allowance.	Uniformed Traffic Control per allowance, One Hundred Thousand Dollars dollars and Zero cents (\$ 100,000.00)	\$ 100,000.00
14	1** Allowance.	Flagger Traffic Control per allowance, Fifty Thousand Dollars dollars and Zero cents (\$ 50,000.00)	\$ 50,000.00

* Indeterminate quantity for comparison of Bids only. Actual payment shall be in accordance with Section 00200 Items and Indeterminate Items.

** Lump sum price for comparison of Bids only. Actual payment shall be in accordance with Section 01020 Allowances

The bidder, by submittal of this BID, agrees with the Owner that the amount of the bid security deposited with this BID fairly and reasonably represents the amount of damages the Owner will suffer due to the failure of the bidder to fulfill his agreements as above provided.

(SEAL)

_____ L.S.
(Name of Bidder)

By _____
(Signature and title of authorized representative)

(Business address)

(City and State)

Date _____

The bidder is a corporation incorporated in the State (or Commonwealth) of _____ - a partnership - an individual. (Bidder must add and delete as necessary to make this sentence read correctly.)

(Note: If the bidder is a corporation, affix corporate seal and give below the names of its president treasurer, and general manager, if any; if a partnership, give full names and residential addresses of all partners; and if an individual, give residential address, if different from business address.)

The required names and addresses of all persons interested in the foregoing Bid, as Principals, are as follows:

(Add supplementary page if necessary)

CERTIFICATE OF AUTHORIZATION
FOR
BIDDING REPRESENTATIVE

(Note: Bidder must complete for certification of authorized representative signing Bid.)

At a duly authorized meeting of the Board of Directors of the

_____ held on _____, (Name
of Corporation) (Date)

at which all the Directors were present or waived notice, it was voted that

_____ (Name of Authorized Representative) _____ (Title)

of this company shall be, and hereby is, authorized to execute bidding documents, contracts and bonds in the name and on behalf of said company, and to affix the corporate seal thereto, and such execution of any contract obligation in this company's name on its behalf of such

_____ under seal of the company shall be valid and binding upon this company. (Title)
A true copy

ATTEST _____
(Clerk)

Place of Business _____

I hereby certify that I am the clerk of the _____
(Name of Corporation)

_____, that _____
(Name of Authorized Representative)

is the duly elected _____ of said company, and that the
(Title)

above vote has not been amended or rescinded and remains in full force and effect as of the date of this contract.

Corporate
Seal

(Clerk)

STATEMENT OF BIDDERS' QUALIFICATIONS

The following shall accompany the bid and is required as evidence of the bidder's qualifications to perform the work, as bid upon, in accordance with the contract drawings and specifications. This statement must be notarized. All questions must be answered. Additional data may be submitted on separate attached sheets.

1. Name of Bidder _____
2. Permanent Main Office Address _____
3. Official Mailing Address For This Contract _____
4. When Organized? _____
5. Where Incorporated, If a Corporation _____
6. Years Contracting under Present Name _____
7. List contracts on hand, and those completed similar in nature to this kind of project.

Owner	Engineer	Contract	Description	Contract Amount	Completion Date
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

8. List any work the firm has failed to complete, state where and why.

9. If you have ever defaulted on any contract, state where and why.

10. List full names and residences of all principals (i.e.: Officers, Directors, Partners, Owners) interested in this bid.

<u>Name</u>	<u>Residence</u>	<u>Title</u>	<u>Firm</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. State name(s) and qualifications of resident supervisor(s) for this project.

12. List major equipment available for this project and identify ownership or rental.

13. Will you furnish a detailed financial statement and other information, requested by the Owner?

14. List bank references for verifying financial ability of your company.

<u>Name</u>	<u>Address</u>
_____	_____
_____	_____

15. The undersigned hereby authorized and requests any person, firm or corporation, to furnish all information requested by the Owner and/or its designated agents relative to the recitals comprising this Statement of the Bidder's Qualifications.

Dated at _____ this _____ day of _____ 20_____.

(Name of Bidder)

By: _____

(Title)

State of _____

County of _____

_____ being duly sworn in person, deposes and says

that he is _____ of _____,
(Title) (Name of Bidder)

that he is the firm's duly authorized agent to execute these contract documents, and that the answers to the foregoing questions and all statements therein contained are correct and true.

Subscribed and sworn to before me this _____ day of _____ 20_____.

(SEAL)

(Notary Public)

(My Commission Expires)

STATEMENT OF PROPOSED SUBCONTRACTORS

The following shall accompany the bid and is required as evidence of the bidder's qualifications to perform the work as bid upon, in accordance with the contract drawings and specifications. The Bidder must state the names and appurtenant information of all major subcontractors he proposed to use to complete the work as bid upon. Additional data may be submitted on separate attached sheets.

If subcontractors are not to be used to complete the Work and/or any portion thereof, as herein bid upon, the Bidder must acknowledge by writing "NONE" _____.

Description of Work _____

Approximate percentage of Total Bid _____

Proposed Subcontractor, Name _____

Address _____

Description of Work _____

Approximate percentage of Total Bid _____

Proposed Subcontractor, Name _____

Address _____

Description of Work _____

Approximate percentage of Total Bid _____

Proposed Subcontractor, Name _____

Address _____

Bidder to insert description of work, percentage of Total BID, and subcontractors' names as may be required.

This is to certify that all names of the above-mentioned subcontractors are submitted with full knowledge and consent of the respective parties.

The Bidder warrants that none of the proposed subcontractors have any conflict of interest as respects this contract.

Date _____

Bidder

(Name of Bidder)

By

(Signature)

(Title)

(Business Address)

(City and State)

BIDDERS' WORKFORCE / MATERIALS CERTIFICATION

The following shall accompany the bid and is required as evidence of the bidder's commitment to assign the required work force to complete the work and secure the required materials within the scheduled timeframe. This statement must be notarized. All questions must be answered. Additional data may be submitted on separate attached sheets.

- 1. Name of Bidder _____
- 2. Permanent Main Office Address _____
- 3. Identify Licensed Plumbers to be utilized on this project.

Owner	Licensed Plumber (Name)	License Number	Tel. Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- 4. Identify material suppliers.

Company Name	Supplies
_____	_____
_____	_____
_____	_____

5. The undersigned hereby authorized and requests any person, firm or corporation, to furnish all information requested by the Owner and/or its designated agents relative to the recitals comprising this Statement of the Bidder's Workforce/ Materials Certification.

Dated at _____ this _____ day of _____ 20_____.

(Name of Bidder)

By: _____

(Title)

State of _____

County of _____

_____ being duly sworn in person, deposes and says

that he is _____ of _____,
(Title) (Name of Bidder)

that he is the firm's duly authorized agent to execute these contract documents, and that the answers to the foregoing questions and all statements therein contained are correct and true.

Subscribed and sworn to before me this _____ day of _____ 20_____.

(SEAL)

(Notary Public)

(My Commission Expires)

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SECTION 00400

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned (Insert Name of Bidder) _____, as Principal, and (Insert Name of Surety) _____, as Surety, are hereby held and firmly bound and obligated unto the City of Warwick, Rhode Island, as Owner, in the sum of _____ Dollars (\$_____), as liquidated damages for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the City of Warwick, Rhode Island a certain Bid attached hereto and hereby made a part hereof, to enter into a contract in writing, hereinafter referred to as the "AGREEMENT" and/or "Contract", for **"City of Warwick, Rhode Island, Warwick Lead Service Line Replacements, Bid No. 2024-418"**.

NOW THEREFORE,

- (a) If said BID shall be rejected or withdrawn as provided in the INFORMATION FOR BIDDERS attached hereto or, in the alternative,
- (b) If said BID shall be accepted and the Principal shall duly execute and deliver the form of AGREEMENT attached hereto and shall furnish the specified bonds for the faithful performance of the AGREEMENT and/or Contract and for the payment for labor and materials furnished for the performance of the AGREEMENT and/or Contract,

then this obligation shall be void, otherwise it shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder in no event shall exceed the amount of this obligation.

The Surety, for value received, hereby agrees that the obligations of said Surety and its bond shall in no way be impaired or affected by any extensions of the time with which such BID may be accepted, and said Surety does hereby waive notice of any such extensions.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, have duly executed this bond on the _____ day of _____, 20 _____.

(SEAL)

(Name of Principal) L.S.

BY: _____
(Signature)

(Title)

(Name of Surety (Seal)

BY: _____
(Signature and Title)

BY: _____
Attorney-In-Fact

Sealed and delivered in
the presence of:

IMPORTANT: Surety Companies executing BONDS must appear on the U.S. Treasury Department's most current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts and be authorized to transact business in the state where the PROJECT is located.

If the Bond is signed on behalf of the Surety by an Attorney-In-Fact, there should be attached, a duly certified copy of his power of attorney showing his authority to sign such Bond.

SECTION 00500

CONTRACT AGREEMENT
CITY OF WARWICK, Rhode Island
WARWCI LEAD SERVICE LINE
REPLACEMENTS BID NO. 2024-418

THIS AGREEMENT, is executed this _____ day of _____ in the year Two Thousand and [] (herein referred to as the "AGREEMENT") by and between the **City of Warwick**, Rhode Island, party of the first part, and _____ (Name of Contractor) party of the second part.

WITNESSETH, that the parties to these presents, each in consideration of the undertakings, promises, and agreements on the part of the other herein contained, have undertaken, promised, and agreed and do hereby undertake, promise, and agree, the party of the first part for itself, its successors and assigns, and the party of the second part for himself and his heirs, executors, administrators, successors and assigns, as follows:

1.01	Definitions	1.29	Abandonment of Work or Other Default
1.02	The Contract Documents	1.30	Prices for Work
1.03	Obligations and Liability of Contractor	1.31	Moneys May Be Retained
1.04	Authority of the Engineer	1.32	Formal Acceptance
1.05	Supervision of Work	1.33	Progress Estimates
1.06	Insurance	1.34	Partial Acceptance
1.07	Patents	1.35	Final Estimate and Payment
1.08	Compliance with Laws	1.36	Liens
1.09	Provisions Required by Law Deemed Inserted	1.37	Claims
1.10	Permits	1.38	Application of Moneys Retained
1.11	Not to Sublet or Assign	1.39	No Waiver
1.12	Delay by Owner	1.40	Liability of Owner
1.13	Time for Completion	1.41	Guarantee
1.14	Liquidated Damages	1.42	Retain Money for Repairs
1.15	Night, Saturday, Sunday and Holiday Work	1.43	Return of Drawings
1.16	Employ Competent Persons	1.44	Cleaning Up
1.17	Employ Sufficient Labor and Equipment	1.45	Legal Address of Contractor
1.18	Intoxicating Liquors and/or Drugs	1.46	Headings
1.19	Access to Work	1.47	Modification or Termination
1.20	Examination of Work	1.48	Remedies and Arbitration
1.21	Defective Work, Etc.	1.49	Direct Labor cost
1.22	Protection Against Water and Storm	1.50	Termination for Convenience
1.23	Right to Materials	1.51	Equal Employment Opportunity...
1.24	Changes	1.52	Price Adjustment – Liquid Asphalt and Diesel
1.25	Extra Work		
1.26	Extension of Time on Account of Extra Work		
1.27	Changes Not to Affect Bonds		
1.28	Claims for Damages		

1.01 DEFINITIONS

Wherever the words hereinafter defined or pronouns used in their stead occur in the Contract Documents, they shall have the following meaning indicated which shall be applicable to both the singular and plural thereof:

ADDENDA - Written or graphic instruments prior to the opening of Bids which Clarify, correct or change the Bidding Requirements or Contract Documents.

AGREEMENT - the written contract between Owner and Contractor covering the Work to be performed.

"AS DIRECTED," "AS ORDERED," "AS REQUESTED," "AS REQUIRED", "AS

PERMITTED," or words of like import are used, it shall be understood that the direction, order, request, requirement, or permission of the Engineer is intended.

"APPROVED," "ACCEPTABLE," "SUITABLE," "SATISFACTORY," and words of like import shall mean approved by, acceptable to, suitable to, or satisfactory to the Engineer.

APPLICATION FOR PAYMENT - Form used by Contractor in requesting progress or final payments, format to be acceptable to the Engineer.

BID - The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BIDDER - Any person, firm or corporation submitting a bid for the work.

CHANGE ORDER - A document recommended by the Engineer, which is signed by the Contractor and Owner authorizing the addition, deletion or revision in the Work, or adjustment in the Contract Price or Contract Time, issued on or after the effective date of the Agreement.

CONTRACTOR - The person, firm or corporation with whom the Owner has entered into the Agreement.
Contract Bonds - Bid, Performance, and Labor and Materials Bonds and other instruments of security furnished by the Contractor and his surety in accordance with the Contract Documents.

CONTRACT DOCUMENTS - The Agreement, Addenda, Bid, Post Bid documentation submitted prior to the Notice Award, The Notice to Proceed, Bonds, General Conditions, Supplementary Conditions, The Specifications, the Drawings, all written Amendments, Change Orders, Field Orders, and Engineers written interpretations and clarifications.

CONTRACT PRICE - The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

CONTRACT TIME - The number of calendar days stated in the Contract Documents for the completion of the Work.

CONSTRUCTION SUPERINTENDENT - That person designated by the Contractor to carry out the provisions of the Contract.

DATUM OR LEVELS - The figures given in the Contract and Specifications or upon the Drawings after

the word elevation or abbreviation of it, shall mean the distance in feet above mean sea level, the base of the State in which the Work is located and the United States Geodetic Survey (U.S.G.S.).

DRAWINGS - The part of the Contract Drawings which show the characteristics and Scope of the Work to be performed and which have been prepared or approved by the Engineer.

EARTH - Wherever used as the name of an excavated material or material to be excavated, shall mean all kinds of material other than rock as defined in this section.

ELEVATION - The figures given on the Drawings or in the other Contract Documents after the word "elevation" or abbreviation of it shall mean the distance in feet above the datum adopted by the Engineer.

ENGINEER - The person, firm or corporation duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly authorized representatives. (For this Contract, BETA Group, Inc.)

FIELD ORDER - A written order issued by the Engineer which orders minor changes in the Work which do not involve a change in the Contract Price or an extension of the Contract time.

GENERAL REQUIREMENTS - Sections of Division 1 of the Specifications.

"HEREIN," "HEREINAFTER," "HEREUNDER," and words of like import shall be deemed to refer to the Contract Documents.

NOTICE OF AWARD - The written notice of the acceptance of the Bid from the Owner to the successful Bidder.

NOTICE TO PROCEED - Written communication issued by the Owner to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work.

OWNER - The public body or authority, corporation, association, firm or person with whom the Contractor has entered into the Agreement and for whom the Work is to be provided.

PROJECT OR CONTRACT - The undertaking to be performed in the Contract Documents.

PROJECT REPRESENTATIVE - The authorized representative of the owner who is assigned to the project site or any part thereof.

ROCK - wherever used as the name of an excavated material to be excavated, shall mean only boulders and pieces of concrete and masonry exceeding 1 cu. yd. in volume, or igneous, sedimentary, metamorphic, and conglomerate rock which, in the opinion of the Engineer, requires, for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power-operated tool. No soft or disintegrated rock which can be removed with a hand pick or power-operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings, or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed as "rock."

SHOP DRAWINGS - All drawings, diagrams, schedules and other data or information prepared for and submitted by the Contractor, to illustrate portions of the Work.

SPECIFICATIONS - The portions of the Contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

SUBCONTRACTOR - An individual, firm or corporation, approved by the Owner and Engineer having a direct contract with the Contractor or with any other Sub-Contractor for the performance of a part of the Work on the Project.

SUBSTANTIAL COMPLETION - Date certified by the Engineer when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for which it was intended, as expressed in the Contract documents.

SUPPLEMENTARY CONDITIONS - The part of the Contract Documents which amends or supplements the General Conditions.

SUPPLIER - Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed when posted by certified or

registered mail to the said party at his last given address or delivered in person to said party or his authorized representative on the Work.

WORK - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

1.02 THE CONTRACT DOCUMENTS

A. The Contract Documents, as defined above, are sometimes herein referred to as the "Contract".

The Contract Documents are complementary, and what is called for by anyone shall be as binding as if called for by all. In the event of any conflict or inconsistency between the provisions of the AGREEMENT and the provisions of any of the other Contract Documents, the provisions of the AGREEMENT shall prevail.

A. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the edition of the standard specification, manual, code or laws or regulations identified in the reference. In the event a particular edition is not identified, the reference shall mean the latest amended edition in effect at the time of receipt of the Bid. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the Owner, the Contractor or the Designer, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the Engineer, or any of the Engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of the AGREEMENT.

1.03 OBLIGATIONS AND LIABILITY OF CONTRACTOR

A. The Contractor shall do all the work and perform and furnish all the labor, services, materials, equipment, plant, machinery, apparatus, appliances,

tools, supplies and all other things (except as otherwise expressly provided herein) necessary and as herein specified for the proper performance and completion of the Work in the manner and within the time hereinafter specified, in strict accordance with the Drawings, Specifications and other Contract Documents, in conformity with the directions and to the satisfaction of the Engineer, and at the prices herein agreed upon therefor.

B. All parts of the Work and all fixtures, equipment, apparatus and other items indicated on the Drawings and not mentioned in the Specifications, or vice versa, and all work and material usual and necessary to make the work complete in all its parts, including all incidental work necessary to make it complete and satisfactory and ready for use and operation, whether or not they are indicated on the Drawings or mentioned in the Specifications, shall be furnished and executed the same as if they were called for both by the Drawings and by the Specifications.

C. The Contractor shall coordinate his operations with those of any other contractors who may be employed on other work of the Owner, shall avoid interference therewith, and shall cooperate in the arrangements for storage of materials and equipment.

D. The Contractor shall conduct his work so as to interfere as little as possible with private business and public travel. Wherever and whenever necessary or required, he shall maintain fences, furnish watchmen, maintain lights, and take such other precaution as may be necessary to protect life and property.

E. The Contractor shall indemnify and save harmless the Owner and the Engineer and their officers, agents, servants and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses, including attorneys' fees, on account of bodily injury, sickness, disease or death sustained by any person or persons or injury or damage to or destruction of any property, directly or indirectly arising out of, relating to or in connection with the Work, whether or not due or claimed to be due in whole or in part to the active, passive or concurrent negligence or fault of the Contractor, his officers, agents, servants or employees, any of his subcontractors, or any of their respective officers, agents, servants or employees and/or any other person or persons, and whether or not such claims, demands, suits or proceedings are just, unjust, groundless, false or fraudulent; and the Contractor shall and does hereby

assume and agrees to pay for the defense of all such claims, demands, suits and proceedings, provided, however, that the Contractor shall not be required to indemnify the Engineer, his officers, agents, servants or employees, against any such damages occasioned solely by defects in maps, plans, drawings, designs or specifications prepared, acquired or used by the Engineer and/or solely by the negligence or fault of the Engineer; and provided further, that the Contractor shall not be required to indemnify the Owner, his officers, agents, servants or employees, against any such damages occasioned solely by acts or omissions of the Owner other than supervisory acts or omissions of the Owner in the Work.

F. The Contractor shall have complete responsibility for the Work and the protection thereof, and for preventing injuries to persons and damage to the Work and property and utilities on or about the Work, until final completion and final acceptance thereof. He shall in no way be relieved of his responsibility by and right of the Engineer to give permission or directions relating to any part of the Work, by any such permission or directions given, or by failure of the Engineer to give such permission or directions. The Contractor shall bear all costs, expenses, losses and damages on account of the quantity or character of the Work or the nature of the land (including but not limited to subsurface conditions) in or under or on which the Work is done being different from that indicated or shown in the Contract Documents or from what was estimated or expected, or on account of the weather, elements, or other causes.

G. The Contractor shall conduct his operations so as not to damage existing structures or work installed either by him or by other contractors. In case of any such damage resulting from his operations, he shall repair and make good as new the damaged portions at his own expense with the consent of the damaged party. In the event that consent is not given, the Contractor shall continue liable for the damage caused.

H. The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, their officers, agents, servants and employees as he is for his own acts and omissions and those of his own officers, agents, servants and employees.

I. Should the Contractor sustain any loss, damage or delay through any act or omission of any other contractor or any subcontractor of any such other contractor, the Contractor shall have no claim against the Owner therefor, other than for an extension of time,

but shall have recourse solely to such other contractor or subcontractor.

J. If any other contractor or any subcontractor of any such other contractor shall suffer or claim to have suffered loss, damage or delay by reason of the acts or omissions of the contractor or of any of his subcontractors, the Contractor agrees to assume the defense against any such claim and to reimburse such other contractor or subcontractor for such loss or damage.

K. The Contractor agrees to and does hereby indemnify and save harmless the Owner from and against any and all claims by such other contractors or subcontractors alleging such loss, damage or delay from and against any and all claims, demands, suits, proceedings, liabilities, judgments, awards, losses, damages, costs and expenses, including attorneys' fees, arising out of, relating to or resulting from such claims.

L. The Contractor shall promptly pay all federal, state and local taxes which may be assessed against him in connection with the Work or his operations under the AGREEMENT and/or the other Contract Documents, including, but not limited to, taxes attributable to the purchase of material and equipment, to the performance of services, and the employment of persons in the prosecution of the Work.

M. Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material

1. The Owner shall be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specification or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. The Owner shall not be responsible for any such materials brought to the site by the Contractor, Subcontractors, Suppliers or anyone else for whom the Contractor is responsible.

2. To the fullest extent permitted by Laws and Regulations, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Engineer, Engineer's Consultants and the officers, directors, employees, agents other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from such hazardous condition, provided that: (i) any such claim, cost, loss or damage is attributable to

bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) nothing in this subparagraph shall obligate the Owner to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.

1.04 AUTHORITY OF THE ENGINEER

A. The Engineer shall be the sole judge of the intent and meaning of the Drawings and Specifications and his decisions thereon and his interpretation thereof shall be final, conclusive and binding on all parties.

B. The Engineer shall be the Owner's representative during the life of the Contract and he shall observe the Work in progress on behalf of the Owner. He shall have authority (1) to act on behalf of the Owner to the extent expressly provided in the Contract or otherwise in writing; (2) to determine the amount, quality, acceptability and fitness of all work, materials and equipment required by the Contract; and (3) to decide all questions which arise in relation to the Work, the execution thereof, and the fulfillment of the Contract.

C. The Contractor shall proceed without delay to perform the work as directed, instructed, determined or decided by the Engineer and shall comply promptly with such directions, instructions, determinations or decisions. If the Contractor has any objection thereto he may, within ten (10) days of having received any such direction, instruction, determination or decision, require that any such direction, instruction, determination or decision be put in writing and within ten (10) days after receipt of any such writing he may file a written protest with the Owner stating clearly and in detail his objections, the reasons therefor, and the nature and amount of additional compensation, if any, to which he claims he will be entitled thereby. A copy of such protest shall be filed with the Engineer at the same time it is filed with the Owner. Unless the Contractor requires that any such direction, instruction, determination or decision be put in writing within ten (10) days of having received such direction, instruction, determination or decision and unless the Contractor files such written protest with the Owner and Engineer within such ten (10) day period, he shall be deemed to have waived all grounds for protest of such direction, instruction, determination, or decision and all claims for additional compensation or damages occasioned thereby, and shall further be deemed to have accepted such direction, instruction, determination, or decision as being fair, reasonable,

and finally determinative of his obligations and rights under the Contract.

1.05 SUPERVISION OF WORK

A. The Contractor shall be solely responsible for supervision of the Work, shall give the work the constant attention necessary to ensure the expeditious and orderly progress thereof, and shall cooperate with the Engineer in every possible way.

B. At all times, the Contractor shall have his agent on the Work a competent superintendent capable of reading and thoroughly understanding the Drawings and Specifications, with full authority to execute the directions of the Engineer without delay and to supply promptly such labor, services, materials, equipment, plant, apparatus, appliances, tools, supplies and other items as may be required. Such superintendent shall not be removed from the Work without the prior written consent of the Engineer. If, in the opinion of the Engineer, the superintendent or any successor proves incompetent, the Contractor shall replace him with another person approved by the Engineer; such approval, however, shall in no way relieve or diminish the Contractor's responsibility for supervision of the Work.

C. Whenever the Contractor or his agent or superintendent is not present on any part of the Work where it may be necessary to give directions or instructions with respect to such work, such directions or instructions may be given by the Engineer to and shall be received and obeyed by the designated foreman or any other person in charge of the particular work involved.

1.06 INSURANCE

A. Before starting and until final completion and acceptance of the Work and expiration of the guarantee period provided for in the AGREEMENT the Contractor shall procure and maintain insurance of the types specified in paragraphs (1) to (11), inclusive, below, and to the limits for this insurance specified in Table A at the end of this section. All insurance shall be obtained from companies satisfactory to the Owner and Engineer.

B. Insurance shall be in such forms as will protect the Contractor from all claims and liability for damages for bodily and personal injury, including accidental death, and for property damage, which may arise from operations under the Contract, whether such operations

be by himself, his subcontractors, or by anyone directly or indirectly employed or engaged by him.

C. The **City of Warwick**, Rhode Island (Owner) and the Engineer shall be named as an "additionally insured".

D. All insurance policies provided by the Contractor shall include a "*Waiver of Subrogation*" endorsement for the Owner, Engineer and/or other third party entity.

E. The following types of insurance shall be provided on all policies:

1. Workmen's Compensation and Employer's Liability Insurance.

2. General Liability coverage, including Bodily Injury Insurance for operations and completed operations and Contractor's Protective Bodily Injury Insurance.

3. General Liability coverage, including Property Damage Insurance for operations and completed operations and Contractor's Protective Property Damage Insurance, each including coverage for injury to or destruction of wires or pipes and similar property and appurtenant apparatus and the collapse of or structural injury to any building or structure except those on which work under the Contract is being done. Blasting and explosion coverage shall be obtained if there is a need for blasting under the Contract, and no blasting shall be performed until such insurance has been secured.

4. Bodily Injury Insurance covering the operation of all motor vehicles owned by the Contractor.

5. Personal Injury Insurance to cover claims for personal injury and including claims brought by employees.

6. Property Damage Insurance covering the operation of all motor vehicles owned by the Contractor.

7. Insurance to cover bodily injuries and property damage resulting from the use of motor vehicles not owned by the Contractor, while such vehicles are being operated in connection with the prosecution of the Work.

8. Contractual Liability Insurance covering the liability assumed by the Contractor under the fifth paragraph of that subsection titled "Obligations and Liability of Contractor" of this AGREEMENT.

9. Owner's/Contractor's Protective Liability and Property Damage Insurance to protect the Owner and

the Engineer against claims for Property damage and for bodily injuries, including accidental death, caused by the operations of the Contractor or his subcontractors on the Work. The policy shall indicate the Owner and the Engineer as the named insured. A copy of the policy shall be furnished to the Owner and a Certificate of Insurance shall be furnished to the Engineer.

10. Excess/Umbrella Liability Coverage shall be provided in accordance with the minimum limits stated in Table A.

11. Builders' Risk Insurance with an "All Risk" Installation Floater covering loss by fire and extended coverage in the completed value form in the amount of the total insurable value of all structures, materials, and equipment to be built and installed. The insurance shall be obtained from a company satisfactory to the Owner. The policy shall indicate Owner, the Contractor, all subcontractors, and the Engineer as the named insured with loss payable to the Owner as Trustee. The policy shall provide for a 30-day notice to the Owner of cancellation or restrictive amendment. A copy of the policy shall be furnished to the Owner and a Certificate of Insurance shall be furnished to the Engineer. The insurance shall be obtained before the work is started and shall be maintained until the date of completion of the work as stated in the final estimate, or until the Owner occupies or otherwise take possession of the structure, whichever occurs first.

F. All policies shall be so written that the Owner will be notified in writing of cancellation or restrictive amendment at least 30 days prior to the effective date of such cancellation or amendment.

G. Certificates from the Contractor's insurance carriers stating the coverage provided, the limits of liability, and expiration dates shall be filed in triplicate with the Owner before operations are begun.

H. Certificates from the contractor naming the Owner, **City of Warwick**, Rhode Island and the Engineer as additionally insured must be received by the Owner prior to initiating the work.

I. Renewal certificates must be furnished by the Contractor prior to the expiration date of any of the initial insurances.

J. No insurance required or furnished hereunder shall in any way relieve the Contractor of or diminish any of his responsibilities, obligations and liabilities under the Contract.

1.07 PATENTS

A. The Contractor's attention is directed to the following "Patent Indemnity Clause" illustrating the format and/or required wording therefore which shall be used by all manufacturers and/or suppliers, as deemed necessary by the Owner and Engineer, as an Indemnification and Hold Harmless Agreement.

B. This Agreement shall be accepted and approved in form by the Owner and Engineer prior to the approval and/or installation of the product.

PATENT INDEMNIFICATION

"In consideration for their purchase and use of the (Name of product and/or equipment) manufactured by (name of Manufacturer) and for other good and valuable consideration, (Name of Manufacturer) agrees to defend and hold harmless (Name of Contractor), BETA Group, Inc., and the (Name of Owner), and their employees and agents, from and against any liability, loss, cost, expense or damage including reasonable attorneys' and accountants' fees incurred by these entities in defending or prosecuting any claim for such liability, loss, cost, expense or damage resulting or arising out of a claim that the use of the above mentioned product and/or equipment delivered hereunder directly infringes any United States Patent, provided that (Name of Manufacturer) is given authority, information, and assistance for the defense of such suit, and (Name of Manufacturer) shall pay all damages and costs assessed against the above named entities for the use of such produce and/or equipment provided, however, that this indemnification shall not apply to equipment of (Name of Contractor) design, and provided further that if the use of such product and/or equipment is enjoined in any suit, (Name of Manufacturer) shall at its own expense and its option either procure for (name of Contractor) the right to continue the normal use of such produce and/or equipment, replace said product and/or equipment, modify said equipment or refund the purchase price thereof; and provided further that (Name of Manufacturer) indemnity as to use shall not apply to infringement resulting from the use of the produce and/or equipment delivered hereunder in combination with other items where use of the product and/or equipment per se does not constitute infringement."

1.08 COMPLIANCE WITH LAWS

A. The Contractor shall keep himself fully informed of all existing and future federal, state, and local laws,

ordinances, rules, and regulations affecting those engaged or employed on the Work, the materials and equipment used in the Work or the conduct of the Work, and of all orders, decrees and other requirements of bodies of tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the Drawings, Specifications or other Contract Documents in relation to any such law, ordinance, rule, regulation, order, decree or other requirement, the Contractor shall forthwith report the same to the Engineer in writing. The Contractor shall at all times observe and comply with, and cause all his agents, with all such existing and future laws, ordinances, rules, regulations, orders, decrees and other requirements, and he shall protect, indemnify and save harmless the Owner, its officers, agents, servants and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgements, penalties, losses, damages, costs and expenses, including attorneys' fees, arising from or based upon any violation or claimed violation of any such law, ordinance, rule, regulation, order, decree or other requirement, whether committed by the Contractor or any of his agents, servants, employees or subcontractors.

1.09 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

A. Each and every provision of law and clause required by law to be inserted in the Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. 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.

1.10 PERMITS

A. The Contractor shall, at his own expense, take out and maintain all necessary permits from the county, municipal, or other public authorities; shall give the notices required by law; and shall post all bonds and pay all fees and charges incident to the due and lawful prosecution of the Work.

1.11 NOT TO SUBLET OR ASSIGN

A. The Contractor shall constantly give his personal attention to the faithful prosecution of the Work, shall keep the same under his personal control, shall not assign the Contract or sublet the Work or any part thereof without the previous written consent of the Owner, and shall not assign any of the moneys payable

under the Contract, or his claim thereto, unless by and with the like written consent of the Owner and the Surety on the Contract Bonds. Any assignment or subletting in violation hereof shall be void and unenforceable.

B. The Contractor shall not sublet or assign work to a subcontractor(s), for a total in excess of fifty (50) percent of the Contract Price, without prior written approval of the Owner and Engineer.

C. The Contractor shall be fully responsible to the Owner for the acts and omissions of his subcontractors, suppliers, and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

D. The Contractor shall cause appropriate provisions, and applicable State or Federal regulations, to be inserted in all subcontractors relative to the work to bind subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

E. The Contractor's attention is directed to the fact that nothing contained in this Contract shall create any contractual relation between any subcontractor and the Owner.

1.12 DELAY BY OWNER

A. The Owner may delay the beginning of the Work or any part thereof if the necessary lands or rights-of-way for such work shall not have been obtained. The Contractor shall have no claim for additional compensation or damages on account of such delay, but shall be entitled only to any extension of time as hereinafter provided.

1.13 TIME FOR COMPLETION

A. The rate of progress shall be such that the Work shall be performed and completed in accordance with the Contract before the expiration of the time limit stipulated in Table A at the end of this section, except as otherwise expressly provided herein.

B. It is agreed that the rate of progress herein required has been purposely made low enough to allow for the ordinary and foreseeable delays incident to

construction work of this character. No extension of time will be given for ordinary or foreseeable delays, inclement weather, or accidents, and the occurrence of such will not relieve the Contractor from the necessity of maintaining this rate of progress and completing the Work within the stipulated time limit.

C. If delays are caused by acts of God, acts of Government, unavoidable strikes, extra work, or other cause or contingencies clearly beyond the control or responsibility of the Contractor, the Contractor may be entitled to additional time to perform and complete the Work, provided that the Contractor shall, within ten (10) days from the beginning of such delay notify the Owner in writing, with a copy to the Engineer, of the cause and particulars of the delay. Upon receipt of such notification, the Owner shall review and evaluate the cause and extent of the delay. If, under the terms of the AGREEMENT, the delay is properly excusable, the Owner will, in writing, appropriately extend the time for completion of the Work. (This paragraph will be interpreted to include delays in receipt of equipment provided that the Contractor placed his order and submitted shop drawings for such equipment promptly after execution of the Contract, that he has shown due diligence in following the progress of the order, and that the time required for delivery is in accordance with conditions generally prevailing in the industry.) The Contractor agrees that he shall not have or assert any claim for nor shall he be entitled to any additional compensation or damages on account of such delays.

D. The time in which the Work is to be performed and completed is of the essence of this AGREEMENT.

1.14 LIQUIDATED DAMAGES

A. In case the Contractor fails to complete the Work satisfactorily on or before the date of completion fixed herein or as duly extended as hereinbefore provided, the Contractor agrees that the Owner shall deduct from the payments due the Contractor each month the sum set forth in Table A at the end of this section for each calendar day of delay, which sum is agreed upon not as a penalty, but as fixed and liquidated damages for each day of such delay. If the payments due the Contractor are less than the amount of such liquidated damages, said damages shall be deducted from any other moneys due or to become due the Contractor, and, in case such damages shall exceed the amount of all moneys due or to become due the Contractor, the Contractor or his Surety shall pay the balance to the Owner.

1.15 NIGHT, SATURDAY, SUNDAY AND HOLIDAY WORK

A. No work shall be done at night, on Saturday on Sunday or on a holiday except (1) usual protective work, such as pumping and the tending of lights, (2) work done in case of emergency threatening injury to persons or property, or (3) if all of the conditions set forth in the next paragraph below are met.

B. No work other than that included in (1) and (2) above shall be done at night except when (a) in the sole judgment of the Owner, the work will be of advantage to the Owner and can be performed satisfactorily at night, (b) the work will be done by a crew organized for regular and continuous night work, and (c) in the sole judgment of the Owner and Engineer, adequate noise prevention measures are incorporated into the Work by the Contractor to minimize any noise impact within the work area and (d) the Owner has given written permission for such night work. The Contractor is responsible for obtaining all permits and approvals required.

1.16 EMPLOY COMPETENT PERSONS

A. The Contractor shall employ only competent persons on the Work and shall not employ persons or means which may cause strikes, work stoppages or any disturbances by persons employed by the Contractor, any subcontractor, the Owner, the Engineer or any other contractor. Whenever the Engineer notifies the Contractor in writing that in his opinion any person on the Work is incompetent, unfaithful, disorderly, or otherwise unsatisfactory, or not employed in accordance with the provisions of the Contract, such person shall be discharged from the Work and shall not again be employed on it, except with the written consent of the Engineer.

1.17 EMPLOY SUFFICIENT LABOR AND EQUIPMENT

A. If in the sole judgment of the Engineer the Contractor is not employing sufficient labor, plant, equipment or other means to complete the Work within the time specified, the Engineer may, after giving written notice, require the Contractor to employ such additional labor, plant, equipment and other means as the Engineer deems necessary to enable the Work to progress properly.

1.18 INTOXICATING LIQUORS AND/OR DRUGS

A. The Contractor shall not sell and shall neither permit nor suffer the introduction and/or use of intoxicating liquors and/or drugs upon or about the Work.

1.19 ACCESS TO WORK

A. The Owner, the Engineer, and their officers, agents, servants and employees may at any and all times and for any and all purposes, enter upon the Work and the site thereof and the premises used by the Contractor, and the Contractor shall at all times provide safe and proper facilities therefor.

1.20 EXAMINATION OF WORK

A. The Engineer shall be furnished by the Contractor with every reasonable facility for examining and inspecting the Work and for ascertaining that the Work is being performed in accordance with the requirements and intent of the Contract, even to the extent of requiring the uncovering or taking down portions of furnished work by the Contractor.

B. Should the work thus uncovered or taken down prove satisfactory, the cost of uncovering or taking down and the replacement thereof shall be considered as extra work unless the original work was done in violation of the Contract in point of time or in the absence of the Engineer or his inspector and without his written authorization, which case said cost shall be borne by the Contractor. Should the work uncovered or taken down prove unsatisfactory, said cost shall likewise borne by the Contractor.

C. Examination of inspection of the Work shall not relieve the Contractor of any of his obligations to perform and complete the Work as required by the Contract.

1.21 DEFECTIVE WORK, ETC.

A. Until acceptance and during the applicable guarantee period thereafter, the Contractor shall promptly, without charge, repair, correct or replace work, equipment, materials, apparatus or parts thereof which are defective, damaged or unsuitable or which in any way fail to comply with or be in strict accordance with the provisions and requirements of the Contract or applicable guarantee and shall pay to the Owner all

resulting costs, expenses, losses or damages suffered by the Owner.

B. If any material, equipment, apparatus or other items brought upon the site for use or incorporation in the Work, or selected for the same, is rejected by the Engineer as unsuitable or not in conformity with the Specifications or any of the other Contract Documents, the Contractor shall forthwith remove such materials, equipment, apparatus and other items from the site of the Work and shall at his own cost and expense make good and replace the same and any material furnished by the Owner which shall be damaged or rendered defective by the handling or improper installation by the Contractor, his agents, servants, employees or subcontractors.

1.22 PROTECTION AGAINST WATER AND STORM

A. The Contractor shall take all precautions necessary to prevent damage to the Work by storms or by water entering the site of the Work directly or through the ground. In case of damage by storm or water, the Contractor shall at his own cost and expense make such repairs or replacements or rebuild such parts of the Work as the Engineer may require in order that the finished Work may be completed as required by the Contract.

1.23 RIGHT TO MATERIALS

A. Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials, equipment, apparatus and other items furnished after they have been installed or incorporated in or attached or affixed to the Work or the site, but all such materials, equipment, apparatus and other items shall, upon being so installed, incorporated, attached or affixed, become the property of the Owner. Nothing in this subsection shall relieve the Contractor of his duty to protect and maintain all such materials, equipment, apparatus and other items.

1.24 CHANGES

A. The Owner, through the Engineer, may make changes in the Work and in the Drawings and Specifications therefor by making alterations therein, additions thereto or omissions therefrom. All work resulting from such changes shall be performed and furnished under the pursuant to the terms and conditions of the Contract. If such changes result in an increase or decrease in the Work to be done hereunder,

or increase or decrease the quantities thereof, adjustment in compensation shall be made therefor at the unit prices stipulated in the Contract for such work, except that if unit prices are not stipulated for such work, compensation for additional or increased work shall be made as provided hereinafter under the subsection titled "Extra Work"; and for eliminated or decreased work the Contractor shall allow the Owner a reasonable credit as determined by the Engineer.

B. Except in an emergency endangering life or property, no change shall be made unless in pursuance of a written order from the Engineer authorizing the change, and no claim for additional compensation shall be valid unless the change is so ordered.

C. The Contractor agrees that he shall neither have nor assert any claim for or be entitled to any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

1.25 EXTRA WORK

A. The Contractor shall perform any extra work (work in connection with the Contract but not provided for herein) when and as ordered in writing by the Engineer, at the unit prices stipulated in the Contract for such work or, if none are so stipulated, whether (a) at the price agreed upon before such work is commenced and named in the written order for such work, or (b) if the Engineer so elects, for the reasonable cost of such work, as determined by the contractor and approved by the Engineer, plus a percentage of such cost, as set forth below. No extra work shall be paid for unless specifically ordered as such in writing by the Engineer.

B. The Contractor shall submit claim for any extra work within fourteen (14) calendar days of performing said extra work.

C. The cost of extra work done under (b) above shall include the reasonable cost to the Contractor of materials used and equipment installed, common and skilled labor, and foremen, and the fair rental of all machinery and equipment used on the extra work for the period of such use.

D. At the request of the Engineer, the Contractor shall furnish itemized statements for the cost of the extra work ordered as above and give the Engineer access to all records, accounts, bills and vouchers and correspondence relating thereto.

E. The Contractor may include in the cost of extra work the amounts of additional premiums, if any, (other than premiums on bonds) paid on the required insurance on account of such extra work, of Social Security or other direct assessments upon the Contractor's payroll by Federal or other properly authorized public agencies, and of other approved assessments when such assessments are not normally included in payments made by the Contractor directly to his employees, but in fact are, and are customarily recognized as, part of the cost of doing work.

F. The fair rental hourly rate for all machinery and equipment shall be based upon the most recent edition of "Rental Rate Blue Book" published by Equipment Watch or a similar publication approved by the Engineer. Hourly rental rates for machinery and equipment shall be developed by dividing the monthly Blue Book rates by 176 hours per month plus Estimated Hourly Operating Costs (FHWA rate). Rate Adjustment tables shall be utilized for equipment model year and region of operation. If said extra work requires the use of machinery or equipment not already on the site of the Work the cost of transportation, not exceeding a distance of 100 miles, of such machinery or equipment to and from the Work shall be added to the fair monthly rental; provided, however, that this shall not apply to machinery or equipment already required to be furnished under the terms of the Contract.

G. The Contractor shall not include in the cost of extra work any cost or rental of small tools, building, or any portion of the time of the Contractor, his superintendent, or his office and engineering staff.

Note to specifier:

Verify with the client, the percentages for OH&P stated in paragraphs H and I below.

H. To the cost of extra work done by the Contractor's own forces under (b) above (determined as stated above), the Contractor may add [**A: 15 B: 20**] percent to cover his overhead, use of capital, the premium on the Bonds as assessed upon the amount of this extra work, and profit.

I. In the case of extra work done under (b) by a subcontractor the subcontractor shall compute, as above, his cost for the extra work, to which he may add [**A: 15 B: 20**] percent as in the case of the Contractor. The Contractor shall be allowed an additional 5 percent of the subcontractor's initial cost for the extra work

prior to the [**A: 15 B: 20**] percent adjustment, to cover the costs of the Contractor's overhead use of capital, the premium on the Bonds as assessed upon the amount of this work, and profit. Said subcontractor's cost must be reasonable and approved by the Engineer.

J. If extra work is done under (b) above, the Contractor and/or subcontractor shall keep daily records of such extra work. The daily record shall include the names of men employed, the nature of the work performed, and hours worked, materials and equipment incorporated, and machinery or equipment used, if any, in the prosecution of such extra work. This daily record, to constitute verification that the work was done, must be signed both by the Contractor's authorized representative and by the Engineer. A separate daily record shall be submitted for each Extra Work Order.

1.26 EXTENSION OF TIME ON ACCOUNT OF EXTRA WORK

A. When extra work is ordered near the completion of the Contract or at any time during the progress of the Work which unavoidably increases the time for the completion of the Work, and extension of time shall be granted as hereinbefore provided.

1.27 CHANGES NOT TO AFFECT BONDS

A. It is distinctly agreed and understood that any changes made in the Work or the Drawings or Specifications therefor (whether such changes increase or decrease the amount thereof or the time required for its performance) or any changes in the manner of time of payments made by the Owner to the Contractor, or any other modifications of the Contract, shall in no way annul, release, diminish or affect the liability of the Surety on the CONTRACT BONDS given by the Contractor, it being the intent hereof that notwithstanding such changes the liability of the Surety on said bonds continue and remain in full force and effect.

1.28 CLAIMS FOR DAMAGES

A. If the Contractor makes claim for any damages alleged to have been sustained by breach of contract or otherwise, he shall, within ten (10) days after occurrence of the alleged breach or within ten (10) days after such damages are alleged to have been sustained, whichever date is the earlier, file with the Engineer a written, itemized statement of the details of the alleged breach and the details and amount of the

alleged damages. The Contractor agrees that unless such statement is made and filed as so required, his claim for damages shall be deemed waived, invalid and unenforceable, and that he shall not be entitled to any compensation for any such alleged damages. Within ten (10) days after the timely filing of such statement, the Engineer shall file with the Owner a copy of the statement, together with his recommendations for action by the Owner.

B. The Contractor shall not be entitled to claim any additional compensation for damages by reason of any direction instruction, determination or decision of the Engineer, nor shall any such claims be considered, unless the Contractor shall have complied in all respects with the Article titled "Authority of the Engineer", including, but not limited to the filing of a written protest in the manner and within the time therein provided.

1.29 ABANDONMENT OF WORK OR OTHER DEFAULT

A. If the Work shall be abandoned, or any part thereof shall be sublet without previous written consent of the Owner, or the Contract or any moneys payable hereunder shall be assigned otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing, that the conditions herein specified as to rate of progress are not being complied with, or that the Work or any part thereof is being unnecessarily or unreasonably delayed, or that the Contractor has violated or is in default under any of the provisions of the Contract, or if the Contractor becomes bankrupt or insolvent or goes or is put into liquidation or dissolution, either voluntarily or involuntarily, or petitions for an arrangement or reorganization under the Bankruptcy Act, or makes a general assignment for the benefit of creditors or otherwise acknowledges insolvency, the happening of any of which shall be and constitute a default under the Contract, the Owner may notify the Contractor in writing, with a copy of such notice mailed to the Surety, to discontinue all Work or any part thereof; thereupon the Contractor shall discontinue such Work or such part thereof as the Owner may designate; and the Owner may, upon giving such notice, by contract or otherwise as it may determine, complete the Work or such part thereof and charge the entire cost and expense of so completing the Work or such part thereof to the Contractor. In addition to the said entire cost and expense of completing the Work, the Owner shall be entitled to reimbursement from the Contractor and the Contractor agrees to pay to the Owner any losses, damages, costs and expenses, including attorney's fees,

sustained or incurred by the Owner by reason of any of the foregoing causes. For the purposes of such completion the Owner may for itself or for any Contractors employed by the Owner take possession of and use or cause to be used any and all materials, equipment, plant, machinery, appliances, tools, supplies and such other items of every description that may be found or located at the site of the Work.

B. All costs, expenses, losses, damages, attorney's fees and any and all other charges incurred by the Owner under this subsection shall be charged against the Contractor and deducted and/or paid by the Owner out of any moneys due of payable or to become due or payable under the Contract to the Contractor; in computing the amounts chargeable to the Contractor the Owner shall not be held to a basis of the lowest prices for which the completion of the Work or any part thereof might have been accomplished, but all sums actually paid or obligated therefor to effect its prompt completion shall be charged to and against the account of the Contractor. In case the costs, expenses, losses, damages, attorney's fees and other charges together with all payments theretofore made to or for the account of the Contractor are less than the sum which would have been payable under the Contract if the Work had been properly performed and completed by the Contractor, the Contractor shall be entitled to receive the difference, and, in case such costs, expenses, losses, damages, attorneys' fees and other charges, together with all payments theretofore made to or for the account of the Contractor, shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.

1.30 PRICES FOR WORK

A. The Owner shall pay and the Contractor shall receive the prices stipulated in the BID made a part hereof as full compensation for everything performed and furnished and for all risks and obligations undertaken by the Contractor under and as required by the Contract.

1.31 MONEYS MAY BE RETAINED

A. The Owner may at any time retain from any moneys which would otherwise be payable hereunder so much thereof as the Owner may deem necessary to complete the Work hereunder and to reimburse it for all costs, expenses, losses, damage and damages chargeable to the Contractor hereunder, in accordance with the States General Laws.

1.32 FORMAL ACCEPTANCE

A. This Agreement constitutes an entire contract for one whole and complete Work or result. Fixing of the date of completion and acceptance of the Work or a specified part thereof shall only be effective when accomplished by a writing specifically so stating and signed by the Owner.

1.33 PROGRESS ESTIMATES

A. Once a month, except as hereinafter provided, the Engineer shall make an estimate in writing of the total amount and value of the work done to the first of the month by the Contractor. The Owner shall retain a percentage of such estimated value, as set forth in Table A at the end of this section, as part security for fulfillment of the Contract by the Contractor and shall deduct from the balance all previous payments made to the Contractor, all sums chargeable against the Contractor and all sums to be retained under the provisions of the Contract.

B. The Owner shall pay monthly to the Contractor the balance not deducted and/or retained as aforesaid, except that payment may be withheld at any time if, in the sole judgment of the Engineer, the work is not proceeding in accordance with the Contract. If the Owner deems it expedient to do so, it may cause estimates and payments to be made more frequently than one in each month. No progress estimate or payment need be made when, in the sole judgement of the Engineer, the total value of the work done since the last estimate amounts to less than the amount set forth in Table A at the end of this section.

C. Estimates of lump-sum items shall be based on a schedule dividing each such item into its appropriate component parts together with a quantity and a unit price for each part so that the sum of the products of prices and quantities will equal the Contract price for the item. This schedule must be submitted by the Contractor for and must have the approval of the Engineer before the first estimate becomes due.

D. If the Engineer determines that the progress of the Work will be benefited by the delivery to the site of certain materials and equipment, when available, in advance of actual requirement therefor and if such materials and equipment are delivered and properly stored, protected and insured as determined by the Engineer, the cost to the Contractor or subcontractor as established by invoices or other suitable vouchers satisfactory to the Engineer, less the retained

percentages as above provided, may be included in the progress estimates; provided always that there be duly executed and delivered by the Contractor to the Engineer at the same time a Bill of Sale in form satisfactory to the Owner, transferring and assigning to the Owner full ownership and title to such materials or equipment.

1.34 PARTIAL ACCEPTANCE

A. The Owner may, at any time in a written order to the Contractor (1) declare that he intends to use a specified part of the Work which in his opinion is sufficiently complete, in accordance with the Contract Documents, to permit its use; (2) enclose a tentative list of items remaining to be completed or corrected, and (3) fix the date of acceptance of that specified part of the Work.

B. Within 45 days after acceptance under this subsection, the Engineer shall make an estimate in writing of the amount and value of the part of the Work so accepted. The Owner shall pay said amount to the Contractor after deducting therefrom all previous payments, all charges against the Contractor as provided for hereunder, and all amounts to be retained under the provisions of the Contract, said payment to be made at the time of the next monthly progress estimate.

C. Acceptance by the Owner under this subsection shall not relieve the Contractor of any obligations under the Contract Documents except to the extent agreed upon in writing between the Owner and the Contractor.

D. The Owner shall have the right to exclude the Contractor from any part of the Work which has been accepted, but the Owner will allow the Contractor reasonable access thereto to complete or correct items on the tentative list.

1.35 FINAL ESTIMATE AND PAYMENT

A. All quantities shown on progress estimates and all prior payments shall be subject to correction in the final estimate and payment as determined by the Engineer.

B. The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor under or by virtue of this Agreement; and upon satisfactory

completion of the work performed under this Agreement, as a condition before final payment under this Agreement or as a termination settlement under this Agreement the Contractor shall execute and deliver to the Owner a release of all claims against the Owner arising under or by virtue of, this Agreement, except claims which are specifically exempted by the Contractor to be set forth herein. Unless otherwise provided in this Agreement, by State law or otherwise expressly agreed to be the parties to this Agreement, any payment, including final payment under, this Agreement or settlement upon termination of this Agreement shall not constitute a waiver of the Owner's claims against the Contractor or his sureties under this Agreement or applicable Performance and Labor and Materials Bonds.

1.36 LIENS

A. If at any time any notices of lien are filed and labor performed or materials or equipment manufactured, furnished, or delivered to or for the Work, the Contractor shall, at its own cost and expense, promptly discharge, remove or otherwise dispose of the same, and until such discharge, removal or disposition, the Owner shall have the right to retain from any moneys payable hereunder an amount which, in its sole judgement, it deems necessary to satisfy such liens and pay the costs and expenses, including attorneys' fees, of defending any actions brought to enforce the same, or incurred in connection therewith or by reason thereof.

1.37 CLAIMS

A. If at any time there be any evidence of any claims for which the Contractor is or may be liable or responsible hereunder, the Contractor shall promptly settle or otherwise dispose of the same, and until such claims are settled or disposed of, the Owner may retain from any moneys which would otherwise be payable hereunder so much thereof as, in its sole judgement, it may deem necessary to settle or otherwise dispose of such claims and to pay the costs and expenses, including attorney's fees, of defending any actions brought to enforce such claims, or incurred in connection therewith or by reason thereof.

1.38 APPLICATION OF MONEYS RETAINED

A. The Owner may apply any moneys retained hereunder to reimburse itself for any and all costs, expenses, losses, damage and damages, liabilities, suits, judgements and awards incurred, suffered or

sustained by the Owner and chargeable to the Contractor hereunder or as determined hereunder.

1.39 NO WAIVER

A. Neither the inspection by the Owner or the Engineer, nor any order, measurement, approval, determination, decision or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for or use, occupancy, possession or acceptance of the whole or any part of the Work by the Owner, nor any extension of time, nor any other act or omission of the Owner or of the Engineer shall constitute or be deemed to be an acceptance of any defective or improper work, materials, or equipment nor operate as a waiver of any requirement or provision of the Contract, nor of any remedy, power or right of or herein reserved to the Owner, nor of any right to damages for breach of contract. Any and all rights and/or remedies provided for in the Contract are intended and shall be construed to be cumulative; and, in addition to each and every other right and remedy provided for herein or by law, the Owner shall be entitled as of right to a writ of injunction against any breach or threatened breach of the Contract by the Contractor, by his subcontractors or by any other person or persons.

1.40 LIABILITY OF OWNER

A. No person, firm or corporation, other than the Contractor who signed this Contract as such, shall have any interest herein or right hereunder. No claim shall be made or be valid either against the Owner or any agent of the Owner and neither the Owner nor any agent of the Owner shall be liable for or be held to pay any money, except as herein provided. The acceptance by the Contractor of the payment as fixed in the final estimate shall operate as and shall be a full and complete release of the Owner and of every agent of the Owner of and from any and all claims, demands, damages and liabilities of, by or to the Contractor for anything done or furnished for or arising out of or relating to or by reason of the Work or for or on account of any act or neglect of the Owner or of an agent of the Owner or of any other person, arising out of, relating to or by reason of the Work, except the claim against the Owner for the unpaid balance, if any there be, of the amounts retained as herein provided.

1.41 GUARANTEE

A. The Contractor guarantees that the Work and services to be performed under the Contract, and all workmanship, materials and equipment performed,

furnished, used or installed in the construction of the same, shall be free from defects and flaws, and shall be performed and furnished in strict accordance with the Drawings, Specifications, and other Contract Documents, that the strength of all parts of all manufactured equipment shall be adequate and as specified and that the performance test requirements of the Contract shall be fulfilled. This guarantee shall be for a period of one year from and after the date of completion and acceptance of the Work as stated in the final estimate. If part of the Work is accepted in accordance with that subsection of this AGREEMENT titled "Partial Acceptance", the guarantee for that part of the Work shall be for a period of one year from the date fixed for such acceptance.

B. If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, correction, or replacements. If the Contractor neglects to commence making such repairs, correction, or replacements to the satisfaction of the Owner within three (3) days from the date of receipt of such notice, or having commenced fails to prosecute such Work with diligence, the Owner may employ other persons to make the same, and all direct and indirect costs of making said repairs, correction or replacements, including compensation for additional professional services, shall be paid by the Contractor.

1.42 RETAIN MONEY FOR REPAIRS

A. The Owner may retain out of the moneys otherwise payable to the Contractor hereunder a percentage of the amount thereof as set forth in Table A at the end of this section, and may expend the same, in the manner hereinafter provided, in making such repairs, corrections and replacements in the Work as the Owner, in its sole judgement, may deem necessary.

B. If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, correction or replacements. If the Contractor neglects to commence making such repairs, correction, or replacements to the satisfaction of the Owner within three (3) days from the date of receipt of such notice, or having commenced fails to prosecute such work with diligence, the Owner may employ other persons to make the same. The Owner shall pay the cost and expense of the same out of the amounts retained for that purpose. Upon the expiration of the said period of guarantee, provided that

the Work at that time is in good order, the Contractor will be entitled to receive the whole or such part of the sum last aforesaid, if any, as may remain after the cost and expense of making said repairs, correction or replacements, in the manner aforesaid, have been paid therefrom.

1.43 RETURN OF DRAWINGS

A. All Drawings furnished by the Owner or the Engineer to the Contractor may be used only in connection with the prosecution of the Work and shall be returned by the Contractor upon completion of the Work.

1.44 CLEANING UP

A. The Contractor at all times shall keep the site of the Work free from rubbish and debris caused by his operations under the Contract. When the Work has been completed, the Contractor shall remove from the site of the Work all of his plant, machinery, tools, construction equipment, temporary work, and surplus materials so as to leave the Work and the site clean and ready for use.

1.45 LEGAL ADDRESS OF CONTRACTOR

A. The Contractor's business address and his office at or near the site of the Work are both hereby designated as places to which communications shall be delivered. The depositing of any letter, notice, or other communication in a postpaid wrapper directed to the Contractor's business address in a post office box regularly maintained by the Post Office Department or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of receipt. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor delivered to the Engineer. Service of any notice, letter, or other communication upon the Contractor personally shall likewise be deemed sufficient service.

1.46 HEADINGS

A. The headings or titles of any section, subsection, paragraph, provision, or part of the Contract Documents shall not be deemed to limit or restrict the content, meaning or effect of such section, subsection, paragraph, provision or part.

1.47 MODIFICATION OR TERMINATION

A. Except as otherwise expressly provided herein, the Contract may not be modified or terminated except in writing signed by the parties hereto.

1.48 REMEDIES AND ARBITRATION

A. The Contractor's attention is directed to the fact that this Contract is subject to the Public Works Arbitration Act of R.I. General Laws Section 37-16-1 et., seq Unless otherwise provided in this agreement, all claims, counterclaims, disputes and other matters in question between the Owner and the Contractor arising out of, or relating to, this Agreement or in performance interpretation or breach of it will be decided by arbitration at the election of either party, or in a court of competent jurisdiction within the State in which the Owner is located.

B. Any dispute to be arbitrated shall be done so in accordance with the Construction Industry Arbitration Rules and Regulations of the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

C. However, to the extent allowed by law, if neither party wishes to elect arbitration, and if both parties agree, such claim or controversy may be litigated in a court of competent jurisdiction, as provided in this Agreement. Furthermore, if either party elects to bring such claim or controversy to arbitration, it shall first notify the other party and allow that other party ten (10) calendar days (before filing) within which to have the claim mediated, and shall negotiate in good faith during any such mediation effort.

D. In addition, the method of the appointment of an arbitrator shall vary for the method set forth in Article 13 (Appointment form Panel) of the American Arbitration Association (AAA) Construction Industry Arbitration Rules only so far as that: the AAA Shall submit a second, but no further, set of lists should the parties fail to agree upon any of the persons names, or if acceptable arbitrators are unable to act, or if for any other reason the appointment cannot be made from the original submitted lists. If for any reason an appointment cannot be made from the second set of lists, the AAA shall have the power to make the appointment from other members of the Panel without the submission of any additional lists.

1.49 DIRECT LABOR COST

A. Direct labor cost percentage for change orders shall be ____ percent. (Direct labor cost percent shall be established following award and prior to execution of the Contract).

1.50 TERMINATION FOR CONVENIENCE

A. This Agreement may be terminated by the Owner upon not less than seven days' written notice for the Owner's convenience. In the case of termination for convenience, the Owner shall be responsible for amounts due the Contractor for work performed through the date of termination, provided that the Contractor shall submit a request for payment in accordance with the provisions hereof. The Contractor shall have no other claim for payments due with respect to such termination including any claim for lost profits with respect to the balance of the project.

1.51 EQUAL EMPLOYMENT OPPORTUNITY, ANTIDISCRIMINATION AND AFFIRMATIVE ACTION

A. The Contractor shall not discriminate against or exclude any person from participation herein on grounds of race, religion, color, sex, age, or national origin; and that it shall take affirmative actions to insure that applicants are employed, and that employees are treated during their employment, without regard to race, religion, color, sex, age, handicapped status, or national origin.

1.52 PRICE ADJUSTMENT – LIQUID ASPHALT AND DIESEL FUEL

A. The intent of this provision is to insure adequate and fair compensation for unpredictable and fluctuating costs which, from time to time, occur in the prices of Liquid Asphalt and Diesel Fuel. The price adjustment provisions are made part of the Contract to assure more realistic bidding and encourage competition.

B. The base price is the unit price of the material (FOB Terminal), as determined by the RIDOT, just prior to the project bid date.

C. The period price is the unit price of the material (FOB Terminal), as determined by the RIDOT, for any one month period following the bid date during which the price varies from the base price.

D. Price adjustment will be determined by the difference between the Period Price and the Base Price. Price adjustments will only be made at the end of each month during which; a) work was accomplished on the project; and b) prices increase or decrease by 15% or more. Price adjustments will not be allowed beyond the completion date of the Contract or an approved extension thereof.

E. Liquid Asphalt Cement. The asphalt content will be the optimum amount used in every ton of bituminous concrete mixture, as determined by the RIDOT Standard Specifications. The Price Adjustment will be determined by multiplying the total weight of liquid asphalt, in tons, by the difference between the base price and period price.

F. Diesel Fuel. The fuel for operating the plant, and the fuel for hauling and placing bituminous concrete, will equal the total number of tons of bituminous concrete placed during the month in question times a fuel adjustment factor of 2.5 gallons of fuel per ton of bituminous concrete. Tonnage of bituminous concrete placed during the month in question will equal the sum of the weights indicated on the Daily Automated Recordation printout slips provided at the plant. The Price Adjustment will be determined by multiplying the total volume of fuel, in gallons, by the difference between the base price and the period price.

G. No price adjustment will be made for Liquid Asphalt Cement or Diesel Fuel unless the amount of the adjustment exceeds \$500.00 and more than 15% for the month.

IN WITNESS WHEREOF, the parties to this AGREEMENT have hereunto set their hands and seals, and have executed, or caused to be executed by their duly authorized officials, the AGREEMENT in Four (4) copies, each of which shall be deemed an original, as of the day and year first above-written.

WITNESSES

City of Warwick, Rhode Island,
(Owner - party of the first part)

(SEAL)

BY: _____
(Signature)

(Title)

ATTEST:

(Signature)

(Contractor - party of the second part)

(SEAL)

BY: _____
(Signature)

(Title)

(Address)

ATTEST:

(Signature)

Approved As To Form:

Legal Counsel for **City of Warwick, Rhode Island**

CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR IF A CORPORATION
For AGREEMENT

State of _____)

County _____)

on this _____ day of _____, 20 _____, before me personally

came _____ to me known, who being me duly

sworn, did depose and say as follows:

That he resides at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he signed thereto his name and official designation.

Notary Public

(Seal)

My commission expires _____

CERTIFICATE OF OWNER'S LEGAL COUNSEL

I, the undersigned, _____ the duly authorized and acting legal representative of the _____, acting herein through its _____, do hereby certify as follows:

I have examined the foregoing contract and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

By: _____
(Signature)

Date: _____

(Name)

(Title)

(Address)

(City, State, Postal code)

TABLE A

Agreement Subsection Reference	Item	Minimum limits
1.06	Workman's Compensation and Employer's Liability Insurance	As required by the law of the State of Rhode Island
1.06	General Liability including Contractor's Protective, Completed Operations and Contractual Liability	<p>Bodily Injury/Property Damage including C.U. Coverage</p> <hr/> <p>\$1,000,000 (Each Occurrence)</p> <hr/> <p>\$2,000,000 (Aggregate)</p> <hr/> <p>Blasting and explosion coverage shall be obtained if there is a need for blasting under the contract.</p>
1.06	Personal Injury Insurance	\$2,000,000 (Aggregate)
1.06	Automobile Liability including coverage for owned, hired or borrowed vehicles	<p>Bodily Injury/Property Damage</p> <hr/> <p>\$1,000,000 Combined Single Limit (Each Occurrence)</p>
1.06	Owner's/Contractor's Protective (OCP) Liability & Property Damage	<p>Bodily Injury/Property Damage</p> <hr/> <p>\$3,000,000 (Each Occurrence) \$3,000,000 (Aggregate)</p>
1.06	Excess/Umbrella Liability Coverage	\$3,000,000 (Annual aggregate)
1.06	Pollution Liability	<p>\$1,000,000 (Each occurrence) \$3,000,000 (Aggregate)</p>
1.06	Builder's Risk Insurance (If Applicable)	Total insurable value of all structures, materials, and equipment to be built and installed.
1.13	<p>a) <u>Milestone 1</u>: Complete Lead Service Removal All locations by <u>October 1, 2024</u></p> <p>b) Time of Completion - Total Contract</p>	<p>Within 194 consecutive calendar days after the date specified in the Notice to Proceed</p>

1.14	Liquidated Damages for each consecutive calendar day of delay beyond <u>Milestone 1</u> .	<u>\$1,500.00</u>
[A: 1.33	Percentage of Progress Estimates to be Retained The retainage to be paid the Contractor within Ninety (90) days of the date the work is accepted By the awarding authority unless a dispute exists With respect to the work.	5%
1.33	Amount of Minimum Progress Estimates	\$10,000

SECTION 00600

CONTRACT BONDS

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____
(an individual, a partnership, a corporation)

duly organized under the Laws of the State of _____,

and having a usual place of business at _____,

as Principal, and _____, a corporation duly organized

under the Laws of the State of _____,

and duly authorized to do business in the State Rhode Island of _____,

and having a usual place of business at _____

as Surety, are holden and stand firmly bound and obligated unto **City of Warwick**, Rhode Island, as obligee, in the sum of

_____ lawful money of the United States of America, to and for the true payment whereof we bind ourselves and, each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal, be means of a written AGREEMENT (which together with the Contract Documents in said AGREEMENT referred to are collectively sometimes referred to as the "Contract") dated _____, has entered into a contract with the said obligee for **Warwick Lead Service Line Replacements, Bid No. 2024-418** in the **City of Warwick**, Rhode Island, a copy of which agreement is attached hereto and by references made a part hereof.

NOW THEREFORE, THE CONDITION of this obligation is such that if the Principal shall well and truly keep and fully and faithfully perform all of the terms and conditions of said AGREEMENT and of the "Contract Documents" referred to in said AGREEMENT (which collectively are hereinafter and in said AGREEMENT sometimes referred to as the "Contract") and all modifications thereof on the Principal's part to be performed, this obligation shall be void; otherwise it shall remain in full force and effect.

Whenever the said Principal shall be, and declared by the Owner to be, in default under the said Contract, the Owner having performed the Owner's obligations thereunder Surety, for value received, shall promptly remedy the default, or, at the option of the Owner, shall promptly.

- (a) Complete the said AGREEMENT and/or Contract in accordance with its terms and conditions, or

- (b) Obtain a bid or bids for submission to and the approval of the Owner for completing the said AGREEMENT and/or Contract and any modifications thereof in accordance with the terms and conditions thereof, and upon determination by the Owner and the Surety of the lowest responsible and acceptable bidder, arrange for a contract between such bidder and the Owner, and make available to the Owner as the work progresses (even though there should be default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less a sum that shall be equal to the difference between the Contract price as fixed and provided in said AGREEMENT and/or Contract or any modifications thereof to be paid thereunder to the Principal and the amount previously paid by the Owner to and/or for the account of and/or chargeable against the Principal, but not exceeding (including other costs and damages for which the Surety may be liable hereunder) the amount set forth in the first paragraph hereof.

The Surety, for value received, agrees further that no changes in, omissions from, or alterations, modifications or additions to the terms and provisions of said AGREEMENT and/or Contract or the Work to be performed thereunder, and that no extensions of time given or changes made in the manner or time of making payments thereunder, shall in any way effect the Surety's obligations on this bond, and the Surety hereby waives notice of any such changes, omissions, alterations, modifications, additions or extensions.

No right of action shall accrue on this Bond to or for the use of any persons other than the Owner named herein or the heirs, executors, administrators, successors and assigns of the Owner.

IN WITNESS WHEREOF, we have hereunto set our hands and seals to _____
_____ counterparts of this bond, this _____ day of _____,
in the year Two Thousand and _____.

Principal (SEAL)

Principal (SEAL)

Principal (SEAL)

Surety (SEAL)

Surety (SEAL)

NOTE:

If the Principal (Contractor) is a partnership, the Bond should be signed by each of the partners.

If the Principal (Contractor) is a corporation, the Bond should be signed in its correct corporate name by its duly authorized officer or officers.

If this Bond is signed on behalf of the Surety by an attorney-in-fact, there should be attached to it a duly certified copy of his power of attorney showing his authority to sign such Bonds.

There should be executed an appropriate number of counterparts of the Bond corresponding to the number of counterparts of the AGREEMENT.

Date of Bond must not be prior to the date of Contract.

Important

Surety Companies executing BONDS must appear on the U.S. Treasury Department's most current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts and be authorized to transact business in the state where the PROJECT is located.

The attention of the Surety Companies and Principal executing this Performance Bond is Directed to the fact that said Bond shall remain in full effect throughout the life of any guaranty or warranty periods stipulated in the Contract Documents and/or Agreement.

LABOR AND MATERIALS BOND

(NOTE: This Bond is issued simultaneously with the attached Performance Bonds in favor of the Owner.)

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ (an individual, a partnership, a corporation)

duly organized under the Laws of the State of _____,

having a usual place of business at _____,

as Principal, and _____ a corporation duly organized

under the Laws of the State of _____,

and duly authorized to do business in the State of Rhode Island,

and having a usual place of business at _____,

as Surety, are holden and stand firmly bound and obligated unto the **City of Warwick**, Rhode Island, as obligee, in the sum of

_____ lawful money of the United States of America, to and for the true payment whereof we bind ourselves and, each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal, be means of a written AGREEMENT (which together with the Contract Documents in said AGREEMENT referred to are collectively sometimes referred to as the "Contract") dated _____, has entered into a contract with the said obligee for **Warwick Lead Service Line Replacements, Bid No. 2024-418** in the **City of Warwick**, Rhode Island, a copy of which agreement is attached hereto and by references made a part hereof.

NOW, THEREFORE, THE CONDITION of this obligation is such, that if the Principal shall promptly make payments to all claimants as hereinafter defined, for all labor performed or furnished and for all materials and equipment furnished for or used in or in connection with the Work called for by said AGREEMENT and/or Contract and any modifications thereof, including lumber used but not incorporated in said Work, and for the rental or hire of vehicles, tools and other appliances and equipment furnished for or used in connection with said Work, this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

- (a) A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, materials and/or equipment used or reasonably required for use in the performance of the said Work, labor and materials being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental or equipment directly applicable to the said AGREEMENT and/or Contract and any modifications thereof.

- (b) The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials or equipment were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
- (c) No suit or action shall be commenced hereunder by any claimant.

Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials or equipment for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials or equipment were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the said Work is located, save that such service need not be made by a public officer;

After the expiration of one (1) year following the date on which the Principal ceased work on said AGREEMENT and/or Contract and any modifications thereof, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the State in which the said Work, or any part thereof, is situated, or in the United States District Court for the district in which the said Work, or any part thereof, is situated, and not elsewhere.

- (d) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics liens which may be filed of record against said AGREEMENT and/Contract or said Work, whether or not claim for the amount of such lien be presented under and against this bond.

The surety, for value received, agrees further that no changes in, omissions from, or alterations, modifications or additions to the terms and provisions of said AGREEMENT and/or Contract or the Work to be performed thereunder, and that no extensions of time given or changes made in the manner or time of making payments thereunder, shall in any way affect the Surety's obligations on this Bond, and the Surety hereby waives notice of any such changes, omissions, alterations, modifications, additions or extensions.

IN WITNESS WHEREOF, we have hereunto set our hands and seals to _____
counterparts of this Bond, this _____ day of _____, in
the year Two Thousand and _____.

Principal (SEAL)

Principal (SEAL)

Principal (SEAL)

Surety (SEAL)

Surety (SEAL)

NOTE:

If the Principal (Contractor) is a partnership, the Bond should be signed by each of the partners.

If the Principal (Contractor) is a corporation, the Bond should be signed in its correct corporate name by its duly authorized officer or officers.

If this Bond is signed on behalf of the Surety by an attorney-in-fact, there should be attached to it a duly certified copy of his power of attorney showing his authority to sign such Bonds.

There should be executed an approximate number of counterparts of the Bond corresponding to the number of counterparts of the AGREEMENT.

Date of Bond must not be prior to the date of Contract.

Important

Surety Companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

The attention of the Surety Companies and Principal executing this Labor and Materials Bond is directed to the fact that said Bond shall remain in full effect throughout the life of any guaranty or warranty periods stipulated in the Contract Documents and/or Agreement.

CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR IF A CORPORATION
For CONTRACT BONDS

State of _____

County of _____

On this _____ day of _____, 20 _____, before
me personally came _____ to me known, who being by me duly
sworn, did depose and say as follows:

That he resides at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he signed thereto his name and official designation.

Notary Public (Seal)

My commission expires _____

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SECTION 00700

GENERAL CONDITIONS

- 1.01 General Provisions
- 1.02 Definitions
- 1.03 Materials and Equipment
 - A. General
 - B. Handling
 - C. Storage of Excavated Material
 - D. Inspection
 - E. Inspection Away from Site
 - F. Samples
 - G. Shop testing
- 1.04 Contractor's Shop and Working Drawings
- 1.05 Occupying Private Land
- 1.06 Interference with and Protection of Streets
- 1.07 Safety
- 1.08 Existing Facilities
 - A. Dimensions of Existing Structures
 - B. Proposed Pipe Location
 - C. Interference with Existing Works
 - D. Existing Utilities or Connections
 - E. Failure to Repair
 - F. Disturbance of Bounds
- 1.09 Work to Conform
- 1.10 Planning and Progress Schedules
- 1.11 Precautions During Adverse Weather
- 1.12 Temporary Heat
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- 1.15 Patents
- 1.16 "Or Equal" Clause
- 1.17 Additional or Substitute Bonds
- 1.18 Separate Contracts
- 1.19 Payrolls of Contractor and Subcontractors
- 1.20 Payments by Contractor
- 1.21 "Dig Safe" Law
- 1.22 Fire Prevention and Protection
- 1.23 Dust Control
- 1.24 Disposal of Debris
- 1.25 Night, Saturday, Sunday and Holiday Work
- 1.26 Length of Work Day
- 1.27 Hurricane Protection
- 1.28 Reduction in Scope of Work

1.01 GENERAL PROVISIONS

A. The duties and obligations imposed by these General Conditions will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

B. Sections of Division 1, General Requirements govern the execution of the Work of all sections of the specifications.

C. The Specifications are written in imperative and streamlined form. This imperative language is directed to the Contractor, unless stated otherwise.

1.02 DEFINITIONS

A. Wherever the words as listed in subsection 1.01 of the AGREEMENT or pronouns used in their stead occur in the Contract Documents, they shall have the meanings as given in the AGREEMENT.

1.03 MATERIALS AND EQUIPMENT

A. General

1. Unless otherwise provided in the Contract Documents, only new materials and equipment shall be incorporated in the Work.

2. As soon as possible after execution of the AGREEMENT, submit to the Engineer the names and addresses of the manufacturers and suppliers of all materials and equipment proposed to be incorporated into the Work.

3. When shop and working drawings are required as specified below, submit, prior to the submission of such drawings, data in sufficient detail to enable the Engineer to determine whether the manufacturer and/or the supplier have the ability to furnish a product meeting the Specifications.

4. Submit data relating to the materials and equipment proposed to be incorporated into the Work in sufficient detail to enable the Engineer to identify and evaluate the particular product and to determine whether it conforms to the Contract requirements. Such data shall be submitted in a manner similar to that specified for submission of shop and working drawings.

B. Handling

1. Handle, haul, and distribute materials and all surplus materials on the different portions of the Work, required to complete the Work in accordance with the Contract Documents.

2. Provide suitable storage room for materials and equipment during the progress of the Work, and be responsible for the protection, loss of, or damage to materials and equipment furnished under this Contract, until the final completion and acceptance of the Work.

3. Pay all storage and demurrage charges by transportation companies and vendors.

C. Storage of Excavated Material

1. Place excavated materials and equipment to be incorporated in the Work so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work.

2. Materials shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

D. Inspection

1. All materials and equipment furnished by the Contractor to be incorporated in the Work shall be subject to the inspection of the Engineer.

2. No material shall be processed or fabricated for the Work or delivered to the work site without prior concurrence of the Engineer.

3. Facilities and labor for the storage, handling, and inspection of all materials and equipment shall be furnished by the Contractor.

4. Defective materials and equipment shall be removed immediately from the site of the Work.

E. Inspection away from Site

1. If work to be done, away from the construction site, is to be inspected on behalf of the Owner during its fabrication, manufacture, or testing, or before shipment, the Contractor shall give notice to the Engineer of the place and time where such fabrication, manufacture, testing, or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time, as determined solely by the Engineer, so that the necessary arrangements for the inspection can be made.

F. Samples

1. Submit samples of materials for tests, as the Engineer deems necessary to demonstrate conformance with the Specifications. Such samples,

including concrete test cylinders, shall be furnished, taken, stored, packed, and shipped by the Contractor as directed by the Engineer.

2. Furnish suitable molds for making concrete test cylinders. Except as otherwise expressly specified, the Owner shall make arrangements for, and pay for, the tests.

3. Pack samples so as to reach their destination in good condition, and label to indicate the material represented, the name of the building or work and location for which the material is intended, and the name of the Contractor submitting the sample. To ensure consideration of samples, notify the Engineer by letter that the samples have been shipped and properly describe the samples in the letter. Send letter of notification separate from the samples.

4. Submit data and samples, or place his orders, sufficiently early to permit consideration, inspection and testing before the materials and equipment are needed for incorporation in the Work. The consequences for failure to do so shall be the Contractor's sole responsibility.

5. In order to demonstrate the proficiency of workmen, or to facilitate the choice among several textures, types, finishes, surfaces, etc., provide such samples of workmanship of wall, floor, finish, etc., as may be required.

6. After review of the samples, data, etc. the materials and equipment used for the Work shall in all respects conform therewith.

G. Shop Testing

1. When required, furnish to the Engineer in triplicate, sworn copies of manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, equipment performance ratings, and concrete data.

1.04 CONTRACTOR'S SHOP AND WORKING DRAWINGS

A. Submit shop drawings to the Engineer for review and approval.

B. All submittals will be identified as the Engineer may require and in the number of copies also as required by the Engineer.

C. The data shown on the Shop Drawings will be complete regarding quantities, dimensions, specified performance and design criteria, materials and other

data as particular to the Work that the Contractor proposes to provide.

1.05 OCCUPYING PRIVATE LAND

A. Entering or occupying with men, tools, materials, or equipment, any land outside the rights-of-way or property of the Owner (except after written consent from the proper parties) will not be permitted. A copy of the written consent shall be given to the Engineer.

1.06 INTERFERENCE WITH AND PROTECTION OF STREETS

A. Obtain permits from the governing authorities prior to obstructing any portion of a street, road, or private way. If any street, road or private way is rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as ordered by the governing authorities.

B. Maintain streets, roads, private ways, and walks not closed in a passable and safe condition,

C. Provide at least 24 hours in advance, notice to the Owner, Police, Fire and School Departments in writing, with a copy to the Engineer, if the closure of a street or road is necessary. Cooperate with all Departments in the establishment of alternate routes and provide adequate detour signs, plainly marked and well lighted, in order to minimize confusion.

1.07 SAFETY

A. Take all precautions and provide safeguards to prevent personal injury and property damage. Provide protection for all persons including but not limited to employees and employees of other contractors and subcontractors; members of the public; and employees, agents and representatives of the Owner, the Engineer, and regulatory agencies that may be on or about the Work. Provide protection for all public and private property including but not limited to structures, pipes, and utilities, above and below ground.

B. Provide and maintain all safety equipment such as fences, barriers, signs, lights, walkways, guards and fire prevention and fire-fighting equipment.

C. Comply with all applicable Federal, State and local laws, ordinances, rules and regulations and lawful orders of all authorities having jurisdiction for the safety of persons and protection of property.

D. Designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This responsible person shall have the authority to take immediate action to correct unsafe or hazardous conditions and to enforce safety precautions and programs.

1.08 EXISTING FACILITIES

A. Dimensions of Existing Structures

1. Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

B. Proposed Pipe Location

1. Exterior pipelines will be located substantially as indicated on the Drawings, but the right is reserved to the Owner, acting through the Engineer, to make such modifications in location as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings, etc., are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him for laying and jointing different or additional items where required.

2. Small interior piping is indicated diagrammatically on the Drawings, and the exact location is to be determined in the field. Piping shall be arranged in a neat, compact, and workmanlike manner, with a minimum of crossing and interlacing, so as not to interfere with equipment or access way, and, in general, without diagonal runs.

C. Interference with Existing Works

1. Conduct operations so as to interfere as little as possible with existing works. Develop a program, in cooperation with the Engineer and interested officials, which shall provide for the construction and putting into service of the new works in the most orderly manner possible. This program shall be adhered to except as deviations therefrom are expressly permitted. All work of connecting with, cutting into, and reconstructing existing pipes or structures shall be planned to interfere with the

operation of the existing facilities for the shortest time when the demands on the facilities best permit such interference, even though it may be necessary to work outside of normal working hours to meet these requirements. Electrical connections should be coordinated with the Owner so as to minimize disruption of normal plant operations. Before starting work which will interfere with the operation of existing facilities, perform preparatory work and see that all tools, materials and equipment are made ready and at hand.

2. Repair utilities damaged by the Contractors operations during the progress of the work and be responsible for correcting all damages to existing utilities and structures at no additional expense to the Owner. Contact the proper utility or authority to correct or make any changes due to utility or other obstructions during the work but the entire responsibility and expense shall be with the Contractor.

3. Make such minor modifications in the work relating to existing structures as may be necessary, without additional compensation.

4. Submit no claim for additional compensation by reason of delay or inconvenience in adapting his operations to the need for continuous flow of sewage.

D. Existing Utilities or Connections

1. The location of existing underground pipes, conduits, and structures, as shown, has been collected from the best available sources. The Owner, together with its agents, does not imply nor guarantee the data and information in connection with underground pipes, conduits, structures and such other parts as to their completeness, nor their locations as indicated. The Contractor shall assume that there are existing water, sewer, gas and other utility connections to each and every building enroute, whether they appear on the drawings or not. An expense and/or delay occasioned by utilities and structures, or damage thereof, including those not shown, shall be the responsibility of the Contractor, at no additional expense to the Owner.

2. Above ground utilities may be present in the areas of the proposed Work. Take all necessary actions and/or precautions, including, but not limited to, utility company notification and necessary relocations (both temporary and permanent), to ensure proper protection of those aboveground utilities and appurtenances to be affected by his operations. All costs associated with the aboveground utilities shall be paid by the Contractor at no additional expense to the Owner.

3. If and when encountered, existing utilities shall be properly supported and protected during the construction work and the Engineer shall be notified accordingly. The operation of existing utilities shall not be interrupted except with written permission of the operator and owner of such utilities. Allow ample time for all measures as may be required for the continuance of existing utility operations. Take extreme precautions to minimize disruption of utilities. Make prompt and full restitution for repairs by others for all disruptions caused by operations required to perform the Work.

4. Comply with all requirements of utility organizations involved.

E. Failure to Repair

1. Any emergency arising from the interruption of electric, telephone, gas, water, or sewer service due to the activities of the Contractor, shall be repaired by the Contractor as quickly as is possible.

2. If and when, in the opinion of the Owner, the Contractor is not initiating repair work as expeditiously as possible upon notification to do so, the Owner, may at his own option, make the necessary repairs using his own forces or those of others. The cost of such repairs shall be subtracted from the payments due to the Contractor.

F. Disturbance of Bounds

1. Replace all bounds disturbed during the construction operation, at no additional cost to the Owner. The bounds shall be relocated by a land surveyor approved by the Engineer and registered in the State that the Work is to be done.

1.09 WORK TO CONFORM

A. During its progress and on its completion, the Work shall conform to the lines, levels, and grades indicated on the Drawings or given by the Engineer and shall be built in strict accordance with the Contract Documents and the directions given from time to time by the Engineer.

B. All work done without instructions having been given therefore by the Engineer, without proper lines or levels, or performed during the absence of the Engineer, will not be estimated or paid for except when such work is authorized by the Engineer in writing. Work so done may be ordered uncovered or taken down, removed, and replaced at the Contractor's expense.

1.10 PLANNING AND PROGRESS SCHEDULES

A. Before starting the Work and from time to time during its progress, as the Engineer may request, the Contractor shall submit to the Engineer a written description of the methods he plans to use in doing the Work and the various steps he intends to take.

B. Within 14 calendar days after the date of formal execution of the AGREEMENT, the Contractor shall prepare and submit to the Engineer (a) a written schedule fixing the dates on which additional drawings, if any, will be needed by the Contractor and (b) a written schedule fixing the respective dates for the start and completion of various parts of the Work. Each such schedule shall be subject to review from time to time during the progress of the Work.

1.11 PRECAUTIONS DURING ADVERSE WEATHER

A. During adverse weather and against the possibility thereof, take all necessary precautions so that the Work may be properly done and satisfactory in all respects. When required by the manufacturer of the material or equipment to be installed, protection shall be provided by use of tarpaulins, wood and building-paper shelters, or other suitable means.

B. During cold weather, materials shall be preheated, if required, and the materials and adjacent structure into which they are to be incorporated shall be made and kept sufficiently warm so that a proper bond will take place and a proper curing, aging, or drying will result. Protected spaces shall be artificially heated by suitable means that will result in a moist or dry atmosphere according to the particular requirements of the work being protected. Ingredients for concrete and mortar shall be sufficiently heated so that the mixture will be warm throughout when used.

1.12 TEMPORARY HEAT

A. If temporary heat is required for the protection of the Work, provide and install suitable heating apparatus, provide adequate and proper fuel, and shall maintain heat as required.

B. Temporary heating apparatus shall be installed and operated in such manner that finished work will not be damaged.

1.13 ELECTRICAL ENERGY

A. Make all necessary applications and arrangements and pay all fees and charges for electrical energy for power and light necessary for the proper completion of the Work and during its entire progress. Provide and pay for all temporary wiring, switches, connections, and meters.

B. Provide sufficient electric lighting so that all work may be done in a workmanlike manner when there is not sufficient daylight.

1.14 CERTIFICATES OF CONFORMANCE

A. Furnish to the Engineer, in the manner as directed and prior to actual installation, notarized certificates of conformance for all materials to be furnished under this Contract. The notarized certificates of conformance shall state that the material to be furnished meets or exceeds all requirements specified under the Contract Documents. When so directed, the manufacturer's notarized certificates of conformance, certifying that the materials meet the requirements specified shall accompany each shipment of material. Unless otherwise specifically specified and/or directed by the Engineer, all testing of materials required under this Contract shall be provided by the Contractor at no additional expense to the Owner.

1.15 PATENTS

A. Pay, at no additional expense to the Owner, all applicable royalties and license fees associated with the materials and construction methods to be used under this Contract. Defend all suits or claims for infringements of any patent rights, and save the Owner and Engineer harmless from loss on account thereof, except that the Owner shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer (s) is specifically specified with no option to the Contractor. However, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner.

B. Refer to Specification Section 00500, 1.07, Patents, regarding the Contractor's responsibilities for any patent rights associated with the materials and construction methods to be used under this Contract.

1.16 "OR EQUAL" CLAUSE

A. Whenever a material or article required is specified or shown on the drawings by using the name of the proprietary product of a particular manufacturer or vendor, any material or article which will perform adequately, in the Engineer's sole judgment and/or opinion, the duties imposed by the general design may be considered equal and satisfactory providing the material or article so proposed is of equal substance. It shall not be purchased or installed without his written approval. In all cases new material shall be used in the project.

B. If more than one brand, name of material, device, or piece of equipment is shown or specified, each should be regarded as the equal of the other. Any other brand make of material, device or equipment, which in the opinion of the OWNER and/or ENGINEER, is the recognized equal of that specified (considering quality, workmanship, and economy of operation), and is suitable for the purpose intended, may be accepted.

C. ENGINEER will be allowed a reasonable time within which to evaluate submittals for Substitute Items. ENGINEER will be the sole judge of acceptability. No "Or Equal" or Substitute Item will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or equal" or substitute. ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitutes proposed or submitted by CONTRACTOR and in making changes to the Contract Documents. Whether or not ENGINEER accepts a Substitute Item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed Substitute Item.

1.17 ADDITIONAL OR SUBSTITUTE BONDS

A. If at any time the Owner, for justifiable cause, shall be or become dissatisfied with any Surety or Sureties than upon the performance or payment bonds, the Contractor shall, within five (5) calendar days after notice from the Owner so to do, substitute an acceptable bond (or bonds) in such form and sum and signed by such other Surety or Sureties as may

be acceptable to the Owner. The Contractor shall pay the premiums on such bonds with no additional expense to the Owner. No further payments shall be deemed due nor will be made until the new Surety or Sureties shall have furnished such as acceptable bond to the Owner.

1.18 SEPARATE CONTRACTS

A. The Owner reserves the right to let other contracts in connection with the construction of the contemplated work of this project or contiguous projects of the Owner. The Contractor, therefore, will afford any such other contractors reasonable opportunity for the introductions and storage of their materials and the execution of their work, will properly connect and coordinate his work with theirs, and will not commit or permit any act which will interfere with the performance of their work.

B. Coordinate operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work.

C. It is essential that all parties interested in the project cooperate to the end that the entire project will be brought to a successful conclusion as rapidly as possible, but the Owner cannot guarantee that no interference or delay will be caused thereby. Interference and delay resulting from such cooperation shall not be basis of claims against the Owner.

1.19 PAYROLLS OF CONTRACTOR AND SUBCONTRACTORS

A. The Contractor and each of his Subcontractors shall prepare his payrolls on forms prescribed and in accordance with instructions to be furnished by the Owner. Within seven (7) days after the regular payment date of the payroll, the Contractor shall deliver to the Owner, with copies to the Engineer, a certified legible copy or copies of each such payroll. Each such payroll shall contain the statement required by the Federal Regulations issued pursuant to the "Anti-Kickback Statute", (48 Stat. 948; 18 U.S.C. 874; 40 U.S.C. 276C).

B. Carrying any person on his payrolls not employed by him will not be permitted. Carrying employees of a subcontractor on his payrolls will not be permitted, but such employees must be carried on the payrolls of the employing subcontractor.

C. Each Contractor or Subcontractor shall preserve his weekly payroll records for a period of three (3) years from the date of completion of the Contract. The payroll records shall set out accurately and completely the name, occupational classification, and hourly wage rate of each employee, hours worked by him during the payroll period and full weekly wages earned by him, and deductions made from such weekly wages and the actual weekly wages paid to him. Such payroll records shall be made available at all times for inspection by the Owner or his authorized representatives, the Engineer or by agents of the United States Department of Labor.

1.20 PAYMENTS BY CONTRACTOR

A. Pay for all traffic control, safety, transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered. Reimbursable costs for services rendered, as specified in the Contract Documents, shall not be incorporated into partial payment estimates until such time that the Contractor submits to the Engineer actual paid invoices from those in which services were rendered.

1.21 "DIG SAFE" LAW

A. Comply with the Rhode Island General Law, Chapter 39-1.2, "Excavation Near Underground Utility Facilities" which became effective on July 1, 1984.

B. Before proceeding with construction operations, the Contractor shall notify the State of Rhode Island Underground Plant Damage Prevention Systems (DIG SAFE at 811), and shall make such supplemental investigations, including exploratory excavations, by hand digging, as he deems necessary to uncover and determine the exact locations of utilities and structures, and shall have no claims for damages due to encountering subsurface structures or utilities in locations other than that shown on the drawings, or which were made known to the Contractor prior to construction operations. The Contractor shall be responsible and liable for all damages to the existing utilities and structures.

C. Before commencing with the construction of any work, identify any water main, gas main, telephone duct, electric duct, and/or other utility present which is or could be in conflict with the proposed work.

D. Relocation of the affected utilities shall be done as directed by the Owner and in accordance with the requirements of the utility company.

E. The attention of the Contractor is directed to the fact that certain utility companies may not fall under the provisions of "DIG SAFE". Individual utility company notifications by the Contractor shall be necessary to ensure proper notification and protection of all existing utilities affected by this Contract.

1.22 FIRE PREVENTION AND PROTECTION

A. State and municipal rules and regulations with respect to fire prevention, fire-resistant construction and fire protection shall be strictly adhered to and all work and facilities necessary therefore shall be provided and maintained by the Contractor in an approved manner.

B. Provide fire protection equipment such as water tanks, hoses, pumps, extinguishers, and other materials, and apparatus, for the protection of the contract work, and adjacent property. Trained personnel experienced in the operation of all fire protection equipment and apparatus shall be available on the site whenever work is in progress, and at such other times as may be necessary for the safety of the public and the work.

1.23 DUST CONTROL

A. Exercise every precaution and means to prevent and control dust arising out of all construction operations from becoming a nuisance to abutting property owners or surrounding neighborhoods. Pavements adjoining pipe trench shall be kept clean of excess materials wherever and whenever directed by the Engineer. Repeated daily dust control treatment shall be provided to satisfactorily prevent the spread of dust until permanent pavement repairs are made and until earth stockpiles have been removed, and all construction operations that might cause dust have been completed. No extra payment will be made for dust control measures, compensation shall be considered to be included in the prices stipulated for the appropriate items as listed in the Bid.

1.24 DISPOSAL OF DEBRIS

A. The materials from the demolition, and those used in the construction of the Work throughout the project, shall be deposited in such a manner so as to

not endanger persons or the Work, and so that free access may be had at any time to all hydrants, gates and existing equipment in the vicinity of the work. The materials shall be kept trimmed-up so as to be of as little inconvenience as possible to the public travel and plant operations. All excavated materials not approved for backfill and fill, all surplus material, and all rock and boulders resulting from the excavations, shall be removed and satisfactorily disposed of off the site by the Contractor, at no additional expense to the Owner.

B. The materials being removed from the pipelines and manholes during the cleaning process shall be deposited in such a manner as to not endanger the public, plant personnel or persons performing the work. Such debris deposits may be of such nature, high in biological organic contents, or chemically aggressive that they will require proper disposal in a safe, health risk free, environment. (Considered to be "Special Wastes" by Rhode Island Department of Environmental Management) Contact the Owner and Engineer and all agencies having jurisdiction thereof, for approval of debris disposal methods and locations of disposal, prior to disposing of any or all debris removed from pipe cleaning methods. All debris shall be removed and satisfactorily disposed of off the work site, at no additional expense to the Owner.

1.25 NIGHT, SATURDAY, SUNDAY AND HOLIDAY WORK

A. No work shall be done at night or on Saturdays, or Sundays or holidays without the prior written approval of the Owner and Engineer.

1.26 LENGTH OF WORK DAY

A. The Owner retains the right to restrict the Contractor to an eight-hour workday. Such restrictions shall not be the basis for damages or claims against the Owner.

B. The Contractor's attentions is also directed to the fact that should it be deemed necessary to perform various items of work during off-peak flow or traffic hours, early morning or late night hours, then he shall notify the Engineer a minimum of 24 hours in advance as to his intentions and reasons for the change in work hours. The Contractor shall be responsible for properly contacting and informing all involved parties of such a change in work hours. The Contractor shall not be entitled to any additional compensation from the Owner for any expenses that may be incurred by change of working hours and/or scheduling.

1.27 HURRICANE PROTECTION

A. Should hurricane warnings be issued, the Contractor shall take every practicable precaution to minimize danger to persons, to the work and to adjacent property. These precautions shall include closing all openings; removing all loose materials, tools and/or equipment from exposed locations; and removing or securing scaffolding and other temporary work.

1.28 REDUCTION IN SCOPE OF WORK

A. The Owner reserves the right to decrease the scope of the work to be done under this Contract and to omit any work should the Owner deem it to be in the public interest to do so. To this end, the Owner reserves the right to reduce the quantity of any items or omit all of any as set forth in the BID, either prior to executing the contract or at any time during the progress of the work. The Owner further reserves the right, at anytime during the progress of the work, to restore all or part of any items previously omitted or reduced. Exercise by the Owner of the above rights shall not constitute any ground or basis of claim for damages or for anticipated profits on the work omitted.

END OF SECTION

SECTION 00800

SUPPLEMENTARY CONDITIONS

- 1.01 General
- 1.02 Limits of Normal Excavation
- 1.03 Bolts, Anchor Bolts, and Nuts
- 1.04 Concrete Inserts
- 1.05 Sleeves
- 1.06 Cutting and Patching
- 1.07 Foundations, Installations and Grouting
- 1.08 Services of Manufacturer's Representative
- 1.09 Operating Instructions and Parts List
- 1.10 Lubricants
- 1.11 Special Tools
- 1.12 Equipment Drive Guards
- 1.13 Protection Against Electrolysis
- 1.14 Covering Excavated Trench
- 1.15 Maintaining Trench Excavations
- 1.16 Disruption of Storm Drains
- 1.17 Precaution Against Hydraulic Uplift During Construction
- 1.18 Blasting
- 1.19 Nameplates
- 1.20 Special Safety Precautions
- 1.21 Land, Easements and Rights-of-Way
- 1.22 Cleaning Finished Work

1.01 GENERAL

A. These Supplementary Conditions are requirements which amend or supplement the General Conditions specified elsewhere.

B. The duties and obligations imposed by these Supplementary Conditions will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

C. Assertion of any claim for any additional compensation or damages on account of and/or the fulfillment of these Supplementary Conditions will not be allowed.

1.02 LIMITS OF NORMAL EXCAVATION

A. In determining the quantities of excavation to which unit prices shall apply, the limits of normal width and depth of excavation shall be as described below, unless other limits are indicated in the Contract Documents.

1. For pipes in trenches, less than or equal to a depth of 10.0-feet, the normal width of the trench

shall be measured between vertical planes which are a distance apart equal to the sum of 48 inches plus the nominal inside diameter of the pipe.

2. For pipes in trenches, between a depth greater than 10.0-feet and a depth of 20.0-feet, the normal width of the trench shall be measured between vertical planes which are a distance apart equal to the sum of 60-inches plus the nominal inside diameter of the pipe.

3. If the width so computed is less than 5.0-feet for trenches up to 10.0 feet deep than a width of 5.0 feet shall be the normal width. If the width so computed is less than 6.0-feet for trenches greater than 10.0-feet up to 20.0-feet than a width of 6.0-feet shall be the normal width.

4. The normal depth shall be measured to a distance of 0.5 feet below the bottom of the pipe in earth and 0.5 feet in rock, unless there be a cradle underneath the pipe, in which case the normal depth shall be measured to the underside of the cradle. The trench width for the cradle shall be assumed to be that specified above for pipes in the trench.

B. Quantities for payment shall be in accordance with the above limits or the actual widths, **whichever is less.**

C. For concrete placed directly against undisturbed earth, the normal width and depth of the excavation for such concrete shall be measured to the neat lines of the concrete as indicated on the Drawings or as ordered.

D. For concrete placed against rock surfaces resulting from rock excavation, the normal width and depth of the excavation shall be measured to 4 inches outside the neat lines of the concrete as indicated on the Drawings or as ordered.

E. For other structures, except manholes as noted below, the normal width shall be measured between vertical planes 1.0 feet outside the neat lines of the several parts of the structure, except that the width at any elevation shall be measured as not less than the width at a lower elevation. The normal depth shall be measured to the underside of that part of the structure for which the excavation is made.

F. No additional width or depth of trenches excavated in earth or rock shall be allowed at standard circular manholes. The pay limit for rock removed outside proposed manholes shall commence one foot (1.0) outside the widest dimension of the structure or shall be the maximum connecting trench width, whichever is greater.

G. Wherever bell holes are required for jointing pipe, they shall be provided without additional compensation over and above that resulting from measurements as above described.

1.03 BOLTS, ANCHOR BOLTS AND NUTS

A. Furnish bolts, anchor bolts, nuts, washers, plates and bolt sleeves required by equipment to be installed under this Contract in accordance herewith. Anchor bolts shall have suitable washers and, where so required, their nuts shall be hexagonal.

B. Anchor bolts, nuts, washers, plates, and bolt sleeves shall be galvanized unless otherwise indicated or specified.

C. Expansion bolts shall have malleable iron and lead composition elements of the required number of units and size.

D. Unless otherwise specified, stud, tap, and machine bolts, and nuts shall conform to the requirements of ASTM Standard Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners, Designation A307. Hexagonal nuts of the same quality of metal as the bolts shall be used. All threads shall be clean cut and shall conform to ANSI Standard B1.1-1974 for Unified Inch Screw Threads (UN and UNR Thread Form).

E. Bolts, anchor bolts, nuts and washers, specified to be galvanized, shall be zinc coated, after being threaded, by the hot-dip process in conformity with the ASTM Standard Specification for Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip, Designation A123, or the ASTM Standard Specifications for Zinc Coating (Hot Dip) on Iron and Steel Hardware, Designation A153, as is appropriate.

F. Bolts, anchor bolts, nuts, and washers specified to be stainless steel shall be Type 316 stainless steel unless otherwise indicated or specified.

G. Anchor bolts and expansion bolts shall be set accurately. If anchor bolts are set before the concrete has been placed, they shall be carefully held in

suitable templates of acceptable design. Where indicated on the Drawings, specified, or required, anchor bolts shall be provided with square plates at least 4 inches by 4 inches by 3/8 inches or shall have square heads and washers and be set in the concrete forms with suitable pipe sleeves, or both. If anchor or expansion bolts are set after the concrete has been placed, all necessary drilling and grouting or caulking shall be done by the Contractor and care shall be taken not to damage the structure or finish by cracking, chipping, spalling, or otherwise during the drilling and caulking.

1.04 CONCRETE INSERTS

A. Concrete inserts for hangers shall be designed to support safely, in the concrete that is used, the maximum load that can be imposed by the hangers used in the inserts. Inserts for hangers shall be of a type which will permit adjustment of the hangers both horizontally (in one plane) and vertically and locking of the hanger head or nut. All inserts shall be galvanized.

1.05 SLEEVES

A. Unless otherwise indicated on the Drawings or specified, openings for the passage of pipes through floors and walls shall be formed of sleeves of standard-weight, galvanized steel pipe. The sleeves shall be of ample diameter to pass the pipe and its insulation, if any, and to permit such expansion as may occur. Sleeves shall be of sufficient length to be flush at the walls and the bottom of slabs and to project 1 inch above the finished floor surface. Threaded nipples shall not be used as sleeves.

B. Sleeves in exterior walls below ground or in walls to have liquids on one or both sides shall have a 2 inch annular fin of 1/8 inch plate welded with a continuous weld completely around the sleeve at about mid-length. Sleeves shall be galvanized after the fins are attached.

C. All sleeves shall be set accurately before the concrete is placed or shall be built in accurately as the masonry is being built.

1.06 CUTTING AND PATCHING

A. The Contractor shall leave all chases or openings for the installation of his own or any other contractor's or subcontractor's work, or shall cut the same in existing work, and shall see that all sleeves or forms are at the Work and properly set in ample time to prevent delays. He shall see that all such chases, openings, and sleeves are located accurately and are of proper size and shape and shall consult

with the Engineer and the contractors and subcontractors concerned in reference to this work.

B. In case of his failure to leave or cut all such openings or have all such sleeves provided and set in proper time, he shall cut them or set them afterwards at his own expense, but in so doing he shall confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the written consent of the Engineer.

C. The Contractor shall carefully fit around, close up, repair, patch, and point around the work specified herein to the satisfaction of the Engineer.

D. All of this work shall be done by careful workmen competent to do such work and with the proper small hand tools. Power tools shall not be used except where, in the opinion of the Engineer, the type of tool proposed can be used without damage to any work or structures and without inconvenience or interference with the operation of any facilities. The Engineer's concurrence with the type of tools shall not in any way relieve or diminish the responsibility of the Contractor for such damage, inconvenience, or interference resulting from the use of such tools.

E. The Contractor shall not cut or alter the work of any subcontractors or any other contractor, nor permit any of his subcontractors to cut or alter the work of any other contractor, or subcontractor, except with the written consent of the contractor or subcontractor whose work is to be cut or altered or with the written consent of the Engineer. All cutting and patching or repairing made necessary by the negligence, carelessness, or incompetence of the Contractor or any of his subcontractors shall be done by or at the expense of the Contractor and shall be the full responsibility of the Contractor.

1.07 FOUNDATIONS, INSTALLATION AND GROUTING

A. Furnish materials and construct suitable concrete foundation for all equipment installed under this Contract, even though such foundations may not be indicated on the Drawings. The tops of foundations shall be at such elevations as will permit grouting as specified below.

B. Equipment shall be installed by skilled mechanics and in accordance with the instruction of the manufacturer.

C. In setting pumps, motors, and other items of equipment customarily grouted, make an allowance of at least 1-in. for grout under the equipment bases. Shims used to level and adjust the bases shall be steel. Shims may be left embedded in the grout, in which case they shall be installed neatly and so as to be as inconspicuous as possible in the completed work. Unless otherwise permitted, all grout shall be a suitable nonshrink grout.

D. Grout shall be mixed and placed in accordance with the recommendations of the manufacturer. Where practicable, the grout shall be placed through the grout holes in the base and worked outward and under the edges of the base and across the rough top of the concrete foundation to a peripheral form so constructed as to provide a suitable chamber around the top edge of the finished foundation.

E. Where such procedure is impracticable, the method of placing grout shall be as permitted by the Engineer. After the grout has hardened sufficiently, all forms, hoppers, and excess grout shall be removed, and all exposed grout surfaces shall be patched in an approved manner, if necessary, given a burlap-rubbed finish, and painted with at least two coats of an acceptable paint.

1.08 SERVICES OF MANUFACTURER'S REPRESENTATIVE

A. Arrange for the services of qualified factory service representatives from the companies manufacturing or supplying equipment and/or materials to be used or installed in the work as specified, to perform the following duties.

B. After installation of the listed equipment has been completed and the equipment is presumably ready for operation, but before others operate it, the representative shall inspect, operate, test, and adjust the equipment. The inspection shall include but shall not be limited to, the following points as applicable:

1. Soundness (without cracked or otherwise damaged parts).
 2. Completeness in all details, as specified.
 3. Correctness of setting, alignment, and relative arrangement of various parts.
 4. Adequacy and correctness of packing, sealing and lubricants.
- C. The operation, testing, and adjustment shall be as required to prove that the equipment is left in proper condition for satisfactory operation under the conditions specified.

D. On completion of his work, the manufacturer's or supplier's representative shall submit in triplicate to the Engineer a complete signed report of the result of his inspection, operation, adjustments, and tests. The report shall include detailed descriptions of the points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. The report also shall include a certificate that specifically states "the equipment conforms to the requirements of the Contract and is ready for permanent operation and that nothing in the installation will render the manufacturer's warranty null and void".

E. After the Engineer has reviewed the reports from the manufacturer's representatives, the Contractor shall make all arrangements to have the manufacturer's representatives present when the field acceptance tests are made by the Engineer without additional cost to the Owner.

1.09 OPERATING INSTRUCTIONS AND PARTS LISTS

A. Where reference is made in the Technical Specifications to operating instructions and spare parts lists, furnish, for each piece of equipment, six complete sets giving the information listed below:

1. Clear and concise instructions for the operation, adjustment, and lubrication and other maintenance of the equipment. These instructions shall include a complete lubrication chart.

2. List of all parts for the equipment, with catalog numbers and other data necessary for ordering replacement parts.

B. Such instructions and parts lists shall be annotated to indicate only the specific equipment furnished. References to other sizes and types or models of similar equipment shall be deleted or neatly lined out.

C. Such operating instructions and parts lists shall be delivered to the Engineer at the same time that the equipment to which they pertain is delivered to the site.

1.10 LUBRICANTS

A. During testing and prior to acceptance, Furnish all lubricants necessary for the proper lubrication of all equipment furnished under this Contract.

1.11 SPECIAL TOOLS

A. For each type of equipment furnished provide a complete set of all special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation, maintenance, and disassembly of such equipment. Tools shall be high-grade, smooth, forged, alloy, tool steel. Grease guns shall be lever type.

B. Special tools are considered to be those tools which because of their limited use are not normally available, but which are necessary for the particular equipment.

C. Special tools shall be delivered at the same time as the equipment to which they pertain. Properly store and safeguard such special tools until completion of the work, at which time they shall be formally transmitted and delivered to the Owner.

1.12 EQUIPMENT DRIVE GUARDS

A. All equipment driven by open shafts, belts, chains, or gears shall be provided with acceptable all-metal guards enclosing the drive mechanism. Guards shall be constructed of galvanized sheet steel or galvanized woven wire or expanded metal set in a frame of galvanized steel members. Guards shall be secured in position by steel braces or straps that will permit easy removal for servicing the equipment. The guards shall conform in all respects to all applicable safety codes and regulations.

1.13 PROTECTION AGAINST ELECTROLYSIS

A. Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or by other acceptable materials.

1.14 COVERING EXCAVATED TRENCH

A. In addition to the requirements in Section 00700 titled Interference with and Protection of Streets. Cover all open excavations when construction operations are suspended at the end of the day, or in excavated trenches where work is not actually in progress. Cover shall be capable of withstanding AASHTO H20-S16 loading. This cover shall consist of steel plates or some other satisfactory cover of adequate size and strength suitably held in place to keep all traffic out of excavations, all as verified in

writing by the Contractor. The cover shall be laid over the excavation until it is backfilled.

1.15 MAINTAINING TRENCH EXCAVATIONS

A. The length of trench opened at any time, from point where ground is being broken to completed backfill, and also the amount of space in streets or public and private lands occupied by equipment, trench, and supplies, shall not exceed the length of space considered reasonably necessary and expedient by the Engineer. In determining the length of open trench or spaces for equipment, materials, supplies and other necessities, the Engineer will consider: the nature of the lands or streets where work is being done; types and methods of construction and equipment being used; inconvenience to the public or to private parties; possible dangers; and other proper matters. All work must be constructed with a minimum inconvenience and danger to the public and all other parties concerned.

B. Whenever any trench obstructs pedestrian and vehicular traffic in or to any public street, private driveway or property entrance, or on private property, take such means as may be necessary to maintain pedestrian and vehicular traffic and access. Until such time as the work may have attained sufficient strength to support backfill, or if for any other reason it is not expedient to backfill the trench immediately, construct and maintain suitable plank crossing and bridges to carry essential traffic in or to the street, driveway or property in question, as specified or directed.

C. Suitable signs, lights, and such items required by Police Authorities to direct traffic, shall be furnished and maintained by the Contractor at his own expense.

D. Keep streets and premises free from unnecessary obstructions, debris and all other materials. The Engineer may, at any time, order all equipment, materials, surplus from excavations, debris and all other materials lying outside that length of working space, promptly removed. Should the Contractor fail to remove such material within 24 hours after notice to remove the same, the Owner may cause any part or all of such materials to be removed by such persons as he may employ, at the Contractor's expense; and may deduct the costs thereof from payments which may be or may become, due to the Contractor under the Contract. In special cases, where public safety urgently demands it, the Owner may cause such materials to be removed at the Contractor's expense without prior notice.

1.16 DISRUPTION OF STORM DRAINS

A. Portions of the Work may be located in areas that are serviced by storm drains. Take extreme precaution to minimize disruption of the drains, and repair and/or make restitution for repairs by others for all disruptions caused by the construction operations.

1.17 PRECAUTION AGAINST HYDRAULIC UPLIFT DURING CONSTRUCTION

A. Protect all structures against hydraulic uplift until such structures have beneficially completed.

1.18 BLASTING AND PRE-CONSTRUCTION BLASTING SURVEY

A. Blasting will not be permitted.

1.19 NAMEPLATES

A. With the exceptions mentioned below, each piece of equipment shall be provided with a substantial nameplate of noncorrodible metal, securely fastened in place and clearly and permanently inscribed with the manufacturer's name, model or type designation, serial number, principal rated capacities, electrical or other power characteristics, and similar information as appropriate. Coordinate nameplate text requirements with Engineer prior to fabrication. Nameplates shall be securely mounted in a readily visible location approved by the Engineer. Equipment Specification sections may contain additional information regarding nameplates.

B. This requirement shall not apply to standard manually operated hydrants or to gate, globe, check, and plug valves.

C. Each process valve shall be provided with a substantial tag of noncorrodible metal securely fastened in place and inscribed with an identification number in conformance with the Valve Identification Schedule indicated on the drawings or furnished later by the Engineer.

1.20 SPECIAL SAFETY PRECAUTIONS

A. Contractor shall take all necessary safety precautions in completing the work including coordinating with and complying with emergency procedures and requirements of the Owner, Police Department, Fire Department, and the Rhode Island Department of Environmental Management. The Contractor shall comply with all applicable federal, state and local laws, ordinances, rules and regulations and lawful orders of all authorities

having jurisdiction for the safety of persons and protection of property. The Contractor shall have all necessary safety apparatus on-site and workers shall be instructed in its use.

off-site and the work left broom clean, to the satisfaction of the Engineer.

END OF SECTION

1.21 LAND, EASEMENTS, AND RIGHTS-OF-WAY

A. As indicated, a portion of the work may be located within easements and/or rights-of-way, obtained or which will be obtained by the Owner, through private property. On all other lands, the Contractor has no rights unless he obtains them from the proper parties as specified in Section 00700, Occupying Private Land.

B. Prior to issuance of the Notice to Proceed, the Owner shall obtain all land, easements and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the Contract Documents, unless otherwise mutually agreed.

C. The Owner shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

D. The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities or for storage of equipment and materials.

E. If however, lands, easements or rights-of-way cannot be obtained before work on the project begins, the Contractor shall begin his work upon such land, easements or rights-of-way as have been previously acquired by the Owner, and no claims for damages whatsoever will be allowed by reason of its inability to procure the lands, easements, or rights-of-way for the said work, the Contractor shall not be entitled to make or assert a claim for damages by reason of the said delay, or to withdraw from the Contract except by consent of the Owner. Time for completion of work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to set forth in writing.

1.22 CLEANING FINISHED WORK

A. After the work is completed, the pipes, manholes and structures shall be carefully cleaned free of debris and dirt, broken masonry, and mortar, and left in first class condition, ready to use. All temporary or excess materials shall be disposed of

DIVISION 1

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Work covered by the Contract, listing of Owner, Project location, Engineer. Sequence requirements, the Contractor's use of the premises and Owner's occupancy requirements.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work includes, but is not necessarily limited to the construction of approximately:
- Removal of 151 existing lead water services, and all related work associated therewith,
 - Internal plumbing modifications at 140 buildings
 - 3,550 linear feet of 1-inch water service line,
 - 30 linear feet of 2-inch water service line,
 - All related civil/site work

all as more particularly indicated, shown or described in the Drawings, Specifications, and other Contract Documents.

1.03 OWNER

- A. Warwick Department of Public Works Water Division
935 Sandy Lane
Warwick, Rhode Island, 02889
Telephone: (401) 738-2008
Contact: Terry Dipetrillo**

1.04 PROJECT LOCATION

- A. Pawtuxet Village area and Maryland Avenue area
Warwick, Rhode Island, 02893**

1.05 ENGINEER

- A. BETA Group, Inc.
701 George Washington Highway
Lincoln, Rhode Island 02865
Telephone: 401-333-2382
Cell: 401-602-2202
Contact: **Alan Gunnison, P.E., Senior Project Manager**

1.06 WORK SEQUENCE

- A. Contractor is responsible for coordination with each property Owner for access to their house/building. Contractor shall coordinate with their licensed plumber to make connection between new and existing work.

- B. In order that Work may be conducted with minimum inconvenience to the public and, work under this Contract may be coordinated with other work which may be under construction or contemplated, and that work under the Contract may conform to conditions which it has been undertaken or conditions attached to a right-of-way or particular location for this work, the Engineer may determine the point or points and time or times when portions of work will commence or be carried on and may issue orders pertaining to the work sequence, relative to the rate of progress on several portions of the work.
- C. . LSR locations shall be completed no later than **October 1, 2024**.

1.07 CONTRACTOR USE OF PREMISES

- A. The Contractor's use of premises shall be within the limits shown on the Drawings and as defined in Section 00500 – Contract Agreement, for the performance of the Work.
- B. The Contractor shall assume full responsibility for security of all materials and equipment on the site, including those of his subcontractor's.
- C. If directed by the Owner, the Contractor shall move any stored items that interfere with operations of the Owner.
- D. Obtain and pay for use of additional storage or work areas if needed to perform the Work.

1.08 COMPLIANCE WITH PERMITS

- A. The owner has obtained a Rhode Island Department of Transportation (RIDOT) utility permit to perform the work under this Contract. The contractor shall be required to submit all bonds, insurances, and documentation required of this permit and to complete all work in accordance with the permit requirements. A permit template with all requirements anticipated to be part of the final permit are included as Appendix A – Permits.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01015
SPECIAL CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Supplementary requirements governing temporary bypass systems, traffic control, work in state roads, environmental assessment, and pavement work.

B. Related sections

1. Section 00700 – General Conditions
2. Section 00800 – Supplementary Conditions
3. Section 02500 – Paving

1.02 SCHEDULE

A. Contract Time

1. Replacement of all service connection shall be completed by **October 1, 2024.**
2. Liquidated damages of **\$1,500** for each consecutive calendar day of delay beyond Milestone 1.
3. The total Contract Time to complete the project shall be as listed in Specification Section 00500.

1.03 PERMITS

A. The Owner has obtained the following permits for the project.:

1. Rhode Island Department of Transportation Utility Permits which are included in Appendix A.
2. The Owner has waved the requirement to obtain plumbing permits for the project. All work associated with the internal plumbing service shall be completed by a plumber licensed in the State of Rhode Island.

Coordination

1.04 ACCESS TO PRIVATE PROPERTY

A. Coordination

1. The Contractor shall coordinate access to all private property where required.
2. A Letter of Authorization between the Contractor and the owner/authorized agent shall be completed by the Contractor prior to starting work on private property. A blank Letter of Authorization for the project is provided in Appendix C.
3. **No claims for delay shall be considered based on the Contractor's failure to procure the required Letter of Authorization as specified herein**

B. Notification

1. The property owner or property residents shall be provided written notice with flyers or door hangers 72-hours in advance of any service line replacement or disruption of water service.
2. Contractor shall provide and distribute written notifications with flyers or door hangers 72-hours in advance of no-parking restrictions.
3. The Contractor must post No-Parking signs in coordination with Warwick Department of Public Works and the Warwick Police Department 24-hours prior to the start of construction.

1.05 EXCESS SOIL

A. Disposal

1. All excess soil generated from installation of water services shall be loaded and trucked to the Owner's compost facility located at 935 Sandy Lane, Warwick RI.
2. Existing and temporary pavement removed by the Contractor shall be disposed of offsite by the Contractor. Pavement shall be segregated prior to removal of any soil.

END OF SECTION

SECTION 01020

ALLOWANCES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Contingencies and their respective value which have been established in the BID as an estimated lump sum to facilitate comparison of bids only.

B. Related Sections

1. Section 00300 - Bid Forms
2. Section 01025 - Measurement and Payment

1.02 ALLOWANCES

A. Utility Relocation – Bid Item No. 12

1. Provide the relocation, replacement or repair as shown on the Contract Drawings or as directed by the Engineer.
2. Coordinate all work with the respective utility company or department providing access to the site at the appropriate time to prevent any delay in the work specified to be done under these Contract Documents.
3. The actual amount to be paid under this Item to the Contractor will be the paid invoiced amount from the utility without mark-up, overhead, or profit.
4. In the event the respective utility company or department declines to perform the relocation, or does not customarily perform relocation work on utilities under their jurisdiction, the Contractor shall perform all necessary work with his own forces experienced in the relocation work required. Relocation work performed by the Contractor shall be considered “Extra Work” and shall be paid under the conditions of Specification Section 00500, Part 1.25.

B. Uniformed Traffic Control – Bid Item No. 13

1. Provide the uniformed traffic control as required to complete the work or as directed by the Engineer.
2. Coordinate all work with the Warwick Police Department at the appropriate time to prevent any delay in the work specified to be done under these Contract Documents.

3. The actual amount to be paid under this Item to the Contractor will be the paid invoiced amount from the Warwick Police Department without mark-up, overhead, or profit.
4. In the event the Warwick Police Department is not able to provide the uniformed traffic control, the Contractor shall provide flagger traffic control and shall be paid under Bid Item 14.

C. Flagger Traffic Control – Bid Item No. 14

1. Provide the flagger traffic control as required to complete the work or as directed by the Engineer.
2. Coordinate the supply of flagger traffic control at the appropriate time to prevent any delay in the work specified to be done under these Contract Documents.
3. The actual amount to be paid under this Item to the Contractor will be the paid invoiced amount for the flagger traffic control without mark-up, overhead, or profit.

1.03 PAYMENT PROCEDURES

- A. Under these items, the Contractor shall be reimbursed for charges for the allowances required and authorized by the Owner and Engineer, as detailed in Section 01025 - Measurement and Payment.
- B. The lump-sum price for allowances is established in Section 00300 - Bid Forms as an estimated figure to facilitate comparison of bids only. The actual amount to be paid under this item shall constitute full compensation for services rendered.
- C. The lump-sum price for this item shall NOT include any costs associated with services rendered for routine utility markings, repair damages incurred as a result of the Contractor's operations, relocations of utilities done at the Contractor's request and/or convenience, or any other unauthorized services rendered by utility companies. The purpose of this item is strictly for the Contractor's reimbursement for those services authorized by the Owner or Engineer prior to the work being performed.
- D. The Contractor will be paid based on the actual PAID invoiced amount from the authority in question as approved by the Engineer. If the total cost for such charges is greater or less than the allowance amount stated under this item of the BID, a debit or credit of the difference in cost shall be to the Owner.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Materials as required and ordered by the Engineer shall conform to the Contract Documents.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Installation, relocation, or additional work, shall be performed in accordance with the Contract Documents.

END OF SECTION

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SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Measurement and payment criteria applicable to the Work performed under a unit price and/or lump sum payment method of Items listed in the BID.

B. RELATED SECTIONS

1. Section 00300 - Bid
2. Section 00500 - Agreement
3. Section 01020 - Allowances
4. Section 01026 - Schedule of Values

1.02 UNIT QUANTITIES SPECIFIED

- A. Quantities and measurements indicated in SECTION 00300 are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer shall determine payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit price contracted.

1.03 MEASUREMENTS OF QUANTITIES

- A. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- B. Measurement by Area: Measured by square dimension using mean length and width or radius.
- C. Linear Measurement: Measured by linear dimension, along the horizontal projection of the centerline or mean chord.
- D. At appropriate points in this text, specifications are given with respect to measuring or estimating certain quantities and the sums due for the same. Except as otherwise provided, the Engineer shall determine the appropriate method for measuring and computing each quantity, and for estimating the sums due for the various kinds of work and material, using such methods, tools and degrees of precision as are suitable for the particular measurement, Item or computation. When so requested by the Engineer, assistance in measuring or determining quantities, shall be provided by furnishing the help of unskilled laborers on the site, by furnishing copies of invoices, or by other means.
- E. For estimating quantities in which the computations of areas by analytic and geometric methods would be laborious, as determined by the Engineer, it is stipulated and agreed that the planimeter or utilizing the appropriate functions of a design software package such as ACAD may be used for this purpose, upon approval by the Engineer.

1.04 UNIT PRICES

- A. Payment will be computed on the basis of the unit price bid in SECTION 00300 for each Item and the quantity of units completed. Unit prices are to include cost of all necessary materials, labor, equipment, overhead, profit and other applicable costs. (See Par. 1.06, this Section.)

1.05 LUMP SUM PRICES

- A. Payment will be computed on the basis of the percentage of work completed on each Item in the contract BID as determined by the Engineer. Lump sum prices are to include the cost of all necessary materials, labor, equipment, overhead, profit and other applicable costs. (See Par. 1.06, this Section.)
- B. The Contractor's breakdown (submit under SECTION 01026) of the lump sum bid will be used only as a guide to determine the percentage of completion.

1.06 PRICES INCLUDE

- A. The prices stated in the Proposal include full compensation not only for furnishing all the labor, equipment and material needed for, and for performing the work and building the structures contemplated by, the Contract, but also for assuming all risks of any kind for expenses arising by reason of the nature of the soil, ground water, or the action of the elements; for all excavation and backfilling; for the removal of and delay or damage occasioned by trees, stumps, tracks, pipes, ducts, timber, masonry or other obstacles; for removing, protecting, repairing, or restoring, without cost to the Owner, all pipes, ducts, drains, sewers, culverts, conduits, curbs, gutters, walks, fences, tracks, or other obstacles, road pavements and other ground surfacing whether shown on plans or not for draining, damming, pumping or otherwise handling and removing, without damage to the work or to other parties, and without needless nuisance, all water or sewage from whatever source which might affect the work or its progress, or be encountered in excavations made for the work; for furnishing, inserting and removing all sheeting, shoring staging, cofferdams, etc.; for all signs, fencing, lighting, watching, guarding, temporary surfacing, bridging, snow removal, etc., necessary to maintain and protect travel on streets, walks and private ways; for making all provisions necessary to maintain and protect buildings, fences, poles, trees, structures, pipes, ducts and other public or private property affected or endangered by the work; for the repair or replacement of such things if injured by neglect of such provisions for removing all surplus or rejected materials as may be directed; for replacing, repairing and maintaining the surfaces of streets, highways, public and private lands if and where disturbed by work performed under the Contract or by negligence in the performance of work under the Contract; for furnishing the requisite filling materials in case of any deficiency or lack of suitable materials; for obtaining all permits and licenses and complying with the requirements thereof, including the cost of furnishing any security needed in connection therewith; for any and all expense on account of the use of any patented device or process; for protection against inclement or cold weather; for all expenses incurred by or on account of the suspension; interruption or discontinuance of work; for the cost of the surety bond and adequate insurance; for all taxes, fees, union dues, etc., for which the Contractor may be or become liable, arising out of his operations incidental to the Contract; for providing equipment on the site and off site; for providing a field office and its appurtenances and for all general and incidental expenses; for tools, implements and equipment required to build and put into good working order all work contemplated by the Contract; for maintaining and guaranteeing the same as provided; and for fulfilling all obligations assumed by the Contractor under the Contract and its related documents.

- B. The Owner shall pay and the Contractor shall receive the prices stipulated in the BID made a part hereof as full compensation for everything performed and for all risks and obligations undertaken by the Contractor under and as required by the Contract.
- C. The prices for those Items which involve excavation shall include compensation for disposal of surplus excavated material and handling water.
- D. In all Items involving excavation, the price shall be based on doing the entire excavation in earth. Where rock is excavated, the price, therefore, shall be in addition to the cost of excavating earth and no deduction will be made in the amount for earth excavation.
- E. The prices for all pipe Items (i.e. sewers, service connections, drains, etc.) shall constitute full compensation for furnishing, laying, jointing and testing; earth excavation, backfill and compaction; materials for bedding pipe as specified; and cleaning up.

1.07 PAYMENT

- A. In general, payment will be made for all Contract work satisfactorily completed through the end of the previous month. The payment will include any additional work which has been completed and approved and change order work agreed upon by the Owner and Contractor which has been completed and approved (See SECTION 00500).
- B. Each application for payment will indicate the total of a minimum percent retainage as defined in SECTION 00500, held by the Owner on the total of all work completed under the contract and approved for payment to-date.
- C. Monthly applications for payment may also indicate reduction or increase of the total Contract price when an approved change order results in a net reduction or net increase in the cost and quantity of work to be performed under the Contract.
- D. Special billings and charges against the Contract as credit or payment to the Owner, that are not for change order work, may be subtracted from monies due on any monthly application for payment but shall not serve to reduce the total Contract price.
- E. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for work which is incorporated in or made necessary by the Work.

1.08 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

BID ITEM NO. 1A CONSTRUCT 1-INCH WATER SERVICE (MAIN TO CURB STOP CITY STREET) LINEAR FOOT

- 1. The length of service connections to be paid for under these Items shall be measured by the linear foot along the horizontal projection of the centerline of the completed connection, the lengths of valves or fittings not being deducted.
- 2. The unit prices shall constitute full compensation for removal and disposal of existing piping, furnishing and installing 1-inch copper tubing service pipe at a minimum depth of 4-feet & 6-inches below existing grade, unless otherwise directed by the Engineer, from the corporation stop to the curb stop with fittings and adapters as necessary and shown on the Drawings, including connection to the existing non-lead service, excavation, including saw cutting, removal and disposal of hot mix asphalt, dewatering, bedding, backfill and restoration of

property to include loaming, seeding, curbing (all types), bituminous berm, all types of in kind sidewalk reconstruction, restoration of disturbed landscaping, and dust control measures.

3. This Item shall include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items
4. The unit prices shall also constitute full compensation for the furnishing, placing and maintaining of temporary pavement on all service connection trenches, including dense graded crushed stone base course, as specified.
5. The unit prices shall also constitute full compensation for the furnishing, placing, and maintaining of permanent pavement, and removal & disposal of temporary pavement & gravel base on all service connections.
6. The unit prices shall also constitute full compensation for the removing & resetting curbing (all types), furnishing, placing and maintaining of temporary pavement on all sidewalks and driveways disturbed during the installation of services.
7. The unit prices shall also constitute full compensation for removing & resetting granite curb, furnishing and installing permanent in-kind cubing and sidewalks as applicable on all sidewalks disturbed during the installation of services including saw cutting, removal and disposal of temporary sidewalks, excavation to required depth, and special compaction requirements, as indicated on the Drawings and as specified.
8. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
9. Price shall include installation, maintenance, and removal of catch basin silt sacks in all catch basins downgradient of all water construction of water services in City streets.
10. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 1B CONSTRUCT 1-INCH WATER SERVICE (MAIN TO CURB STOP STATE ROAD) LINEAR FOOT

1. The length of service connections to be paid for under these Items shall be measured by the linear foot along the horizontal projection of the centerline of the completed connection, the lengths of valves or fittings not being deducted.
2. The unit prices shall constitute full compensation for removal and disposal of existing piping, furnishing and installing 1-inch copper tubing service pipe at a minimum depth of 4-feet & 6-inches below existing grade, unless otherwise directed by the Engineer, from the corporation stop to the curb stop with fittings and adapters as necessary and shown on the Drawings, including connection to the existing non-lead service, excavation, including saw cutting, removal and disposal of hot mix asphalt, dewatering, bedding, backfill and restoration of

property to include loaming, seeding, curbing (all types), bituminous berm, all types of in kind sidewalk reconstruction, restoration of disturbed landscaping, and dust control measures.

3. This Item shall include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items
4. The unit prices shall also constitute full compensation for the furnishing, placing and maintaining of temporary pavement on all service connection trenches, including dense graded crushed stone base course, as specified.
5. The unit prices shall also constitute full compensation for the furnishing, placing, and maintaining of permanent pavement, removal & disposal of temporary pavement & gravel base, and mill & overlay on all service connections.
6. The unit prices shall also constitute full compensation for the furnishing, placing and maintaining of temporary pavement on all sidewalks and driveways disturbed during the installation of services.
7. The unit prices shall also constitute full compensation for removing & resetting granite curb, furnishing and installing permanent in-kind curbing and sidewalks as applicable on all sidewalks disturbed during the installation of services including saw cutting, removal and disposal of temporary sidewalks, excavation to required depth, and special compaction requirements, as indicated on the Drawings and as specified.
8. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
9. Price shall include installation, maintenance, and removal of catch basin silt sacks in all catch basins downgradient of all water construction of water services in State roads.
10. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 1C CONSTRUCT 1-INCH WATER CURB STOP, EACH

1. The number of curb stops to be paid for under these Items shall be equal to the number of curb stops installed.
2. The unit prices shall include excavation, including removal and disposal of existing curb stop and curb box.
3. The unit prices for 1-inch curb stops with boxes shall constitute full compensation for furnishing and installing curb stops, curb stop boxes, appurtenances, and all necessary restraint devices, if required, and as directed by the Engineer required to complete the work, and all work not specifically included for payment under other Items

4. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.
5. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.

BID ITEM NO. 1D CONSTRUCT 1-INCH WATER CORPORATION, STOP, EACH

1. The number of 1-inch water corporation stops to be paid for under these Items shall be equal to the number of corporation stops installed.
2. The unit prices shall constitute full compensation for tapping the water main, furnishing and installation corporation stops complete, as indicated on the Drawings and/or as directed by the Engineer.
3. The unit price for this Item shall also include furnishing and installing saddles for all corporation stops.
4. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
5. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 1E INSTALL 1-INCH WATER SERVICE PIPE (CURB STOP TO METER PULLED) EACH

1. The number of 1-inch water service pipes (curb stop to meter pulled) to be paid for under these Items shall be equal to the number of 1-inch water service pipes (curb stop to meter pulled) installed.
2. The unit prices shall constitute full compensation for removal & disposal of existing piping, furnishing and installing copper tubing service pipe, excavation of pulling pit and all equipment required to pull the service pipe, from the curb stop to the meter with fittings and adapters as necessary and shown on the Drawings, including connection to the existing non-lead service, excavation, saw cutting, removal and disposal of hot mix asphalt, dewatering, bedding, backfill and restoration of property to include loaming, seeding, curbing (all types), bituminous berm, all types of in kind sidewalk reconstruction, restoration of disturbed landscaping and dust control measures,
3. This Item shall include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items.
4. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.

5. Price shall include installation, maintenance, and removal of catch basin silt sacks in all catch basins downgradient of all construction of water services curb stop to meter pulled.
6. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.
7. The unit price shall include all costs associated with scheduling and coordinating access to complete the work.

BID ITEM NO. 1F INSTALL 1-INCH WATER SERVICE PIPE (CURB STOP TO METER EXCAVATED) LINEAR FOOT

1. The length of service connections to be paid for under these Items shall be measured by the linear foot along the horizontal projection of the centerline of the completed connection, the lengths of valves or fittings not being deducted.
2. The unit price for this item shall include the cost for one (1) failed attempt to pull the 1-inch water service pipe under Item No. 1E.
3. Payment for work under this item shall be made after contractor has demonstrated to the Owner and Engineer that installation by the Pull-Method, described in Item 1E. is not feasible.
4. The unit prices shall constitute full compensation for removal & disposal of existing piping, furnishing and installing copper tubing service pipe, excavation of pulling pit and all equipment required to pull the service pipe, from the curb stop to the meter with fittings and adapters as necessary and shown on the Drawings, including connection to the existing non-lead service, excavation, saw cutting, removal and disposal of hot mix asphalt, dewatering, bedding, backfill and restoration of property to include loaming, seeding, curbing (all types), bituminous berm, all types of in kind sidewalk reconstruction, restoration of disturbed landscaping and dust control measures.
5. This Item shall include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items.
6. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
7. Price shall include installation, maintenance, and removal of catch basin silt sacks in all catch basins downgradient of all construction of water services curb stop to meter excavated.
8. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

9. The unit price shall include all costs associated with scheduling and coordinating access to complete the work.

BID ITEM NO. 1G CONSTRUCT 1-INCH INTERIOR PLUMBING (RESIDENTIAL)
EACH

1. The number of 1-inch interior plumbing connections (residential) to be paid for under this Items shall be equal to the number of 1-inch interior plumbing connections installed.
2. The unit prices for 1-inch interior plumbing connections (residential) shall constitute full compensation for grounding clamp, shut off valves, fittings, backflow preventor, expansion tank, supports, all necessary restraint devices, if required, and as directed by the Engineer required to complete the work, and all work not specifically included for payment under other Items.
3. This Item shall also include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items
4. The unit prices for 1-inch interior plumbing connections (residential) shall include all costs associated with scheduling and coordinating access to complete the work. This includes but not limited to notifying the property owner of proposed work, scheduling appointments, completion of a Letter of Authorization between the Contractor and the owner/authorized agent shall be completed by the Contractor prior to starting work on private property. A blank Letter of Authorization for the project is provided in Appendix C.
5. Unit price shall constitute full compensation for removal and disposal of existing piping and removing and resetting water meter.
6. The unit prices for 1-inch interior plumbing connections (residential) shall include all cost for permitting and the work being completed by a plumbing contractor licensed in the State of Rhode Island.

BID ITEM NO. 1H CONSTRUCT 1-INCH INTERIOR PLUMBING (COMMERCIAL)
EACH

1. The number of 1-inch interior plumbing connections (commercial) to be paid for under these Items shall be equal to the number of 1-inch interior plumbing connections installed.
2. The unit prices for 1-inch interior plumbing connections (commercial) shall constitute full compensation for grounding clamp, shut off valves, fittings, double check, wye strainer, expansion tank, supports, all necessary restraint devices, if required, and as directed by the Engineer required to complete the work, and all work not specifically included for payment under other Items.
3. This Item shall also include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary

conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items

4. The unit prices for 1-inch interior plumbing connections (commercial) shall include all costs associated with scheduling and coordinating access to complete the work. This includes but not limited to notifying the property owner of proposed work, scheduling appointments, completion of a Letter of Authorization between the Contractor and the owner/authorized agent shall be completed by the Contractor prior to starting work on private property. A blank Letter of Authorization for the project is provided in Appendix C.
5. Unit price shall constitute full compensation for removal and disposal of existing piping and removing and resetting water meter.
6. The unit prices for 1-inch interior plumbing connections (commercial) shall include all cost for permitting and the work being completed by a plumbing contractor licensed in the State of Rhode Island.

BID ITEM NO. 2A CONSTRUCT 2-INCH WATER SERVICE PIPE (MAIN TO CURB STOP) LINEAR FOOT

1. The length of 2-inch water service connections to be paid for under these Items shall be measured by the linear foot along the horizontal projection of the centerline of the completed connection, the lengths of valves or fittings not being deducted.
2. The unit prices shall constitute full compensation for furnishing and installing 2-inch copper tubing service pipe at a minimum depth of 4-feet and 6-inches below grade, unless otherwise directed by the Engineer, from the corporation stop to the curb stop with fittings and adapters as necessary and shown on the Drawings, including connection to the existing non-lead service, excavation, including saw cutting, removal and disposal of existing service pipe & hot mix asphalt, dewatering, bedding, backfill and restoration of property to include loaming, seeding, curbing (all types), bituminous berm, all types of in kind sidewalk reconstruction, restoration of landscaping, and dust control measures.
3. This Item shall also include compensation for mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items
4. The unit prices shall also constitute full compensation for the furnishing, placing and maintaining of temporary pavement on all service connection trenches, including dense graded crushed stone base course, as specified.
5. The unit prices shall also constitute full compensation for the furnishing, placing, and maintaining of permanent pavement, and removal & disposal of temporary pavement & gravel base on all service connections.

6. The unit prices shall also constitute full compensation for the furnishing, placing and maintaining of temporary pavement on all sidewalks and driveways disturbed during the installation of services.
7. The unit prices shall also constitute full compensation for removing & resetting granite curb, furnishing and installing permanent in-kind curbing and sidewalks as applicable on all sidewalks disturbed during the installation of services including saw cutting, removal and disposal of temporary sidewalks, excavation to required depth, and special compaction requirements, as indicated on the Drawings and as specified.
8. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
9. Price shall include installation, maintenance, and removal of catch basin silt sacks in all catch basins downgradient of all construction of water services curb stop to meter excavated.
10. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 2B CONSTRUCT 2-INCH WATER CURB STOP, EACH

1. The number of curb stops to be paid for under these Items shall be equal to the number of curb stops installed.
2. The unit prices shall include excavation, including removal and disposal of existing curb box, and curb stop.
3. The unit prices for 2-inch curb stops with boxes shall constitute full compensation for furnishing and installing curb stops, curb stop boxes, appurtenances, and all necessary restraint devices, if required, and as directed by the Engineer required to complete the work, and all work not specifically included for payment under other Items.
4. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
5. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 2C CONSTRUCT 2-INCH WATER CORPORATION, STOP, EACH

1. The number of corporation stops to be paid for under these Items shall be equal to the number of corporation stops installed.
2. The unit prices shall constitute full compensation for tapping the water main, furnishing and installation corporation stops complete, as indicated on the Drawings and/or as directed by the Engineer.
3. The unit price for this Item shall also include furnishing and installing saddles all corporation stop connections.

4. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 3 EARTH EXCAVATION AND BACKFILL FOR TEST PITS, CUBIC YARD

1. The quantity of earth excavation and backfill for test pits to be paid for under this Item shall be the number of cubic yards excavated and backfilled, measured to the extent of the work done as ordered by the Engineer or as indicated on the Drawings for test pits.
2. The unit price shall constitute full compensation for excavation, backfill, compaction for test pits, fine grading, and temporary pavement.
3. This Item shall also include mobilization/demobilization which shall include but not be limited to certain charges for furnishing the performance or surety bond and other securities required, necessary permits, for all other materials, supplies, tools, equipment, labor financing, supervision, temporary structures, field offices, sanitary conveniences, public notifications, coordination with property owners, and any and all other expenses incurred in carrying out the work and furnishing the material, keeping records and making reports required, and assuming risks, which have not been included in the prices of other Items.
4. The unit prices shall also constitute full compensation for loading and trucking excess soil to the Owner's compost facility located at 935 Sandy Lane.
5. This unit price shall include full compensation for supplying, installing, and removing all traffic management components required to complete this Item, as directed by the Engineer and as specified.

BID ITEM NO. 4 EXCAVATION BELOW NORMAL DEPTH, CUBIC YARD

1. The quantity of earth excavation below normal depth (limit of normal excavation) to be included for payment under this Item shall be the number of cubic yards of unsuitable material excavated, measured to the depths and lengths ordered by the Engineer, and to the width between payment limits for normal excavation, as indicated on the Drawings.
2. The unit price shall constitute full compensation for excavation below normal depth and proper disposal of unsuitable material.

BID ITEM NO. 5 ROCK EXCAVATION AND DISPOSAL, CUBIC YARD

1. Where rock is encountered, it shall be uncovered but not excavated until measurements have been made by the Engineer, unless in the opinion of the Engineer, satisfactory measurements can be made in some other manner.
2. The quantity of rock to be paid for under this Item shall be the number of cubic yards of rock, measured in place before excavation, within the payment limits indicated on the Drawings and as defined in the SPECIFICATIONS, unless rock excavation beyond such limits has been authorized in writing by the Engineer, in which case, measurements shall be made to the authorized limits.
3. Excavated rock which has not been disposed of shall not be included for payment.
4. The bidder shall include in his bid for Items involving excavation, the cost of doing the entire excavation as earth, the price for this Item being intended to cover the difference between the cost of rock excavation and the cost of earth excavation. The unit price for this Item shall be paid in addition to any payment made for earth excavation.
5. The unit price for this Item shall constitute full compensation for rock excavation and disposal, for all necessary backfilling, and for furnishing all additional material needed for backfilling.

BID ITEM NO. 6 ADDITIONAL GRAVEL BORROW, CUBIC YARD

1. Gravel borrow backfill below normal depth shall be paid for under this Item. The quantity of gravel borrow backfill below normal depth to be paid for shall be the same as the number of cubic yards of earth excavation below normal depth measured for payment under the Item "Excavation Below Normal Depth", which said gravel replaces.
2. Gravel borrow ordered by the Engineer for backfill of trenches above normal depth shall be paid for under this Item. The quantity of gravel used as backfill for trenches above normal depth shall be measured by the cubic yards to the depth and length ordered by the Engineer and to the width between payment limits for normal excavation as indicated on the Drawings. Gravel borrow outside the limits of normal excavation shall be furnished, placed, and compacted at the Contractor's expense, and no measurement will be made for such gravel.
3. Gravel borrow ordered to be used at other locations shall be measured after compaction and paid for under this Item as the number of cubic yards of gravel actually placed and compacted as directed.
4. Gravel borrow used to backfill rock excavations will not be measured for payment under this Item but shall be included as part of the unit price for "Rock Excavation and Disposal".
5. Gravel borrow used to backfill and/or fill around and/or beneath structures will not be measured for payment under this Item but shall be included as part of the appropriate lump sum price for the structures.
6. The unit price shall constitute full compensation for furnishing, placing, and compacting gravel borrow, as specified.

BID ITEM NO. 7 ADDITIONAL CRUSHED STONE, CUBIC YARD

1. Crushed stone backfill below normal depth shall be paid for under this Item. The quantity of crushed stone backfill below normal depth to be paid for shall be the same as that number of cubic yards of earth excavation below normal depth measured for payment under the Item "Excavation Below Normal Depth", which said stone replaces.
2. Additional crushed stone used for support of existing utilities or ordered by the Engineer to be used at other locations shall be paid for under this Item. The quantity to be paid for shall be the number of cubic yards measured in place after compaction, of additional crushed stone within the limits directed by the Engineer.
3. Crushed stone used for bedding pipe, to backfill authorized excavations, for any drainage purpose, or as indicated on the Drawings for work for which appropriate payment Items have been provided, shall not be measured for payment under this Item.
4. Crushed stone used to backfill rock excavations will not be measured for payment under this Item but shall be included as part of the unit price for "Rock Excavation and Disposal".
5. Crushed stone used to backfill and/or fill around and/or beneath the structures will not be measured for payment under this Item, but shall be included as part of the appropriate lump sum price for the structures.
6. The unit price shall constitute full compensation for furnishing, placing, and compacting crushed stone, as specified.

BID ITEM NO. 8 ADDITIONAL CONTROLLED DENSITY FILL, CUBIC YARD

1. The quantity of controlled density fill to be measured for payment under this Item shall be the number of cubic yards placed as directed by the Engineer.
2. No measurement shall be made under this Item for controlled density fill used as indicated on the Drawings for work for which appropriate payment Items have been provided or for concrete used to backfill unauthorized excavations.
3. The unit price shall constitute full compensation for furnishing and placing additional controlled density fill, as directed by the Engineer and as specified.

BID ITEM NO. 9 ADDITIONAL CONCRETE, CUBIC YARD

1. The quantity of additional concrete to be measured for payment under this Item shall be the number of cubic yards placed as directed by the Engineer.
2. No measurement shall be made under this Item for concrete used as indicated on the Drawings for work for which appropriate payment Items have been provided or for concrete used to backfill unauthorized excavations.
3. The unit price shall constitute full compensation for furnishing and placing additional concrete regardless of class or strength, as directed by the Engineer and as specified.

BID ITEM NO. 10A ADDITIONAL BITUMINOUS SIDEWALK (3" THICKNESS) , SQUARE YARD

1. The quantity of additional bituminous sidewalk (3" thickness) to be measured for payment under this Item shall be the number of square yards placed as directed by the Engineer.
2. No measurement shall be made under this Item for bituminous sidewalk (3" thickness) used as indicated on the Drawings for work for which appropriate payment Items have been provided or for bituminous sidewalk (3" thickness) replacement resulting from damage by the Contractor.
3. The unit price shall constitute full compensation for furnishing and placing additional bituminous sidewalk (3" thickness), as directed by the Engineer and as specified.

BID ITEM NO. 10B ADDITIONAL CONCRETE SIDEWALK (4" THICKNESS) , SQUARE YARD

1. The quantity of additional concrete sidewalk (4" thickness) to be measured for payment under this Item shall be the number of square yards placed as directed by the Engineer.
2. No measurement shall be made under this Item for concrete sidewalk (4" thickness) used as indicated on the Drawings for work for which appropriate payment Items have been provided or for concrete sidewalk (4" thickness) replacement resulting from damage by the Contractor.
3. The unit price shall constitute full compensation for furnishing and placing additional concrete sidewalk (4" thickness), as directed by the Engineer and as specified.

BID ITEM NO. 10C ADDITIONAL RESET GRANITE CURB, LINEAR FOOT

1. The quantity of additional granite curb to be measured for payment under this Item shall be the number of linear feet placed as directed by the Engineer.
2. No measurement shall be made under this Item for reset granite curb used as indicated on the Drawings for work for which appropriate payment Items have been provided or for reset granite curb resulting from damage by the Contractor.
3. The unit price shall constitute full compensation for removing and resetting additional granite curb including all labor, and equipment, as directed by the Engineer and as specified.

BID ITEM NO. 11 STRAW WATTLES, LINEAR FOOT

1. The quantity of straw wattles to be measured for payment under this Item shall be the number of linear feet placed as directed by the Engineer.
2. The unit price shall constitute full compensation for installing and removing straw wattles, as directed by the Engineer and as specified.
3. The quantity of straw wattles required and/or used for sedimentation and erosion controls relating to any drainage or dewatering operations by the Contractor, as determined by the Engineer, shall not be measured for payment under this Item, but shall be furnished, installed,

maintained and, removed, complete, as indicated and specified, or as otherwise ordered by the Engineer, throughout the duration of this Contract.

BID ITEM NO. 12 UTILITY RELOCATION, ALLOWANCE

1. Under this Item, the Contractor shall be reimbursed for certain charges authorized by the Engineer for unforeseen utility relocations required and authorized by the Owner and Engineer.
2. The allowance for this Item established in the BID is an estimated figure to facilitate comparison of bids only. The actual amount to be paid under this Item shall constitute full compensation for wages paid premiums on Workers' Compensation Insurance, payment on account for Social Security and other direct assessments on payroll, as may be required, and all other costs incidental to the services rendered.
3. The allowance for this Item shall NOT include any costs associated with services rendered for routine utility markings, repair damages incurred as a result of the Contractor's operations, relocations or dismantling and reassembling of utilities done at the Contractor's request and/or convenience, or any other unauthorized services rendered by utility companies. The purpose of this Item is strictly for the Contractor's reimbursement for those unforeseen services authorized by the Owner or Engineer prior to the work being performed.
4. The Contractor will be paid based on the actual PAID invoiced amount from the Utility Company in question as approved and authorized by the Owner/Engineer. If the total cost for such charges is greater or less than the allowance amount stated under this Item of the BID, a debit or credit of the difference in cost shall be to the Owner.

BID ITEM NO. 13 UNIFORMED TRAFFIC CONTROL, ALLOWANCE

1. Under this Item the Contractor shall be reimbursed for certain charges for the services rendered of uniformed traffic officers to provide traffic control as specified.
2. The lump sum price established in the Bid is an estimated figure to facilitate the comparison of bids. The actual amount to be paid under this Item shall constitute full compensation for wages paid, premiums on workmen's compensation insurance, payment on account of social security and other direct assessments on payroll, and all other costs incidental to the employment of such uniformed officers.
3. Payment will be based on the actual paid invoiced amount from the Police Department with out allowance for mark up, overhead or profit.
4. If the total cost for uniformed traffic control is greater or less than the amount stated in the Bid, a debit or credit of the difference in cost shall be applied to the lump sum price for this Item.
5. Payment shall be made to the Police department no later than the 20th day of the month following that month in which services were rendered.

BID ITEM NO. 14 FLAGGER TRAFFIC CONTROL, ALLOWANCE

1. Under this Item the Contractor shall be reimbursed for certain charges for the services rendered of traffic control flagger to provide traffic control as specified and in accordance with Manual on Uniform Traffic Control Devices.
2. The lump sum price established in the Bid is an estimated figure to facilitate the comparison of bids. The actual amount to be paid under this Item shall constitute full compensation for wages paid, premiums on workmen's compensation insurance, payment on account of social security and other direct assessments on payroll, and all other costs incidental to the employment of such uniformed officers.

3. Payment will be based on the actual paid invoiced amount for flagger traffic control with out allowance for mark up, overhead or profit.
4. If the total cost for flagger traffic control is greater or less than the amount stated in the Bid, a debit or credit of the difference in cost shall be applied to the lump sum price for this Item.

BID ITEM NO. 15 PROJECT SIGNAGE, ALLOWANCE

1. Under this Item the Contractor shall be reimbursed for certain charges for providing and installing project signage as detailed in Specification Section 01067 State of Rhode Island and Federal Requirements.
2. The lump sum price established in the Bid is an estimated figure to facilitate the comparison of bids. The actual amount to be paid under this Item shall constitute full compensation for wages paid, premiums on workmen's compensation insurance, payment on account of social security and other direct assessments on payroll, and all other costs incidental to the employment of such uniformed officers.
3. Payment will be based on the actual paid invoiced amount for Project Signage with out allowance for mark up, overhead or profit.
4. If the total cost for Project Signage is greater or less than the amount stated in the Bid, a debit or credit of the difference in cost shall be applied to the lump sum price for this Item.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

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SECTION 01060

REGULATORY REQUIREMENTS (RHODE ISLAND)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Building codes, Mechanical codes, and Electrical codes, Regulations, Permits and Fees applicable to the project.

1.02 PERMITS BY CONTRACTOR

- A. The Contractor shall secure all necessary permits from the state, city or town authorities having jurisdiction, for digging of trenches in the streets or highways and all other building and construction operations requiring permits.
- B. As a minimum the following permits are required:
 - 1. Street Opening Permit - City of Warwick, Dept. of Public Works

1.03 PERMITS BY OWNER

- A. The Owner has obtained or will obtain and pay all fees for the permits listed here:
 - 1. RIDOT Utility Permit – Rhode Island Department of Transportation

1.04 CODES

- A. The Contractor shall conform to the requirements of and pay all fees imposed by local and State Building Authorities having jurisdiction over the Work. The Contractor is responsible to conform to all building, mechanical, electrical and plumbing code requirements.
- B. The Contractor shall conform to the latest requirements of the following codes:
 - 1. Federal, State and Municipal Laws
 - 2. Rhode Island State Building Codes, National Building Code Regulation SBC-1
 - 3. Rhode Island State Building Codes, Plumbing Code Regulation SBC-3
 - 4. Rhode Island State Building Codes, Mechanical Code Regulation SBC-4
 - 5. Rhode Island State Building Codes, Electrical Code Regulation SBC-5
 - 6. Any prevailing rules and regulations pertaining to adequate protection and/or guarding of any moving parts or otherwise hazardous locations.

1.04 FEES

- A. The cost of all permits secured by the Contractor shall be borne by him and shall be considered as having been included in the price or prices stated in the Bid. Copies of all required permits shall be filed with the Engineer prior to starting work for which a permit is required.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01067

STATE OF RHODE ISLAND AND FEDERAL REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. RHODE ISLAND SALES AND USE TAX
- B. HISTORICAL ARTICLES
- C. PREVAILING MINIMUM WAGE RATES
- D. EXCERPTS FROM RHODE ISLAND LAWS
- E. REQUIREMENTS FOR MINORITY BUSINESS ENTERPRISE, EQUAL OPPORTUNITY AND NONDISCRIMINATION

1.02 RHODE ISLAND SALES AND USE TAX

- A. Materials and equipment purchased for installation under this Contract are exempt from the Rhode Island Sales Tax. The Contractor shall file for exemption on behalf of the Owner, with the State of Rhode Island Department of Taxation as required by law. The exemption from the Sales Tax shall be taken into account by the Contractor during bidding.

1.03 HISTORICAL ARTICLES

- A. During the life of this Contract, the Contractor is herewith required to immediately notify the following organizations in the event that any articles such as "charcoal," "bone," "shell," "cultural objects - fire cracked stones or stone flaking material" or any other such related items of historical significance are discovered.
 - 1. Owner
 - 2. Local Historical Society
 - 3. Rhode Island Historical Commissioner
 - 4. Engineer

1.04 PREVAILING MINIMUM WAGE RATES

- A. Local prevailing minimum wage rates apply to this project. It is the responsibility of the Contractor before bid openings to request, if necessary, any additional information on local prevailing Wage Rates for those tradespeople who are not covered by the applicable local Wage Decision, but who may be employed for the proposed work under this Contract.
- B. The attention of the Contractor is also directed to Specification Subsection 00700,1.19 and Part A of ATTACHMENT A of this Specification Section in regards to the requirements for certified payrolls. ATTACHMENT A is titled "State Revolving Fund (SRF) Program – Contract Specifications Package". The Contractor shall routinely prepare and submit as a part of the required certified payrolls the "PRIME CONTRACTOR'S OVERALL PAYROLL CERTIFICATION" form provided under Part A.5 of ATTACHMENT A.
- C. A schedule of prevailing minimum wage rates, issued by the State of Rhode Island Department of Labor for the Work under this Contract, is included as Part A.3 of ATTACHMENT A, titled "State Revolving Fund (SRF) Program – Contract Specifications Package", which is provided at the end of this Specification Section.

1.05 EXCERPTS FROM RHODE ISLAND LAWS

- A. The Contractor and each of his subcontractors shall especially note his obligations to comply with the following statutes or excerpts therefrom and any current revisions thereof contained in the General Laws of Rhode Island.
- B. These laws reflect changes made through the end of the 1992 legislative session. While every attempt at accuracy has been made, these are not certified true copies of these laws. The responsibility for compliance with all applicable provisions of Rhode Island laws relating to bidding, award, and performance of public works contracts is the Contractor's. Certified true and complete copies of any Rhode Island laws and regulations may be obtained from the Office of the Rhode Island Secretary of State.

R.I.G.L.

Title, Chapter, Section EXCERPT

5-6-2 WORK FOR WHICH LICENSE REQUIRED

"No person, firm, or corporation shall enter into, engage in, or work at the business of installing wire, conduits, apparatus, fixtures and other appliances for carrying or using electricity for light, heat or other purpose, unless such person, firm or corporation shall have received a license and a certificate therefore, issued by the State Board of Examiners of Electricians."

28-26-6 LICENSE REQUIRED FOR OPERATION OF HOISTING MACHINERY - PUBLIC CONTRACTS

"No persons shall operate or be in direct charge of a hoisting or excavation gasoline, steam, diesel, electric or compressed air hoist, shovel, crane, excavator, of five horsepower or more without obtaining a license to do so as provided in this chapter. No user or agent of use of any such described steam, gasoline, diesel, electric or compressed air hoisting machinery shall permit it to be operated unless it is operated by a duly licensed person as hereinafter provided by this chapter.

Every contract in the construction of public works by the State, or by any City or Town, or by persons contracting therewith for such construction, shall contain a clause embodying the provisions of this section."

Chapter 116

From Chapter 116 of the General Laws of Rhode Island, 1938, relative to the conditions precedent, etc., to carrying on business within this State by foreign corporations:

"The certificate and power of attorney mentioned in the General Corporation Law, properly filled out, subscribed and sworn to, and accompanied by a certified copy of the Charter, articles of association or other similar organization papers, together with all amendments thereto, must be filed in the office of the Secretary of State by all foreign corporations intending to carry on business within this State, or for a foreign corporation to enforce in the courts of this State any contract made within the State."

Detailed information regarding Chapter 116 of the General Laws of Rhode Island, 1938, relative to the conditions precedent, etc., to carrying on business within this State for foreign corporations may be obtained from the Secretary of State, State House, Smith Street, Providence, Rhode Island.

Title 37 (chapters as provided at the end of this Specification Section.)

1.06 REQUIREMENTS FOR MINORITY BUSINESS ENTERPRISE, EQUAL OPPORTUNITY AND NONDISCRIMINATION

- A. Contracts for work under the bid (proposal) will obligate the contractors and subcontractors not to discriminate in employment practices.
- B. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, handicap, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex, age, handicap, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotions, or transfers; recruitment or recruitment advertising, selection for training including apprenticeship; and participation in recreational and educational activities. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notice to be provided, setting forth the provisions of this non-discrimination clause. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Contract so that such provisions will be binding upon each subcontractor and upon subcontractors for standard commercial supplies or raw materials.
- C. The Contractor shall keep such records and submit such reports concerning the racial and ethnic origin of applicants for employment and employees as the Owner may require as consistent with Federal and State law.
- D. The Contractor agrees to comply with such rules, regulations, or guidelines as the State of Rhode Island may issue to implement these requirements. The Contractor further warrants, that it will comply with, Title VI of the Civil rights Act of 1964, 42 U.S.C. 200d to d4.
- E. Contractors shall comply with the provisions of the General Laws of Rhode Island and attention is called to Title 37, Chapter 13, Section 1-16, relative to the payment of wages, obligations and charges by Contractors on public works projects. Non-resident Contractors are subject to Section 44-1-6 of the RI General Laws, as amended, regarding OUT-OF-STATE CONTRACTORS.
- F. The Contractor will be required to comply with Equal Opportunity Requirements and to abide by the prevailing wage rates for Public Works Projects for all employees on the job. It is the responsibility of contractors to inform themselves as to the local labor conditions, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustment of wage rates. Information is available at the Department of Labor.

PART 2 PRODUCTS

NOT USED

EXECUTION

NOT USED

END OF SECTION

SECTION 01069

HEALTH & SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for providing a Health and Safety Plan (HASP) and maintenance of health and safety while performing the Work.

1.02 REQUIREMENTS

- A. Monitor working conditions at all times during construction and provide appropriate protective clothing, equipment and facilities for personnel, and establish workplace procedures to ensure personnel safety.
- B. Implement a Health and Safety protection program. The procedures for such implementation shall be submitted to the Engineer and Owner for approval. The procedures shall include provisions for stations allowing workers to wash and to put on and remove protective clothing, and stations for vehicles to be cleaned, if necessary, before leaving the site, air monitoring, and evaluation of areas where unsafe levels of gas has accumulated.
- C. Comply with all Federal, State, and local safety requirements related to the hazards anticipated to be encountered during the course of this project.
- D. In addition to the above requirements, comply with the following:
 - 1. All construction equipment on the site shall be equipped with vertical exhaust pipes or a spark proof exhaust.
 - 2. Smoking shall not be permitted in any area where gases can accumulate, or in areas where contaminated soil is present.
 - 3. Welding or open flames shall not be permitted in enclosed areas.
 - 4. Toxic gas indicators, an organic vapor analyzer, a combustible gas indicator, an oxygen indicator, and fire extinguishers shall be available at all times during operations. Periodic monitoring with portable monitoring devices shall be employed as dictated by the Health and Safety Plan.
 - 5. During operations, whenever unsafe levels of toxic gases are detected, all work will cease in that area until acceptable levels are reached.

1.03 SHOP DRAWINGS

- A. Submit site specific Health and Safety Plan (HASP) that complies with all applicable OSHA requirements to the Engineer for review and acceptance within fifteen (15) working days of the Contractor's Notice to Proceed. Certified Industrial Hygienist must certify the Contractor's plan prior to submittal to and review by the Engineer. The Contractor is not to proceed with any subsurface or site work without review and acceptance of the submitted Health and Safety Plan by the Engineer.

1.04 QUALITY ASSURANCE

- A. Engage an independent, qualified Health and Safety expert having experience in similar construction conditions, to monitor site conditions and recommend all necessary Health and

Safety protection. This person shall be a Certified Industrial Hygienist (CIH). The Contractor shall follow such recommendations and shall provide such protection to his personnel, and personnel of the Owner and Engineer, as may be affected.

1.05 REGULATORY REQUIREMENTS

- A. Establish work place procedures, enforce the use of these procedures, and the associated equipment and facilities in accordance with the following guidelines:
 - 1. Safety and Health Regulations Promulgated by the U.S. Department of Labor OSHA, 29 CFR 1910 - Occupational Safety and Health Standards, and 29 CFR 1920 - Safety and Health Regulations for Construction.
 - 2. Occupational Safety and Health Standards, 29 CFR 1926 - Safety and Health Regulations for Construction.
 - 3. U.S. Environmental Protection Agency Medical Monitoring Program Guidelines.

1.06 SITE CONDITIONS

- A. An environmental evaluation was not completed for the project.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PROTECTION

- A. If, at any time, the Owner or the Engineer is apprised of a safety hazard which demands immediate attention because of its high potential for harm to the public travel, persons on or about the Work, or public or private property, the Owner or the Engineer shall have the right to order such safeguards to be erected and such precautions to be taken as necessary and the Contractor shall comply with such orders. If, under such circumstances, the Contractor does not or cannot immediately put the Work into proper and approved condition, or if the Contractor or his representative is not upon the site so that he can be notified immediately of the insufficiency of safety precautions, then the Owner may put the Work into such a condition that is, in his opinion, in all respects safe, and the Contractor shall pay all expenses of such labor and materials as may have been used for this purpose by him or by the Owner. The fact that the Owner or the Engineer does not observe a safety hazard or does not order the Contractor to take remedial measures shall in no way relieve the Contractor of the entire responsibility for any costs, loss or damage by any party sustained on account of the insufficiency of the safety precautions taken by him or by the Owner acting under authority of this Section.
- B. If the Contractor is alerted to the fact that conditions of high hazard are present or can be present at the site during the performance of the Work, it is the responsibility of the Contractor to take appropriate safety precautions to meet whatever conditions of hazard may be present during the performance of the Work, whether reasonably foreseeable or not. The safety conditions enumerated in the Specifications are the minimum permissible and neither the Owner nor the Engineer makes any representation that the safety standards provided herein will be adequate to meet all eventualities. The Contractor is therefore alerted to the

fact that it shall be his responsibility to anticipate and provide such additional safety precautions, facilities, personnel and equipment as shall be necessary to protect life and property from whatsoever conditions of hazard are present or may be present.

- C. The Contractor shall supply and erect highly visible safety fencing a minimum of three feet in height around all construction areas that pose a threat to safety and post proper signage as required by Local, State and Federal requirements. The Contractor shall erect safety fencing as documented in the Contact Drawings or as directed by the Engineer and shall maintain such fencing and signage until such a time that the potential safety hazard has been rectified. Upon final completion of construction all safety fencing shall be removed off-site by the Contractor. Safety fencing requirements of OSHA shall be enforced by the Contractor.

END OF SECTION

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SECTION 01090

REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Reference material, abbreviations, and terms used in the Construction Documents and establishes edition dates and complete titles for standards referenced elsewhere in the Specifications.

1.02 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Obtain copies of standards when required by Contract Documents.
- C. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.03 SCHEDULE OF REFERENCES

AA	Aluminum Association 818 Connecticut Ave. N.W. Washington, DC 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reford Station Detroit, MI 48219
AFBMA	Anti-Friction Bearing Manufacturers Association

AGC	Associated General Contractors of America 1956 E Street, N.W. Washington, DC 20006
AGM	American Gear Manufacturers Association
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American Iron and Steel Institute 1000 16 th Street, N.W. Washington, DC 20036
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANS	American National Standard
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
API	American Petroleum Institute
ARI	Air-Conditioning and Refrigeration Institute 1501 Wilson Boulevard Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47 th Street New York, NY 10017
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASPA	American Sod Producers Association 4415 West Harrison Street Hillside, IL 60162
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWG	American or Brown and Sharpe Wire Gage
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
BIA	Brick Institute of America 11490 Commerce Park Drive Reston, VA 22091
CS	Commercial Standard
EJCDC	Engineers' Joint Contract Document Committee American Consulting Engineers Council 1015 15 th Street, N.W. Washington, DC 20005
FM	Factory Mutual System 1151 Boston-Providence Turnpike PO Box 688 Norwood, Massachusetts 02062
Fed Spec.	Federal Specification General Services Administration Specification and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407

IBR	Institute of Boiler and Radiator Manufacturers
ICBO	International Conference of Building Officials 5360 S. Workman Mill Road Whittier, CA 90601
IPS	Iron Pipe Size
JIC	Joint Industry Conference Standards
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
NASSCO	National Association of Sewer Service Companies 101 Wymore Road, Suite 521 Altamonte, FL 32714
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association PO Box 781 Herndon, VA 22070
NCPWB	National Certified Pipe Welding Bureau
NEMA	National Electrical Manufacturers' Association 2101 'L' Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association Battery March Park Quincy, MA 02269
NPT	National Pipe Thread
OS&Y	Outside screw and yoke
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077

SMACNA	Sheet Metal and Air Conditioning Contractors' National Assoc. 8224 Old Court House Road Vienna, VA 22180
Stl. WG	U.S. Steel Wire Washburn and Moen, American Steel and Wire or Roebling Gage
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
USS Gage	United States Standard Gage
125-lb. ANS	American National Standard for Cast-Iron Pipe Flanges and Flange
250-lb. ANS	Fittings, Designation B16.1-1975, for the appropriate class

1.04 EDITION DATES

- A. Reference to publications and reference material shall be understood to mean the latest edition, unless stated otherwise.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

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SECTION 01200

PROJECT MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for project meetings.

1.02 PRECONSTRUCTION CONFERENCE

- A. The Engineer will schedule and administer a pre-construction conference.
- B. The pre-construction conference will be scheduled and administered within fourteen (14) calendar days after the dated "Notice to Proceed". The Contractor shall be prepared to address such topics as projected construction schedules, major personnel, critical work areas, construction facilities and shop drawing submittals.

1.03 PROGRESS MEETINGS

- A. The Engineer will schedule and administer progress meetings and specially called meetings throughout the duration of the Work at minimum monthly intervals.
- B. The time and location of such meetings shall be designated by the Engineer and shall be convenient for all parties involved.
- C. The Engineer will, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to participants, and those affected by decisions made.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

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SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for submission of schedules and shop drawings.

1.02 PROGRESS SCHEDULE

- A. Refer to Section 01310 Construction Progress Schedule for Critical Path Method (CPM) construction scheduling requirements.
- B. Special attention is directed to the requirement that the Contractor shall start the Work, as specified under this Contract, no later than thirty (30) calendar days after the execution of the Contract Documents, unless otherwise directed by the Owner. The Contractor shall comply with all pre-construction requirements as specified. The Owner reserves the right to delay the commencement of the Work or any part thereof if the specified requirements as determined by the Engineer have not been satisfied. The Owner further reserves the right to limit or, delay construction, or certain activities thereof, in certain areas of the Contract should the Owner deem it to be in the public's best interest and/or safety to do so.
- C. The Contractor shall contact the appropriate town or city authorities concerning any public or semi-public events that may occur during the construction period that may affect construction. The Contractor alone shall be responsible for arranging his construction sequence to conform to any restrictions these events may impose. No claims for extras will be allowed because of any delay, extra materials handling, extra excavation, etc. caused by the imposed restrictions. However, additional time may be granted for completion of the work to compensate for delays caused by said restrictions.

1.03 SHOP DRAWINGS

- A. Submit **electronic copies of** all shop and working drawings of concrete reinforcement, structural details, piping layout, wiring, materials fabricated especially for the Contract, and materials and equipment for which such drawings are specifically requested.
- B. A maximum of two (2) submittals of each shop drawing will be reviewed by the Engineer. If more submittals are required due to the Contractor's neglect or failure to fulfill the requirements of the Contract plans and specifications, or to make corrections or modifications required by the Engineer in the review of the first two submittals, the Engineer will review the submittal and the Contractor will be responsible for the cost of the review, as determined by the Owner based on the Engineer's documentation of time and rates for additional services established in the Engineering Agreement between the Owner and the Engineer.
- C. If resubmittals on shop and working drawings are required, the Engineer will retain three (3) copies and **[three (3)]** copies will be returned to the Contractor. When resubmittals are returned to the Engineer, six copies of the complete submittal shall again be required.

- D. Such drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When the dimensions are of particular importance, or when specified, the drawings shall be certified by the manufacturer or fabricator as correct for the Contract.
- E. When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted in place of shop and working drawings.
- F. The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings to eliminate delay to the Work due to the absence of such drawings. All shop and working drawings must be submitted to the Engineer within thirty (30) calendar days prior to incorporation into the Work, unless otherwise permitted by the Engineer. **Prior to the submittal of any shop drawings, the Contractor shall submit a schedule of proposed shop drawing transmittals.** The schedule shall identify the subject matter of each transmittal, the corresponding specification section number and the proposed date of submission. Prior to and during the progress of the Work the schedule shall be revised and resubmitted as requested by the Engineer.
- G. No material or equipment shall be purchased or fabricated for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.
- H. Until the necessary review has been made, the Contractor shall not proceed with any portion of the Work (such as the construction of foundations) for which review is required.
- I. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24 inch by 36 inch sheets, except those which are made by changing existing standard shop and working drawings. All drawings shall be clearly marked with the names of the Owner, Contractor, and building, equipment, or structure to which the drawing applies, and shall be suitable numbered. Submitted shop drawings shall be accompanied by a letter of transmittal, completed by the Contractor as **provided** by the Engineer.
- J. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer; other drawings shall be returned for correction.
- K. If a shop drawing shows any deviation from the Contract requirements, the Contractor shall make specific mention of the deviations in his letter of transmittal.
- L. The review of shop and working drawings by the Engineer will be general only, and nothing contained in this Section shall relieve, diminish or alter in any respect the responsibilities of the Contractor under the Contract Documents and in particular, the specific responsibility of

the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance as specified. The Contractor shall be responsible for errors and omissions in shop drawings.

- M. Should the Contractor submit equipment that requires modifications to the structures, piping, electrical conduit, wires, appurtenances, or layouts etc., either existing or as detailed on the Drawings, he shall also submit details of the proposed modifications. If such equipment and modifications are accepted, the Contractor, at no additional cost to the Owner, shall do the work necessary to make such modifications.
- N. The Contractor shall furnish additional copies of shop drawings or catalog cuts when so requested.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

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SECTION 01310

CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for computer generated Critical Path Method (CPM) construction scheduling and Narrative progress report.
- B. No portion of this specification shall take precedent over SECTION 00500-Contract Agreement.

1.02 SUBMITTALS

- A. Submit in accordance with SECTION 01300-Submittals
 - 1. Quality Assurance/Control Submittal
 - a. Name and version of CPM software proposed for use.
 - b. List of construction projects completed on which progress of work was controlled with CPM software.
 - 2. Schedule
 - a. Within **14 days** following the receipt of the Notice to Proceed, the Contractor shall submit **two** color copies of a computer generated schedule and a list of activities to the Engineer. Following review by the Engineer and Owner the Contractor shall meet with the Engineer and Owner to discuss the review. The Contractor shall incorporate the Engineer's comments into the schedule and submit eight color copies of the revised schedule within 14 days following receipt of the Engineer's comments.

PART 2 PRODUCTS

2.01 SOFTWARE

- A. Computer based scheduling software used by the Contractor shall be the product of a recognized commercial computer software producer and shall be capable of meeting the requirements specified herein.

PART 3 EXECUTION

3.01 PREPARATION

- A. General
 - 1. The Contractor shall prepare his proposed CPM schedule based on a breakdown of work tasks that he has developed.
 - 2. The construction schedule and updates shall be prepared by the Contractor or the Contractor's qualified consultant.

B. Schedule

1. Each schedule shall be prefaced with the following summary data:
 - a. Contract name and number
 - b. Contractor's Name
 - c. Contract duration
 - d. The effective or starting date of the schedule
 - e. Revision date of the latest schedule.
2. The CPM schedule shall be sequenced by early start date and shall include the following minimum items:
 - a. Activity Name
 - b. Estimated duration
 - c. Activity description
 - d. Early start date (calendar date)
 - e. Early finish date (calendar date)
 - f. Latest allowable start date (calendar date)
 - g. Latest allowable finish date (calendar date)
 - h. Status (whether critical)
 - i. Estimated cost of the activity
 - j. Float (total and free)
 - k. Major milestones
3. Separate milestones shall be included for Notice-to-Proceed and Project Completion Date.
4. Activities shall include major components of the work including submittals that might impact the critical path, subcontractor work, major and critical equipment design, fabrication, testing, delivery and installation times, system/subsystem/component testing, process and facility startup, training, demobilization, project cleanup and closeout. Critical portions of process instrumentation and control system work, shall be defined in detail in a sub schedule.
5. The sum of the costs assigned to the activities shall be equal to the Contract price. Activity costs shall not be assigned to submittals or submittal reviews. Comply with SECTION 01026-Schedule of Values. Provide a table showing the anticipated monthly percentage of completion, based on the total contract price.
6. Critical activities, predecessors, free float and total float shall be clearly displayed on the schedule in graphical form. Schedules that contain activities showing negative float or that extend beyond the contract completion date will not be approved.
7. Each schedule submittal shall also include a list of activities in the order in which the activities will be performed, along with activity durations, activity predecessors, type of predecessor (finish-start, finish-finish, start-start, lead/lag), and any dependency or required date.
8. The schedule shall be based on a standard 5-day work week with allowance for holidays and adverse weather.
9. Engineer's approval of the CPM schedule is advisory only and shall not relieve the Contractor of responsibility for accomplishing the work prior to the contract completion date. Omissions and errors in the approved CPM schedule shall not excuse performance less than that required by the Contract. Approval by the Engineer in no way makes the Engineer an insurer of the CPM schedule's success or liable for time or cost overruns flowing from its shortcomings. The Owner hereby disclaims any obligation or liability by reason of approval by its agent, the Engineer, of the CPM schedule.

C. Narrative Progress Report

1. Include as a minimum:
 - a. Summary of work completed during the previous period (since submission of last narrative progress report).
 - b. Explanation for variations between actual work completed in previous period and planned work as reported in last period.
 - c. Summary of work planned during the next period.
 - d. Current and anticipated delaying factors and their estimated impacts on other activities and milestones, both critical and non-critical.
 - e. Corrective actions taken or proposed.
2. A Narrative Progress Report shall be submitted monthly to the Engineer, at least 5 working days prior to the progress meeting.
3. At the discretion of the Engineer, the Contractor may be required to submit a revised CPM schedule showing completion to date and any changes to the previous schedule.

3.02 MONITORING SCHEDULE

- A. The CPM approved construction schedule shall be used by the Contractor throughout the duration of the project for planning, organizing, and directing the Work, and for reporting progress of the Work
- B. The Contractor is solely responsible for monitoring schedule compliance. When a delay to the critical path occurs, the Contractor shall immediately notify the Engineer in writing. Within one week of the notification, the Contractor shall submit for the Engineer's approval, a description of proposed actions to return the project to schedule.

3.03 MODIFYING SCHEDULE

- A. If the Contractor desires to make changes in his method of operating which affect the approved CPM schedule, he shall notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer approves these changes, the Contractor shall revise and submit for approval, without additional cost to the Owner, all of the affected portions of the CPM schedule.
- B. It may be necessary for the contract schedule or completion time to be adjusted by the Owner to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Owner or its representatives and other unforeseeable conditions which may indicate schedule adjustments or completion time extensions. Under such conditions, the Engineer will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions and the Contractor shall revise his schedule accordingly.
- C. Float time is a project resource available to both the Contractor and the Owner to meet contract milestones and completion dates. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float suppression techniques shall be shared to proportionate benefit of OWNER and CONTRACTOR.

- D. If the Contractor provides an accepted schedule with an early completion date, the Owner reserves the right to reduce the Time of Completion to match the early completion date by issuing a deductive Change Order at no change in Contract Price.

END OF SECTION

SECTION 01381

AUDIO VIDEO RECORDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for color audio video recording of all existing roadway and right-of-way conditions.

1.02 REQUIREMENTS

A. Pre Construction recording

1. Furnish to the Engineer an original and one copy of a continuous color audio video recording. Take recording prior to any construction activity.
2. Recordings to be of sufficient detail to accurately and clearly show the existing, preconstruction conditions of this entire area of the Work. Each recording to include an audio description of the area being video recorded.
3. Coverage shall include, but not limited to, all existing roadways, sidewalks, curbing, driveways, buildings, structures, above ground utilities, landscaping, trees, signage and other physical features located within the zone of influence of the Work. The coverage may be expanded if directed by Engineer.
4. All recordings will be done during daylight hours. No recording shall be performed if weather is not acceptable, such as rain, fog, etc.

- B. The Engineer reserves the right to reject any recordings because of poor quality.

- C. Any recordings rejected by the Engineer shall be rerecorded at no additional cost.

1.03 SUBMITTALS

- A. Provide references of similar projects for review by the Engineer, include owner contacts and telephone numbers.

1.04 QUALITY CONTROL

- A. The recording shall be performed by a qualified, established audio video recording firm knowledgeable in construction practices and inspection procedures.

PART 2 PRODUCTS

2.01 AUDIO VIDEO MEDIA

- A. Video recordings shall be submitted on USB type A external thumb drives sized to suit video file size. Contractor to ensure that recording is capable of playback on both Windows Media player or other similar player.

PART 3 EXECUTION

3.01 AUDIO AND VIDEO RECORDING

- A. Each recording shall begin with the Owner's name, Contract name and number, Contractor's name, date, and location information such as street name, property address, direction of travel, viewing side, etc.
- B. Videos of the interior of each property where private side water service replacement is completed shall be provided.
- C. Information appearing on the recording must be continuous and run simultaneously by computer generated transparent digital information. No editing or overlaying of information at a later date will be acceptable.
- D. Digital information will be as follows:
 - 1. Day, date and time
- E. Time must be accurate to within 1/10 of a second and continuously generated.
- F. Written documentation must coincide with the information on the recording so as to make easy retrieval of locations sought for a later date.
- G. Audio shall be recorded at the same time as the video recording. Special commentary will be given for unusual conditions of buildings, sidewalks and curbing, foundations, trees and shrubbery, etc.
- H. All thumb drives shall bare labels with the following information:
 - 1. Thumb Drive Number
 - 2. Owner's Name
 - 3. Date of Recording
 - 4. Project Name and Number
 - 5. Location and Standing Limit of recording

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for Contractor's quality control of products, suppliers, manufacturers, services, site conditions, and workmanship, to produce Work of specified quality.

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Comply fully with manufacturers' instructions, including each step in sequence.
- B. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.03 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field sample is specified to be removed, clear area only after field sample has been accepted by the Engineer.

1.04 CERTIFIED WELDERS

- A. Structural welds shall be made only by operators who have been qualified by tests, as prescribed in the "Standard Qualification Procedure" of the American Welders Society, to perform the type of work required.
- B. Pipe welds shall be made only by operators who have been qualified by the National Certified Pipe Welding Bureau and each operator's qualification record shall be submitted to the Engineer before any work is performed.
- C. Shop welding shall be in accordance with the "Code for Welding in Building Construction".

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for temporary utilities required during construction.

1.02 TEMPORARY WATER

- A. Temporary pipe lines and connections from the permanent service lines, necessary for the use of the General Contractor and his Subcontractors shall be installed, protected, and maintained at the expense of the General Contractor.
- B. Provide an adequate supply of drinking water from an approved source of acceptable quality, satisfactorily cooled, for his employees and those of his Subcontractors.

1.03 TEMPORARY ELECTRICITY

- A. Provide electrical energy required for temporary lighting and power.
- B. The General Contractor and all Subcontractors, individually, shall furnish all extension cords, sockets, motors, and accessories required for their work.
- C. Electrical work to be done in accordance with applicable codes.

1.04 TEMPORARY SANITARY FACILITIES

- A. Provide adequate sanitary facilities for the use of those employed on the Work. Sanitary facilities shall be made available when the first employees arrive on the site of the Work, be properly secluded from public observation, and be maintained during the progress of the Work in suitable numbers.
- B. Maintain sanitary facilities in an orderly and sanitary condition at all times and enforce their use. Rigorously prohibit the committing of nuisances on the site of the Work, on the lands of the Owner, or any adjacent property.

1.05 TEMPORARY HEATING

- A. Within 30 calendar days after the execution of this Contract, submit in writing to the Engineer for approval, three copies of method and time schedule for heating during construction which shall concur with his progress schedule submitted under Specification Section 01300.
- B. The installation and operation of heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection. Heating devices which may cause damage to finish surfaces shall not be used.

- C. After the permanent heating system has been installed, tested, and made ready for operation, the Contractor may, at his own risk and expense, use it for providing heat for protection of the Work. He shall provide and pay for all fuel and care necessary, and, when the Work is ready for acceptance, he shall, at his own expense, put the system into first-class condition, even to the extent of replacing worn or damaged parts as directed.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01560

TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for cleaning, maintenance of the site, barriers and fences required during construction.

1.02 CLEANING DURING CONSTRUCTION

- A. Unless otherwise specified under the various trade Sections of the Specifications, the General Contractor shall perform clean-up operations during construction as herein specified.
 - 1. Control accumulation of waste materials and rubbish; periodically dispose of off-site. Bear all costs, including fees resulting from disposal.
 - 2. Clean interior areas prior to start finish work and maintain areas free of dust and other contaminants during finishing operations.
 - 3. Maintain project in accordance with all local, State and Federal Regulatory Requirements.
 - 4. Store volatile wastes in covered metal containers, and remove from premises.
 - 5. Prevent accumulation of wastes that create hazardous conditions.
 - 6. Provide adequate ventilation during use of volatile or noxious substances
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.
 - 4. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
 - 5. Use only those cleaning materials and methods recommended by manufacturer of surface material to be cleaned.
 - 6. Execute cleaning to ensure that the buildings, the sites, and adjacent properties are maintained free from accumulations of waste materials and rubbish and wind blown debris, resulting from construction operations.
 - 7. Provide on-site containers for collection of waste materials, debris, and rubbish.
 - 8. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas off the construction site.
 - 9. Handle material in a controlled manner with as little handling as possible. Do not drop or throw materials from heights.
 - 10. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not damage surrounding surfaces.
 - 11. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.
 - 12. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, work done under this contract, or

elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc. shall, upon completion of the work, be left in a clean and neat condition.

1.03 DUST CONTROL

- A. Provide adequate means for the purpose of preventing dust caused by construction operations throughout the period of the construction contract.
- B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions or performance obligations of the General Contractor.

1.04 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize amount of bare soil exposed at one time.
- C. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts for clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Construct sediment control devices for discharge from dewatering trenches.
- G. Construct all sedimentation control devices shown on the plans.

1.05 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
- B. Execute construction work by methods and by use of equipment which will reduce excess noise.
 - 1. Equip air compressors with Silencers, and power equipment with mufflers.
 - 2. Manage vehicular traffic and scheduling to reduce noise.

1.06 POLLUTION CONTROL

- A. Special care shall be taken to prevent contamination or muddying up or interfering in any way with the stream flows, if any along the line of work. No waste matter of any kind will be allowed to discharge into the stream flows or impounded water of any pools or other bodies of water.

1.07 SURFACE WATER CONTROL

- A. Take all precautions to prevent damage to the work or equipment by high waters or by storms. The Engineer with the approval of the Owner may prohibit the carrying out of any work at any time when in his judgment, high water or storm conditions are unfavorable or not suitable, or at any time, regardless of the weather, when proper precautions are not being taken to safeguard previously constructed work or work in progress.
- B. In case of damage caused by the failure of the Contractor to take adequate precautions, the Contractor shall repair or replace equipment damaged and shall make such repairs or rebuild such parts of the damaged work, as the Engineer may require, at no additional expense to the Owner.

1.08 BARRIERS AND ENCLOSURES

A. Fences and Barricades

- 1. Provide and maintain temporary fences, barriers, lights, guardrails, and barricades as indicated in the Contract Documents, or as necessary to secure the Work and adjacent property, and protect persons and property.
- 2. Obtain necessary approvals and permits and provide temporary expedients as necessary to accommodate tasks requiring items mentioned herein.

B. Protection of Trees

- 1. The Contractor shall take care not to harm trees along the sides of roads or with in the existing facility in which the construction work is to be done or trees on adjacent lands except as indicated on the drawings or with the written permission of the Owner and any other owner of the trees involved. Care shall be taken not to cut tree roots so as to harm the growth of trees to remain.
- 2. If, in the opinion of the Engineer, any trees damaged during construction can be repaired, the Contractor shall satisfactorily repair same at no further cost to the Owner.
- 3. If, in the opinion of the Engineer, any tree damaged during construction cannot be repaired and should be removed, the Contractor shall satisfactorily remove and replace, in kind, same at no further cost to the Owner.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

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SECTION 01570

TRAFFIC REGULATIONS
(RHODE ISLAND)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for traffic control for the duration of the Contract.

1.02 REFERENCES

- A. This specification includes, requirements of additional specifications as listed. The Contractor shall perform the Work in accordance with requirements of the referenced specification in addition to the requirements of this Specification Section 01570.
- B. The Contractor shall obtain and familiarize himself with all requirements of these specifications.
 - 1. Rhode Island Department of Transportation Standard Specification for Road and Bridge Construction, including all addenda issued by the State of Rhode Island Department of Public Works. (Referred to as the Standard Specification).
 - 2. Manual of Uniform Traffic Control Devices (MUTCD) Latest Edition, including all addenda.

1.03 PERFORMANCE REQUIREMENTS

- A. Contractor shall have the sole responsibility for the maintenance and protection of traffic.
- B. An authorized representative of the Contractor shall be available on a 24-hour basis for the duration of the Contract for the purpose of correcting construction related impediments or hazards.

1.04 SUBMITTALS

- A. Shop Drawings
 - 1. In accordance with SECTION 01300 – SUBMITTALS, submit a traffic plan delineating requirements of this section, the Contract Drawings, and the City of Warwick and RIDOT requirements.
 - 2. Traffic control plans shall detail all typical work zones and detours.

1.05 SITE CONDITIONS

- A. Replace at no cost to the City of Warwick or RIDOT, pavement markings, legends and lane arrows removed or damaged by the construction operation.
- B. Restore temporary detours to original condition.

C. Replace traffic signal loops damaged during construction within 72 hours.

1.06 SCHEDULING

A. There shall be no time limitations on construction operations except those hours and locations where noise regulations may apply and except as required for the maintenance of traffic as required by the City of Warwick or RIDOT.

B. Keep closing of travel lanes to a minimum.

C. Notify city departments 48 hours prior to construction operations on travel ways.

1. Police Department (401) 468-4200.
2. Fire Department (401) 468-4000.
3. Department of Public Works (401) 738-2003.

PART 2 PRODUCTS

2.01 TRAFFIC CONTROL DEVICES

A. In accordance with the Standard Specification and MUTCD.

PART 3 EXECUTION

3.01 INSTALLATION OF TRAFFIC CONTROL DEVICES

A. In accordance with the Standard Specification and MUTCD.

3.02 PROTECTION OF TRAFFIC

A. Barricade trenches and roadway excavations at the end of each work period with temporary precast concrete barriers, properly lighted and marked to guide traffic to designated travel lane. Or other means acceptable to the Engineer and approved on the Traffic Plan.

B. Maintain and protect traffic movements for the entire length of the project.

C. Keep one lane of traffic open at all times except for brief stoppages dictated by the construction operation involving safety of vehicles in the travel lanes.

D. Maintain access to business and private ways during construction operations.

E. Furnish sufficient number of signs, temporary precast concrete barriers, warning lights, drums and traffic cones to warn traffic of construction and guide traffic through the construction area.

3.03 TRAFFIC PERSONS

A. Contractor shall procure the service of uniformed traffic persons as required to perform construction while safely managing the movement of non-construction traffic through active project areas. Contractor shall be responsible for determining the need for uniformed traffic

persons over the course of the project and shall schedule traffic persons in a timely fashion in advance of when said traffic persons will be needed.

- B. The traffic person shall be City of Warwick uniformed police officers unless otherwise authorized or required (e.g. if an adequate number City of Warwick police officers are unavailable to serve as uniformed traffic persons).
- C. The intent is to insure public safety by police direction of traffic. Police are not to serve as watchmen to protect the Contractor's equipment and materials, or to warn pedestrians of such hazards as open trenches.
- D. Nothing contained herein shall be construed as relieving the Contractor of any of his responsibilities for protection of persons and property under the terms of the Contract.

END OF SECTION

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SECTION 01700

CONTRACT CLOSE-OUT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for specific administrative procedures, record keeping, close-out submittals, and forms used at substantial and final completion of the Work.
- B. Contractor shall satisfy all administrative requirements within the Contract Documents and the Requirements listed in this section prior to Contract Close-out.

1.02 FINAL CLEANING

- A. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools, and machinery or other construction equipment furnished by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.
- B. The Contractor shall restore or replace, when and as directed, any public or private property damage by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required, all necessary highway or driveway, walk and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable as work progresses and shall not be left until the end of the contract period.
- C. Unless otherwise specified under the various Sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- D. At completion of work, remove waste materials, rubbish tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.
- E. Cleaning shall include all surfaces, interior and exterior in which the Contractor and all Subcontractors have had access whether existing or new.
- F. Refer to Sections of the Specifications for cleaning of specific products or work.
- G. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
- H. Use only those cleaning materials and methods that are recommended by the manufacturer of surfaces material to be cleaned.
- I. Employ experienced workmen, or professional cleaners, for final cleaning operations.

1.03 PROJECT RECORD DOCUMENTS

- A. Project Record Documents also referred here as Record Drawings shall consist of all the contract drawings.
- B. The Contractor and all Subcontractors shall be required to maintain one set of Record Drawings, as the work relates to their Sections of the Specifications, at the site.
- C. Record Drawings shall be stored and maintained in the General Contractor's field office apart from other documents used for construction. The Record Drawings shall be maintained in a clean, dry, and legible condition and shall not be used for construction purposes.
- D. Record Drawings shall be available at all time for inspection by the Engineer. All deficiencies noted shall be promptly corrected.
- E. The following information shall be indicated on the Record Drawings for building construction:
 - 1. Record all changes, including change orders, in the location, size, number, and type both horizontally and vertically of all elements of the projects which deviate from those indicated on all the contract drawings.
 - 2. The tolerance for the actual location of utilities and appurtenances within the building to be marked on the Record Drawings shall be plus or minus two (2) inches.
 - 3. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) ft. intervals and at all changes of direction.
 - 4. The location of all internal utilities and appurtenances, concealed by finish materials, including but not limited to valves, coils, dampers, vents, clean outs, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps and maintenance devices. The location of these internal utilities, appurtenances and devices shall be shown by offsets to the column grid lines on the drawings.
 - 5. Each of the utilities and appurtenances shall be referenced by showing a tag number, area served and function on the Record Drawings.
 - 6. Prior to the installation of all finish materials, a review of the Record Drawings shall be made to confirm that all changes have been recorded. All costs to investigate such conditions shall be borne by the applicable party as demonstrated by the Engineer.
- F. The following information shall be indicated on the Record Drawings for sewer construction:
 - 1. Location of manholes with 3 swing ties.
 - 2. Linear distance of sewer from manhole to manhole, including size and type of pipe.
 - 3. Manhole rim elevation and invert elevations of all pipes within manholes, including drops.
 - 4. Recalculated pipe slopes based on record elevations.
 - 5. Location in feet from downstream manhole of wyes and chimneys and vertical height of chimneys.
 - 6. Length of service connections.
 - 7. Location of service connection terminus (at property line) with 3 swing ties and depth from existing surface grade.
 - 8. Pumping station information as detailed in 1.03, E.
- G. The following information shall be indicated on the Record Drawings for water main construction:

1. Linear distance along watermain from appurtenance (i.e. vault to tee, tee to bends, bends to valves, blow offs and service corporations, including size and type of pipe).
 2. Depths of pipe and fittings.
 3. Location of vaults, valves, hydrants, bends, blow offs, service curb boxes, location of service connection to house, and any change in service pipe direction with 3 swing ties.
 4. Rim elevation on vaults (meter, air release etc.).
- H. The following information shall be indicated on the Record Drawings for storm drain construction:
1. Rim elevations on inlets, catch basins, manholes and other structures.
 2. Invert elevations of all pipes within inlets, catch basins, manholes, end sections, headwalls, culverts and other structures.
 3. Linear distance along drain from structure to structure, and branch connections, including size and type of pipe.
 4. Recalculated pipe slopes based on record elevations.
 5. Location of manholes, inlets, catch basins, outlets, headwalls, other structures and service line connections with 3 swing ties.
- I. At the end of each month and before payment for materials installed, the Contractor, and his Subcontractors, shall review Record Drawings for purpose of payment. If the changes in location of all installed elements are not shown on the Record Drawings and verified in the field, then the material shall not be considered as installed and payment will be withheld.
- J. At the completion of the contract, each Subcontractor shall submit to the Contractor a complete set of his respective Record Drawings indicating all changes. After checking the above drawings, the Contractor shall certify in writing on the title sheet of the drawings that they are complete and correct and shall submit the Record Drawings to the Engineer.

1.04 EQUIPMENT AND SYSTEM CHECKOUT, CERTIFICATIONS AND TESTING

- A. Comply with requirements of Section 01680 Equipment and System Checkout, Certifications and Testing.

1.05 OPERATING AND MAINTENANCE MANUALS

- A. Comply with requirements of Section 01730 Operation and Maintenance Manuals.

1.06 SPARE PARTS

- A. Comply with requirements of Section 01750 Spare Parts.

1.07 LUBRICANTS

- A. Comply with requirements of Section 01751 Lubricants.

1.08 WARRANTIES

- A. Comply with requirements of Section 01740 Warranties.

1.09 FINAL INSPECTION

A. The Contractor shall submit written certification that:

1. Project has been inspected for compliance with Contract Documents.
2. Equipment and systems have been tested in the presence of the manufacturer's representative and are operational and satisfactory.
3. Project is completed, and ready for final inspection.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

DIVISION 2

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SECTION 02140

DEWATERING

PART 1 GENERAL

1.01 SUMMARY

- A. Dewatering specified in this section is applicable to utilities and all other structure.
- B. Section Includes
 - 1. Requirements for designing, furnishing, installing, maintaining, operating and removal of temporary dewatering systems required to lower and control water levels and hydrostatic pressures during construction.
 - 2. Requirements for obtaining all necessary permits required for temporary dewatering, treating and disposing of pumped water.

1.02 DEFINITIONS

- A. Dewatering: Lowering the zone of saturation and intercepting groundwater seepage which would otherwise emerge from the slopes or bottom of the excavations. The purposes of dewatering are to increase the stability of excavated slopes; prevent loss of material from beneath the slopes or bottom of the excavation; improve the excavating and hauling characteristics of on-site soil; prevent rupture or heaving of the bottom of an excavation; and dispose of pumped water. In addition, dewatering is required to place and compact structural fill.

1.03 DESIGN REQUIREMENTS

- A. The Contractor is responsible for the adequacy of the dewatering system.
- B. Design dewatering systems to:
 - 1. Effectively reduce the hydrostatic pressure and lower the groundwater levels to a minimum of 2 feet below excavation in soil;
 - 2. Develop a substantially dry and stable subgrade for the protection of subsequent operations;
 - 3. Result in no damage to adjacent buildings, structures, utilities and other work, included in this contract.
 - 4. Depressurize stratified layers of sand that may be confined by silt layers so that a stable excavation bottom is maintained.
- C. Methods may include sump pumping, single or multiple stage well point, or jet eductor well point systems, deep wells, or combinations thereof.
- D. Locate dewatering facilities where they will not interfere with existing utilities, facilities and/or construction work to be done under this Contract.

- E. Contractor is responsible to obtain all necessary permits from state and local authorities regarding the operation and discharge of the dewatering system, and to conduct all necessary sampling and testing that may be required by those authorities.

1.04 SUBMITTALS

A. Shop Drawings

- 1. In accordance with Section 01300 submit the following prior to dewatering system installation:
 - a. Proposed system components.
 - b. Operational plan to include locations and depth of components.
 - c. Method of disposal of pumped water, including method of insuring proper sediment removal should upset in dewatering system occur.

B. Quality Assurance/Control Submittals

- 1. In accordance with Section 01300 submit the following:
 - a. Provide documentation demonstrating ability and experience of installing contractor for the type of conditions under this contract.
 - b. Names, addresses and telephone numbers of supervisory personnel actively involved in at least five successful projects requiring dewatering.

1.05 PROJECT/SITE CONDITIONS

A. Environmental Requirements

- 1. Dispose of all pumped water in accordance with Rhode Island Department of Environmental Protection, Rhode Island Coastal Resources Management Council and any other agency having jurisdiction.

B. Existing Conditions

- 1. Groundwater Measurements have not been taken for this project.
- 2. Groundwater surface is subject to fluctuations during periods of heavy precipitation.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 SITE PREPARATION

A. Surface Drainage

- 1. Construct dikes, ditches, pipelines, sumps or other means to intercept and divert precipitation and surface water away from excavations.

B. Drainage of Excavated Areas

1. Construct dikes, ditches, pipelines, sumps or other means to collect surface and seepage water which may enter the excavation.
2. Discharge water through settling basins or method approved by Engineer when water is to be deposited into an existing watercourse.

3.02 INSTALLATION

- A. Advise Engineer of changes made to Operation Plan as submitted under article 1.05 of this section, made to accommodate field conditions.

3.03 MONITORING

- A. Observe and record daily the elevation of the groundwater during the length of the dewatering operation and provide data to Engineer on daily basis.

3.04 OPERATION

- A. Operate dewatering systems to lower the groundwater level in excavations allowing all subsequent work to be done on a stable dry subgrade.
- B. Modify dewatering procedures which cause, or threaten to cause, damage to new or existing facilities, to prevent further damage. Modifications made at no additional expense to the Owner.
- C. Maintain the water level a minimum of two (2) feet below subgrade or at lower elevation to eliminate hydrostatic pressure on structures.
- D. Prevent disturbance of foundation soils and loss of ground as water is removed.
- E. Notify the Engineer of disturbance to the foundation soils caused by an interruption or inadequacy of the dewatering system.
- F. Maintain on site, auxiliary equipment to operate the dewatering system continuously while excavations are opened below elevation of final grade.

3.05 DISPOSAL OF WATER

- A. Discharge water in a manner that will not cause erosion, flooding, damage to existing facilities, completed Work or adjacent property, improved or otherwise.

3.06 REMOVAL

- A. Remove all material and equipment from the site upon completion of dewatering operations.
- B. Seal all dewatering wells upon completion of the dewatering by pressure injecting a grout capable of sealing the wells and preventing leakage.

END OF SECTION

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SECTION 02200

EARTH EXCAVATION, BACKFILL, FILL AND GRADING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for; excavating in earth for trenches and structures; backfilling excavations; furnishing necessary material; compaction; constructing embankments and fills; miscellaneous earth excavations and miscellaneous grading.

B. Related Sections

1. Section 01025 - Measurement and Payment
2. Section 01410 - Testing Laboratory Service
3. Section 02080 – Management of Excess Soil
4. Section 02140 – Dewatering
5. Section 02215 - Aggregate Materials
6. Section 03300 - Cast-In-Place Concrete

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).

1.03 MEASUREMENT AND PAYMENT PROCEDURES

A. Test Pits

1. Where determination of the exact location of pipe or other underground structure is necessary for doing the work properly, the Contractor may be required to excavate test pits to determine such locations. When such test pits may be properly considered as incidental to other excavation, the Contractor shall receive no additional compensation, the work being understood to be included as part of the excavation. When the Engineer orders test pits beyond the limits of excavation he considers a part of the work, such test pits shall be paid for as specified in SECTION 01025.

1.04 QUALITY ASSURANCE

A. Field Samples

1. Provide samples of materials as requested by the Engineer, to the Quality Control Engineer hired by the Owner, prior to delivery of materials on site, in order to facilitate field testing of compaction operations and material properties.

1.05 PROJECT/SITE CONDITIONS

A. Existing Conditions

1. There are pipes, drains, and other utilities in locations not indicated on drawings, no attempt has been made to show all services, and completeness or accuracy of information given is not guaranteed.

1.06 MAINTENANCE

- A. Maintain all work in accordance with SECTION 01800.

PART 2 PRODUCTS

2.01 MATERIALS

A. Suitable Aggregate

1. The nature of materials will govern both acceptability for backfill and methods best suited for placement and compaction.
2. All material whether from excavations or from borrow pits, after being placed and properly compact, will make a dense stable fill and containing no vegetation, masses of roots, individual roots more than 18 inches long, or more than on half (1/2) inch in diameter, stones over six (6) inches in diameter, or porous matter.
3. Organic matter to be well distributed and not to exceed minor quantities.

B. Trench and Excavation Backfill

1. In general, and unless other material is indicated on drawings or specified, material used for backfilling trenches and excavations shall be suitable material which was removed in the course of making the construction excavations. Prior to re-use of in-situ material, the material shall be tested to determine if the material meets the requirements of applicable Specification Section for crushed stone, gravel borrow, or select borrow. If sufficient suitable material is not available from the excavations, the backfill material shall be crushed stone, gravel borrow or select borrow as directed in according to respective Specification Sections.

C. Structure Backfill

1. Unless otherwise indicated or specified, all fill and backfill under structures other than the culvert and pavement adjacent to structures other than the culvert shall be compacted gravel borrow containing not more than 10 percent material passing a 200 sieve. When coarse aggregate and fine aggregate are indicated or specified for use under structures, they shall conform to the requirements for coarse and fine aggregate specified in SECTION 03300.

D. Filling and Embankment Backfill

1. Suitable selected materials available from the excavations and not required for backfill around pipes or against structures may be used for filling and building embankments, except as otherwise specified. Material needed in addition to that available from construction operations shall be obtained from suitable gravel banks or other suitable deposits. The Contractor shall furnish, at his own expense, all borrow material needed on the work.

E. Additional materials

1. Concrete: In accordance with SECTION 03300.
2. Crushed stone: In accordance with SECTION 02215.
3. Gravel borrow: In accordance with SECTION 02215.
4. Selected borrow: In accordance with SECTION 02215.

2.02 EQUIPMENT

A. Well Points

1. Designed to drain soil and prevent saturated soil from flowing into excavation.

B. Pumping Units

1. Designed for use with the wellpoints, capable of maintaining a high vacuum and, handling large volumes of air and water at the same time.

C. Underdrain Pipe

1. HDPE pipe enclosed in crushed stone encased in filter fabric.
2. Sewer pipe of quality known as "seconds".

2.03 SOURCE QUALITY CONTROL

- A. Provide Engineer with access to location of off site sources of materials.

- B. All imported material to be used as backfill and loam on the project shall be tested by Contractor to demonstrate compliance with RIDEM's Residential Direct Exposure

Criteria and GB Leachability Criteria prior to the material being imported for use. No soil shall be brought on-site without the Town's Environmental Professional's approval. A minimum frequency of one (1) sample per every one thousand (1,000) cubic yards of each type of required clean soil shall be collected by the Contractor's Environmental Professional and analyzed for the following:

- TPH via EPA Method 8100;
- VOCs via EPA Method 8260;
- PAHs via EPA Method 8270; and
- RCRA 8 Metals via EPA Method 6010/7471.

All original laboratory analytical data and/or a certification from the facility that provides the clean fill and/or loam attesting to the materials origin and suitability shall be provided to the Town prior to bringing the material on-site.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify all existing utilities and facilities prior to excavation.

3.02 PROTECTION

A. Utilities

1. Support and protect from damage existing pipes, poles, wires, fences, curbing, property line markers, and other structures, which the Engineer decides must be preserved in place without being temporarily or permanently relocated.
2. Restore items damaged during construction without compensation, to a condition at least equal prior to construction.

B. Trees

1. Enclose the trunks of trees adjacent to work with substantial wooden boxes of height necessary to protect trees from injury from piled material, equipment, operations or otherwise.
2. Employ excavating machinery and cranes of suitable type and size and operate with care to prevent injury to trees not to be cut and particularly to overhanging branches and limbs.
3. When trimming is required, make all cuts smooth and neat without splitting or crushing.
4. Cover cut areas with an application of grafting wax.
5. Branches, limbs, and roots shall not be cut except by permission of the Engineer.

C. Plantings

1. Protect by suitable means or temporarily replant and maintain cultivated hedges, shrubs, and plants which may be injured by the Contractor's operations
2. Replant in their original positions and care for until growth is re-established, once the construction operations have been substantially completed.
3. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to which existed prior to the start of the Work.

D. Paved surfaces

1. Do not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels shaped as to cut or injure paved surfaces.
2. All surfaces which have been injured by the Contractor's operations shall be restored to a condition at least equal to which existed prior to start of the Work.
3. Suitable materials and methods shall be used for such restoration.

3.03 PREPARATION

A. Pavement Removal

1. Remove only existing pavement as necessary for the prosecution of the work.
2. Engineer may require that pavement be cut with pneumatic tools or saws without extra compensation to Contractor, where in the opinion of the Engineer it is necessary to prevent damage to the remaining road surface.
3. Dispose large of pieces of broken pavement before proceeding with excavation.

B. Top Soil Removal

1. Unless otherwise noted, from areas which excavations are to be made, loam and topsoil shall be carefully removed and separately stored to be used again as directed; or, if the Contractor prefers not to separate surface materials, he shall furnish, as directed, loam and topsoil at least equal in quantity and quality to that excavated, at no cost to the Owner.

C. Subgrade

1. Remove loam and topsoil, loose vegetable matter, stumps, large roots, etc., from areas where embankments will be built or material will be placed for grading.

2. Shape as indicated on the drawings and prepare by forking, furrowing, or plowing to bond first layer of the new material placed.

3.04 RELOCATION AND REPLACEMENT OF EXISTING STRUCTURES

- A. The structures to which the provisions of this article apply include pipes, wires, and other structures which meet all of the following:
 1. Are not indicated on the drawings or otherwise provided for.
 2. Encroach upon or are encountered near and substantially parallel to the edge of the excavation.
 3. In the opinion of the Engineer will impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced.
- B. In removing existing pipes or other structures, the Contractor should use care to avoid damage to materials, and the Engineer shall include for payment only those new materials which, in his judgment, are necessary to replace those unavoidably damaged.
- C. Whenever the Contractor encounters certain existing structures as described above and is so ordered in writing, he shall do the whole or such portions of the work as he may be directed to change the location of, remove and later restore, or replace such structures, or to assist the Owner thereof in so doing. For all such work, the Contractor shall be paid under such items of work as may be applicable, otherwise as Extra Work.
- D. When fences interfere with the Contractor's operations, he shall remove and (unless otherwise specified) later restore them to a condition which existed prior to the start of the Work, all without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

3.05 SHEETING AND BRACING

- A. Provide in accordance with specification Section 02160.

3.06 DEWATERING

- A. Provide in accordance with specification Section 02140.

3.07 EXCAVATION

- A. Execute operation of dewatering, sheeting and bracing without undermining or disturbing foundations of existing structures or of work previously completed under this contract.

- B. Excavate to widths that provide suitable room for:
 - 1. Building structures or laying and jointing piping.
 - 2. Placing all sheeting, bracing, and supports.
 - 3. Cofferdamming, pumping and draining.
- C. Render bottom of excavations firm, dry and acceptable in all respects.
- D. Do not plow, scrap or dig by machinery, earth at finished subgrade which results in disturbance of material below subgrade, unless indicated or specified, and remove with pick and shovel, last of material to be excavated, just before placing pipe, masonry or other structure.
- E. Make all excavations in open, except as otherwise specified or permitted.
- F. Excavation Near Existing Facilities
 - 1. As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools. Such manual excavation when incidental to normal excavation shall be included in the work to be done under items involving normal excavation.
- G. Unauthorized Excavation
 - 1. If the bottom of any excavation is taken out beyond the limits indicated or prescribed, the resulting void shall be backfilled at the Contractor's expense with thoroughly compacted gravel borrow, if the excavation was for a pipeline, or with Class B concrete, if the excavation was for a masonry structure.
- H. Unsuitable Material
 - 1. If material unsuitable for foundation (in the opinion of the Engineer) is found at or below the grade to which excavation would normally be carried in accordance with the drawings and/or specifications, the Contractor shall remove such material to the required width and depth and replace it with thoroughly compacted, crushed stone, gravel borrow, fine aggregate or concrete as directed.

3.08 TRENCHING

A. Trench Excavation

- 1. Where pipe is to be laid in specified bedding material or concrete cradle, the trench may be excavated by machinery to, or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed, as approved by the Engineer.

2. Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery, but, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

B. Depth of Trench

1. Excavate trench to depths permitting the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.

C. Width of Trench

1. Excavate trench as narrow as practicable and do not widen by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.
2. Excavate trenches with approximately vertical sides between the elevation of the center of the pipe and an elevation one (1) ft. above the top of the pipe.

D. Trench Excavation In-Fill

1. If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to a height of at least 1 ft. above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall then be excavated as though in undisturbed material.

- E. Length of trench open at any one time will be controlled by conditions, subject to any limits that may be prescribed by the Engineer.

3.09 BACKFILLING

A. General

1. Frozen material shall not be placed in the backfill nor shall backfill be placed upon frozen material. Previously frozen material shall be removed or shall be otherwise treated as required, before new backfill is placed.

B. Fill and Backfill Under Structures

1. The fill and backfill materials shall be placed in layers not exceeding six (6) inches in thickness. Unless otherwise indicated or specified, each layer shall be compacted to 95 percent in accordance with ASTM D1557.

C. Backfilling Around Structures

1. Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking, or other damage. As soon as practicable after the structures are structurally adequate and other necessary work has been done, special leakage tests, if required, shall be made. Promptly after the completion of such tests, the backfilling shall be started and then shall proceed until its completion. The best of the excavated materials shall be used in backfilling within two (2) feet. of the structure. Unequal soil pressures shall be avoided by depositing the material evenly around the structure.
2. The material shall be placed and compacted to 90 percent in accordance with ASTM D1557 unless otherwise indicated or specified.

D. Backfilling Pipe Trenches

1. As soon as practicable after the pipes have been laid and the joints have acquired a suitable degree of hardness, if applicable, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until its completion.
2. With the exception mentioned below in this paragraph, trenches shall not be backfilled at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights and barricades and the obstruction of traffic, he may, at his own risk backfill the entire trench, omitting or including backfill at joints as soon as practicable after the joints have acquired a suitable degree of hardness, if applicable, and the related structures have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.

3. No stone or rock fragment larger than 12 inches in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than five (5) feet. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.
4. Zone Around Pipe
 - a. Backfilled with the materials and to the limits indicated on the drawings.
 - b. Material shall be compacted to 90 percent by tamping.
5. Remainder of Trench
 - a. Compact by water-jetting, or tamping, in accordance with the nature of the material to 95 percent in accordance with ASTM D1557. Water-jetting may be used wherever the material does not contain so much clay or loam as to delay or prevent satisfactory drainage. However, tamping shall be used if water-jetting does not compact the material to the density required.
6. Excavated material which is acceptable to the Engineer for surfacing or pavement subbase shall be placed at the top of the backfill to such depths as may be specified elsewhere or as directed. The surface shall be brought to the required grade and stones raked out and removed.

E. Placing and Compacting Embankment Material

1. After the subgrade has been prepared as hereinbefore specified, the material shall be placed thereon and built up in successive layers until it has reached the required elevation.
2. Layers shall not exceed 12 inches in thickness before compaction. In embankments at structures, the layers shall have a slight downward slope away from the structure; in other embankments the layers shall have a slight downward slope away from the center. In general, the finer and less pervious materials shall be placed against the structures or in the center, and the coarser and more pervious materials, upon the outer parts of embankments.
3. Each layer of material shall be compacted by the use of approved rollers or other approved means so as to secure a dense, stable, and thoroughly compacted mass. At such points as cannot be reached by mobile mechanical equipment, the materials shall be thoroughly compacted by the use of suitable power-driven tampers.
4. Previously placed or new materials shall be moistened by sprinkling, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or too great an application of water, to compact it properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper

compaction, or such other precautions shall be taken as may be necessary to obtain proper compaction.

5. The portion of embankments constructed below proposed structures shall be compacted to 95 percent in accordance with ASTM D1557. The top two (2) feet of an embankment below a pavement base shall be compacted to 95 percent. All other embankments shall be compacted to 90 percent in accordance with ASTM D1557.

3.10 METHODS OF COMPACTION

A. Water-Jetting

1. Saturate backfill material throughout its full depth and at frequent intervals across and along the trench until all slumping ceases.
2. Furnish one or more jet pipes, each of sufficient length to reach the specified depth and of sufficient diameter, not less than one and one fourth (1-1/4) inches to supply an adequate flow of water to compact the material.
3. Equip jet pipe with a quick-acting valve, supply water through a fire hose from a hydrant or a pump having adequate pressure and capacity to achieve the required results.

B. Tamping and Rolling

1. Deposit backfill material and spread in uniform, parallel layers not exceeding 8 in. thick before compaction. Before the next layer is placed, each layer shall be tamped to obtain a thoroughly compacted mass. Care shall be taken that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers, tractors, or similar power equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling, and compacting.
2. If necessary to ensure proper compaction by tamping (or rolling), the backfill material shall first be wet by sprinkling. However, no compaction by tamping (or rolling) shall be done when the material is too wet either from rain or too great an application of water to be compacted properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compacting, or such other precautions shall be taken as may be necessary to obtain proper compaction.

C. Miscellaneous Requirements.

1. Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be

completely filled with fine material. Only suitable quantities of stones and rock fragments shall be used in the backfill; the Contractor shall, as part of the work done under the items involving earth excavation and rock excavation as appropriate, furnish and place all other necessary backfill material.

2. All voids left by the removal of sheeting shall be completely backfilled with suitable materials, and thoroughly compacted.

3.11 DISPOSAL OF SURPLUS EXCAVATED MATERIALS

- A. No excavated materials shall be removed from the site of the work or disposed of by the Contractor except as directed or permitted by the Engineer.
- B. Surplus excavated materials suitable for backfill shall be used to backfill normal excavations in rock or to replace other materials unacceptable for use as backfill; shall be neatly deposited and graded so as to make or widen fills, flatten side slopes, or fill depressions; or shall be neatly deposited for other purposes within a haul of one (1) mile from the point of excavation; all as directed or permitted and without additional compensation. Prior to re-use of in-situ material, the material shall be tested to determine if the material meets the requirements of applicable Specification Section for crushed stone, gravel borrow, or select borrow.
- C. Surplus excavated materials not needed as specified above shall be handled in accordance with Section 2080.

3.12 DUST CONTROL

- A. During the progress of the Work, maintain the area of activities, by sweeping and sprinkling of streets to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.

3.13 BRIDGING TRENCHES

- A. Provide suitable and safe bridges and other crossings where required for the accommodation of travel, and to provide access to private property during construction. Remove once bridges and crossings are no longer needed.

3.14 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01410

3.15 CARE AND RESTORATION OF PROPERTY

- A. Restoration of existing property or structures shall be completed within 5 business days of completing the work within the property and not left until the end of the construction period.

END OF SECTION

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SECTION 02210

ROCK EXCAVATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for removal and disposal of rock.
2. Note that for rock payment limits, see Specification Section 01025 – Measurement and Payment

B. Related Sections

1. Section 00500-Agreement
2. Section 00800- Supplementary Conditions
3. Section 02200-Earth Excavation, Backfill, Fill and Grading

1.02 DEFINITIONS

- ###### A. Rock-as defined in SECTION 00500.

1.03 REQUIREMENTS

- ###### A. Excavate rock if encountered, to the lines and grades indicated on the drawings or as directed, dispose of the excavated material, and furnish acceptable material for backfill in place of the excavated rock.
- ###### B. Excavate rock in pipe trenches to a limit which provides 6-inches clearance minimum from the pipe after it has been laid. Before the pipe is laid, the trench shall be backfilled to the correct subgrade with thoroughly compacted, suitable material or, when so specified or indicated on the drawings, with the same material as that required for bedding the pipe, furnished and placed at the expense of the Contractor.
- ###### C. The use of explosives will not be allowed.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 EXCESS ROCK EXCAVATION

- A. If rock is excavated beyond the limits of payment indicated on the drawings, specified, or authorized in writing by the Engineer, the excess excavation, whether resulting from overbreakage or other causes, shall be backfilled, by and at the expense of the Contractor, as specified below in this section.
- B. In pipe trenches, excess excavation below the elevation of the top of the bedding, cradle, or envelope shall be filled with material of the same type, placed and compacted in the same manner, as specified for the bedding, cradle, or envelope. Excess excavation above said elevation shall be filled with earth as specified in the article titled "Backfilling Pipe Trenches" in SECTION 02200.
- C. In excavations for structures, excess excavation in the rock beneath foundations shall be filled with 3000 psi concrete. Other excess excavation shall be filled with earth as specified in the article titled "Backfilling Around Structures" in SECTION 02200.

3.02 SHATTERED ROCK

- A. If the rock below normal depth is shattered, and the Engineer considers such shattered rock to be unfit for foundations, the shattered rock shall be removed and the excavation shall be backfilled with concrete as required, except that in pipe trenches screened gravel shall be used for backfill. All such removal and backfilling shall be done by and at the expense of the Contractor.

3.03 PREPARATION OF ROCK SURFACES

- A. Whenever so directed during the progress of the work, remove all dirt and loose rock from designated areas and shall clean the surface of the rock thoroughly, using steam to melt snow and ice, if necessary. Water in depressions shall then be removed as required so that the whole surface of the designated area can be inspected to determine whether seams or other defects exist.
- B. The surfaces of rock foundations shall be left sufficiently rough to bond well with the masonry and embankments to be built thereon, and if required, shall be cut to rough benches or steps.
- C. Before any masonry or embankment is built on or against the rock, the rock shall be scrupulously freed from all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means shall be used to accomplish this cleaning. Remove free water left on the surface of the rock.

3.04 REMOVAL OF BOULDERS

- A. Remove piles of boulders and loose rock encountered within the limits of earth embankments and dispose in a suitable place.

3.05 DISPOSAL OF EXCAVATED ROCK

- A. All excavated rock shall be handled, transported and disposed of by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him without additional cost to the Owner.
- B. Excavated rock may be used in backfilling trenches subject to the following limitations:
 - 1. Pieces of rock larger than permitted under the article titled "Backfilling Pipe Trenches" in SECTION 02200 shall not be used for this purpose.
 - 2. The quantity of rock used as backfill in any location shall not be so great as to result in the formation of voids.
 - 3. Rock backfill shall not be placed within 36 in. of the surface of the finish grade.
- C. Surplus excavated rock shall be disposed of as specified for surplus excavated material as specified in SECTION 02200.

3.06 BACKFILLING ROCK EXCAVATIONS

- A. Where rock has been excavated and the excavation is to be backfilled, the backfilling above normal depth shall be done as specified in SECTION 02200. If material suitable for backfilling is not available in sufficient quantity from other excavations, the Contractor shall, at his own expense, furnish suitable material from outside sources.

END OF SECTION

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SECTION 02215

AGGREGATE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for furnishing and placing materials, which include Crushed Stone, Gravel Borrow and Select Borrow.
2. Location of specified materials as detailed on the Drawings or as directed by the Engineer for excavation below normal depth, utility support, replacement of unsuitable material or elsewhere, as ordered.

B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading.
2. Section 02500 - Pavement

1.02 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO).

1. T11, Amount of Material Finer than 0.075 mm Sieve in Aggregate
2. T27, Sieve Analysis of Fine and Coarse Aggregates.

B. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).

1.03 DEFINITIONS

- ###### A. The term Screened Gravel as used in these Contract Documents shall mean Crushed Stone.

1.04 SUBMITTALS

A. Shop Drawings

1. Provide sieve analysis when gradation requirements are given in the Specification.

B. Samples

1. Furnish representative sample including location of source with Shop Drawing transmittal sheet.

1.05 QUALITY ASSURANCE

A. Field Samples

1. The attention of the Contractor is directed to the fact that under Specification SECTION 00700, 1.03 Materials and Equipment, all materials furnished by the Contractor to be incorporated into the Work shall be subject to the inspection of the Engineer. The Engineer shall be the sole judge as to the acceptability of proposed materials and said judgement shall be final, conclusive, and binding.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. In accordance with Specification SECTION 00700, 1.03 Materials and Equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. Crushed Stone

1. For bedding and pipe zone material for pipe larger than 3 inches diameter. Well graded in size from 3/8 inches to 3/4 inches or such other sizes as may be approved.
2. For bedding and pipe zone material for plastic pipe 3 inches diameter and less, maximum particle size shall be 3/8 inches.
3. Clean, hard, and durable particles or fragments, free from dirt, vegetation, or other objectionable matter, and free from an excess of soft, thin elongated, laminated or disintegrated pieces.
4. Screened Stone of similar size and grading to this specification may be used instead of Crushed Stone.

B. Gravel Borrow

1. Granular material well graded from fine to coarse with a maximum size of 3 inches, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
2. Gravel shall not contain vegetation, masses of roots, or individual roots more than 18 inches long or more than 1/2 inches in diameter.
3. Gravel shall be substantially free from loam and other organic matter, clay and other fine or harmful substances.
4. Gradation requirements for gravel shall be determined by AASHTO-T11 and T27 and conform to the following:

Sieve	Percent Passing
1/2 inch	60-95
No. 4	50-85
No. 50	8-28
No. 2000	8

C. Select Borrow

1. Use inorganic natural soils and/or rock having not more than 5 percent by weight passing the No. 200 sieve and having a maximum 3 inch stone size.
2. Use only material well-graded throughout entire site range, free from roots, leaves and other organic materials, free of ice or frost and aggregations of frozen soil particles.
3. Control the moisture content of borrow within plus or minus 3 percent optimum moisture content at the borrow source.

D. Gravel Base Course

1. In accordance with SECTION 02500.

E. Riprap

1. All riprap used shall be sound, tough and durable stone, not lumpy or frozen, and free from slag, cinders, ashes, rubbish or other deleterious materials. All riprap will be of the size required for each specific application, as shown on the Drawings.
2. The material for riprap shall consist of broken stone produced from sound ledge or large boulders with at least three fractured faces on each particle and shall be free from overburden, spoil, shale or organic material. The stone shall have a minimum density of 160 pounds per cubic foot. It shall be angular in shape with its minimum dimension not less than one third of the maximum dimension.
3. Stone for pipe ends shall be sound, durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar stone or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 50 pounds not more than 125 pounds and at least 75% of the volume shall consist of stones weighing not less than 75 pounds each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.
4. Stone for placed riprap shall have one flat face and shall be roughly square or rectangular to facilitate laying up.
5. Riprap shall conform to the following gradation and shall be well graded within the size required:

National Stone Association Modified NSA No.	Size Inches (square opening)		
	Maximum	Average	Minimum
R-1	2	1	No. 4
R-2	4	2	1
R-3	8	4	2
R-4	14	7	4
R-5	20	10	6
R-6	26	13	8
R-7	34	18	14
R-8	50	24	18

6. "Average size" is that size exceeded by at least 50 percent of the total weight of the tonnage shipped; i.e., 50 percent of the tonnage shall consist of pieces larger than the "average" size (normally half the specified nominal top size).
7. Pieces smaller than the minimum size shown shall not exceed 15 percent of the tonnage shipped.
8. Geotextile material in accordance with SECTION 02272.

2.02 SOURCE QUALITY CONTROL

A. Test, Inspection

1. Engineer may elect to sample material supplied at the source.
2. Assist the Engineer and/or personnel from the designated testing laboratory in obtaining samples.

PART 3 EXECUTION

3.01 INSTALLATION

A. Crushed Stone

1. Spread in layers of uniform thickness not greater than 6 inches.
2. Compact thoroughly by means of a suitable vibrator or mechanical tamper.

B. Gravel Borrow

1. Spread in layers of uniform thickness not exceeding 12 inches before compaction and moistened or allowed to dry as directed.
2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment.
3. Compaction shall conform to 95% of minimum dry density per ASTM D1557.
4. The percolation rate for the compacted bank-run gravel shall not exceed 5 minutes per inch.

C. Select Borrow

1. Spread in layers of uniform thickness not exceeding 12 in. before compaction and moistened or allowed to dry.

2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment unless otherwise directed by the Engineer.

D. Installation

1. Preparation

- a. Areas to receive riprap shall be free of brush, trees, stumps, and other objectionable material and be dressed to a smooth surface. All soft or spongy material shall be removed to the depth shown on the plans or as authorized and replaced with gravel borrow conforming to SECTION 02215. Filled areas will be compacted as specified in SECTION 02200.
- b. Install Geotextile material at locations indicated on the Contract Drawings in accordance with SECTION 02272.

2. Dumped Riprap

- a. Stone for riprap shall be paced on the prepared area in a manner, which will produce, and evenly graded mass of stone with the minimum practical percentage of voids. The entire mass of stone shall be placed so as to conform with the lines, grades, and thicknesses shown on the plans. Riprap shall be placed to its full course thickness at one operation and in such a manner as to avoid displacing the underlying material. Placing of riprap in layers, or by dumping into chutes, or by similar methods likely to cause degradation will not be permitted.
- b. All riprap shall be placed and distributed with no large accumulations of either the larger or smaller size of stone.
- c. It is the intent of these specifications to produce a compact riprap installation in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment may be required to the extent necessary to secure the results specified.
- d. When riprap and bedding material are dumped under water, thickness of the layers shall be increased as shown on the Drawings.

3. Placed Riprap

- a. Stone for placed riprap shall be placed on a prepared surface in a pattern that contains minimum voids. Top surface of riprap shall conform to a true and even plane with a tolerance of plus or minus 4-inches.
- b. Joints shall be broken as much as practicable, chocking openings with smaller stones.
- c. Larger stones placed near base of slopes, stones laid to rest on the prepared surface and not on other stones, Stones placed on slopes shall be done from the top down.

4. Riprap placed outside the specified limits will not be measured or paid for, and the Contractor may be required to remove and dispose of the excess riprap without cost to the Owner.

3.02 FIELD QUALITY CONTROL

A. Site Tests

1. In accordance with SECTION 01410.

END OF SECTION

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SECTION 02224

CONTROLLED DENSITY FILL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for flowable concrete fill to be used in place of compacted soil for general backfill of trenches.

B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading
2. Section 03000 - Cast-In-Place Concrete

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. C33, Standard Specification for Concrete Aggregates.
2. C150, Standard Specification for Portland Cement.
3. C260, Standard Specification for Air-Entraining Admixtures for Concrete.
4. C494, Standard Specification for Chemical Admixtures for Concrete
5. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
6. C989, Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars

B. American Concrete Institute (ACI)

1. ACI Committee 229, Standard Specification for Controlled Low Strength Materials (CLSM).

1.03 DEFINITIONS

- A. Controlled Density Fill (CDF), also known as "Flowable Fill" and "Ready-mix Fill." Self-compacting, self-leveling, cementitious material used for backfills, fills and structural fills.
- B. Very Flowable, Exhibits characteristics needed for small or confined areas and required to flow over long distances.
- C. Flowable, Where the above flowability characteristics are not required.
- D. Excavatable, may be removed in the future if required.

E. Non excavatable, not expected to be removed in the future.

1.04 DESIGN REQUIREMENTS

- A. Provide a mixture of Portland cement, aggregates, water and mineral admixtures with a low cement content and high slump to reduce strength development for possible removal and minimize settlement after placement.
- B. The proposed mix should maximize the flow characteristics of the material while producing the necessary strength.
- C. The design mixes shall have the following strengths at 28 days:
 - 1. Excavatable fill,
 - a. Class I (flowable) and II (very flowable), 30 to 100 psi., 150 psi maximum at 1 year
 - 2. Non excavatable fill,
 - a. Class III (flowable) and IV (very flowable), 100 to 1200* psi.

* Specific compressive strength(s) for structural applications are noted on the Contract Drawings
- D. Air Content to be minimum 15 %
- E. Slump, using the modified method consisting of a six inch long by three inch inside diameter straight tube of non porous material.
 - 1. Class I and III: 6" to 8" diameter
 - 2. Class II and IV: 9" to 14" diameter

1.05 PERFORMANCE REQUIREMENTS

- A. Provide fill of homogeneous structure which when cured, will have the required strength, water tightness, and durability. To this end, it is essential that careful attention be given to the selection of materials, mixtures, placing and curing of the fill.

1.06 SUBMITTALS

- A. In accordance with Section 01300, submit the following,
 - 1. Mix design data not limited to, but including maximum and minimum strengths, air content, setting times, flowability and yield.
 - 2. Certification by the supplier stating compatibility with the project requirements and the Contractor's installation methods.

1.07 QUALITY ASSURANCE

- A. Furnish the supplier with information as to the intended use of the CDF.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Portland Cement: ASTM C150, Type II American-made. (AASHTO M 85)
- B. Water: Clean, potable and complying with ASTM C94. (AASHTO M 157)
- C. Aggregates: ASTM C33 or a non-reactive aggregate source free of contaminants which exhibits high flow properties for controlled density fill. (AASHTO M 6, M 80)
- D. Air entraining admixture conforming to ASTM C260, or as approved by the Engineer.
- E. Chemical Admixtures: In accordance with ASTM C494. (AASHTO M 195)
- F. Fly Ash: Meet requirements of ASTM C618 Class C or Class F. (AASHTO M 295)
- G. Granulated Blast Furnace Slag: In accordance with ASTM C989. (AASHTO M 302)

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor shall follow the guideline set forth in ACI 229, except non-standard materials shall not be used.

3.02 PREPARATION

- A. Pipes and all other members to be encased in CDF shall be temporarily secured in place to prevent displacement during fill placement.
- B. To reduce hydrostatic pressure and limit displacement potential, Contractor may use a high air generator in the fill mixture to lower unit weights.
- C. Pre-job test all pump applications prior to day of placement with actual equipment.
- D. Secure site during the placement for the CDF. Cautions include but are not limited to barricades, fences, lights and steel plates.
- E. Work shall be sequenced so as to keep traffic flowing within the project area.

3.03 INSTALLATION

- A. CDF shall be batched at concrete plants and hauled to job sites in ready-mix trucks with continuous agitating drums.
- B. During waiting period prior to discharge, truck drums shall agitate mixture.
- C. CDF shall be installed in accordance with suppliers recommendations.

3.04 FIELD QUALITY CONTROL

- A. All CDF to be used in the work shall be subject to testing to determine whether it conforms to the requirements of the specifications. The methods of testing shall be in accordance with the National Ready Mixed Concrete Association, Guide Specification for Controlled Low Strength Materials (CLSM) Article 8.0 Quality Control. The place, time, frequency, and method of sampling will be determined by the Engineer in accordance with the particular conditions of this project.

3.05 PROTECTION

- A. Open trenches shall not be left uncovered overnight.

END OF SECTION

SECTION 02272

GEOTEXTILE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for installation of geotextile filter fabric in trenches, around leaching pits or drywells, and under riprap.

B. Related Sections

1. Section 02100 - Site Preparation
2. Section 02200 – Earthwork
3. Section 02215 – Aggregate Materials

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. D3786, Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method
2. D4355, Test Method for Deterioration of Geotextiles From Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
3. D4491, Test Method for Water Permeability of Geotextiles by Permittivity
4. D4533, Test Method for Trapezoid Tearing Strength of Geotextiles
5. D4632, Test Method for Grab Breaking Load and Elongation of Geotextiles
6. D4751, Test Method for Determining Apparent Opening Size of a Geotextile
7. D4833, Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
8. D5261, Measuring Mass Per Unit Area of Geotextiles.

1.03 QUALITY ASSURANCE

A. General

1. Producer of fabric to maintain competent laboratory at point of manufacture to ensure quality control in accordance with ASTM testing procedures.
2. Laboratory to maintain records of quality control results.

1.04 SUBMITTALS

A. Shop Drawings

1. Submit in accordance with SECTION 01300
2. Include manufacturer's recommended method of joining of adjacent fabric panels.

B. Certificate of Conformance

1. Upon each shipment/delivery of product to the work site, furnish mill certificate(s) from the company manufacturing the fabric attesting that the fabric meets the chemical, physical, manufacturing and performance requirements specified. Fabric will be rejected if it is found to have defects, rips, flaws, deterioration or other damage.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Provide fabric in rolls wrapped with a heavy-duty protective covering to protect fabric from, mud, dirt, dust, debris and other deleterious sources until it is installed. Label each roll of fabric with number or symbol to identify production run.
- B. Do not expose fabric to ultraviolet radiation (sunlight) for more than 20 days total in period of time following manufacture until fabric is installed and covered.
- C. If Engineer determines material is damaged in any way or has excessive sunlight exposure, the Contractor shall immediately make all repairs and replacements as directed by the Engineer, at no additional cost to the Owner.

1.06 SCHEDULING

- A. Schedule Work so that the covering of the fabric with a layer of the cover material is accomplished immediately after inspection and approval of the placed fabric by the Engineer. Failure to comply with this requirement shall require replacement of the fabric.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER/MATERIAL

- A. The geotextile fabric shall be nonwoven polypropylene designated as MIRAFI 140N as manufactured by Nicolon/Mirafi Group, Norcross, Georgia; or acceptable equivalent and shall meet the following minimum requirements:

<u>Property</u>	<u>Unit</u>	<u>Test Method</u>	<u>Requirements</u>
Weight	oz/sy	ASTM D5261	4.3
Grab Tensile Strength	lbs	ASTM D4632	120
Grab Tensile Elongation	%	ASTM D4632	50
Mullen Burst Strength	psi	ASTM D3786	240
Puncture Resistance	lbs	ASTM D4833	70
Trapezoid Tear Strength	lbs	ASTM D4533	50
Equivalent Opening Size (EOS)	US Std. Sieve (mm)	ASTM D4751	70 (0.21)
Permittivity	sec ⁻¹	ASTM D4491	1.5
Permeability	cm/sec	ASTM D4491	0.22
Flow Rate	gal/min/sf	ASTM D4491	120
Ultraviolet Resistance (strength retained at 500 hrs)	%	ASTM D4355	70

- B. To keep the number of overlay joints to a minimum, fabric shall be provided in sections not less than fifteen (15) feet in width unless otherwise approved by the Engineer prior to delivery to the site.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

A. For Riprap

1. Prepared areas to receive geotextile in accordance with SECTION 02100 and SECTION 02200
2. Clear subgrade of all sharp objects, large stones, roots, debris, or any other foreign materials that may contribute to puncturing, shearing, rupturing or tearing of the geotextile.
3. Grade area as smooth as possible and compact in accordance with SECTION 02200, with a vibratory roller or other method approved by the Engineer.
4. Inspect subgrade and repair all unstable areas or soft spots with the installation of gravel and recompact prior to the placement of geotextile.

3.02 FABRIC INSTALLATION

A. For Riprap

1. Place at the locations shown on the Contract Drawings.
2. Unroll directly onto the prepared slope in a continuous manner. Join adjacent sections by overlapping the fabric a minimum of 12-inches. Join end sections by overlapping the fabric a minimum of 2-feet with field-sewn joints or as recommended by the manufacturer.
3. Place fabric on slopes creating a “shingled” effect in the direction of anticipated water flow.
4. Lay fabric smooth, maximizing surface contact with the prepared subbase, free of tension, stress, folds, wrinkles, or creases.
5. Securely anchor fabric sections at the top of the slope as recommended by the manufacturer. Use anchoring pins, nails, staples or other such means to secure fabric to the subbase surface to prevent fabric movement caused by wind uplift, and/or placement of cover material.
6. Maintain sufficient amount of cover material (minimum depth of 6-inches) to protect fabric during placement of riprap. Dozer buckets or blades, or other heavy or damaging equipment shall not be in direct contact with the fabric.
7. Minimize the height from which cover material is dumped and/or dropped directly onto the fabric material in order to avoid fabric damage or movement. Equipment used for spreading and compacting the cover material shall be of the type and size to avoid damage or movement to the underlying geotextile fabric.
8. Spread cover material in the direction of fabric overlap and in a manner that avoids creating undue tension, stress, sagging, buckling and/or other movement of the underlying fabric.

B. Fabric Installation in Trenches

1. In accordance with manufacturers recommendations

2. Place fabric in trench prior to placing crushed stone pipe bedding.
3. Overlap fabric 18-inches minimum for unsewn lap joints.
4. Do not permit equipment to travel directly on fabric.
5. Place fabric in smooth condition to prevent tearing or puncture.
6. Lay fabric loosely, without wrinkles or creases.
7. Leave slack in fabric to allow for adjustment.

3.03 PROTECTION

- A. Protect the work before, during and after installation, and protect the installed work covered by other Sections.

3.04 REPAIR

- A. Geotextile fabric damaged during installation shall be repaired by a piece of geotextile material cut, placed and adequately anchored over the damaged area, subject to a 3-foot minimum overlap requirement or as directed by the Engineer.
- B. If detrimental movement of the geotextile fabric occurs during any step of the installation, as determined solely by the Engineer, the Contractor shall remove the cover material and/or sections of fabric to the limits deemed necessary and reinstall the fabric.
- C. Any fabric damage during its installation or during placement of cover materials shall be replaced by the Contractor at no additional cost to the Owner.

END OF SECTION

SECTION 02500

PAVING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for construction of all temporary and permanent pavement on paved areas affected or damaged by his operations, whether inside or outside the normal trench limits, as indicated on the drawings and as herein specified.

B. Related Sections

1. Section 02200 – Earth Excavation, Backfill, Fill and Grading

1.02 REFERENCES

A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification prior to preparation and installation of any pavements.

1. Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, together with all errata addenda additional revisions, and supplemental specifications, (referred to as Standard Specification).

B. American Society for Testing and Materials

1. C117 Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
2. C136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

1.03. PAVEMENT SCHEDULE

A. The Contractors attention is directed to the various pavements required under this contract, and their locations as detailed below.

B. All pavement thickness specified in this specification shall be of the thickness required after compaction.

1. Locations:

State Roads,

Description: **Temporary Trench Width**
Requirements: 3" Class 12.5 HMA Base Course

Description: **Permanent Trench Width**
Requirements: 12" Gravel Base Course (Minimum)
2" Class 12.5 HMA Surface Coarse (**Trench width plus cut back and limits of milling**)
4" Class 19 HMA Base Course (**Trench width plus cut back**)

Work and roadway restoration requirements are further defined in RIDOT permit, included as Appendix A.

City Streets,

Description: **Temporary Trench Width**
Requirements: 3" Class 12.5 HMA Base Course

Description: **Permanent Trench Width**
Requirements: 12" Gravel Base Course (Minimum)
4" Class 12.5 HMA Base & Surface Coarse (**Trench width plus cut back**)

Description: **Permanent Driveway Pavement**
Requirements: 1.5" Class 12.5 HMA Base Course
1.5" Class 9.5 HMA Surface Course

PART 2 PRODUCTS

2.01 MATERIALS

A. Asphalt Tack

1. Tack coat shall consist of emulsified asphalt, grade RS-1 conforming to the requirements of the Rhode Island Standard Specification Sections 403 and M.03.01.

B. City Streets HMA

1. City streets HMA Base and Surface course shall conform to the requirements of the Rhode Island Standard Specification Sections 401 and Class 12.5 HMA for Base and Surface Course.

C. State Roads HMA

1. Bituminous Surface Course shall conform to the requirements of the Rhode Island Standard Specification Sections 401 and Class 12.5 HMA for Surface Course.
2. Bituminous Base Course shall conform to the requirements of the Rhode Island Standard Specification Sections 401 and Class 19 HMA for Surface Course.

E. Temporary Pavement

1. Temporary Pavement shall be HMA conforming to the requirements of the State of Rhode Island Standard Specification, Subsection 401 Class 12.5 HMA.

F. Gravel Base Course

1. Gravel base course in accordance with State of Rhode Island Standard Specification, Subsection M.01.09, Meeting the gradation requirements of Table 1, Column 1, with 100% Passing three (3) inch Square Mesh Sieves.

G. Gravel Borrow Subbase Course

1. Gravel borrow sub base course shall conform to the requirements of the Rhode Island Standard Specification Subsections 302 and Subsection M.01.09, Meeting the gradation requirements of Table 1, Column 1, with 100% Passing three (3) inch Square Mesh Sieves.

2.02 SOURCE QUALITY CONTROL

- A. The paving plants used by the Contractor for preparation of bituminous paving materials shall be acceptable to the Engineer. The Engineer shall have the right to inspect the plant and the making of the material.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prior to placing pavement, all backfill shall have been properly compacted as specified under Section 02200 to eliminate settling of backfill. No pavement shall be placed over poorly compacted backfill. Backfill and gravel base course shall be compacted, brought to the proper elevation, and dressed so that new pavement construction shall be at the required grade. The Contractor shall maintain the surfaces of all excavated and disturbed areas until the pavement is placed. If there is a time lapse of more than 24 hours between completion of preparation of subgrade or placing of gravel base course and placing of paving, or if subgrade or gravel base course has been eroded or disturbed by traffic, the subgrade or gravel base course shall be restored before placing pavement.

- B. When installing permanent pavement on bituminous concrete roadway the edges of existing pavement shall be cut back 12 inches, or more as required, from the trench excavation wall or damaged area to sound undamaged material, straightened, cleaned, and painted with an accepted asphalt emulsion to ensure a satisfactory bond between it and the newly placed surface courses. Existing surface courses shall be stripped from the bituminous concrete base course for at least a six (6) inch width and trimmed square and straight so that new permanent surfacing shall be placed on undisturbed bituminous concrete base course.
- C. Before permanent pavement is installed, the base shall be brought to the proper grade, and temporary pavement and excess gravel base shall be removed.
- D. Existing pavement shall be swept clean prior to placing any asphalt emulsion over it. Existing pavement that will be under new pavement shall be painted with asphalt emulsion to ensure a satisfactory bond.
- E. All manhole covers, catch basin grates, valve and meter boxes, curbs, walks, walls and fences shall be adequately protected and left in a clean condition. Where required, the grade of manhole covers, catch basin grates, valve boxes, and other similar items shall be adjusted to conform to the finished pavement grade.
- G. The Contractor shall remove and acceptably dispose of all surplus and unsuitable material.
- H. The contractor shall install temporary driveway pavement course within 5 business days of finishing construction on property.

3.02 INSTALLATION

A. General

1. All construction methods and materials shall be satisfactory to the Engineer.
2. Unless indicated otherwise, all permanent bituminous pavement shall be installed in two (2) courses or more. Bituminous base courses shall be carefully spread and raked to a uniform surface and thoroughly rolled before application of the top course.
3. All top courses of permanent paving shall be applied with acceptable mechanical spreaders in widths of at least nine (9) feet.
4. The rolling for all bituminous and gravel base courses shall conform to the standards listed in the appropriate Subsection of the Standard Specification.
5. Pavement shall be placed so that the entire roadway or paved area shall have a true and uniform surface, and the pavement shall conform to the proper grade and cross section with a smooth transition to existing pavement.

B. Gravel Base Course

1. The finished depth of gravel base coarse shall be a minimum thickness of 12-inches after final pavement has been placed.

2. The gravel base shall be placed to such depth that the furnished compacted gravel base course is the depth as indicated on the drawings and specified herein.
3. The top of the compacted gravel base shall be below the furnish grade a distance required to accommodate the compacted pavement material as indicated on the drawings and specified herein.

C. Gravel Borrow Subbase Course

1. The gravel borrow subbase course shall be placed to such depth that the furnished compacted gravel borrow subbase course is the depth as indicated on the drawings and specified herein.
2. The top of the compacted gravel base shall be below the furnish grade a distance required to accommodate the compacted pavement material as indicated on the drawings and specified herein.

D. Temporary Pavement

1. Temporary pavement shall be placed over all trenches in paved areas.
2. The Contractor, upon completing the backfilling and compaction of the trenches in the streets and the placing of the gravel base course, shall be required to construct temporary pavement at the end of each day.
3. Temporary Pavement shall be placed in one course and shall consist of 3-inch compacted thickness of hot bituminous mix in Town Road and 3-inch compacted thickness of hot bituminous mix in State Road, on a 15-inch compacted thickness gravel base as directed by the Engineer.
4. The Contractor shall maintain temporary pavement in good repair and flush with the existing pavement at all times until the permanent pavement is placed.
5. Temporary patch shall be placed on a **daily basis** and shall cover the full extent of disturbance.
6. Temporary patch shall remain in place for a full winter season and shall be removed prior to the time limit of the Contract. Permanent pavement shall not be placed without authorization from the Engineer or the Town.

E. Bituminous Base

1. Bituminous Base shall be used in the streets as listed in Part 1.03 of this specification.
2. Bituminous Base shall be placed to the thickness as indicated in Part 1.03 of this specification and installed in accordance with the requirements of the Standard Specification and as detailed in the Contract Drawings.

G. Bituminous Surface

1. Bituminous Surface shall be used in the streets as listed in Part 1.03 of this specification.
2. Bituminous Surface shall be placed to the thickness as indicated in Part 1.03 of this Specification and installed in accordance with the requirements of the Standard Specification and as detailed in the Contract Drawings.

I. Sidewalks, Driveways, Parking Lots and Curbing

1. Sidewalks, driveways, parking lots and curbing that are removed or damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they are found immediately prior to the start of operations. Materials and methods used for such restoration shall be in conformance with the requirements of the State of Rhode Island Standard Specification.
2. Where the trench locations are in a sidewalk, the entire width of the sidewalk shall be replaced with new material. Side forms shall be set so as to obtain and preserve a straight edge along both sides of the walk.
3. Where trench is in a driveway, the driveway shall be repaved across its entire width with even edges.
4. Parking lots shall be repaved in accordance with Part 3.01 of this section.
5. Gravel base course under sidewalks and driveways shall not be less than 12 inches thick.
6. The disturbed portion of driveways shall be restored with temporary pavement no later than 5 business days after the CONTRACTOR completes the proposed work within the resident's property. The ENGINEER is to determine the limits of the temporary driveway pavement.
7. Temporary pavement shall remain in place for a full winter season and shall be removed prior to the time limit of the Contract. Permanent driveway pavement shall not be placed without authorization from the Engineer or the Town.

J. Surface Maintenance

1. During the guarantee period, the Contractor shall maintain the bituminous surface and shall promptly make good all defects such as cracks, depressions, and holes that may occur. At all times, the surfacing shall be kept in a safe and satisfactory condition for traffic. If defects occur in surfacing constructed by the Contractor, the Contractor shall remove all bituminous concrete and base as is necessary to properly correct the defect. After removing bituminous concrete and base course, the Contractor shall correct the cause of the defect and replace the base course and bituminous concrete in accordance with these specifications.

END OF SECTION

SECTION 02502

BITUMINOUS CONCRETE EXCAVATION BY COLD PLANER

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for removing bituminous concrete by Cold Planer in designated areas.

1.02 REFERENCES

- A. This specification includes by reference, requirements of additional specifications as listed. The Contractor shall perform the Work in accordance with requirements of the referenced specification in addition to the requirements of this Specification Section 02502.
- B. The Contractor shall obtain and familiarize himself with all requirements of these specifications prior to any cold planning.
 1. Materials and construction methods shall conform, insofar as applicable, to the requirements of **Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction Current Edition**, together with all errata addenda additional revisions, and supplemental specifications.

1.03 PERFORMANCE REQUIREMENTS

- A. The Cold Planner must be equipped with an elevating devise capable of loading planned material directly into dump trucks while operating. The Cold Planer shall have necessary safety devises such as reflectors, headlights, taillights, flashing lights and back up signals so as to operate safely in traffic day and/or night.
- B. The Cold Planer shall be designed and built for planning flexible pavements and posses the ability to plane cement concrete patches when encountered in bituminous pavement. It shall be self propelled and have the means for planning without tearing or gouging the underlying surface. Variable lacing patterns shall be provided to permit a rough grooved or smooth surface as directed by the Engineer.
- C. A 1 ½ inch cut to predetermined grade or any specified lesser depth may be required in one pass. The minimum width of pavement planned in one pass shall be 6 feet, except in areas to be trimmed and edged. The Contractor will be permitted to augment the large Cold Planning equipment with other more maneuverable machines for those areas inaccessible to the 6 foot machine such as curb or casting cuts.
- D. The machine shall be adjustable as to crown and depth and meet the standards set by the Air Quality Act for noise and air pollution.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

- A. The planned surface shall conform generally to the grade and cross section required. The surface shall not be torn, gouged, shoved, broken or excessively grooved. It shall be free of imperfections in workmanship that prevent resurfacing after the Cold Plane operation. Surface texture shall be as required by the Engineer and excess material shall be removed so that the surface is acceptable to traffic if required.
- B. Asphalt cuttings shall be removed and legally disposed of by the Contractor.
- C. The planned surface shall be swept clean and its condition accepted by the Engineer prior to installation of bituminous surface course.

END OF SECTION

SECTION 02530

RESTORATION OF CURB, SIDEWALKS AND VEGETATED AREAS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for removal and replacement of granite curb, concrete and bituminous sidewalks including sidewalks at driveways and wheelchair ramps.
2. Requirements for restoration of vegetated areas, plantings and tree beds.
3. Requirements for construction of sidewalks in sensitive tree areas.
4. Restoration to include those areas designated by the Contract Drawings and those affected or damaged by the construction operations, outside the limits of Work.

B. Related Sections

1. Section 01060 – Regulatory Requirements
2. Section 02200 - Earth Excavation, Backfill, Fill and Grading

1.02 REFERENCES

A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification.

1. Materials and construction methods shall conform, insofar as applicable, to the requirements of the Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, together with all errata addenda additional revisions, and supplemental specifications, (referred to as the Standard Specification).

1.03 SUBMITTALS

A. Submit in accordance with Section 01300,

1. Sieve analysis for aggregates and loams.
2. Mix designs for batched materials.
3. Certifications for landscape material.
4. Samples when requested by the Engineer.

5. Submit with seed, certificates confirming seed mixture, purity, germinating value, and crop year identification.

PART 2 PRODUCTS

2.01 MATERIALS

A. Gravel Borrow

1. In accordance with State of Rhode Island Standard Specification, Subsection M.01.02, Meeting the gradation requirements of Table 1, Column 1, with 100% Passing three (3) inch Square Mesh Sieves.

B. Concrete Curb

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M.09.

C. Granite Curb

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M.09.

D. Cement Concrete

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M 02.

E. Bituminous Concrete

1. In accordance with the requirements of the Rhode Island Standard Specification Section 401 for Surface Course, Class I-2 and the gradation requirements for Class I-2 or sidewalk in section M.03.01.

F. Plant Materials

1. In accordance with Section M.18 of the Rhode Island Standard Specification.

2.02 LOAM

- A. Fertile, natural topsoil, typical of locality, without admixture of subsoil, refuse or other foreign materials, and obtained from well-drained arable site. Mixture of sand, silt and clay particles in approximately equal proportions. Free of stumps, roots, heavy or stiff clay, stones large than 1 inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other deleterious matter.
- B. Not less than 4 percent nor more than 20 percent organic matter as determined by loss on ignition of oven-dried samples.

- C. Loam test samples dried to constant weight at temperature of 230 degrees. F., plus or minus nine degrees.
- D. Use loam, having prior vegetative growth that did not contain toxic amounts of either acid or alkaline elements.

2.03 LIME, FERTILIZER AND SEED

- A. Ground agricultural limestone containing not less than 85 percent of total carbonates.
- B. Complete fertilizer, at least 50 percent of nitrogen derived from natural organic sources of ureaform and containing following percentages by weight:
 - Nitrogen 10%
 - Phosphorus 10%
 - Potash 10%
- C. Turf grass seed, clean, high in germinating value and latest year's crop mixture as follows:

Name	Minimum Proportion by Weight	Percent Purity	Percent Germination
Kentucky bluegrass	20%	87%	85%
Merion Kentucky bluegrass	20%	87%	85%
Red Chewings fescue	45%	98%	85%
Italian rye	15%	98%	90%

2.04 SOURCE QUALITY CONTROL

- A. The plants used by the Contractor for preparation of bituminous paving materials and cement concrete shall be acceptable to the Engineer who shall have the right to inspect the plant and the making of the material.

PART 3 EXECUTION

3.01 INSTALLATION/RESTORATION

- A. Excavation to be in accordance with Section 02200 unless noted otherwise by the referenced specifications below.
- B. Granite Curb
 - 1. Installing or Remove, Salvage and Reset granite curb at the locations indicated on the Drawings or as directed by the Engineer shall be in accordance with Section 906 of the State of Rhode Island Standard Specification.
- C. Concrete Curb

1. Installation of concrete curb at the locations indicated on the Drawings or as directed by the Engineer shall be in accordance with Section 906 of the State of Rhode Island Standard Specification.

D. Sidewalks

1. Installation of new or replacing existing sidewalks, driveways and wheelchair ramps at the locations shown on the Drawings or as directed by the Engineer to be in accordance with Section 905 of the State of Rhode Island Standard Specification.

E. Plantings and Tree Beds in accordance with L.08

F. Restoration Limits

1. Where the trench location is in a sidewalk, the entire width of the sidewalk shall be replaced with new material. Side forms shall be set so as to obtain and preserve a straight edge along both sides of the walk.
2. Sidewalks shall be cut at existing joints or as directed otherwise by the Engineer.
3. Where trench is in a driveway, the driveway shall be repaved across its entire width with even edges.

G. Restoration Outside Limits of Work

1. Sidewalks, driveways, parking lots and curbing that are or damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they are found immediately prior to the start of operations. Materials and methods used for such restoration shall be in conformance with the requirements of the Standard Specification.
2. There shall be no cost to the Owner for this work.

H. Salvaged Granite Curb

1. All existing granite curb which remains unused at the end of the project shall be returned by the Contractor to the Town of Bristol Department of Public Works. Coordinate delivery of unused curb with Department of Public Works personnel.

3.02 LOAM

- A. Spread loam on areas to 6-inch depth after compaction, fine grade and compact.

3.03 LIME, FERTILIZER AND SEEDING

- A. Apply lime by mechanical means at rate of 3000 pounds per acre.
- B. Apply fertilizer at rate of 1200 pounds per acre.

- C. Remove weeds or replace loam and reestablish finish grades, if any delays in seeding lawn areas and weeds grow on surface or loam is washed out prior to sowing seed and without additional compensation. Sow seed at rate of 175 pounds per acre on calm day, by mechanical means. "Hydro-Seeding" not permitted unless otherwise permitted or required by Engineer. Sow one-half of seed in one direction, and other half at right angles to original direction. Rake seed lightly into loam, to depth of not more than 1/4 inch and compact by means of an acceptable lawn roller weighing 100 to 150 pounds per linear foot of width.
- D. Water lawn areas adequately at time of sowing and daily thereafter with fine spray, and continue throughout maintenance and protection period.
- E. Seed during approximate time periods of April 1 to May 15 and August 15 to October 1, and only when weather and soil conditions are suitable for such work, unless otherwise permitted.

3.04 MAINTENANCE OF SEEDED AREAS

- A. Maintain lawn areas and other seed areas at maximum height of 2-1/2 inches by mowing at least three times. Weed thoroughly once and maintained until time of final acceptance. Reseed and re-fertilize with original mixtures, watering or whatever is necessary to establish over entire area of lawn and other seeded areas a close stand of grasses specified, and reasonably free of weeds and undesirable coarse native grasses.
- B. Begin maintenance immediately after each portion of lawn is seeded and continue for minimum of 45 days.
- C. Repair or replace all seeded areas which, in judgment of Engineer, have not survived and grown in satisfactory manner, for a period of one year after acceptance.
- D. Seeding replacement, same seed mixture as specified and furnished and installed as specified.

3.05 TEMPORARY COVER CROP

- A. Sow a temporary cover crop of buckwheat, domestic rye grass or other acceptable seed if there is insufficient time in the planting season to complete seeding, fertilizing, and permanent seeding at the option of Contractor or order of Engineer. Cut and water cover crop as necessary until the beginning of the following planting season, at which time it shall be plowed or harrowed into soil, the areas shall be fertilized and permanent seed crop sown as specified.

END OF SECTION

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SECTION 02629

UNDERGROUND UTILITY MARKING TAPE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for furnishing and installing metallic (detectable) and non-metallic (non-detectable) marking tape over buried pipelines and conduits.

1.02 REFERENCES

- A. A.P.W.A. - American Public Works Association

1.03 SUBMITTALS

- A. Shop Drawings
 - 1. Submit in accordance with SECTION 01300 - SUBMITTALS
- B. Samples
 - 1. Provide samples of submitted products.

1.04 DESCRIPTION

- A. General
 - 1. Marking tape to be installed over all pipe lines and conduits installed under this Contract.
 - 2. Marking tape for non-ferrous pipe or conduits to be Detectable, magnetic type.
 - 3. Marking tape for ferrous pipe or conduits to be Non-detectable, non-magnetic type.
 - 4. Tape to be **6-inches**, wide.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Underground utility marking tape to be:
 - 1. Detectable: Magnatec by THOR Enterprises, Inc., Sun Prairie, WI.
 - 2. Non-detectable: Shieldtec by THOR Enterprises, Inc., Sun Prairie, WI.
 - 3. Or product deemed equal by the Engineer.

2.02 MATERIALS

- A. Detectable Underground Utility marking Tape
 - 1. Minimum overall thickness: 5.0 mil (0.005”).
 - 2. Aluminum foil core: 35 gauge (0.00035”) minimum.
 - 3. Foil visible from both sides of tape.
 - 4. Protective plastic jacket applied to both sides of foil.

5. Jacket adhesive applied directly to the film and foil.
 6. No printing to extend to the edges of the tape.
 7. No Dilutants, pigments or contaminants in the adhesive.
 8. Adhesive formulated to resist degradation by elements normally found in soil.
- B. Non-detectable Underground Utility marking Tape
1. Minimum overall thickness: 4.0 mil (0.004”).
 2. Polyethylene plastic film: 100% virgin, low density acid and alkali-resistant.
 3. Printing: Permanent, black, environmentally safe.
 4. Coloring: color-fast, lead free, organic pigments suitable for direct burial and prolonged exposure to the elements normally found in soil.
- C. Marking
1. Tape to printed with “BURIED *UTILITY* LINE BELOW”, replacing the word “*UTILITY*” with the word “WATER”, “SEWER”, “DRAIN”, “ELECTRIC”, “GAS”, or otherwise appropriate, repeating continuously every 30-inches max.
- D. Color Code in accordance with A.P.W.A. Standards as follows:
- | | |
|----------------------------------|--|
| 1. Safety Red | Electric power and high voltage lines |
| 2. High Visibility Safety Yellow | Gas and oil distribution/Transmission
Dangerous materials/Steam |
| 3. Safety Alert Orange | Fiber optic/telephone/CATV |
| 4. Safety Precaution Blue | Water and irrigation lines |
| 5. Safety Green | Sewer/storm/sanitary systems, non-potable
water |
| 6. Safety Brown | Force mains and effluent lines |
| 7. Alert Purple | Reclaimed and effluent re-use lines |

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install marking tape directly above the pipe line or conduit tape is to identify, approximately **24-inches** below the proposed finished grade.
- B. Install marking tape in accordance with manufacturers recommendations.
- C. Install marking tape over existing utilities disturbed by the Contractors operation.

END OF SECTION

SECTION 02642

WATER SERVICE CONNECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for furnishing and installing potable water service connections.

1.02 SUBMITTALS

A. Shop Drawings

- 1. In accordance with Section 01300, submit manufacturer's specifications, catalog data, descriptive literature, illustrations, diagrams, etc.

1.03 REFERENCES

A. American National Standards Institute

- 1. NSF/ANSI 61 – Drinking Water System Components - Health effects

B. American Society for Testing and Materials (ASTM)

- 1. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings
- 2. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
- 3. ASTM B584 - Standard Specification for Copper Alloy Sand Castings for General Applications.
- 4. ASTM D2447 - Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter.

C. American Water Works Association (ANSI/AWWA)

- 1. ANSI/AWWA C800, Underground Service Line Valves and Fittings.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fittings and accessories shall conform to the requirements of ANSI/AWWA C800 unless noted otherwise.
 - 1. Corporation Stops shall be CC thread by compression connection
 - a. A service saddle shall be provided for **all** corporation stop connections.
 - 2. Curb Stops shall be compression connection.

3. Other connection styles as approved by the Engineer.
- B. Lead free fittings shall be manufactured by A.Y. McDonald, Dubuque, IA; Mueller Co., Decatur, IL; The Ford Meter Box Company, Wabash, Indiana; or an acceptable equivalent.
1. Lead free brass goods furnished under this specification shall be new and unused.
 2. Ball valve type, ends as required to suit type of pipe or tubing to be connected, and a combined cap and tee handle and shall **Open Right (Clockwise)** with no drain.
 3. All service fitting shall be certified as suitable for contact with drinking water by an ANSI accredited organization in accordance with NSF/ANSI 61.
 4. All fittings shall be stamped or embossed with a mark or name indicating that the product is manufactured lead free as specified.
- C. Stops shall be ball valve style and have ends as required to suit type of pipe or tubing to be connected, and a combined cap and tee handle.
- C. Curb Boxes
1. Erie style, heavy duty top, sliding type with flare top and recess cover marked “WATER” and sliding type arched bottom section.
 2. Overall length to suit specified depth of cover requirements as approved by the Engineer.
- D. Service Piping
1. 4-inch and larger to be Cement Lined Ductile Iron, Class 52.
 2. 2-inch or less to be Type “K” Copper in accordance with ASTM B88.
- E. Service Saddle
1. Model 317, manufactured by Smith Blair, Inc., Texarkana, TX.

PART 3 EXECUTION

- A. Water service and fire service connections shall be installed or replaced as required from the new water main corporation stop to the new curb stop and connected to the existing service. Remove and replace existing curb stop, remove service pipe from old main, tap new main, install new corporation stop, install **copper** water service and fire service connection between new main and new installed curb stop.
- B. Service shall be maintained as continuously as possible, coordinate shut down with property owner.
- C. The tapping machine shall be rigidly fastened to the pipe as near the horizontal diameter as possible. The length of travel of the tap should be so established that when the stop is inserted and tightened with a 14-inch wrench, not more than one to three threads will be exposed on the outside. When a wet tapping machine is used, the corporation cock shall be inserted with the machine while it is still in place. Stops shall be tightened only sufficiently to be watertight. Care must be exercised not to overtighten.

- D. Service tubing shall be installed with care to avoid kinks or sharp bends. Do not allow tubing to contact ledge, rock or sharp stones which could cause damage.
 - 1. Wrap tubing with #12 tracer wire connected to the corporation and curb stop.
- E. Provide at least 6-inches of coarse grained sand or gravel with a maximum particle size of ½-inch adjacent to and above the service pipe. Backfill remainder of trench with approved backfill material.
- F. Services shall be flushed before activating to avoid meter clogging.
- G. The Engineer must observe all service connections under normal water main pressure prior to backfilling of the service trench to check for leakage.
- H. Service connections shall be free from leaks and may be pressure tested through the water main as directed by the Engineer.
- I. The curb service boxes shall be set in a true vertical position and if the boxes are within the limits of the roadway or within areas where the plowing of snow will take place, the tops of the boxes shall be set about ½-inch below the top of the finished grade. In locations where these boxes are not likely to be disturbed, the tops shall be set flush with the adjoining ground.

END OF SECTION

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SECTION 02930

LOAMING AND SEEDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for loaming, fertilizing, seeding, and related work in areas disturbed in the process of performing the Work under this contract.

1.02 SUBMITTALS

- A. In accordance with SECTION 01300 submit the following:
 - 1. Submit with seed, certificates confirming seed mixture, purity, germinating value, and crop year identification.
 - 2. Submit test samples of loam.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Fertilizer:
 - 1. Delivered mixed as specified in standard size, unopened containers showing weight, analysis, and name of manufacturer.
 - 2. Store in weather proof place.
- B. Seed:
 - 1. Delivered in original unopened containers with mixture listed.

PART 2 PRODUCTS

2.01 LOAM

- A. Fertile, natural topsoil, typical of locality, without admixture of subsoil, refuse or other foreign materials, and obtained from well-drained arable site. Mixture of sand, silt and clay particles in approximately equal proportions. Free of stumps, roots, heavy or stiff clay, stones large than 1 inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other deleterious matter.
- B. Not less than 4 percent nor more than 20 percent organic matter as determined by loss on ignition of oven-dried samples.
- C. Loam test samples dried to constant weight at temperature of 230 degrees. F., plus or minus nine degrees.
- D. Use loam, having prior vegetative growth that did not contain toxic amounts of either acid or alkaline elements.

2.02 LIME, FERTILIZER AND SEED

- A. Ground agricultural limestone containing not less than 85 percent of total carbonates.
- B. Complete fertilizer, at least 50 percent of nitrogen derived from natural organic sources of ureaform and containing following percentages by weight:

Nitrogen 10% Phosphorus 10% Potash 10%

- C. Turf grass seed, clean, high in germinating value and latest year's crop mixture as follows:

Name	Minimum Proportion by Weight	Percent Purity	Percent Germination
Kentucky bluegrass	20%	87%	85%
Merion Kentucky bluegrass	20%	87%	85%
Red Chewings fescue	45%	98%	85%
Italian rye	15%	98%	90%

PART 3 EXECUTION

3.01 GENERAL

- A. Supply suitable quantities of water, hose and appurtenances.

3.02 LOAM

- A. Spread loam on areas to 6-inch depth after compaction, fine grade and compact.

3.03 LIME, FERTILIZER AND SEEDING

- A. Apply lime by mechanical means at rate of 3000 pounds per acre.
- B. Apply fertilizer at rate of 1200 pounds per acre.
- C. Remove weeds or replace loam and reestablish finish grades, if any delays in seeding lawn areas and weeds grow on surface or loam is washed out prior to sowing seed and without additional compensation. Sow seed at rate of 175 pounds per acre on calm day, by mechanical means. "Hydro-Seeding" not permitted unless otherwise permitted or required by Engineer. Sow one-half of seed in one direction, and other half at right angles to original direction. Rake seed lightly into loam, to depth of not more than 1/4 inch and compact by means of an acceptable lawn roller weighing 100 to 150 pounds per linear foot of width.
- D. Water lawn areas adequately at time of sowing and daily thereafter with fine spray, and continue throughout maintenance and protection period.
- E. Seed during approximate time periods of April 1 to May 15 and August 15 to October 1, and only when weather and soil conditions are suitable for such work, unless otherwise permitted.

3.04 MAINTENANCE OF SEEDED AREAS

- A. Maintain lawn areas and other seed areas at maximum height of 2-1/2 inches by mowing at least three times. Weed thoroughly once and maintained until time of final acceptance. Reseed and refertilize with original mixtures, watering or whatever is necessary to establish over entire area of lawn and other seeded areas a close stand of grasses specified, and reasonably free of weeds and undesirable coarse native grasses.
- B. Begin maintenance immediately after each portion of lawn is seeded and continue for minimum of 45 days.
- C. Repair or replace all seeded areas which, in judgment of Engineer, have not survived and grown in satisfactory manner, for a period of one year after acceptance.
- D. Seeding replacement, same seed mixture as specified and furnished and installed as specified.

3.05 TEMPORARY COVER CROP

- A. Sow a temporary cover crop of buckwheat, domestic rye grass or other acceptable seed if there is insufficient time in the planting season to complete seeding, fertilizing, and permanent seeding at the option of Contractor or order of Engineer. Cut and water cover crop as necessary until the beginning of the following planting season, at which time it shall be plowed or harrowed into soil, the areas shall be fertilized and permanent seed crop sown as specified.

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DIVISION 3

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SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for furnishing and installing forms, reinforcing steel, concrete and expansion and/or construction joints

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. A185, Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
2. A615, Specification for deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
3. C31, Practice for Making and Curing Concrete Test Cylinders in the Field.
4. C33, Specification for Concrete Aggregates.
5. C39, Test Method for Compressive Strength of Cylindrical Concrete Specimens.
6. C42, Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
7. C94, Specification for ready Mixed Concrete.
8. C143, Test Method for Slump of Hydraulic Cement Concrete.
9. C150, Specification for Portland Cement.
10. C172, Practice for Sampling Freshly Mixed Concrete.
11. C231, Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
12. C260, Test Method for Air-Entraining Admixtures for Concrete.
13. C494, Specification for Chemical Admixtures for Concrete.
14. C920, Specification for Elastomeric Joint sealants.
15. D994, Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
16. D1056, Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
17. D1751, Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

B. American Concrete Institute (ACI):

1. ACI 301, Specification for Structural Concrete for Buildings.
2. ACI 304, Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
3. ACI 305, Recommended Practice for Hot Weather Concreting.
4. ACI 306, Recommended Practice for Cold Weather Concreting.
5. ACI 315, Building Code Requirements for Reinforced Concrete.
6. ACI 347, Guide to Formwork for Concrete.

C. Concrete Reinforcing Steel Institute (CRSI):

1. Manual of Standard Practice.

1.03 SUBMITTALS

A. Submit Shop Drawings in accordance with SECTION 01300 for the following:

1. Reinforcing Steel
 - a. Furnish in detail and completeness that all fabrication and placement at the site can be accomplished without the use of contract drawings for reference.
 - b. Include number of pieces, sizes, and grade of reinforcing steel, accessories, and any other information required for fabrication and placement.
 - c. Show joint layout and design
 - d. Check structural and site drawings for anchor bolts, anchors, inserts, conduits, sleeves, and any other items which are required to be embedded in concrete, and make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.
2. Concrete mix designs.
3. Grout manufacturer/design mix (if included in this section)
4. Manufacturer's data for ancillary materials such as joint fillers and sealants, epoxy bonding compound.

1.04 QUALITY ASSURANCE

A. Selection of testing laboratory in accordance with SECTION 01410.

B. Sample and Test Concrete as follows:

1. Test Specimens: Make, cure and have tested, a minimum of one set of four test specimens from the concrete of each day's pour and for each fifty cubic yards of concrete cast in accordance with ASTM C172, C31 and C39. One cylinder shall be broken after seven days and three cylinders after twenty-eight day.
2. Slump: A slump test shall be made for each truckload of concrete in accordance with ASTM C143. Slumps greater than design mix limit will be grounds for rejection of the concrete.
3. Air Content: An air content test shall be made from each day's pour of concrete by the pressure method in accordance with ASTM C231. Air contents above or below the limits specified will be grounds for rejection of the concrete.
4. In the event the compressive strength of the cylinders, when tested, is below the specified minimum, the Engineer may require test cores of the hardened structure to be taken by the Testing Laboratory in accordance with ASTM C42. If such test indicates that the core specimen is below the required strength, the concrete in question shall be removed and replaced without cost to the Owner. Any other work damaged as a result of this concrete removal shall be replaced with new materials to the satisfaction of the Engineer at no additional cost to the Owner. The cost of coring will be deducted from the contract amount. Where the Testing Laboratory has taken core cylinders and the concrete proves to be satisfactory, core holes shall be filled in a manner satisfactory to the Engineer at no additional cost to the Owner.
5. The Contractor shall coordinate the date and location of tests with the Engineer before any concrete work is started.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Reinforcing steel.

1. Transport to the site, store, and cover in a manner which will ensure that no damage shall occur to it from moisture, dirt, grease, or any other cause that might impair bond to concrete or chip protective epoxy coating.
2. Store on the site at all times, a supply of approved reinforcing steel to ensure that there will be no delay of the work.
3. Identification of steel shall be maintained after bundles are broken.

PART 2 PRODUCTS

2.01 MATERIALS

A. Portland Cement.

1. In accordance with ASTM C150, Type II of U.S. manufacture.
2. Only one brand of cement shall be used on the project.

B. Aggregates.

1. Fine aggregate, in accordance with ASTM C33, clean and graded from 1/4 inch to fines.
2. Coarse aggregate, in accordance with ASTM C33, clean and graded from 1/4 inch to maximum sizes hereinafter specified.

C. Air Entraining Agent.

1. In accordance with ASTM C260.

D. Water Reducing Agent.

1. In accordance with ASTM C494 Type A.

E. Microsilica Admixture.

1. Packaged in easily dispersing form.

F. Water.

1. Clean and potable,
2. Free of impurities detrimental to concrete.

G. Reinforcing Bars.

1. New, deformed billet steel bars, in accordance with ASTM A615, Grade 60.

H. Welded Wire Fabric

1. In accordance with ASTM A185.

I. Accessories.

1. Reinforcement accessories, consisting of spacers, chairs, ties, and similar items shall be provided as required for spacing, assembling, and supporting reinforcement in place.
2. All accessories shall be dielectric coated steel or approved plastic accessories, conforming to the applicable requirements of the CRSI Standards.

J. Tie wire.

1. 16 gauge or heavier black annealed wire.

K. Form Ties and Spreaders.

1. Standard metal form clamp assemble and plastic cone, of type acting as spreaders and leaving no metal within 1 inch of concrete face.

2. Provide form tie with water stop for all walls to be in contact with earth or liquid.
3. Inner tie rod shall be left in concrete when forms are removed.
4. No wire ties or wood spreaders will be permitted. Use ½" x 1" C.T. plastic cones for sinkages.

L. Form Coatings.

1. Non-grain raising and non-staining type that will not leave residual matter on surface of concrete or adversely affect proper bonding of subsequent application of other material applied to concrete surface.
2. "Nox-Crete Form Coating" as manufactured by Nox-Crete Company, or approved equal.
3. Coatings containing mineral oils or the non-drying ingredients will not be permitted.

M. Grout.

1. High-strength, non-shrink grout with saltwater resistance.
2. Five Star Special Grout 120 or equivalent.

2.02 CONCRETE STRENGTHS AND PROPORTIONS

- A. Cast-in-place concrete shall have the minimum compressive strength at 28 days as indicated on the Drawings.
- B. The exact proportions for the mix, including amounts admixture (if any), and water, shall be determined by the concrete supplier.
- C. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed not he work, but without permitting the materials to segregate or excess free water to collect on the surface.
- D. Air-Entrainment: The air content in all concrete shall be maintained at 5 to 7 percent.

2.03 PREMOLDED JOINT FILLER

- A. Bituminous Type.
 1. In accordance with ASTM D994 or D1751.
- B. Sponge Rubber Type.
 1. Neoprene, closed-cell, expanded in accordance with ASTM D1056, Type 2C5, with a compression deflection, 25 percent deflection (limits), 17 to 24 psi (119 to 168 kPa) minimum.

2.04 POURABLE JOINT FILLERS

- A. Filler for Nonpotable Water Structures
 1. Specific Gravity: Greater than 1.0 for cured, in-place filler.
 2. Vertical and Sloped Joints: Furnish gun grade material that will remain as placed in joints and will not run down slope.
 3. Suitable for continuous immersion and exposure to liquid being contained in the structure.

2.05 JOINT SEALANTS

A. In slabs.

1. In accordance with ASTM C920 for poured 2-component polyurethane sealant.
2. Sikaflex-2c, as manufactured by Sika Corporation or approved equivalent.

B. In walls.

1. Type II, Class A, compound conforming to Interim Federal Specification TT-S-00227E (3) (COM-NBS) for Sealing Compound; Elastomeric Type, Multi-Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures).
2. Sikaflex-1a, as manufactured by Sika Corporation or approved equivalent.

2.06 EPOXY BONDING COMPOUND

- A. The epoxy bonding compound shall be a three-component, solvent-free, moisture-tolerant, epoxy modified, cementitious product specifically formulated as a bonding agent and anti-corrosion coating. The product shall have suitable contact time, fluidity, and application temperature for this type of application.

PART 3 EXECUTION

3.01 FORMWORK

A. Falsework for Forms

1. Build and maintain necessary false work for the forms.

B. Construction of Forms

1. General

- a. Construct in accordance with ACI 347.
- b. Construct of sound material, to the correct shape and dimensions, mortar tight, of sufficient strength, and so braced and tied together that the movement of men, equipment, materials, or placing and vibrating the concrete will not throw them out of line or position.

2. Embedded Items

- a. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
- b. Do not embed wood, other than necessary nailing blocks, in concrete.
- c. Extended complete cooperation to suppliers of embedded items in their installation.
- d. Secure information for embedded items from other trades as required.
- e. Securely anchored embedded items in correct location and alignment prior to placing concrete.

3. Openings for Items Passing Through Concrete

- a. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
- b. Coordination work of this nature in order that there will be no unnecessary cutting and patching of concrete.
- c. Cutting and repairing of concrete as a result of failure to provide for such openings shall be paid for by the Contractor at no additional expense to the Owner.

C. Removing Forms and False work

1. Forms shall not be removed for at least 72 hours after concrete has been placed.
2. Forms shall not be removed until the concrete has attained sufficient strength to insure stability.

3.02 REINFORCING STEEL

A. General

1. Place reinforcing steel in accordance with the drawings and approved shop drawings and the applicable requirements of the CRSI, Manual of Practice.
2. Install reinforcement accurately and secure against movement, particularly under the weight of workmen and the placement of concrete.

B. Reinforcing Steel Supports

1. Support bars on approved plastic or dielectric-coated metal chairs or spacers, accurately placed and securely fastened to forms or steel reinforcement in place.
2. Supply additional bars, whether specifically shown on the drawings or not, where necessary to securely fasten reinforcement in place.
3. Support legs of accessories in forms without embedding in form surface.
4. Spacing of chairs and accessories shall conform to CRSI, Manual of Standard Practice. Accurately space hoops and stirrups and wire to the reinforcement.
5. Permit no loose wood inside forms.
6. Lifting of welded wire fabric into proper position while concrete is being poured rather than supporting fabric on chairs will not be permitted.

C. Placing and Tying

1. Set in place, space, and rigidly and securely tie or wire with tie wire at all splices and at all crossing points and intersections in the positions shown, or as directed.
2. Rebending of bars on the job to accommodate the job to accommodate existing conditions will not be permitted without the written approval of the Engineer
3. Points ends of wire ties away from forms.

D. Spacing

1. Minimum center to center distance between parallel bars shall be in accordance with the details on the drawings, or, where not shown, the clear spacing shall be 2 times the bar diameter but in no case less than 1½ inches or less than 1½ times the maximum size aggregate.

E. Splices

1. Maximum 50% of steel spliced occurring within lap length.
2. Top bars shall be 1.3 times values given in 3.01.D.5.c.
3. Splice lengths.
 - a. #6 bars and smaller: 50-bar diameter
 - b. #7 bars and larger: 60-bar diameter

F. Concrete Covering

1. In accordance with ACI 315, except where shown otherwise on drawings.

3.03 CONCRETE

A. Mixing of Concrete

1. All concrete shall be ready-mixed concrete, and shall be mixed and delivered in accordance with ASTM C 94. The batch plant of the concrete producer shall be certified for compliance with the standards established by the National Ready-Mixed Concrete Association.
 2. In the event concrete is mixed at a central batching plant, the delivery shall be arranged so that intervals between batches are kept to a minimum, and in any event not more than thirty (30) minutes. Trucks shall be in first class condition and kept in constant rotation during delivery.
 3. Concrete shall be placed within 90 minutes after cement has been mixed with aggregate or 45 minutes after addition of water and admixtures.
 4. No admixtures, except those mentioned in paragraph 2.1 shall be used. Calcium chloride will not be permitted.
 5. Truck delivery slips of all concrete delivered to the job shall indicate the quantity and quality of concrete, additives, date and time of batching and delivery, and the location of placement. Delivery slips shall be forwarded to the Engineer at the end of each pour.
- B. Cold Weather Concreting.
1. In accordance with ACI 306.
 2. Concrete shall not be mixed or placed when the temperature is below 40 degrees F, or when conditions indicate that the temperature will fall below 40 degrees F within 72 hours unless precautions are taken to protect the concrete.
 3. Concrete temperature shall be maintained, when deposited, at not less than 60 degrees F. Reinforcement, forms, and ground which concrete will contact must be completely free of frost.
 4. Concrete and formwork must be kept at a temperature of not less than 50 degrees F. for not less than 96 hours after placing.
 5. Calcium chloride shall not be used.
- C. Hot Weather Concreting.
1. In accordance with ACI 305.
 2. The maximum temperature of the concrete, when deposited, shall be 85 degrees F. If the weather causes the placing temperature to exceed 85 degrees F., the mix shall be cooled by methods approved by the Engineer.
 3. No concrete shall be deposited when the air temperature is greater than 90 degrees F.
- D. Conveying and Placing Concrete.
1. In accordance with ACI 304.
 2. Notification: Before placing concrete, forms shall be thoroughly inspected. All chips, dirt, etc., shall be removed, all temporary bracing and cleats taken out, all openings for pipes, etc., properly boxed, all forms properly secured in their correct position and made tight, all reinforcement, anchors, and embedded items secured in their proper places. Concrete which may be on the forms or reinforcement, and which is set and dry, shall be cleaned off, and the forms and steel washed off before proceeding. Remove all foreign matter from forms and excavations.
 3. Water shall be removed from place of deposit before concrete is placed unless otherwise permitted by the Engineer. Any flow of water into an excavation shall be diverted through proper side drains into a sump, or shall be removed by other approved methods which will avoid washing away the freshly deposited concrete.
 4. Soil on which concrete will be poured shall be thoroughly wetted (except in freezing weather).

5. Anchors and Embedded Items: Anchors, bolts, sleeves, inserts, wood blocking, and any other items to be embedded in concrete shall be accurately secured in position before the concrete is placed. Aluminum shall not be embedded in concrete.

E. Handling and Depositing

- a. Before any concrete is placed, notify all whose work is in any way connected with or influenced by the concrete work, and give them reasonable time to complete all portions of their work that must be completed before concrete is deposited.
- b. Immediately before concrete is placed, inspect all forms to ensure that they are in proper position, sufficiently rigid, thoroughly clean, properly oiled and free from foreign materials, and that all reinforcement is in proper position.
- c. Concreting, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed.
- d. Concrete shall be conveyed as rapidly as practicable from the mixer to the place of final deposit by methods that prevent the separation or loss of ingredients. It shall be deposited, as nearly as practicable, in its final position to avoid rehandling or flowing.
- e. Concrete shall not be dropped freely where reinforcement will cause segregation, nor shall it be dropped freely more than six (6) feet. Concrete shall be deposited to maintain a plastic surface approximately horizontal.
- f. Concrete that has partially hardened shall not be deposited in the work.

F. Pumping

- a. Concrete may be placed by pumping if first approved in writing by the Engineer for the location proposed.
- b. Equipment for pumping shall be of such size and design as to ensure a practically continuous flow of concrete at the delivery end without separation of materials.
- c. The concrete mix shall be designed to the same requirements as herein before specified, and may be richer in lubricating components in order to allow proper pumping.
- d. Concrete shall not be pumped through aluminum pipes.

G. Vibrating and Compacting

- a. All concrete shall be thoroughly consolidated and compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement, embedded items, and into the corners of the forms. All concrete against forms shall be thoroughly spaded. Internal vibrators shall be used under experienced supervision, and shall be kept out of contact with reinforcement and wood forms. Vibrators shall not be used in a manner that forces mortar between individual form members.
- b. Vibrators shall be flexible electric type or approved compressed air type, adequately powered and capable of transmitting to the concrete not less than seven thousand (7,000) impulses per minute. Vibration shall be sufficiently intense to cause the concrete to flow or settle readily into place without separation of the ingredients. A sufficient number of vibrators shall be employed so that complete compaction is secured throughout the entire volume of each layer of concrete. At least one (1) vibrator shall be kept in readiness as a spare for emergency use. Vibrators shall be such that the concrete becomes uniformly plastic with their use.
- c. Vibration shall be close to the forms but shall not be continued at one spot to the extent that large areas of grout are formed or the heavier aggregates are caused to settle. Care shall be taken to not disturb concrete that has its initial set.

- d. Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand as used in the concrete shall first be deposited in the forms, to a depth of at least on inch.
- e. The responsibility for providing fully filled out, smooth, clean, and properly aligned surfaces free from objectionable pockets shall rest entirely with the Contractor.

3.04 CONSTRUCTION JOINTS

- A. Construction joints shall be located a maximum of 40 feet apart. If, for any reason, the contractor feels a change is necessary, he shall prepare a placing plan and submit it to the Engineer for approval.
- B. Where a joint is to be made, the surface of the concrete shall be sandblasted or thoroughly picked, thoroughly cleaned, and all laitance removed. In addition to the foregoing, joints shall be thoroughly wetted, but not saturated, and slushed with a coat of grout immediately before the placing of new concrete.
- C. Approved keys shall be used at all joints, unless detailed otherwise.
- D. Forms shall be retightened before placing of concrete is continued. There shall be an interval of at least 48 hours between adjacent pours.
- E. Bonding Concrete at Construction Joints
 1. To new concrete construction joints:
 - a. Thoroughly clean and saturate joint with water.
 - b. Cover horizontal wall surfaces as specified in this Section, and immediately place concrete.
 - c. Limit concrete lift placed immediately on top of bonding compound to 12 inches thick.
 - d. Thoroughly vibrate to mix and consolidate bonding compound and concrete together.

3.05 BONDING NEW CONCRETE TO OLD CONCRETE:

1. Mechanically roughen existing concrete surfaces to a clean, rough surface using appropriate mechanical means to remove the existing concrete surface, and provide a minimum roughness profile of 1/4-inch.
2. Saturate surface with water for 24 hours, cover with epoxy bonding compound and place concrete as specified for new concrete.

3.06 EXPANSION JOINTS

1. Expansion joints shall be located as shown on contract drawings.
2. The joint shall include a joint filler, a bond breaker and joint sealant and installed as indicated on contract drawings.

3.07 JOINT SEALANTS.

1. Prepare surface in accordance with manufacturers directions.
2. Apply primer as recommended by sealant manufacturer.
3. Install sealant with the proper tools and methods as directed by the sealant manufacturer.

3.08 PATCHING

1. Immediately after stripping forms, patch minor defects, form-tie holes, honeycombed areas, etc., before concrete is thoroughly dry.
2. Repair gravel pockets by cutting out to solid surface, form key, and thoroughly wet before placing patching mortar consisting of 1 part cement to 2 parts fine sand; compact into place and neatly finish. Honeycombed areas or gravel pockets which, in the Engineer's opinion are too large and unsatisfactory for mortar patching as described above, shall be cut out to solid surface, keyed, and packed solids with matching concrete to produce firm bond and surface.
3. The Contractor shall do all the cutting as required by himself or other trades. All such work shall be of the minimum size required. No excessive cutting will be permitted, or shall any structural members or reinforcement be cut.
4. The Contractor shall do all patching after work by other trades has been installed, where required, using Portland Cement Mortar 1:2 mix.

3.09 PROTECTION AND CURING

1. Protect concrete from injurious action of the elements and defacement of any nature during construction operations.
2. Keep concrete in a thoroughly moist condition from the time it is placed until it has cured, for at least (7) days.
3. Carefully protect exposed concrete corners from damage.
4. Allow no slabs to become dry at any time until curing operations are complete. In general, slabs shall be cured with non-staining curing paper, hosing or fog spray; vertical surfaces shall be curing with Burlene or fog spray or an approved curing compound.
5. Protect fresh concrete from drying winds, rain, damage, or spoiling. Curing paper shall be lapped 4 inches minimum at joints and sealed with waterproof tape.

3.10 CONCRETE FINISHES

1. Unexposed Surfaces: All unexposed surfaces shall have any form finish, at the Contractor's option.
2. Wearing Surface Finish: Float the surface by hand using a wooden or magnesium float. Finish with a flexible bristle broom. Permit surface to harden sufficiently to retain the scoring or ridges. Broom transverse to traffic or at right angles to the slope of the slab.
3. Addition of Material: The addition of cement, sand, water, or mortar to slab surfaces while finishing concrete is strictly prohibited.

3.11 DEFECTIVE WORK

1. The following concrete work shall be considered defective and may be ordered by the Engineer to be removed and replaced at Contractor's expense:
 - a. Incorrectly formed.
 - b. Not plumb or level.
 - c. Not specified strength.
 - d. Containing rock pockets, voids, honeycomb, or cold joints.
 - e. Containing wood or foreign matter.
 - f. Otherwise not in accordance with the intent of the Drawings and Specifications.

END OF SECTION

APPENDIX A

RIDOT Utility Permits

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Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Utility Permit No: 202310011

Date: 10/05/2023

Permission is hereby granted to: Warwick Water Department
935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008
Contact: Terry DiPetrillo

To perform the following work: remove/replace lead water service at Post Road/Pawtuxet Village in **Warwick**.

With the following requirements:

- NOTE I:** *Utility Work Commencement Notification Form must be received by the Department and the assigned inspector must be notified a minimum of 48 hours prior to any scheduled work.*
- NOTE II:** *This permit shall be kept on the job site at all times and be available for inspection by any authorized representative of the Department.*
- NOTE II:** *The time limit for the completion of all work authorized under this permit including all final restoration is two years from work commencement date of this permit.*
- NOTE IV:** *This permit shall be void unless work herein contemplated commences within one (1) year of the date of issuance.*

Rhode Island Department of Transportation

Signed: 

Matthew Ouellette, P.E.

Deputy State Highway Maintenance Operations Engineer

CC: Kent, Christopher Walusiak, Bradley Taylor, File



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

**UTILITY WORK COMMENCEMENT NOTIFICATION FORM
(Minimum Advance Notice: 48 HOURS)**

Utility Permit No: **202310011**
Date: **10/05/2023**

Email to: RIDOT Division of Maintenance – Permit Office
DOT.Permits@dot.ri.gov

Utility Permit No. **202310011** was issued on Thursday, October 05, 2023 to **Warwick Water Department**. This permit was authorized to perform the following work: *remove/replace lead water service at Post Road/Pawtuxet Village in Warwick*

The business/municipality named below is responsible for performance of the work. The undersigned understands the permit’s conditions and limitations and is conversant with the [Rhode Island Department of Transportation’s Standard Specifications for Road and Bridge Construction, 2004 Edition amended 2018, with all revisions](#), the [Rhode Island Standard Details, 1998 edition, amended 2019 with all revisions](#), and the latest edition of the [Manual on Uniform Traffic Control Devices](#).

PLEASE PRINT OR TYPE

Name of Utility/Municipality: Warwick Water Department
Business Address: 935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008

Contact Person (Name and Title): _____

Proposed Work Dates: Utility Installation: Start _____ Finish _____
 Trench Restoration: Start _____ Finish _____
 Final Restoration: Start _____ Finish _____

Signature of Permittee: _____

Printed Name and Title: _____

This document must be signed and emailed to the Division of Maintenance at least 48 hours before the utility installation, full depth trench restoration or final restoration work is to commence. This notice is in addition to the utility inspector notification.

UTILITY WORK NOTIFICATION REQUIREMENT

In accordance with RI General Law § 39-2.2-3 (c)(2), the RIDOT has contracted with pre-qualified vendors through a Master Price Agreement to conduct state-certified testing and inspection services on all utility work in accordance with the utility permit requirements.

The inspector assigned to this permit, including their contact information, is as follows:

Inspector Company: **CDR Maguire**

Email: CDRInspectors@cdrmaguire.com

The Permittee shall notify the assigned inspector via email or phone a minimum of 48 hours **prior to** the commencement of any utility or restoration work to be done as part of this permit. If the inspector cannot be reached the Permittee must contact the RIDOT Permitting staff, Ali Hammad at 401-734-4810 or Roger Mason at 401-734-4831, for notification. Inspection services through RIDOT shall be **confirmed** before any work can commence. The RIDOT utility permit number shall be included for reference with all notifications.

Please note that the Permittee shall notify the assigned inspector a minimum of 3 hours prior to any cancellation of scheduled work. Failure to do so will result in a minimum 4 hour charge to the utility company.

202310011



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Special Condition:

- Sidewalks with brick or brick façade panels, that are removed or disturbed during the utility work located within the Post Road Right-of-Way, shall be replaced in-kind.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

On-going Maintenance Conditions

The grantee shall maintain the surface of the roadway over said substructures and other areas where work has been performed as long as the Department deems necessary, but at no time shall this period of time be less than five (5) years from the completion of work.

Conditions Relating to Installation of Overhead Structures, Including Poles, Towers, Wire, etc.

- On all freeways, any overhead structures relocated and/or installed shall be placed in conformance with AASHTO's publication, "A policy on the Accommodation of Utilities on Freeway Rights-of-Way", issued February 15, 1969, or amendments thereto.
- On state highways other than freeways, overhead structures shall be relocated and/or installed in conformance with P.P.M. 30-4 or amendments thereto of the Federal Highway Administration, unless as otherwise ordered by the Department.
- All aspects of said installation and/or relocation shall be in conformance with the standards set forth in the "National Electrical Code" and the "National Electrical Safety Code".
- In connection with the installation and/or relocation of the facilities covered by this permit, no trees shall be cut or trimmed except as provided herein.

General Conditions

The word "Department" as used herein shall imply the Department of Transportation, State of Rhode Island. The word "Engineer" as used herein shall mean the Department Engineer or the authorized agent of the Department. The word "Grantee" as used herein shall mean the person or persons, corporation or municipality to whom this permit is granted or their legal representatives. During the progress of work, all structures under and above ground shall be properly protected from damage or injury. It shall be the duty of the grantee to make certain that the security of the traveling public is safeguarded and its rights are not unreasonably curtailed. No detours may be engaged on any project without obtaining special permission from the Department and local authorities. The work area shall be protected at all times to avoid the possibility of accident. Said work area shall be marked with "Construction Approach Warning Signs", lights, flasher beacons or other warning devices as prescribed by the Department or the Engineer. The work performed under permit shall be planned and carried out so that the drainage system of the highway is effective at all times.



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Conditions Relating to Maintenance of Traffic

The permittee shall maintain any road affected by its work open to traffic and keep such road in a condition that shall safely and adequately accommodate such traffic. The permittee shall furnish, erect and maintain all traffic control including barricades, warning signs, delineators, flaggers, and traffic- persons in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". The permittee shall submit for approval a traffic control plan for all utility work which would have an effect on the roadway. If it is determined that the contractor is not in conformance with the MUTCD, the Department or their designee will order a suspension of work until the work area is brought into conformance with MUTCD. All traffic control protection will be maintained until the proposed work has been completed.



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RIDOT Utility Permit Standard Conditions

1) Specifications that govern this permit are the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition (amended March 2018), with all revisions (RIDOT Standard Specifications) and the special provisions included in this permit. Standard Details for this permit are the Rhode Island Standard Details, 1998 edition (amended June 2019), with all revisions (RI Standard Details). The RIDOT Hot Mix Asphalt (HMA) Matrix is incorporated into this permit by reference.

2) The Permittee shall obtain the approval of the Scenic Roadway Board (SRB) for any proposed work on any roadways that have been designated as a scenic roadway in accordance with RI General Law § 24-15. A complete list of roadways can be found at the following link: <http://www.dot.ri.gov/community/scenicroadways.php> . It is the responsibility of the Permittee to obtain this approval prior to submitting a utility permit application, and to include proof of SRB approval with the application. Questions on obtaining this approval should be sent to Colin Franco at colin.franco@dot.ri.gov.

3) No lane and/or shoulder closures are allowed on weekdays from 0600 hrs to 0900 hrs or from 1500 hrs to 1800 hrs and no lane and/or shoulder closures are allowed on weekends, unless otherwise approved by RIDOT. The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way. Any weekend work will also need concurrent approval from the local municipality.

4) No work will be allowed during overnight hours from 2100 hrs to 0600 hrs the next morning unless otherwise approved by RIDOT and the local municipality.

5) No work shall take place during the winter shutdown period from December 15th through April 15th of the following calendar year unless otherwise approved by RIDOT.

6) Any operations requiring the closure of a lane and/or shoulder must fill out a RIDOT Lane Closure Report a minimum of 72 hours prior to the commencement of any work. This report is web based and can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report/>. If any scheduled work is cancelled, a RIDOT Lane Closure Cancellation Request must be filled out. Cancellation request forms can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report-cancelation-request/>.

7) HOLIDAYS:

NO LANE AND/OR SHOULDER CLOSURES ARE ALLOWED AFTER 13:00 ON THE FRIDAY PRECEDING A HOLIDAY WEEKEND.

a. NEW YEAR'S DAY (IF ON WEEKEND, OBSERVED ON FOLLOWING MONDAY)

i. No lane and/or shoulder closures allowed starting at 1300 hrs on New Year's Eve Day through 000 hrs the day after New Year's Day (or the following Monday if on a weekend)



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b. MARTIN LUTHER KING DAY, PRESIDENT'S DAY, VICTORY DAY, COLUMBUS DAY, VETERAN'S DAY, AND ELECTION DAY

- i. No lane and/or shoulder closures allowed on this holiday.

c. EASTER SUNDAY

- i. No lane and/or shoulder closures allowed on Saturday and/or Sunday.

d. MEMORIAL DAY, INDEPENDENCE DAY, AND LABOR DAY

- i. No lane and/or shoulder closures allowed from 1300 hrs on Friday to 000 hrs on Tuesday after the holiday.

e. THANKSGIVING DAY

- i. No lane and/or shoulder closures allowed from Wednesday through Sunday of Thanksgiving Week. Work can resume at 000 hrs on Monday.

f. CHRISTMAS DAY

- i. No lane and/or shoulder closures allowed from 1300 hrs on Christmas Eve through 000 hrs the day after Christmas.

8) Restoration of any altered roadway shall commence immediately after the completion of the alteration, and shall include, if necessary, temporary, or intermediate restoration on an ongoing basis to keep the roadway smooth and level until the final pavement restoration can be completed. This includes patching of any potholes that form within the work zone during or immediately following construction.

9) Temporary waterborne pavement markings shall be applied to any new pavement surface which shall be opened to traffic at the completion of each day's paving operations. The pavement markings shall be replaced in kind to match the original conditions prior to the start of work and shall be maintained by the Permittee until final pavement restoration is complete and final pavement markings are in place in accordance with Conditions #31 and #33 of these utility permit conditions.

10) In accordance with the RIDOT Standard Specifications (Section T.13.03.1), when the Permittee mills and overlays or otherwise resurfaces an existing roadway that will be open to traffic, and such operations damage existing traffic signal loop detectors, thereby rendering such to be non-functional, the Permittee shall restore properly operating detection within seven (7) calendar days. When existing detection is rendered non-functional by the Permittee's operations for any other reason, the Permittee shall restore properly operating detection within seventy-two (72) hours, unless otherwise authorized in writing by RIDOT.

11) All trenches and/or excavations shall be saw cut prior to removal of the pavement. Saw cuts shall be clean, straight parallel lines. All pavement cuts shall be full depth through the pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.



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12) All backfilling and compaction shall be done in accordance with the RIDOT Standard Specifications to the top of the subgrade. The top of the subgrade shall be trimmed and fine graded. Please note, all backfill shall be placed in lifts no greater than six (6) inches.

13) A minimum twelve (12) inches of gravel subbase shall be placed, compacted to and in accordance with the RIDOT Standard Specifications.

14) A minimum three (3) inch temporary hot mix asphalt (HMA) pavement patch shall be installed on all trenches and/or excavations within the State Right-of-Way (ROW) which will not be permanently restored within the same working day. Class 9.5 or 12.5 HMA from a RIDOT approved plant shall be used for the temporary pavement patch. Temporary patches shall be in place for a maximum four (4) months from the initial date of the work prior to permanent trench restoration.

15) Any use of steel road plates within the State Right-of-Way (ROW) shall require prior RIDOT approval in writing. If approved by RIDOT, the use of steel road plates shall conform with R.I.G.L. 24-8-45 – Steel Plate Use and all the following requirements:

- a. Steel plates shall withstand traffic loading without movement.
- b. When two (2) or more steel plates are used, the plates shall be welded or fastened in a manner to eliminate vertical movement.
- c. All steel plates shall be marked with the utility company or contractor name and contact information.
- d. Steel plates shall be installed to extend a minimum of 18 inches beyond the edge of any excavation.
 - a. Temporary paving with hot mix asphalt or installation of other suitably manufactured equipment shall be used to feather the edges of the plates to form a wedged taper to cover the edges of the steel plates.
 - a. Each corner of the steel plates shall be marked with durable and highly reflective orange pavement parking tape no less than 4 inches in width.
 - g. The exposed surface area of the steel plates shall be slip resistant (non-skid).
 - h. All signage advising motorists of the steel plates shall be in compliance with the current edition of the Manual on Uniform Traffic Control Devices.
 - i. All steel plates must be removed from the roadway between October 31st and April 15th and prior to any winter storm outside of this time period unless otherwise approved by RIDOT in writing.

16) Stormwater Impact Conditions:



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a. All storm drain inlets and catch basins must have sediment control devices installed in order to prevent soil and debris from entering the drainage system prior to and throughout the life of the project. Storm drain protection must be cleaned as necessary and be removed at the end of the project and properly disposed of offsite.

b. Perimeter controls and construction entrances must be installed for any staging areas utilized as part of the operation.

c. Dewatering or discharging directly or indirectly into a storm drain is prohibited.

d. The contractor is responsible for keeping the roadway clean at all times throughout all operations within the State Highway Right-of-Way. This includes mitigation of construction runoff and regular sweeping of the roadway.

17) Any utility facility to be replaced within the State Highway Right-of-Way shall be either removed, crushed in place and buried, or filled with grout and capped.

18) All utilities must maintain a minimum eighteen (18) inch vertical and horizontal separation spacing from all RIDOT facilities, edge-to-edge (drainage pipes, catch basins and inlets, manholes, foundations, electrical conduit, etc.) within the State Highway Right-of-Way.

PERMANENT PAVEMENT STRUCTURE TRENCH RESTORATION (PERMIT CONDITIONS 19 THROUGH 29)

19) All trenches and/or excavations shall be re-sawcut, full depth through the pavement, one (1) foot minimum cutbacks from all vertical edges of the initial utility work trenches and/or excavations prior to installing permanent pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.

20) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to installing permanent pavement.

21) At a minimum, the restored pavement thickness shall match the existing depth of the roadway, or equal six (6) inches, whichever is greater, over a minimum twelve (12) inches of compacted gravel subbase trimmed and fine graded. Class 19 HMA base course shall be used from a RIDOT approved asphalt plant and shall be installed in accordance with the RIDOT Standard Specifications. Further requirements for restored pavement thickness and Class(es) HMA to be used may be specified in more detail as additional permit specific conditions.

22) It is the responsibility of the Permittee to determine the presence of concrete road base at the location of their operation. If concrete base is present in the roadway, restoration shall include Class XX concrete base in kind thickness, 24-inch #5 epoxy coated bars drilled and doweled into the



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existing concrete base 18 inches on center, utilizing either grout or epoxy, all in accordance with the RIDOT Standard Specifications, over a minimum twelve (12) inches of compacted gravel subbase.

23) The full depth permanent pavement structure trench shall be in place for a minimum thirty (30) calendar days, and for a maximum one (1) year, prior to final pavement restoration.

24) Impacted and/or damaged concrete sidewalk shall be restored/replaced with new, full panels in accordance with RI Standard Details 43.1.0, 43.3.0, 43.3.1 and any other applicable RI Standard Details for concrete sidewalk.

25) Impacted and/or damaged concrete driveways shall be restored/replaced with new, full panels in accordance with RI Standard Detail 43.5.0 and any other applicable RI Standard Details for concrete driveways.

26) Impacted and/or damaged asphalt sidewalk shall be restored/replaced full width in accordance with RI Standard Detail 43.2.0 using Class 4.75 or 9.5 HMA.

27) Impacted and/or damaged asphalt driveways shall be restored/replaced full width using Class 9.5 HMA.

28) Impacted and/or damaged curbing shall be replaced in kind and reset to original grade. The curbing shall be installed in accordance with RI Standard Detail 7.6.0.

29) Impacted and/or damaged landscaped areas shall be loamed and seeded in accordance with Section L (Landscaping) of the RIDOT Standard Specifications.

FINAL PAVEMENT RESTORATION (PERMIT CONDITIONS 30 THROUGH 37)

30) All structures within the limits of restoration shall be adjusted to final grade and pitch of the roadway prior to final pavement restoration. It is the responsibility of the Permittee and utility owner to coordinate with other utility structure owners in order to get all structures adjusted to final grade.

31) Final pavement restoration of the roadway shall include two (2) inches of micromilling and resurfacing all impacted travel lanes and/or shoulders for their full width using Modified Class 12.5 HMA Surface Course from a RIDOT approved asphalt plant and in accordance with the RIDOT Standard Specifications. Impacted travel lanes and/or shoulders are the roadway pavement areas that the utility work trenches and/or excavations are located within. In addition to the roadway pavement areas impacted by the utility work trenches and/or excavations, this final pavement restoration shall also apply to all travel lanes and/or shoulders impacted by either lateral or longitudinal utility work trenches and/or excavations when the trenches and/or excavations are less than or equal to five hundred (500) feet longitudinal from one another, including the sections between trenches and/or excavations, so that no section(s) of roadway pavement less than or equal to five hundred (500) feet shall remain unpaved. This will provide a continuous final pavement between the utility work trenches and/or excavations. The final pavement restoration area shall also include any areas, travel lanes and/or shoulders damaged either directly or indirectly by the



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permit work. RIDOT reserves the right to revise or extend the final pavement restoration limits upon completion of the work. Further requirements for more stringent final pavement restoration (if applicable) may be specified in more detail as additional permit specific conditions.

32) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to final resurfacing.

33) Temporary waterborne pavement markings shall be installed in accordance with Condition #9. Permanent pavement markings shall be restored in the same locations as originally located with epoxy resin, in accordance with the RIDOT Standard Specifications. Permanent epoxy resin pavement markings shall be placed no sooner than two (2) weeks but no later than four (4) weeks from the completion of the paving operations.

34) Any property damage caused by construction associated with this permit shall be repaired and/or replaced to the satisfaction of the State (RIDOT).

35) Spot checks for conformance with this permit may include compaction testing, pavement coring, ground penetrating radar, etc. If RIDOT deems any of the utility work non-conforming, insufficient, defective or incomplete, it is the responsibility of the Permittee to complete the repairs to the satisfaction of the State (RIDOT).

36) The Permittee shall be responsible for maintaining the final restoration work required under this permit for a minimum period of five (5) years, starting from the date of acceptance of all work.

37) The Permittee agrees that:

a. No Person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination in the use of State Property.

b. In the furnishing of services on State Property, no person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination.

c. The applicant shall use State Property in compliance with all other requirements imposed by or pursuant to 49 C.F.R. Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation effectuation of Title VI of the Civil Rights Act of 1964 (The Regulations) and as the Regulations may be amended.



Department of Transportation
Division of Highway and Bridge Maintenance
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Date _____

**NOTICE OF COMPLETION OF UTILITY WORK
REQUEST FOR RELEASE OF PERMIT AND/OR BOND**

This letter serves as notification that the work required under Utility Permit No. 202310011 in the city/town of Warwick has been completed in conformance with the permit requirements and is ready for final inspection by the Department of Transportation.

Permit Holder

NOTE: FAILURE TO REQUEST A FINAL INSPECTION WILL RESULT IN THE NON-ISSUANCE OF APPLICATIONS FILED IN THE NEXT CALENDAR YEAR.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Utility Permit No: 202310012

Date: 10/05/2023

Permission is hereby granted to: Warwick Water Department
935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008
Contact: Terry DiPetrillo

To perform the following work: remove/replace lead water service at 162 Narragansett Parkway in Warwick.

With the following requirements:

- NOTE I:** *Utility Work Commencement Notification Form must be received by the Department and the assigned inspector must be notified a minimum of 48 hours prior to any scheduled work.*
- NOTE II:** *This permit shall be kept on the job site at all times and be available for inspection by any authorized representative of the Department.*
- NOTE II:** *The time limit for the completion of all work authorized under this permit including all final restoration is two years from work commencement date of this permit.*
- NOTE IV:** *This permit shall be void unless work herein contemplated commences within one (1) year of the date of issuance.*

Rhode Island Department of Transportation

Signed: 

Matthew Ouellette, P.E.

Deputy State Highway Maintenance Operations Engineer

CC: Kent, Christopher Walusiak, Bradley Taylor, File



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

**UTILITY WORK COMMENCEMENT NOTIFICATION FORM
(Minimum Advance Notice: 48 HOURS)**

Utility Permit No: 202310012

Date: 10/05/2023

Email to: RIDOT Division of Maintenance – Permit Office
DOT.PermitOffice@dot.ri.gov

Utility Permit No. **202310012** was issued on Thursday, October 05, 2023 to **Warwick Water Department**. This permit was authorized to perform the following work: *remove/replace lead water service at 162 Narragansett Parkway in Warwick*

The business/municipality named below is responsible for performance of the work. The undersigned understands the permit’s conditions and limitations and is conversant with the [Rhode Island Department of Transportation’s Standard Specifications for Road and Bridge Construction, 2004 Edition amended 2018, with all revisions](#), the [Rhode Island Standard Details, 1998 edition, amended 2019 with all revisions](#), and the latest edition of the [Manual on Uniform Traffic Control Devices](#).

PLEASE PRINT OR TYPE

Name of Utility/Municipality: Warwick Water Department
Business Address: 935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008

Contact Person (Name and Title): _____

Proposed Work Dates: [Utility Installation:](#) Start _____ Finish _____
 [Trench Restoration:](#) Start _____ Finish _____
 [Final Restoration:](#) Start _____ Finish _____

Signature of Permittee: _____

Printed Name and Title: _____

This document must be signed and emailed to the Division of Maintenance at least 48 hours before the utility installation, full depth trench restoration or final restoration work is to commence. This notice is in addition to the utility inspector notification.

UTILITY WORK NOTIFICATION REQUIREMENT

In accordance with RI General Law § 39-2.2-3 (c)(2), the RIDOT has contracted with pre-qualified vendors through a Master Price Agreement to conduct state-certified testing and inspection services on all utility work in accordance with the utility permit requirements.

The inspector assigned to this permit, including their contact information, is as follows:

Inspector Company: **CDR Maguire**

Email: CDRInspectors@cdrmaguire.com

The Permittee shall notify the assigned inspector via email or phone a minimum of 48 hours **prior to** the commencement of any utility or restoration work to be done as part of this permit. If the inspector cannot be reached the Permittee must contact the RIDOT Permitting staff, Ali Hammad at 401-734-4810 or Roger Mason at 401-734-4831, for notification. Inspection services through RIDOT shall be **confirmed** before any work can commence. The RIDOT utility permit number shall be included for reference with all notifications.

Please note that the Permittee shall notify the assigned inspector a minimum of 3 hours prior to any cancellation of scheduled work. Failure to do so will result in a minimum 4 hour charge to the utility company.

202310012



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Special Condition:

- No utility work shall be performed in the paved portion of the Narragansett Parkway Right-of-Way.



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On-going Maintenance Conditions

The grantee shall maintain the surface of the roadway over said substructures and other areas where work has been performed as long as the Department deems necessary, but at no time shall this period of time be less than five (5) years from the completion of work.

Conditions Relating to Installation of Overhead Structures, Including Poles, Towers, Wire, etc.

- On all freeways, any overhead structures relocated and/or installed shall be placed in conformance with AASHTO's publication, "A policy on the Accommodation of Utilities on Freeway Rights-of-Way", issued February 15, 1969, or amendments thereto.
- On state highways other than freeways, overhead structures shall be relocated and/or installed in conformance with P.P.M. 30-4 or amendments thereto of the Federal Highway Administration, unless as otherwise ordered by the Department.
- All aspects of said installation and/or relocation shall be in conformance with the standards set forth in the "National Electrical Code" and the "National Electrical Safety Code".
- In connection with the installation and/or relocation of the facilities covered by this permit, no trees shall be cut or trimmed except as provided herein.

General Conditions

The word "Department" as used herein shall imply the Department of Transportation, State of Rhode Island. The word "Engineer" as used herein shall mean the Department Engineer or the authorized agent of the Department. The word "Grantee" as used herein shall mean the person or persons, corporation or municipality to whom this permit is granted or their legal representatives. During the progress of work, all structures under and above ground shall be properly protected from damage or injury. It shall be the duty of the grantee to make certain that the security of the traveling public is safeguarded and its rights are not unreasonably curtailed. No detours may be engaged on any project without obtaining special permission from the Department and local authorities. The work area shall be protected at all times to avoid the possibility of accident. Said work area shall be marked with "Construction Approach Warning Signs", lights, flasher beacons or other warning devices as prescribed by the Department or the Engineer. The work performed under permit shall be planned and carried out so that the drainage system of the highway is effective at all times.



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Conditions Relating to Maintenance of Traffic

The permittee shall maintain any road affected by its work open to traffic and keep such road in a condition that shall safely and adequately accommodate such traffic. The permittee shall furnish, erect and maintain all traffic control including barricades, warning signs, delineators, flaggers, and traffic- persons in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". The permittee shall submit for approval a traffic control plan for all utility work which would have an effect on the roadway. If it is determined that the contractor is not in conformance with the MUTCD, the Department or their designee will order a suspension of work until the work area is brought into conformance with MUTCD. All traffic control protection will be maintained until the proposed work has been completed.



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RIDOT Utility Permit Standard Conditions

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2) The Permittee shall obtain the approval of the Scenic Roadway Board (SRB) for any proposed work on any roadways that have been designated as a scenic roadway in accordance with RI General Law § 24-15. A complete list of roadways can be found at the following link: <http://www.dot.ri.gov/community/scenicroadways.php> . It is the responsibility of the Permittee to obtain this approval prior to submitting a utility permit application, and to include proof of SRB approval with the application. Questions on obtaining this approval should be sent to Colin Franco at colin.franco@dot.ri.gov.

3) No lane and/or shoulder closures are allowed on weekdays from 0600 hrs to 0900 hrs or from 1500 hrs to 1800 hrs and no lane and/or shoulder closures are allowed on weekends, unless otherwise approved by RIDOT. The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way. Any weekend work will also need concurrent approval from the local municipality.

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b. MARTIN LUTHER KING DAY, PRESIDENT'S DAY, VICTORY DAY, COLUMBUS DAY, VETERAN'S DAY, AND ELECTION DAY

i. No lane and/or shoulder closures allowed on this holiday.

c. EASTER SUNDAY

i. No lane and/or shoulder closures allowed on Saturday and/or Sunday.

d. MEMORIAL DAY, INDEPENDENCE DAY, AND LABOR DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Friday to 000 hrs on Tuesday after the holiday.

e. THANKSGIVING DAY

i. No lane and/or shoulder closures allowed from Wednesday through Sunday of Thanksgiving Week. Work can resume at 000 hrs on Monday.

f. CHRISTMAS DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Christmas Eve through 000 hrs the day after Christmas.

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9) Temporary waterborne pavement markings shall be applied to any new pavement surface which shall be opened to traffic at the completion of each day's paving operations. The pavement markings shall be replaced in kind to match the original conditions prior to the start of work and shall be maintained by the Permittee until final pavement restoration is complete and final pavement markings are in place in accordance with Conditions #31 and #33 of these utility permit conditions.

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15) Any use of steel road plates within the State Right-of-Way (ROW) shall require prior RIDOT approval in writing. If approved by RIDOT, the use of steel road plates shall conform with R.I.G.L. 24-8-45 – Steel Plate Use and all the following requirements:

- a. Steel plates shall withstand traffic loading without movement.
- b. When two (2) or more steel plates are used, the plates shall be welded or fastened in a manner to eliminate vertical movement.
- c. All steel plates shall be marked with the utility company or contractor name and contact information.
- d. Steel plates shall be installed to extend a minimum of 18 inches beyond the edge of any excavation.
 - a. Temporary paving with hot mix asphalt or installation of other suitably manufactured equipment shall be used to feather the edges of the plates to form a wedged taper to cover the edges of the steel plates.
 - a. Each corner of the steel plates shall be marked with durable and highly reflective orange pavement parking tape no less than 4 inches in width.
 - g. The exposed surface area of the steel plates shall be slip resistant (non-skid).
 - h. All signage advising motorists of the steel plates shall be in compliance with the current edition of the Manual on Uniform Traffic Control Devices.
 - i. All steel plates must be removed from the roadway between October 31st and April 15th and prior to any winter storm outside of this time period unless otherwise approved by RIDOT in writing.

16) Stormwater Impact Conditions:



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a. All storm drain inlets and catch basins must have sediment control devices installed in order to prevent soil and debris from entering the drainage system prior to and throughout the life of the project. Storm drain protection must be cleaned as necessary and be removed at the end of the project and properly disposed of offsite.

b. Perimeter controls and construction entrances must be installed for any staging areas utilized as part of the operation.

c. Dewatering or discharging directly or indirectly into a storm drain is prohibited.

d. The contractor is responsible for keeping the roadway clean at all times throughout all operations within the State Highway Right-of-Way. This includes mitigation of construction runoff and regular sweeping of the roadway.

17) Any utility facility to be replaced within the State Highway Right-of-Way shall be either removed, crushed in place and buried, or filled with grout and capped.

18) All utilities must maintain a minimum eighteen (18) inch vertical and horizontal separation spacing from all RIDOT facilities, edge-to-edge (drainage pipes, catch basins and inlets, manholes, foundations, electrical conduit, etc.) within the State Highway Right-of-Way.

PERMANENT PAVEMENT STRUCTURE TRENCH RESTORATION (PERMIT CONDITIONS 19 THROUGH 29)

19) All trenches and/or excavations shall be re-sawcut, full depth through the pavement, one (1) foot minimum cutbacks from all vertical edges of the initial utility work trenches and/or excavations prior to installing permanent pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.

20) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to installing permanent pavement.

21) At a minimum, the restored pavement thickness shall match the existing depth of the roadway, or equal six (6) inches, whichever is greater, over a minimum twelve (12) inches of compacted gravel subbase trimmed and fine graded. Class 19 HMA base course shall be used from a RIDOT approved asphalt plant and shall be installed in accordance with the RIDOT Standard Specifications. Further requirements for restored pavement thickness and Class(es) HMA to be used may be specified in more detail as additional permit specific conditions.

22) It is the responsibility of the Permittee to determine the presence of concrete road base at the location of their operation. If concrete base is present in the roadway, restoration shall include Class XX concrete base in kind thickness, 24-inch #5 epoxy coated bars drilled and doweled into the



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existing concrete base 18 inches on center, utilizing either grout or epoxy, all in accordance with the RIDOT Standard Specifications, over a minimum twelve (12) inches of compacted gravel subbase.

23) The full depth permanent pavement structure trench shall be in place for a minimum thirty (30) calendar days, and for a maximum one (1) year, prior to final pavement restoration.

24) Impacted and/or damaged concrete sidewalk shall be restored/replaced with new, full panels in accordance with RI Standard Details 43.1.0, 43.3.0, 43.3.1 and any other applicable RI Standard Details for concrete sidewalk.

25) Impacted and/or damaged concrete driveways shall be restored/replaced with new, full panels in accordance with RI Standard Detail 43.5.0 and any other applicable RI Standard Details for concrete driveways.

26) Impacted and/or damaged asphalt sidewalk shall be restored/replaced full width in accordance with RI Standard Detail 43.2.0 using Class 4.75 or 9.5 HMA.

27) Impacted and/or damaged asphalt driveways shall be restored/replaced full width using Class 9.5 HMA.

28) Impacted and/or damaged curbing shall be replaced in kind and reset to original grade. The curbing shall be installed in accordance with RI Standard Detail 7.6.0.

29) Impacted and/or damaged landscaped areas shall be loamed and seeded in accordance with Section L (Landscaping) of the RIDOT Standard Specifications.

FINAL PAVEMENT RESTORATION (PERMIT CONDITIONS 30 THROUGH 37)

30) All structures within the limits of restoration shall be adjusted to final grade and pitch of the roadway prior to final pavement restoration. It is the responsibility of the Permittee and utility owner to coordinate with other utility structure owners in order to get all structures adjusted to final grade.

31) Final pavement restoration of the roadway shall include two (2) inches of micromilling and resurfacing all impacted travel lanes and/or shoulders for their full width using Modified Class 12.5 HMA Surface Course from a RIDOT approved asphalt plant and in accordance with the RIDOT Standard Specifications. Impacted travel lanes and/or shoulders are the roadway pavement areas that the utility work trenches and/or excavations are located within. In addition to the roadway pavement areas impacted by the utility work trenches and/or excavations, this final pavement restoration shall also apply to all travel lanes and/or shoulders impacted by either lateral or longitudinal utility work trenches and/or excavations when the trenches and/or excavations are less than or equal to five hundred (500) feet longitudinal from one another, including the sections between trenches and/or excavations, so that no section(s) of roadway pavement less than or equal to five hundred (500) feet shall remain unpaved. This will provide a continuous final pavement between the utility work trenches and/or excavations. The final pavement restoration area shall also include any areas, travel lanes and/or shoulders damaged either directly or indirectly by the



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permit work. RIDOT reserves the right to revise or extend the final pavement restoration limits upon completion of the work. Further requirements for more stringent final pavement restoration (if applicable) may be specified in more detail as additional permit specific conditions.

32) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to final resurfacing.

33) Temporary waterborne pavement markings shall be installed in accordance with Condition #9. Permanent pavement markings shall be restored in the same locations as originally located with epoxy resin, in accordance with the RIDOT Standard Specifications. Permanent epoxy resin pavement markings shall be placed no sooner than two (2) weeks but no later than four (4) weeks from the completion of the paving operations.

34) Any property damage caused by construction associated with this permit shall be repaired and/or replaced to the satisfaction of the State (RIDOT).

35) Spot checks for conformance with this permit may include compaction testing, pavement coring, ground penetrating radar, etc. If RIDOT deems any of the utility work non-conforming, insufficient, defective or incomplete, it is the responsibility of the Permittee to complete the repairs to the satisfaction of the State (RIDOT).

36) The Permittee shall be responsible for maintaining the final restoration work required under this permit for a minimum period of five (5) years, starting from the date of acceptance of all work.

37) The Permittee agrees that:

a. No Person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination in the use of State Property.

b. In the furnishing of services on State Property, no person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination.

c. The applicant shall use State Property in compliance with all other requirements imposed by or pursuant to 49 C.F.R. Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation effectuation of Title VI of the Civil Rights Act of 1964 (The Regulations) and as the Regulations may be amended.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Date _____

**NOTICE OF COMPLETION OF UTILITY WORK
REQUEST FOR RELEASE OF PERMIT AND/OR BOND**

This letter serves as notification that the work required under Utility Permit No. 202310012 in the city/town of Warwick has been completed in conformance with the permit requirements and is ready for final inspection by the Department of Transportation.

Permit Holder

NOTE: FAILURE TO REQUEST A FINAL INSPECTION WILL RESULT IN THE NON-ISSUANCE OF APPLICATIONS FILED IN THE NEXT CALENDAR YEAR.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Utility Permit No: 202310013

Date: 10/05/2023

Permission is hereby granted to: Warwick Water Department
935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008
Contact: Terry DiPetrillo

To perform the following work: remove/replace lead water service at 291 Narragansett Parkway in Warwick.

With the following requirements:

- NOTE I:** *Utility Work Commencement Notification Form must be received by the Department and the assigned inspector must be notified a minimum of 48 hours prior to any scheduled work.*
- NOTE II:** *This permit shall be kept on the job site at all times and be available for inspection by any authorized representative of the Department.*
- NOTE II:** *The time limit for the completion of all work authorized under this permit including all final restoration is two years from work commencement date of this permit.*
- NOTE IV:** *This permit shall be void unless work herein contemplated commences within one (1) year of the date of issuance.*

Rhode Island Department of Transportation

Signed: 

Matthew Ouellette, P.E.

Deputy State Highway Maintenance Operations Engineer

CC: Kent, Christopher Walusiak, Bradley Taylor, File



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

**UTILITY WORK COMMENCEMENT NOTIFICATION FORM
(Minimum Advance Notice: 48 HOURS)**

Utility Permit No: 202310013

Date: 10/05/2023

Email to: RIDOT Division of Maintenance – Permit Office
DOT.PermitOffice@dot.ri.gov

Utility Permit No. **202310013** was issued on Thursday, October 05, 2023 to **Warwick Water Department**. This permit was authorized to perform the following work: *remove/replace lead water service at 291 Narragansett Parkway in Warwick*

The business/municipality named below is responsible for performance of the work. The undersigned understands the permit’s conditions and limitations and is conversant with the [Rhode Island Department of Transportation’s Standard Specifications for Road and Bridge Construction, 2004 Edition amended 2018, with all revisions](#), the [Rhode Island Standard Details, 1998 edition, amended 2019 with all revisions](#), and the latest edition of the [Manual on Uniform Traffic Control Devices](#).

PLEASE PRINT OR TYPE

Name of Utility/Municipality: Warwick Water Department
Business Address: 935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008

Contact Person (Name and Title): _____

Proposed Work Dates: Utility Installation: Start _____ Finish _____
 Trench Restoration: Start _____ Finish _____
 Final Restoration: Start _____ Finish _____

Signature of Permittee: _____

Printed Name and Title: _____

This document must be signed and emailed to the Division of Maintenance at least 48 hours before the utility installation, full depth trench restoration or final restoration work is to commence. This notice is in addition to the utility inspector notification.

UTILITY WORK NOTIFICATION REQUIREMENT

In accordance with RI General Law § 39-2.2-3 (c)(2), the RIDOT has contracted with pre-qualified vendors through a Master Price Agreement to conduct state-certified testing and inspection services on all utility work in accordance with the utility permit requirements.

The inspector assigned to this permit, including their contact information, is as follows:

Inspector Company: **CDR Maguire**

Email: CDRInspectors@cdrmaguire.com

The Permittee shall notify the assigned inspector via email or phone a minimum of 48 hours **prior to** the commencement of any utility or restoration work to be done as part of this permit. If the inspector cannot be reached the Permittee must contact the RIDOT Permitting staff, Ali Hammad at 401-734-4810 or Roger Mason at 401-734-4831, for notification. Inspection services through RIDOT shall be **confirmed** before any work can commence. The RIDOT utility permit number shall be included for reference with all notifications.

Please note that the Permittee shall notify the assigned inspector a minimum of 3 hours prior to any cancellation of scheduled work. Failure to do so will result in a minimum 4 hour charge to the utility company.

202310013



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Special Condition:

- No utility work shall be performed in the paved portion of the Narragansett Parkway Right-of-Way.



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On-going Maintenance Conditions

The grantee shall maintain the surface of the roadway over said substructures and other areas where work has been performed as long as the Department deems necessary, but at no time shall this period of time be less than five (5) years from the completion of work.

Conditions Relating to Installation of Overhead Structures, Including Poles, Towers, Wire, etc.

- On all freeways, any overhead structures relocated and/or installed shall be placed in conformance with AASHTO's publication, "A policy on the Accommodation of Utilities on Freeway Rights-of-Way", issued February 15, 1969, or amendments thereto.
- On state highways other than freeways, overhead structures shall be relocated and/or installed in conformance with P.P.M. 30-4 or amendments thereto of the Federal Highway Administration, unless as otherwise ordered by the Department.
- All aspects of said installation and/or relocation shall be in conformance with the standards set forth in the "National Electrical Code" and the "National Electrical Safety Code".
- In connection with the installation and/or relocation of the facilities covered by this permit, no trees shall be cut or trimmed except as provided herein.

General Conditions

The word "Department" as used herein shall imply the Department of Transportation, State of Rhode Island. The word "Engineer" as used herein shall mean the Department Engineer or the authorized agent of the Department. The word "Grantee" as used herein shall mean the person or persons, corporation or municipality to whom this permit is granted or their legal representatives. During the progress of work, all structures under and above ground shall be properly protected from damage or injury. It shall be the duty of the grantee to make certain that the security of the traveling public is safeguarded and its rights are not unreasonably curtailed. No detours may be engaged on any project without obtaining special permission from the Department and local authorities. The work area shall be protected at all times to avoid the possibility of accident. Said work area shall be marked with "Construction Approach Warning Signs", lights, flasher beacons or other warning devices as prescribed by the Department or the Engineer. The work performed under permit shall be planned and carried out so that the drainage system of the highway is effective at all times.



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Division of Highway and Bridge Maintenance
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Conditions Relating to Maintenance of Traffic

The permittee shall maintain any road affected by its work open to traffic and keep such road in a condition that shall safely and adequately accommodate such traffic. The permittee shall furnish, erect and maintain all traffic control including barricades, warning signs, delineators, flaggers, and traffic- persons in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". The permittee shall submit for approval a traffic control plan for all utility work which would have an effect on the roadway. If it is determined that the contractor is not in conformance with the MUTCD, the Department or their designee will order a suspension of work until the work area is brought into conformance with MUTCD. All traffic control protection will be maintained until the proposed work has been completed.



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Division of Highway and Bridge Maintenance
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RIDOT Utility Permit Standard Conditions

1) Specifications that govern this permit are the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition (amended March 2018), with all revisions (RIDOT Standard Specifications) and the special provisions included in this permit. Standard Details for this permit are the Rhode Island Standard Details, 1998 edition (amended June 2019), with all revisions (RI Standard Details). The RIDOT Hot Mix Asphalt (HMA) Matrix is incorporated into this permit by reference.

2) The Permittee shall obtain the approval of the Scenic Roadway Board (SRB) for any proposed work on any roadways that have been designated as a scenic roadway in accordance with RI General Law § 24-15. A complete list of roadways can be found at the following link: <http://www.dot.ri.gov/community/scenicroadways.php> . It is the responsibility of the Permittee to obtain this approval prior to submitting a utility permit application, and to include proof of SRB approval with the application. Questions on obtaining this approval should be sent to Colin Franco at colin.franco@dot.ri.gov.

3) No lane and/or shoulder closures are allowed on weekdays from 0600 hrs to 0900 hrs or from 1500 hrs to 1800 hrs and no lane and/or shoulder closures are allowed on weekends, unless otherwise approved by RIDOT. The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way. Any weekend work will also need concurrent approval from the local municipality.

4) No work will be allowed during overnight hours from 2100 hrs to 0600 hrs the next morning unless otherwise approved by RIDOT and the local municipality.

5) No work shall take place during the winter shutdown period from December 15th through April 15th of the following calendar year unless otherwise approved by RIDOT.

6) Any operations requiring the closure of a lane and/or shoulder must fill out a RIDOT Lane Closure Report a minimum of 72 hours prior to the commencement of any work. This report is web based and can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report/>. If any scheduled work is cancelled, a RIDOT Lane Closure Cancellation Request must be filled out. Cancellation request forms can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report-cancelation-request/>.

7) HOLIDAYS:

NO LANE AND/OR SHOULDER CLOSURES ARE ALLOWED AFTER 13:00 ON THE FRIDAY PRECEDING A HOLIDAY WEEKEND.

a. NEW YEAR'S DAY (IF ON WEEKEND, OBSERVED ON FOLLOWING MONDAY)

i. No lane and/or shoulder closures allowed starting at 1300 hrs on New Year's Eve Day through 000 hrs the day after New Year's Day (or the following Monday if on a weekend)



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b. MARTIN LUTHER KING DAY, PRESIDENT'S DAY, VICTORY DAY, COLUMBUS DAY, VETERAN'S DAY, AND ELECTION DAY

i. No lane and/or shoulder closures allowed on this holiday.

c. EASTER SUNDAY

i. No lane and/or shoulder closures allowed on Saturday and/or Sunday.

d. MEMORIAL DAY, INDEPENDENCE DAY, AND LABOR DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Friday to 000 hrs on Tuesday after the holiday.

e. THANKSGIVING DAY

i. No lane and/or shoulder closures allowed from Wednesday through Sunday of Thanksgiving Week. Work can resume at 000 hrs on Monday.

f. CHRISTMAS DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Christmas Eve through 000 hrs the day after Christmas.

8) Restoration of any altered roadway shall commence immediately after the completion of the alteration, and shall include, if necessary, temporary, or intermediate restoration on an ongoing basis to keep the roadway smooth and level until the final pavement restoration can be completed. This includes patching of any potholes that form within the work zone during or immediately following construction.

9) Temporary waterborne pavement markings shall be applied to any new pavement surface which shall be opened to traffic at the completion of each day's paving operations. The pavement markings shall be replaced in kind to match the original conditions prior to the start of work and shall be maintained by the Permittee until final pavement restoration is complete and final pavement markings are in place in accordance with Conditions #31 and #33 of these utility permit conditions.

10) In accordance with the RIDOT Standard Specifications (Section T.13.03.1), when the Permittee mills and overlays or otherwise resurfaces an existing roadway that will be open to traffic, and such operations damage existing traffic signal loop detectors, thereby rendering such to be non-functional, the Permittee shall restore properly operating detection within seven (7) calendar days. When existing detection is rendered non-functional by the Permittee's operations for any other reason, the Permittee shall restore properly operating detection within seventy-two (72) hours, unless otherwise authorized in writing by RIDOT.

11) All trenches and/or excavations shall be saw cut prior to removal of the pavement. Saw cuts shall be clean, straight parallel lines. All pavement cuts shall be full depth through the pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.



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12) All backfilling and compaction shall be done in accordance with the RIDOT Standard Specifications to the top of the subgrade. The top of the subgrade shall be trimmed and fine graded. Please note, all backfill shall be placed in lifts no greater than six (6) inches.

13) A minimum twelve (12) inches of gravel subbase shall be placed, compacted to and in accordance with the RIDOT Standard Specifications.

14) A minimum three (3) inch temporary hot mix asphalt (HMA) pavement patch shall be installed on all trenches and/or excavations within the State Right-of-Way (ROW) which will not be permanently restored within the same working day. Class 9.5 or 12.5 HMA from a RIDOT approved plant shall be used for the temporary pavement patch. Temporary patches shall be in place for a maximum four (4) months from the initial date of the work prior to permanent trench restoration.

15) Any use of steel road plates within the State Right-of-Way (ROW) shall require prior RIDOT approval in writing. If approved by RIDOT, the use of steel road plates shall conform with R.I.G.L. 24-8-45 – Steel Plate Use and all the following requirements:

- a. Steel plates shall withstand traffic loading without movement.
- b. When two (2) or more steel plates are used, the plates shall be welded or fastened in a manner to eliminate vertical movement.
- c. All steel plates shall be marked with the utility company or contractor name and contact information.
- d. Steel plates shall be installed to extend a minimum of 18 inches beyond the edge of any excavation.
 - a. Temporary paving with hot mix asphalt or installation of other suitably manufactured equipment shall be used to feather the edges of the plates to form a wedged taper to cover the edges of the steel plates.
 - a. Each corner of the steel plates shall be marked with durable and highly reflective orange pavement parking tape no less than 4 inches in width.
 - g. The exposed surface area of the steel plates shall be slip resistant (non-skid).
 - h. All signage advising motorists of the steel plates shall be in compliance with the current edition of the Manual on Uniform Traffic Control Devices.
 - i. All steel plates must be removed from the roadway between October 31st and April 15th and prior to any winter storm outside of this time period unless otherwise approved by RIDOT in writing.

16) Stormwater Impact Conditions:



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Division of Highway and Bridge Maintenance
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a. All storm drain inlets and catch basins must have sediment control devices installed in order to prevent soil and debris from entering the drainage system prior to and throughout the life of the project. Storm drain protection must be cleaned as necessary and be removed at the end of the project and properly disposed of offsite.

b. Perimeter controls and construction entrances must be installed for any staging areas utilized as part of the operation.

c. Dewatering or discharging directly or indirectly into a storm drain is prohibited.

d. The contractor is responsible for keeping the roadway clean at all times throughout all operations within the State Highway Right-of-Way. This includes mitigation of construction runoff and regular sweeping of the roadway.

17) Any utility facility to be replaced within the State Highway Right-of-Way shall be either removed, crushed in place and buried, or filled with grout and capped.

18) All utilities must maintain a minimum eighteen (18) inch vertical and horizontal separation spacing from all RIDOT facilities, edge-to-edge (drainage pipes, catch basins and inlets, manholes, foundations, electrical conduit, etc.) within the State Highway Right-of-Way.

PERMANENT PAVEMENT STRUCTURE TRENCH RESTORATION (PERMIT CONDITIONS 19 THROUGH 29)

19) All trenches and/or excavations shall be re-sawcut, full depth through the pavement, one (1) foot minimum cutbacks from all vertical edges of the initial utility work trenches and/or excavations prior to installing permanent pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.

20) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to installing permanent pavement.

21) At a minimum, the restored pavement thickness shall match the existing depth of the roadway, or equal six (6) inches, whichever is greater, over a minimum twelve (12) inches of compacted gravel subbase trimmed and fine graded. Class 19 HMA base course shall be used from a RIDOT approved asphalt plant and shall be installed in accordance with the RIDOT Standard Specifications. Further requirements for restored pavement thickness and Class(es) HMA to be used may be specified in more detail as additional permit specific conditions.

22) It is the responsibility of the Permittee to determine the presence of concrete road base at the location of their operation. If concrete base is present in the roadway, restoration shall include Class XX concrete base in kind thickness, 24-inch #5 epoxy coated bars drilled and doweled into the



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existing concrete base 18 inches on center, utilizing either grout or epoxy, all in accordance with the RIDOT Standard Specifications, over a minimum twelve (12) inches of compacted gravel subbase.

23) The full depth permanent pavement structure trench shall be in place for a minimum thirty (30) calendar days, and for a maximum one (1) year, prior to final pavement restoration.

24) Impacted and/or damaged concrete sidewalk shall be restored/replaced with new, full panels in accordance with RI Standard Details 43.1.0, 43.3.0, 43.3.1 and any other applicable RI Standard Details for concrete sidewalk.

25) Impacted and/or damaged concrete driveways shall be restored/replaced with new, full panels in accordance with RI Standard Detail 43.5.0 and any other applicable RI Standard Details for concrete driveways.

26) Impacted and/or damaged asphalt sidewalk shall be restored/replaced full width in accordance with RI Standard Detail 43.2.0 using Class 4.75 or 9.5 HMA.

27) Impacted and/or damaged asphalt driveways shall be restored/replaced full width using Class 9.5 HMA.

28) Impacted and/or damaged curbing shall be replaced in kind and reset to original grade. The curbing shall be installed in accordance with RI Standard Detail 7.6.0.

29) Impacted and/or damaged landscaped areas shall be loamed and seeded in accordance with Section L (Landscaping) of the RIDOT Standard Specifications.

FINAL PAVEMENT RESTORATION (PERMIT CONDITIONS 30 THROUGH 37)

30) All structures within the limits of restoration shall be adjusted to final grade and pitch of the roadway prior to final pavement restoration. It is the responsibility of the Permittee and utility owner to coordinate with other utility structure owners in order to get all structures adjusted to final grade.

31) Final pavement restoration of the roadway shall include two (2) inches of micromilling and resurfacing all impacted travel lanes and/or shoulders for their full width using Modified Class 12.5 HMA Surface Course from a RIDOT approved asphalt plant and in accordance with the RIDOT Standard Specifications. Impacted travel lanes and/or shoulders are the roadway pavement areas that the utility work trenches and/or excavations are located within. In addition to the roadway pavement areas impacted by the utility work trenches and/or excavations, this final pavement restoration shall also apply to all travel lanes and/or shoulders impacted by either lateral or longitudinal utility work trenches and/or excavations when the trenches and/or excavations are less than or equal to five hundred (500) feet longitudinal from one another, including the sections between trenches and/or excavations, so that no section(s) of roadway pavement less than or equal to five hundred (500) feet shall remain unpaved. This will provide a continuous final pavement between the utility work trenches and/or excavations. The final pavement restoration area shall also include any areas, travel lanes and/or shoulders damaged either directly or indirectly by the



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permit work. RIDOT reserves the right to revise or extend the final pavement restoration limits upon completion of the work. Further requirements for more stringent final pavement restoration (if applicable) may be specified in more detail as additional permit specific conditions.

32) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to final resurfacing.

33) Temporary waterborne pavement markings shall be installed in accordance with Condition #9. Permanent pavement markings shall be restored in the same locations as originally located with epoxy resin, in accordance with the RIDOT Standard Specifications. Permanent epoxy resin pavement markings shall be placed no sooner than two (2) weeks but no later than four (4) weeks from the completion of the paving operations.

34) Any property damage caused by construction associated with this permit shall be repaired and/or replaced to the satisfaction of the State (RIDOT).

35) Spot checks for conformance with this permit may include compaction testing, pavement coring, ground penetrating radar, etc. If RIDOT deems any of the utility work non-conforming, insufficient, defective or incomplete, it is the responsibility of the Permittee to complete the repairs to the satisfaction of the State (RIDOT).

36) The Permittee shall be responsible for maintaining the final restoration work required under this permit for a minimum period of five (5) years, starting from the date of acceptance of all work.

37) The Permittee agrees that:

a. No Person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination in the use of State Property.

b. In the furnishing of services on State Property, no person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination.

c. The applicant shall use State Property in compliance with all other requirements imposed by or pursuant to 49 C.F.R. Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation effectuation of Title VI of the Civil Rights Act of 1964 (The Regulations) and as the Regulations may be amended.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Date _____

**NOTICE OF COMPLETION OF UTILITY WORK
REQUEST FOR RELEASE OF PERMIT AND/OR BOND**

This letter serves as notification that the work required under Utility Permit No. 202310013 in the city/town of Warwick has been completed in conformance with the permit requirements and is ready for final inspection by the Department of Transportation.

Permit Holder

NOTE: FAILURE TO REQUEST A FINAL INSPECTION WILL RESULT IN THE NON-ISSUANCE OF APPLICATIONS FILED IN THE NEXT CALENDAR YEAR.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Utility Permit No: 202310014

Date: 10/05/2023

Permission is hereby granted to: Warwick Water Department
935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008
Contact: Terry DiPetrillo

To perform the following work: remove/replace lead water service at 1579 Post Road in Warwick.

With the following requirements:

- NOTE I:** *Utility Work Commencement Notification Form must be received by the Department and the assigned inspector must be notified a minimum of 48 hours prior to any scheduled work.*
- NOTE II:** *This permit shall be kept on the job site at all times and be available for inspection by any authorized representative of the Department.*
- NOTE II:** *The time limit for the completion of all work authorized under this permit including all final restoration is two years from work commencement date of this permit.*
- NOTE IV:** *This permit shall be void unless work herein contemplated commences within one (1) year of the date of issuance.*

Rhode Island Department of Transportation

Signed: 

Matthew Ouellette, P.E.

Deputy State Highway Maintenance Operations Engineer

CC: Kent, Christopher Walusiak, Bradley Taylor, File



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

**UTILITY WORK COMMENCEMENT NOTIFICATION FORM
(Minimum Advance Notice: 48 HOURS)**

**Utility Permit No: 202310014
Date: 10/05/2023**

Email to: RIDOT Division of Maintenance – Permit Office
DOT.PermitOffice@dot.ri.gov

Utility Permit No. **202310014** was issued on Thursday, October 05, 2023 to **Warwick Water Department**. This permit was authorized to perform the following work: *remove/replace lead water service at 1579 Post Road in Warwick*

The business/municipality named below is responsible for performance of the work. The undersigned understands the permit’s conditions and limitations and is conversant with the [Rhode Island Department of Transportation’s Standard Specifications for Road and Bridge Construction, 2004 Edition amended 2018, with all revisions](#), the [Rhode Island Standard Details, 1998 edition, amended 2019 with all revisions](#), and the latest edition of the [Manual on Uniform Traffic Control Devices](#).

PLEASE PRINT OR TYPE

Name of Utility/Municipality: Warwick Water Department
Business Address: 935 Sandy Lane
Warwick, RI 02889
Telephone: 738-2008

Contact Person (Name and Title): _____

Proposed Work Dates: [Utility Installation:](#) Start _____ Finish _____
 [Trench Restoration:](#) Start _____ Finish _____
 [Final Restoration:](#) Start _____ Finish _____

Signature of Permittee: _____

Printed Name and Title: _____

This document must be signed and emailed to the Division of Maintenance at least 48 hours before the utility installation, full depth trench restoration or final restoration work is to commence. This notice is in addition to the utility inspector notification.

UTILITY WORK NOTIFICATION REQUIREMENT

In accordance with RI General Law § 39-2.2-3 (c)(2), the RIDOT has contracted with pre-qualified vendors through a Master Price Agreement to conduct state-certified testing and inspection services on all utility work in accordance with the utility permit requirements.

The inspector assigned to this permit, including their contact information, is as follows:

Inspector Company: **Cataldo & Associates, Inc.**

Email: cataldo.inspection@CataldoEng.com

Phone: **401-305-0682**

The Permittee shall notify the assigned inspector via email or phone a minimum of 48 hours **prior to** the commencement of any utility or restoration work to be done as part of this permit. If the inspector cannot be reached the Permittee must contact the RIDOT Permitting staff, Ali Hammad at 401-734-4810 or Roger Mason at 401-734-4831, for notification. Inspection services through RIDOT shall be **confirmed** before any work can commence. The RIDOT utility permit number shall be included for reference with all notifications.

Please note that the Permittee shall notify the assigned inspector a minimum of 3 hours prior to any cancellation of scheduled work. Failure to do so will result in a minimum 4 hour charge to the utility company.

202310014



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On-going Maintenance Conditions

The grantee shall maintain the surface of the roadway over said substructures and other areas where work has been performed as long as the Department deems necessary, but at no time shall this period of time be less than five (5) years from the completion of work.

Conditions Relating to Installation of Overhead Structures, Including Poles, Towers, Wire, etc.

- On all freeways, any overhead structures relocated and/or installed shall be placed in conformance with AASHTO's publication, "A policy on the Accommodation of Utilities on Freeway Rights-of-Way", issued February 15, 1969, or amendments thereto.
- On state highways other than freeways, overhead structures shall be relocated and/or installed in conformance with P.P.M. 30-4 or amendments thereto of the Federal Highway Administration, unless as otherwise ordered by the Department.
- All aspects of said installation and/or relocation shall be in conformance with the standards set forth in the "National Electrical Code" and the "National Electrical Safety Code".
- In connection with the installation and/or relocation of the facilities covered by this permit, no trees shall be cut or trimmed except as provided herein.

General Conditions

The word "Department" as used herein shall imply the Department of Transportation, State of Rhode Island. The word "Engineer" as used herein shall mean the Department Engineer or the authorized agent of the Department. The word "Grantee" as used herein shall mean the person or persons, corporation or municipality to whom this permit is granted or their legal representatives. During the progress of work, all structures under and above ground shall be properly protected from damage or injury. It shall be the duty of the grantee to make certain that the security of the traveling public is safeguarded and its rights are not unreasonably curtailed. No detours may be engaged on any project without obtaining special permission from the Department and local authorities. The work area shall be protected at all times to avoid the possibility of accident. Said work area shall be marked with "Construction Approach Warning Signs", lights, flasher beacons or other warning devices as prescribed by the Department or the Engineer. The work performed under permit shall be planned and carried out so that the drainage system of the highway is effective at all times.



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Conditions Relating to Maintenance of Traffic

The permittee shall maintain any road affected by its work open to traffic and keep such road in a condition that shall safely and adequately accommodate such traffic. The permittee shall furnish, erect and maintain all traffic control including barricades, warning signs, delineators, flaggers, and traffic- persons in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". The permittee shall submit for approval a traffic control plan for all utility work which would have an effect on the roadway. If it is determined that the contractor is not in conformance with the MUTCD, the Department or their designee will order a suspension of work until the work area is brought into conformance with MUTCD. All traffic control protection will be maintained until the proposed work has been completed.



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RIDOT Utility Permit Standard Conditions

1) Specifications that govern this permit are the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition (amended March 2018), with all revisions (RIDOT Standard Specifications) and the special provisions included in this permit. Standard Details for this permit are the Rhode Island Standard Details, 1998 edition (amended June 2019), with all revisions (RI Standard Details). The RIDOT Hot Mix Asphalt (HMA) Matrix is incorporated into this permit by reference.

2) The Permittee shall obtain the approval of the Scenic Roadway Board (SRB) for any proposed work on any roadways that have been designated as a scenic roadway in accordance with RI General Law § 24-15. A complete list of roadways can be found at the following link: <http://www.dot.ri.gov/community/scenicroadways.php> . It is the responsibility of the Permittee to obtain this approval prior to submitting a utility permit application, and to include proof of SRB approval with the application. Questions on obtaining this approval should be sent to Colin Franco at colin.franco@dot.ri.gov.

3) No lane and/or shoulder closures are allowed on weekdays from 0600 hrs to 0900 hrs or from 1500 hrs to 1800 hrs and no lane and/or shoulder closures are allowed on weekends, unless otherwise approved by RIDOT. The set-up and break-down of temporary traffic control devices within a traveled way shall be construed as a closure of that traveled way. Any weekend work will also need concurrent approval from the local municipality.

4) No work will be allowed during overnight hours from 2100 hrs to 0600 hrs the next morning unless otherwise approved by RIDOT and the local municipality.

5) No work shall take place during the winter shutdown period from December 15th through April 15th of the following calendar year unless otherwise approved by RIDOT.

6) Any operations requiring the closure of a lane and/or shoulder must fill out a RIDOT Lane Closure Report a minimum of 72 hours prior to the commencement of any work. This report is web based and can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report/>. If any scheduled work is cancelled, a RIDOT Lane Closure Cancellation Request must be filled out. Cancellation request forms can be found at: <https://ridot.wufoo.com/forms/ridot-lane-closure-report-cancellation-request/>.

7) HOLIDAYS:

NO LANE AND/OR SHOULDER CLOSURES ARE ALLOWED AFTER 13:00 ON THE FRIDAY PRECEDING A HOLIDAY WEEKEND.

a. NEW YEAR'S DAY (IF ON WEEKEND, OBSERVED ON FOLLOWING MONDAY)

i. No lane and/or shoulder closures allowed starting at 1300 hrs on New Year's Eve Day through 000 hrs the day after New Year's Day (or the following Monday if on a weekend)



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b. MARTIN LUTHER KING DAY, PRESIDENT'S DAY, VICTORY DAY, COLUMBUS DAY, VETERAN'S DAY, AND ELECTION DAY

i. No lane and/or shoulder closures allowed on this holiday.

c. EASTER SUNDAY

i. No lane and/or shoulder closures allowed on Saturday and/or Sunday.

d. MEMORIAL DAY, INDEPENDENCE DAY, AND LABOR DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Friday to 000 hrs on Tuesday after the holiday.

e. THANKSGIVING DAY

i. No lane and/or shoulder closures allowed from Wednesday through Sunday of Thanksgiving Week. Work can resume at 000 hrs on Monday.

f. CHRISTMAS DAY

i. No lane and/or shoulder closures allowed from 1300 hrs on Christmas Eve through 000 hrs the day after Christmas.

8) Restoration of any altered roadway shall commence immediately after the completion of the alteration, and shall include, if necessary, temporary, or intermediate restoration on an ongoing basis to keep the roadway smooth and level until the final pavement restoration can be completed. This includes patching of any potholes that form within the work zone during or immediately following construction.

9) Temporary waterborne pavement markings shall be applied to any new pavement surface which shall be opened to traffic at the completion of each day's paving operations. The pavement markings shall be replaced in kind to match the original conditions prior to the start of work and shall be maintained by the Permittee until final pavement restoration is complete and final pavement markings are in place in accordance with Conditions #31 and #33 of these utility permit conditions.

10) In accordance with the RIDOT Standard Specifications (Section T.13.03.1), when the Permittee mills and overlays or otherwise resurfaces an existing roadway that will be open to traffic, and such operations damage existing traffic signal loop detectors, thereby rendering such to be non-functional, the Permittee shall restore properly operating detection within seven (7) calendar days. When existing detection is rendered non-functional by the Permittee's operations for any other reason, the Permittee shall restore properly operating detection within seventy-two (72) hours, unless otherwise authorized in writing by RIDOT.

11) All trenches and/or excavations shall be saw cut prior to removal of the pavement. Saw cuts shall be clean, straight parallel lines. All pavement cuts shall be full depth through the pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.



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12) All backfilling and compaction shall be done in accordance with the RIDOT Standard Specifications to the top of the subgrade. The top of the subgrade shall be trimmed and fine graded. Please note, all backfill shall be placed in lifts no greater than six (6) inches.

13) A minimum twelve (12) inches of gravel subbase shall be placed, compacted to and in accordance with the RIDOT Standard Specifications.

14) A minimum three (3) inch temporary hot mix asphalt (HMA) pavement patch shall be installed on all trenches and/or excavations within the State Right-of-Way (ROW) which will not be permanently restored within the same working day. Class 9.5 or 12.5 HMA from a RIDOT approved plant shall be used for the temporary pavement patch. Temporary patches shall be in place for a maximum four (4) months from the initial date of the work prior to permanent trench restoration.

15) Any use of steel road plates within the State Right-of-Way (ROW) shall require prior RIDOT approval in writing. If approved by RIDOT, the use of steel road plates shall conform with R.I.G.L. 24-8-45 – Steel Plate Use and all the following requirements:

a. Steel plates shall withstand traffic loading without movement.

b. When two (2) or more steel plates are used, the plates shall be welded or fastened in a manner to eliminate vertical movement.

c. All steel plates shall be marked with the utility company or contractor name and contact information.

d. Steel plates shall be installed to extend a minimum of 18 inches beyond the edge of any excavation.

a. Temporary paving with hot mix asphalt or installation of other suitably manufactured equipment shall be used to feather the edges of the plates to form a wedged taper to cover the edges of the steel plates.

a. Each corner of the steel plates shall be marked with durable and highly reflective orange pavement parking tape no less than 4 inches in width.

g. The exposed surface area of the steel plates shall be slip resistant (non-skid).

h. All signage advising motorists of the steel plates shall be in compliance with the current edition of the Manual on Uniform Traffic Control Devices.

i. All steel plates must be removed from the roadway between October 31st and April 15th and prior to any winter storm outside of this time period unless otherwise approved by RIDOT in writing.

16) Stormwater Impact Conditions:



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a. All storm drain inlets and catch basins must have sediment control devices installed in order to prevent soil and debris from entering the drainage system prior to and throughout the life of the project. Storm drain protection must be cleaned as necessary and be removed at the end of the project and properly disposed of offsite.

b. Perimeter controls and construction entrances must be installed for any staging areas utilized as part of the operation.

c. Dewatering or discharging directly or indirectly into a storm drain is prohibited.

d. The contractor is responsible for keeping the roadway clean at all times throughout all operations within the State Highway Right-of-Way. This includes mitigation of construction runoff and regular sweeping of the roadway.

17) Any utility facility to be replaced within the State Highway Right-of-Way shall be either removed, crushed in place and buried, or filled with grout and capped.

18) All utilities must maintain a minimum eighteen (18) inch vertical and horizontal separation spacing from all RIDOT facilities, edge-to-edge (drainage pipes, catch basins and inlets, manholes, foundations, electrical conduit, etc.) within the State Highway Right-of-Way.

PERMANENT PAVEMENT STRUCTURE TRENCH RESTORATION (PERMIT CONDITIONS 19 THROUGH 29)

19) All trenches and/or excavations shall be re-sawcut, full depth through the pavement, one (1) foot minimum cutbacks from all vertical edges of the initial utility work trenches and/or excavations prior to installing permanent pavement. Trenches and/or excavations shall be rectangular in shape and orientated as to reduce the exposure of the joints to the wheel paths of passing traffic. Saw cuts shall not result in any overcut corners. Any damaged areas from saw blades outside the bounds of the trenches and/or excavations shall be restored as part of the final pavement restoration.

20) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to installing permanent pavement.

21) At a minimum, the restored pavement thickness shall match the existing depth of the roadway, or equal six (6) inches, whichever is greater, over a minimum twelve (12) inches of compacted gravel subbase trimmed and fine graded. Class 19 HMA base course shall be used from a RIDOT approved asphalt plant and shall be installed in accordance with the RIDOT Standard Specifications. Further requirements for restored pavement thickness and Class(es) HMA to be used may be specified in more detail as additional permit specific conditions.

22) It is the responsibility of the Permittee to determine the presence of concrete road base at the location of their operation. If concrete base is present in the roadway, restoration shall include Class XX concrete base in kind thickness, 24-inch #5 epoxy coated bars drilled and doweled into the



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existing concrete base 18 inches on center, utilizing either grout or epoxy, all in accordance with the RIDOT Standard Specifications, over a minimum twelve (12) inches of compacted gravel subbase.

23) The full depth permanent pavement structure trench shall be in place for a minimum thirty (30) calendar days, and for a maximum one (1) year, prior to final pavement restoration.

24) Impacted and/or damaged concrete sidewalk shall be restored/replaced with new, full panels in accordance with RI Standard Details 43.1.0, 43.3.0, 43.3.1 and any other applicable RI Standard Details for concrete sidewalk.

25) Impacted and/or damaged concrete driveways shall be restored/replaced with new, full panels in accordance with RI Standard Detail 43.5.0 and any other applicable RI Standard Details for concrete driveways.

26) Impacted and/or damaged asphalt sidewalk shall be restored/replaced full width in accordance with RI Standard Detail 43.2.0 using Class 4.75 or 9.5 HMA.

27) Impacted and/or damaged asphalt driveways shall be restored/replaced full width using Class 9.5 HMA.

28) Impacted and/or damaged curbing shall be replaced in kind and reset to original grade. The curbing shall be installed in accordance with RI Standard Detail 7.6.0.

29) Impacted and/or damaged landscaped areas shall be loamed and seeded in accordance with Section L (Landscaping) of the RIDOT Standard Specifications.

FINAL PAVEMENT RESTORATION (PERMIT CONDITIONS 30 THROUGH 37)

30) All structures within the limits of restoration shall be adjusted to final grade and pitch of the roadway prior to final pavement restoration. It is the responsibility of the Permittee and utility owner to coordinate with other utility structure owners in order to get all structures adjusted to final grade.

31) Final pavement restoration of the roadway shall include two (2) inches of micromilling and resurfacing all impacted travel lanes and/or shoulders for their full width using Modified Class 12.5 HMA Surface Course from a RIDOT approved asphalt plant and in accordance with the RIDOT Standard Specifications. Impacted travel lanes and/or shoulders are the roadway pavement areas that the utility work trenches and/or excavations are located within. In addition to the roadway pavement areas impacted by the utility work trenches and/or excavations, this final pavement restoration shall also apply to all travel lanes and/or shoulders impacted by either lateral or longitudinal utility work trenches and/or excavations when the trenches and/or excavations are less than or equal to five hundred (500) feet longitudinal from one another, including the sections between trenches and/or excavations, so that no section(s) of roadway pavement less than or equal to five hundred (500) feet shall remain unpaved. This will provide a continuous final pavement between the utility work trenches and/or excavations. The final pavement restoration area shall also include any areas, travel lanes and/or shoulders damaged either directly or indirectly by the



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permit work. RIDOT reserves the right to revise or extend the final pavement restoration limits upon completion of the work. Further requirements for more stringent final pavement restoration (if applicable) may be specified in more detail as additional permit specific conditions.

32) Asphalt emulsion tack coat shall be applied to all vertical and horizontal pavement surfaces prior to final resurfacing.

33) Temporary waterborne pavement markings shall be installed in accordance with Condition #9. Permanent pavement markings shall be restored in the same locations as originally located with epoxy resin, in accordance with the RIDOT Standard Specifications. Permanent epoxy resin pavement markings shall be placed no sooner than two (2) weeks but no later than four (4) weeks from the completion of the paving operations.

34) Any property damage caused by construction associated with this permit shall be repaired and/or replaced to the satisfaction of the State (RIDOT).

35) Spot checks for conformance with this permit may include compaction testing, pavement coring, ground penetrating radar, etc. If RIDOT deems any of the utility work non-conforming, insufficient, defective or incomplete, it is the responsibility of the Permittee to complete the repairs to the satisfaction of the State (RIDOT).

36) The Permittee shall be responsible for maintaining the final restoration work required under this permit for a minimum period of five (5) years, starting from the date of acceptance of all work.

37) The Permittee agrees that:

a. No Person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination in the use of State Property.

b. In the furnishing of services on State Property, no person shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination.

c. The applicant shall use State Property in compliance with all other requirements imposed by or pursuant to 49 C.F.R. Part 21, nondiscrimination in Federally-assisted programs of the Department of Transportation effectuation of Title VI of the Civil Rights Act of 1964 (The Regulations) and as the Regulations may be amended.



Department of Transportation
Division of Highway and Bridge Maintenance
360 Lincoln Avenue
Warwick, RI 02888

Date _____

**NOTICE OF COMPLETION OF UTILITY WORK
REQUEST FOR RELEASE OF PERMIT AND/OR BOND**

This letter serves as notification that the work required under Utility Permit No. 202310014 in the city/town of Warwick has been completed in conformance with the permit requirements and is ready for final inspection by the Department of Transportation.

Permit Holder

NOTE: FAILURE TO REQUEST A FINAL INSPECTION WILL RESULT IN THE NON-ISSUANCE OF APPLICATIONS FILED IN THE NEXT CALENDAR YEAR.

APPENDIX B

Water Service Photos

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City of Warwick – Lead Service Replacement

Sheet C-1





☀️ 177°S (T) ▲ 71ft



110 Post Road

20 Jul 2023, 10:03:30 AM



☀ 168°S (T) ▲ 66ft



90 Post Road

20 Jul 2023, 10:05:39 AM



☀ 147°SE (T) ▲ 43ft



78 Post Road

20 Jul 2023, 10:08:45 AM



47/49 Post Road



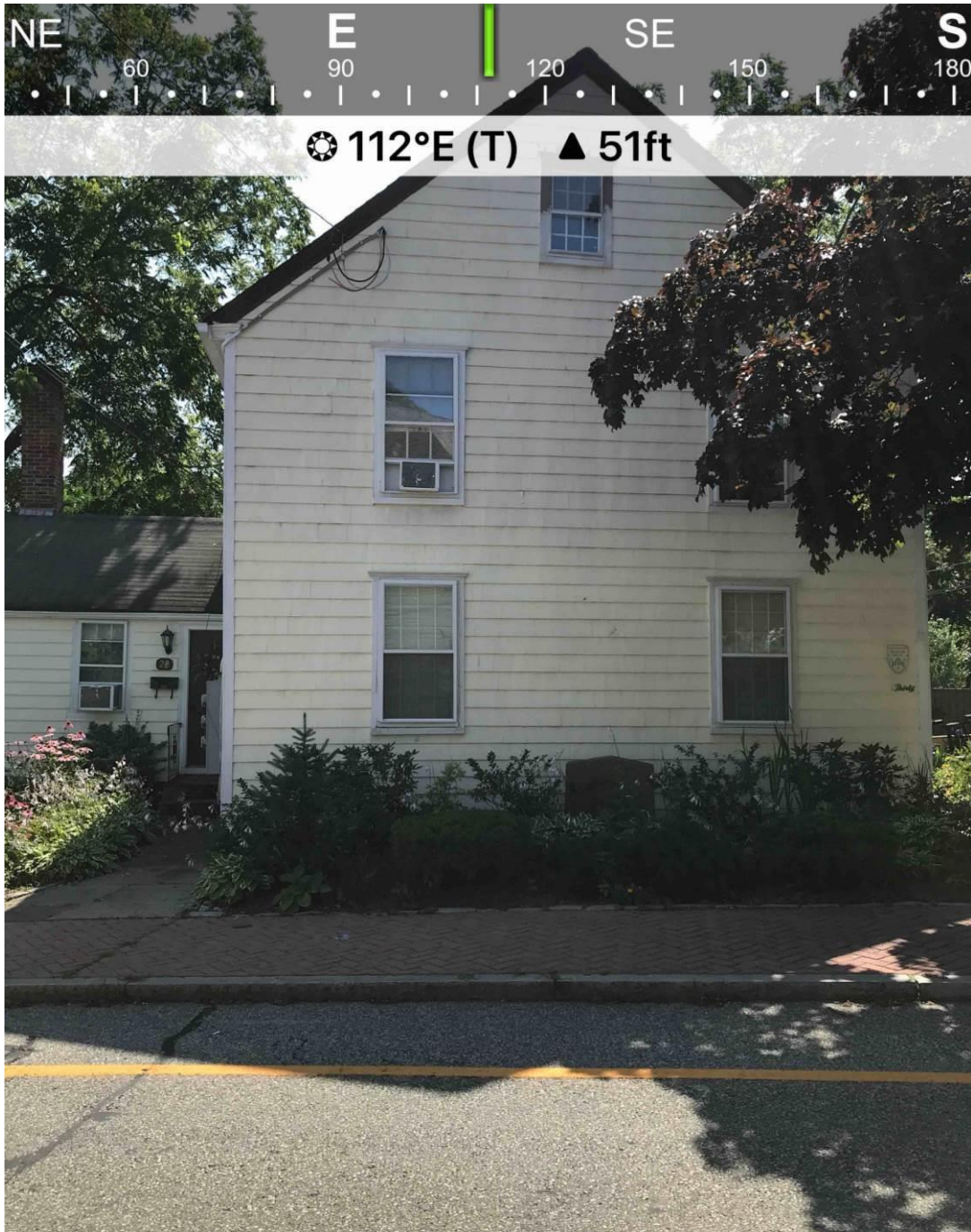




36 Post Road



27/29 Post Road



30/32 Post Road



23-25 Post Road

Sheet C-2



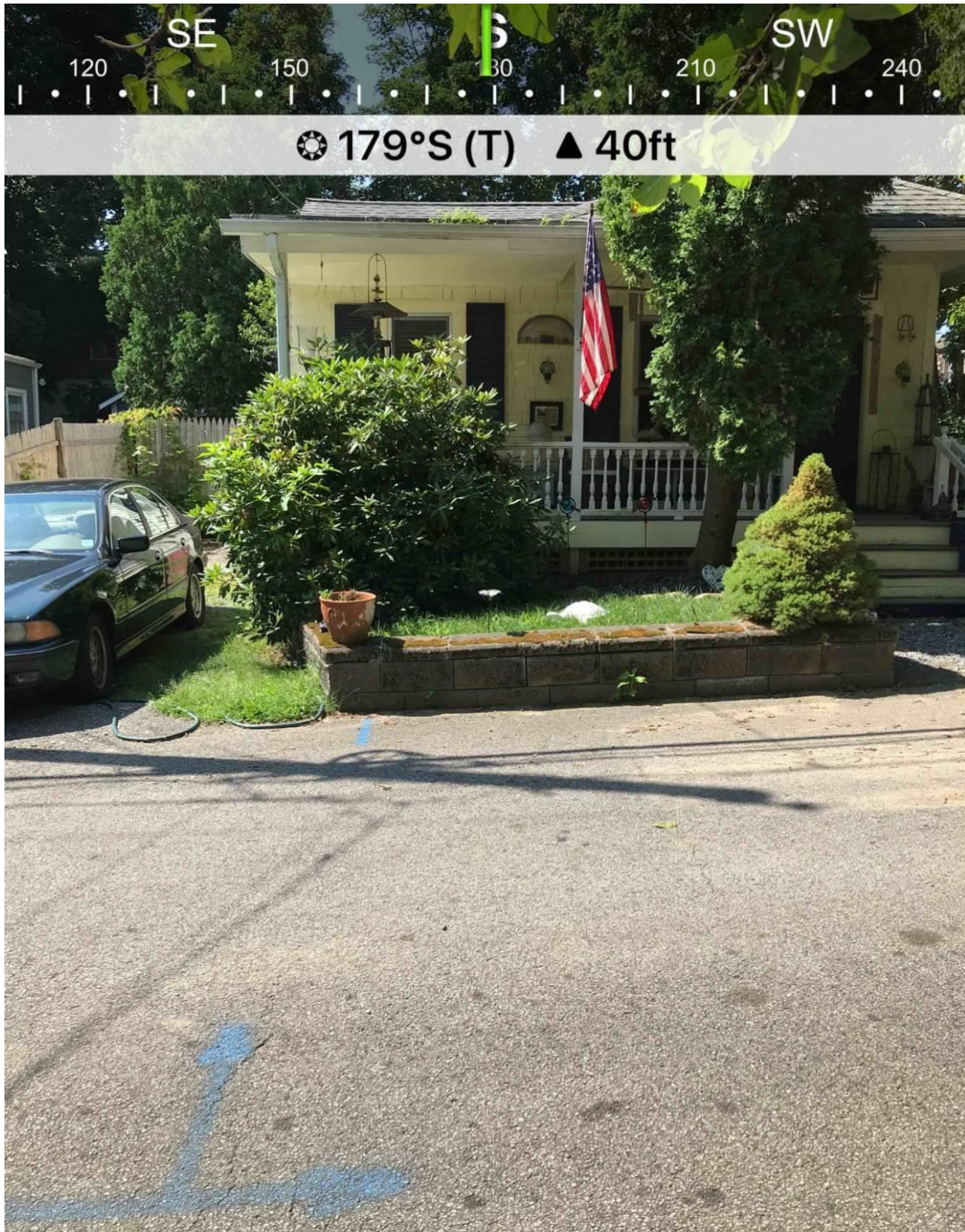


☀ 5°N (T) ▲ 44ft



43 East View

20 Jul 2023, 10:32:32 AM



40 East View



☀ 178°S (T) ▲ 42ft



73 Narraganset

20 Jul 2023, 10:34:38 AM













☀ 263°W (T) ▲ 57ft



21 Fair

20 Jul 2023, 10:50:52 AM





39 Fair

20 Jul 2023, 10:54:12 AM



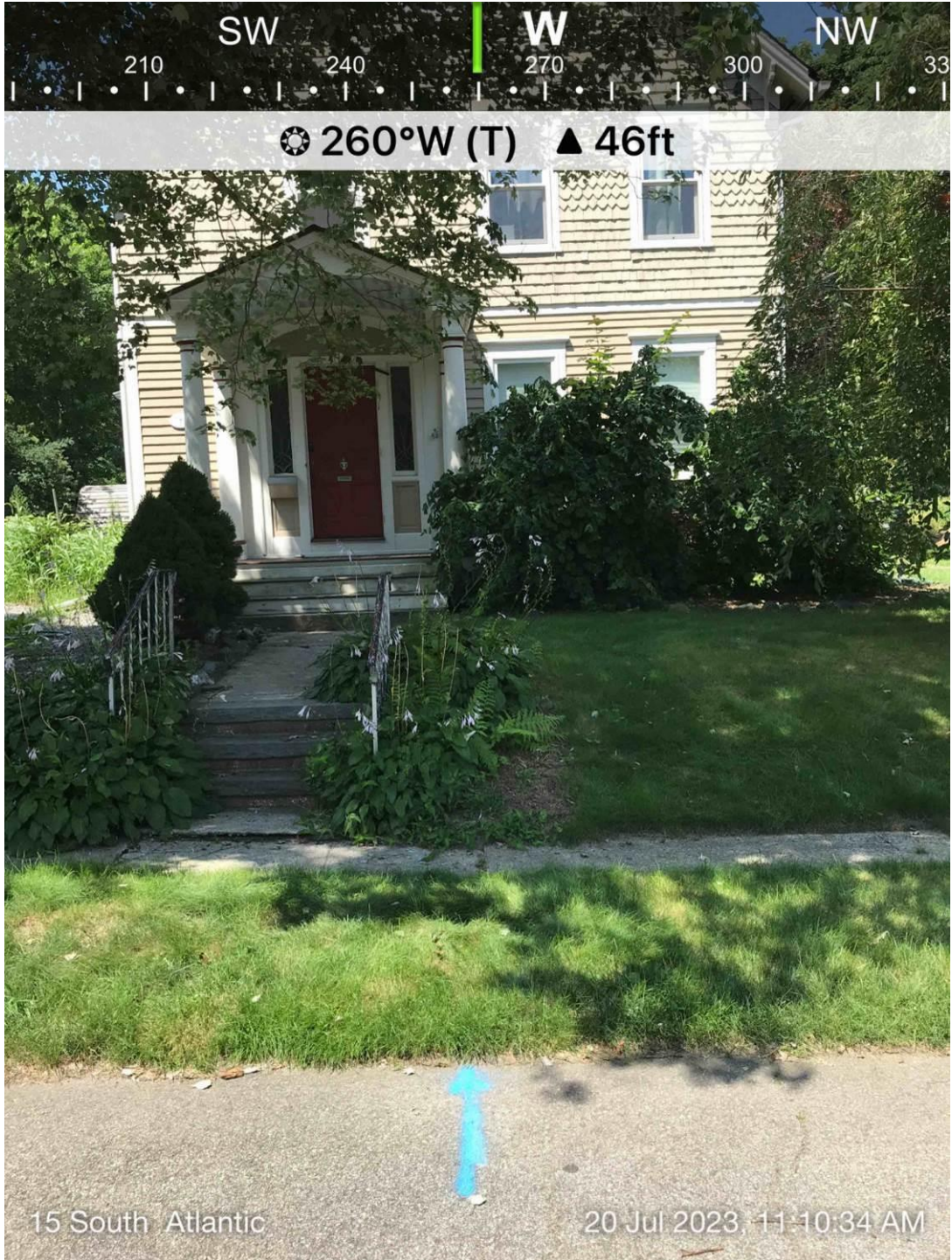
91°E (T) ▲ 48ft

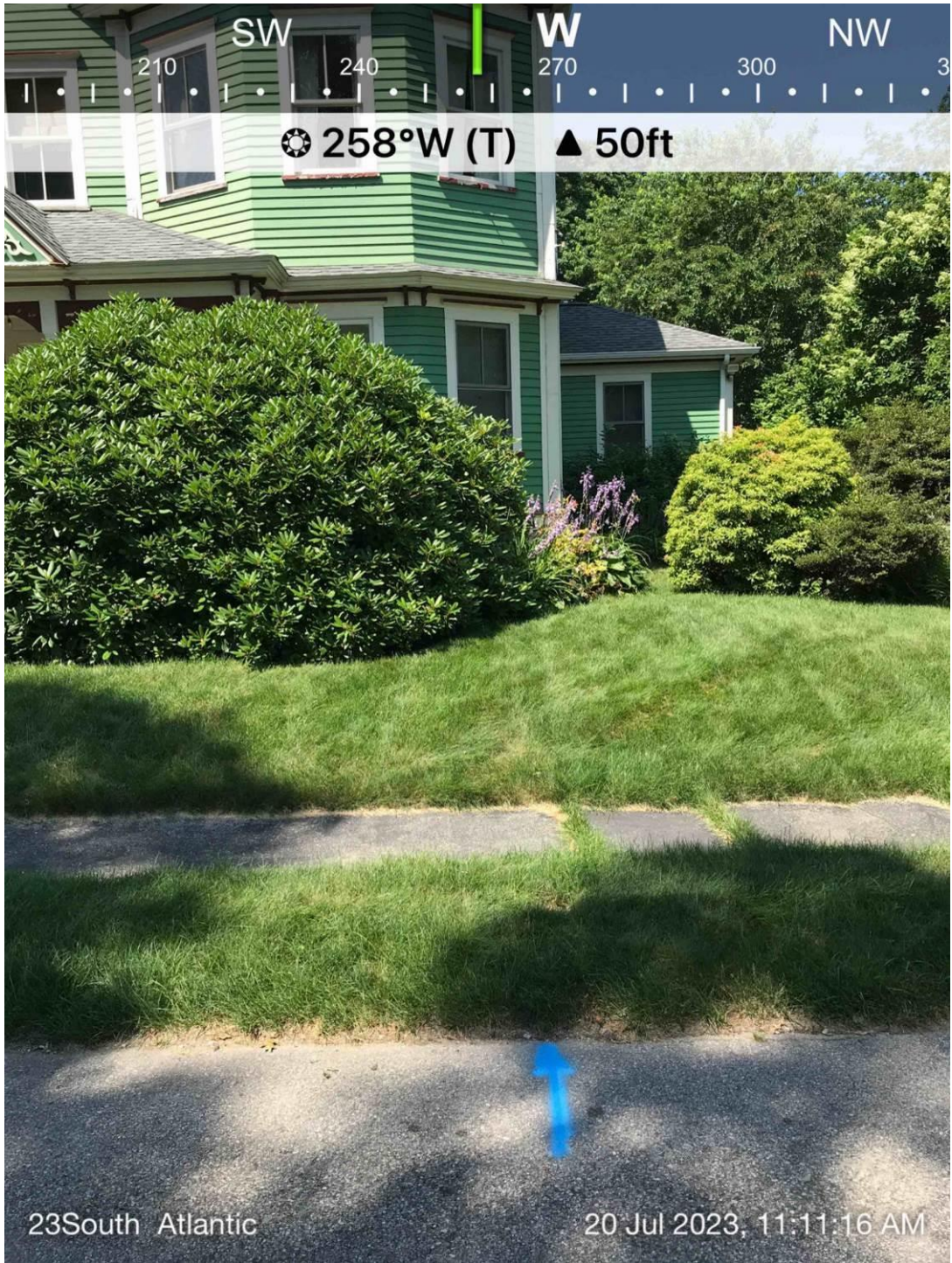


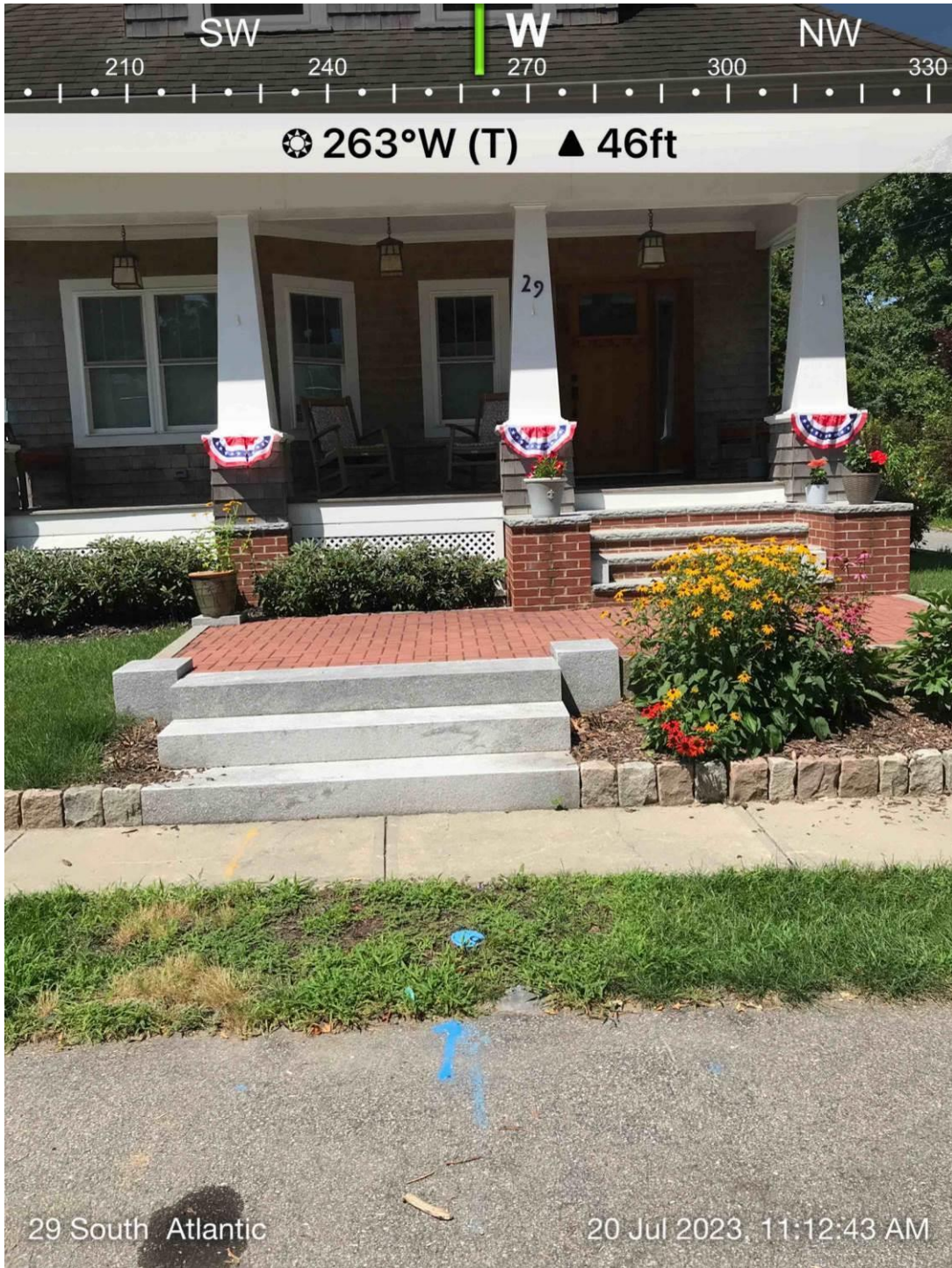
42 Fair

20 Jul 2023, 10:54:41 AM

Sheet C-3









☀ 83°E (T) ▲ 41ft



42 South Atlantic

20 Jul 2023, 11:07:46 AM



☀ 258°W (T) ▲ 43ft



43 South Atlantic

20 Jul 2023, 11:08:23 AM

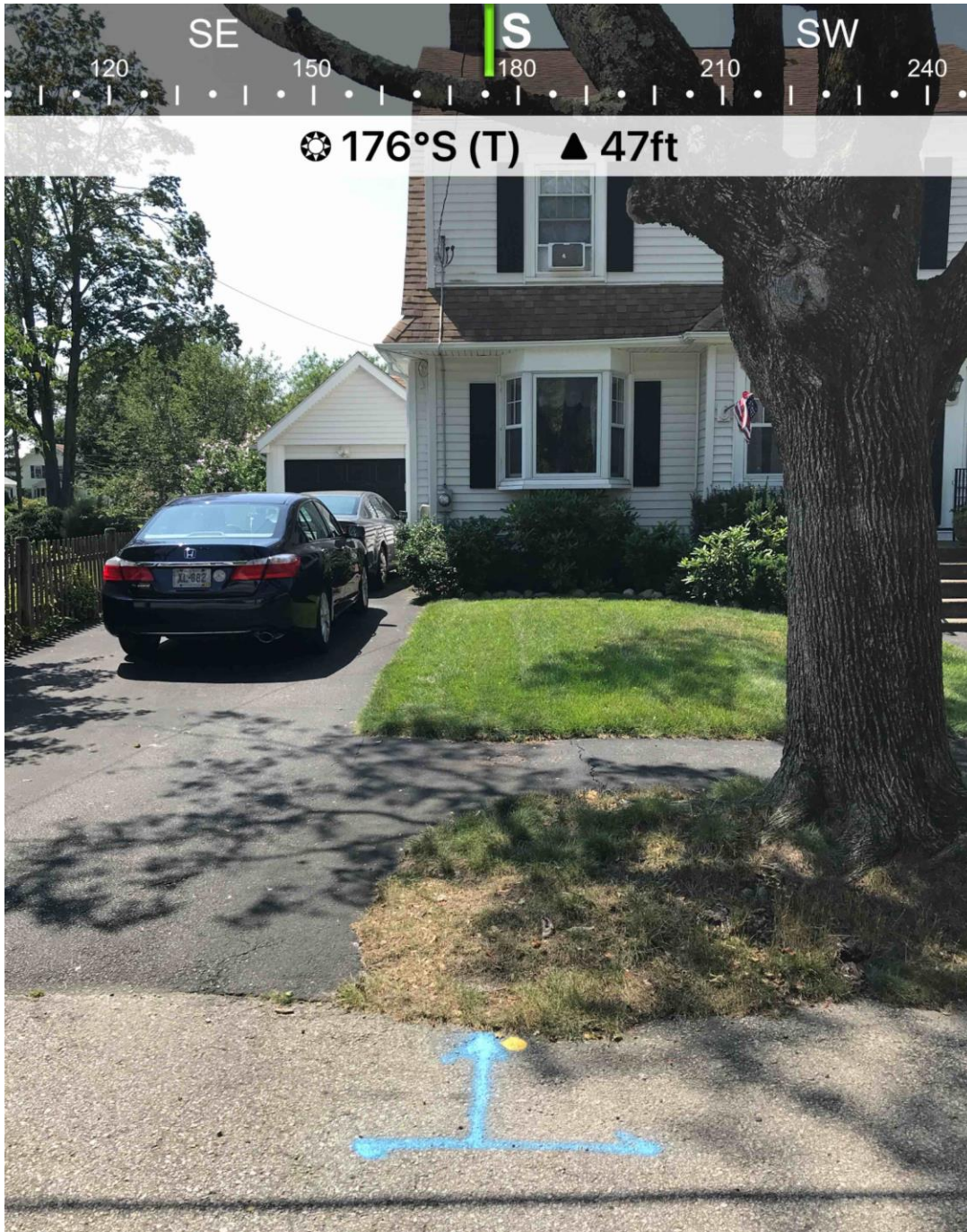












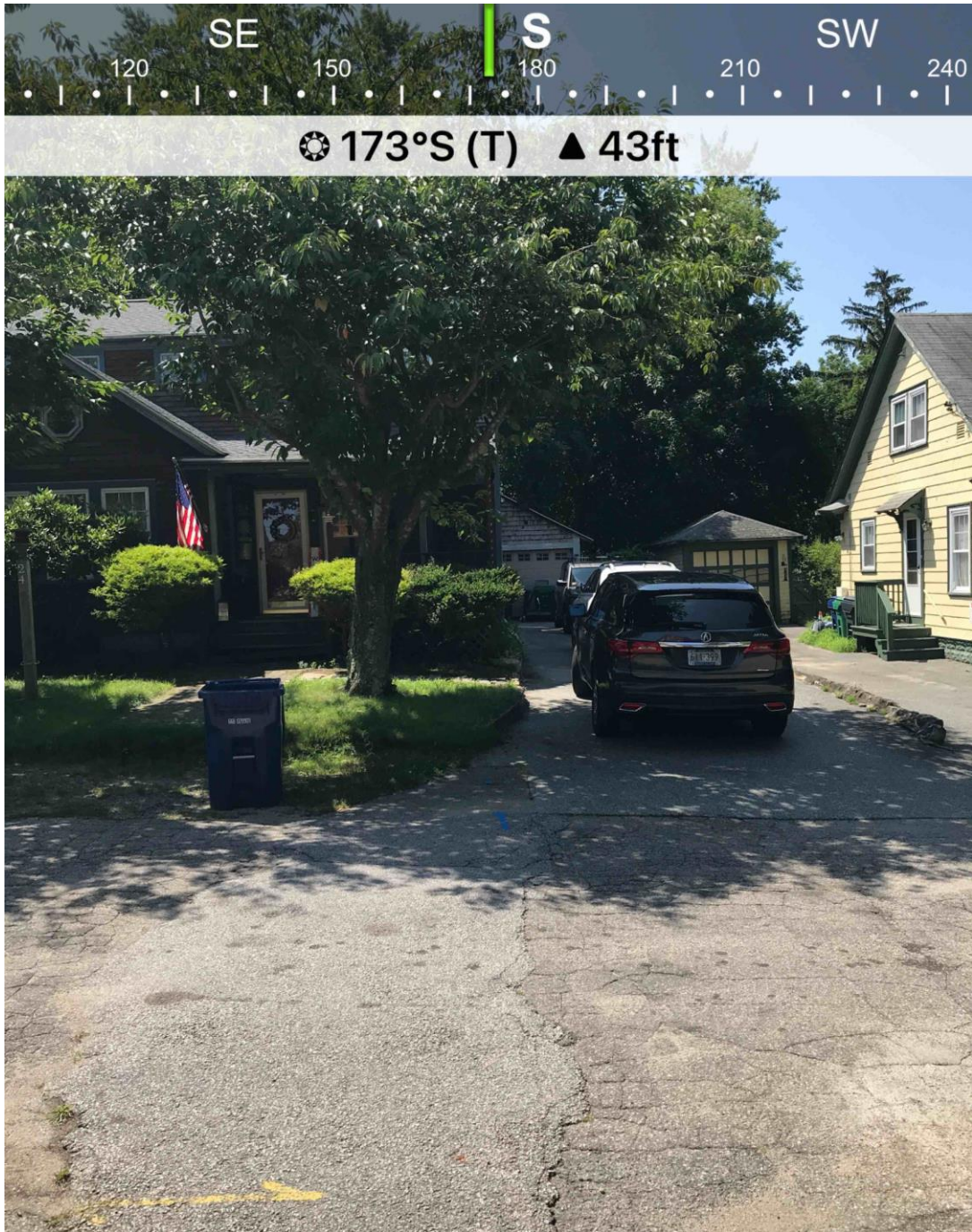
8 Atlantic Ave



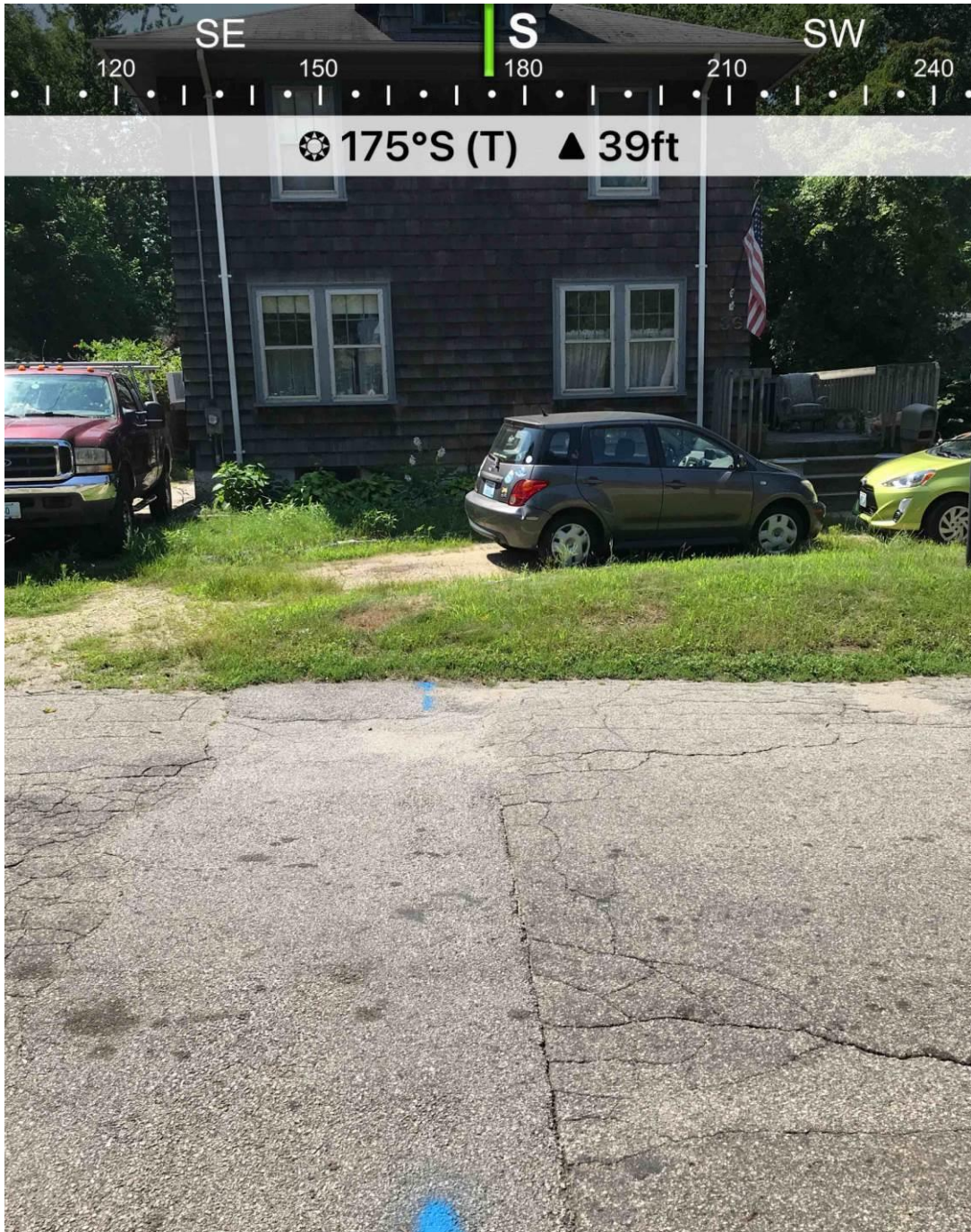
Sheet C-4



19 North Fair St



24 North Fair St



36 North Fair St



59 North Fair St



☀ 96°E (T) ▲ 48ft



6 Lawrence Ave

20 Jul 2023 11:36:38 AM





☀ 257°W (T) ▲ 45ft



15 Lawrence Ave

20 Jul 2023, 11:34:37 AM



☀ 94°E (T) ▲ 41ft



22 Lawrence Ave

20 Jul 2023, 11:33:40 AM

Sheet C-5













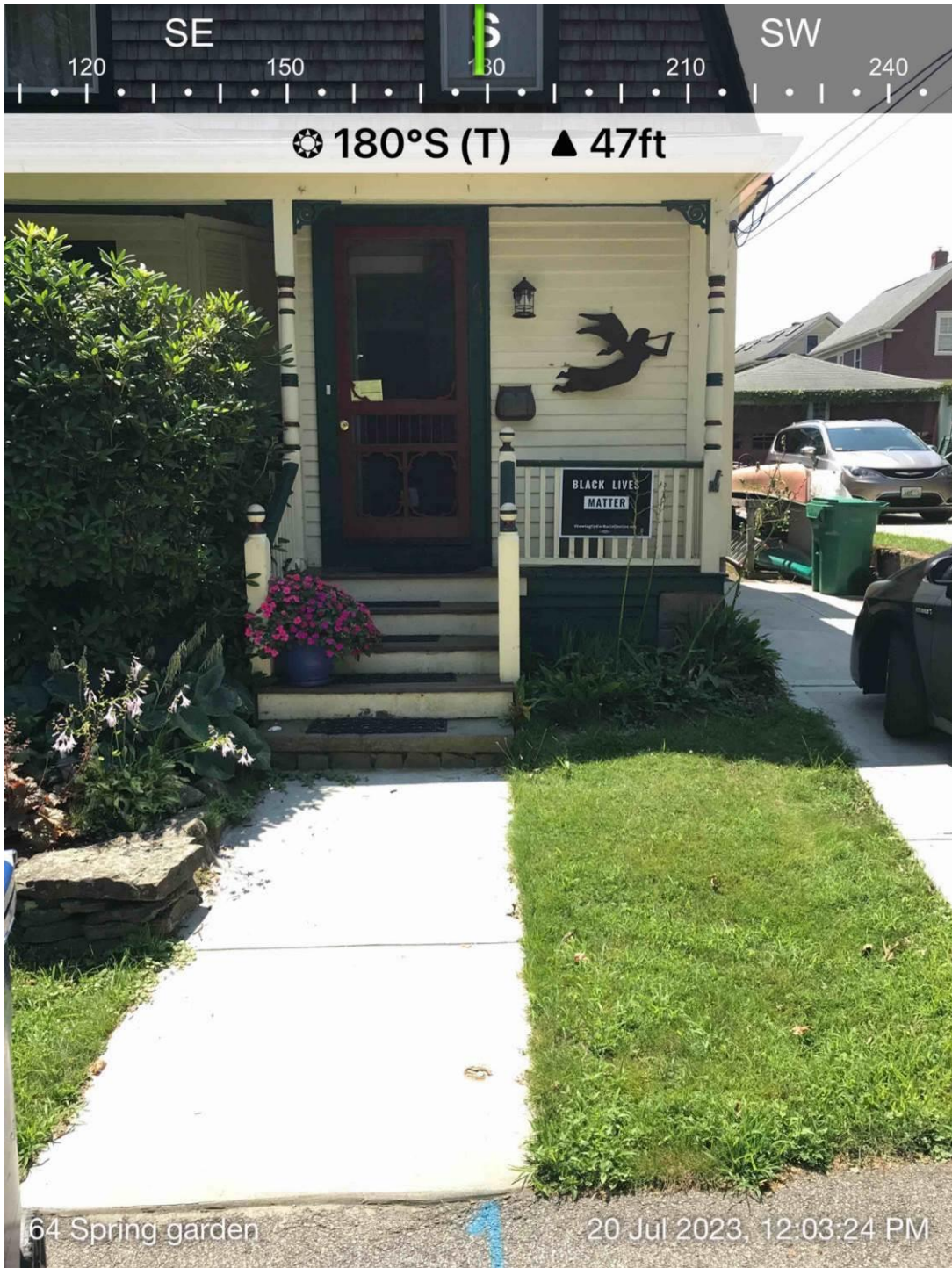






57 Spring garden

20 Jul 2023, 12:04:09 PM



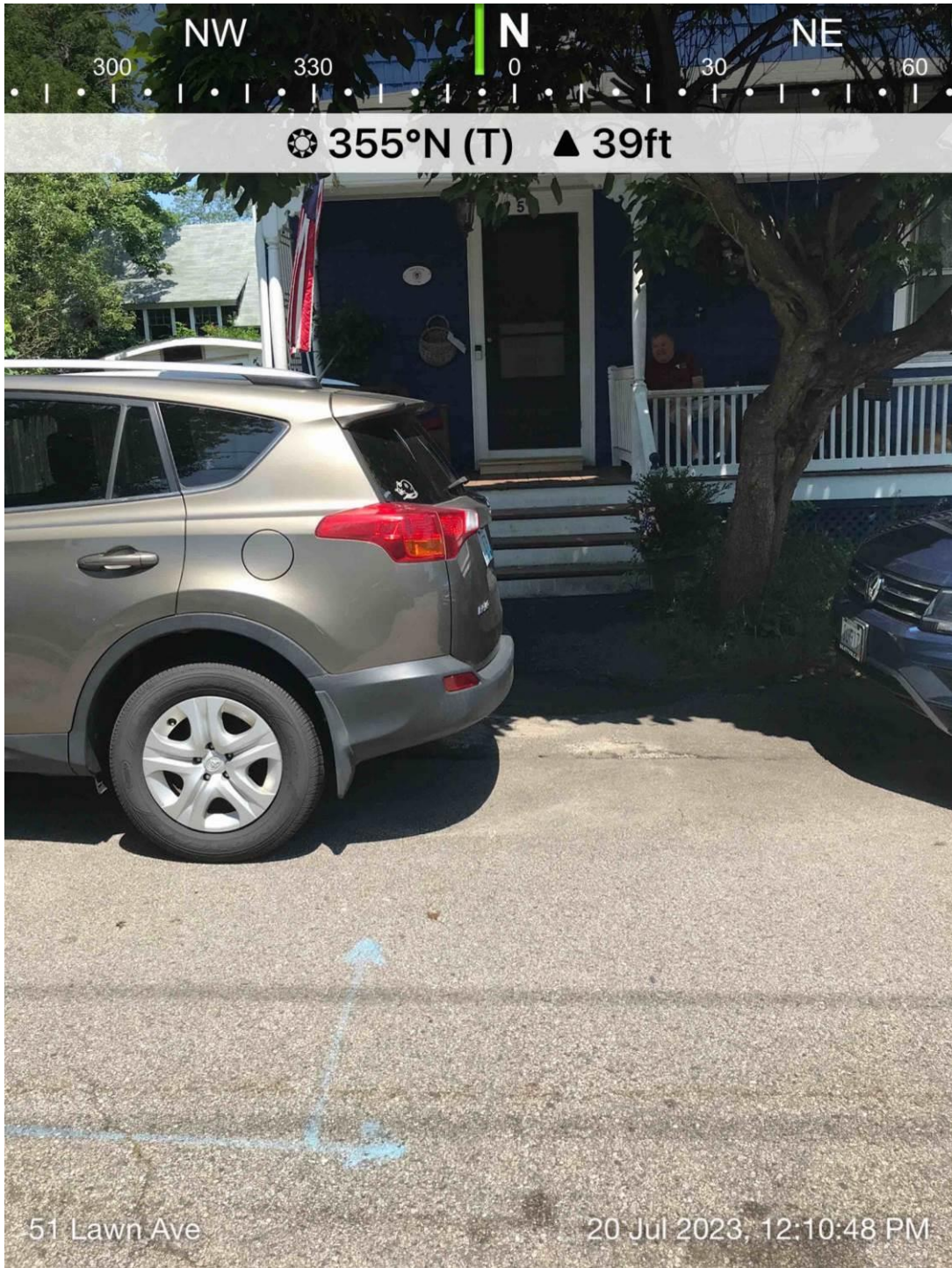


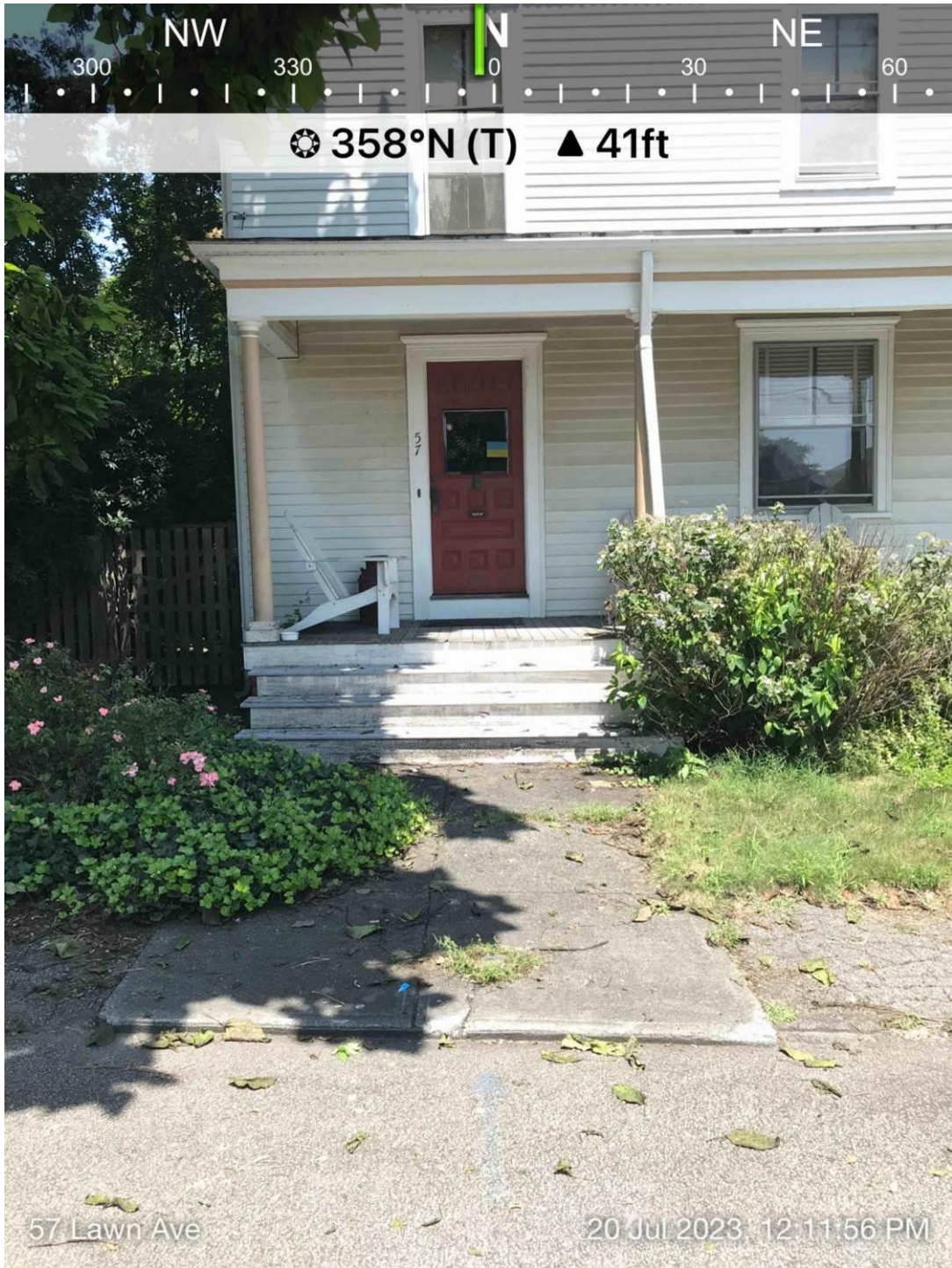




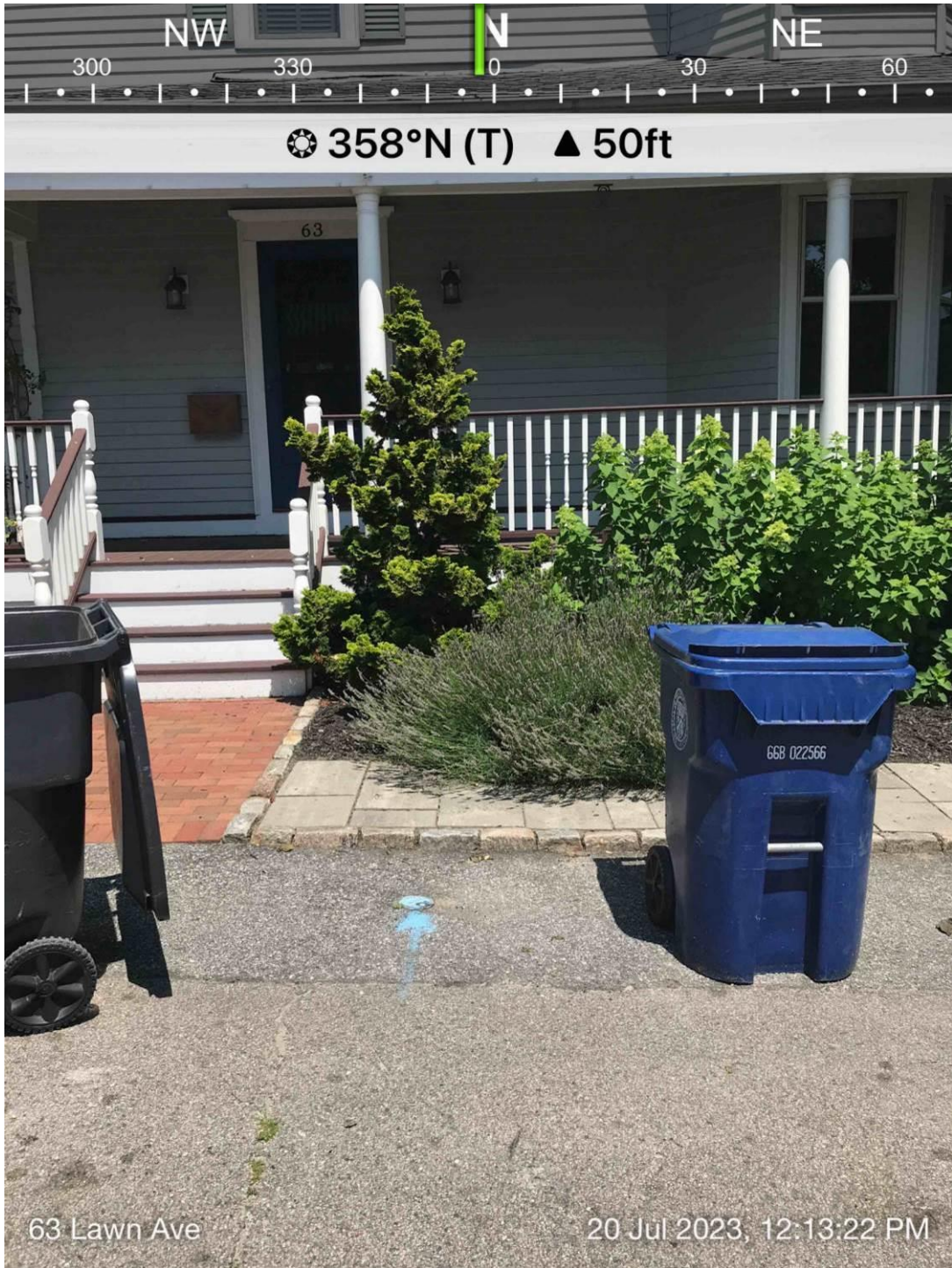
Sheet C-6





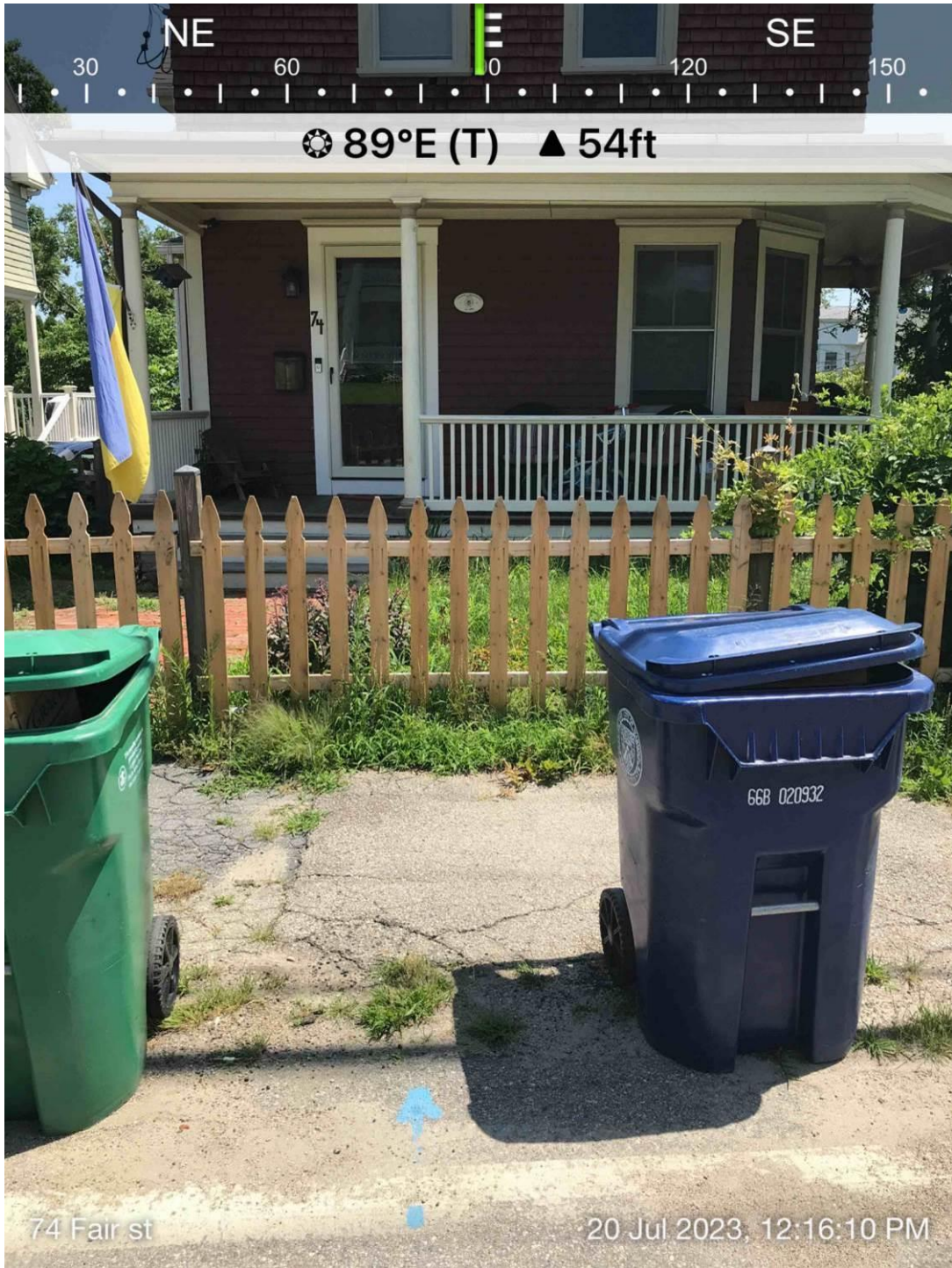












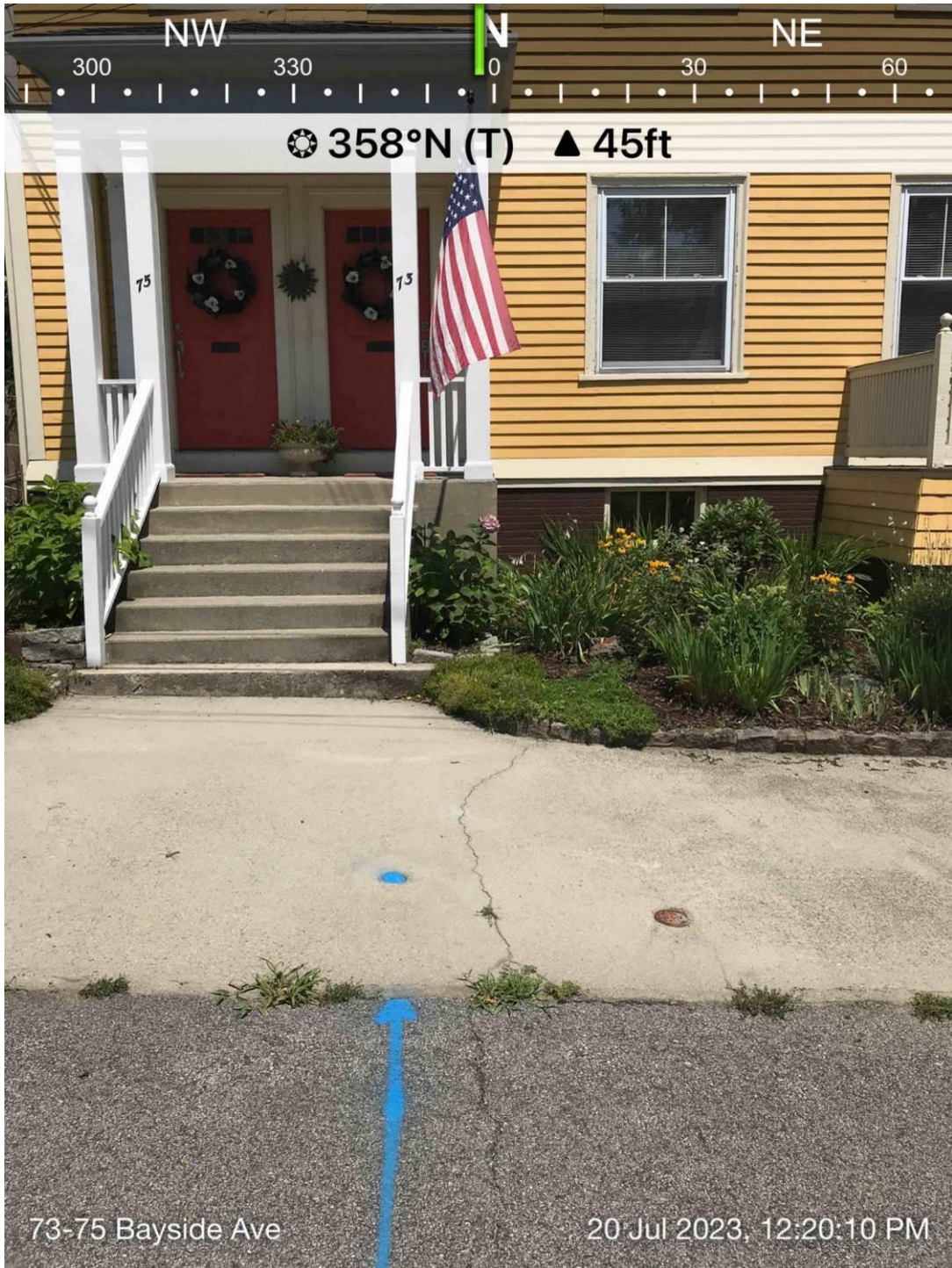
139°SE (T) ▲ 41ft

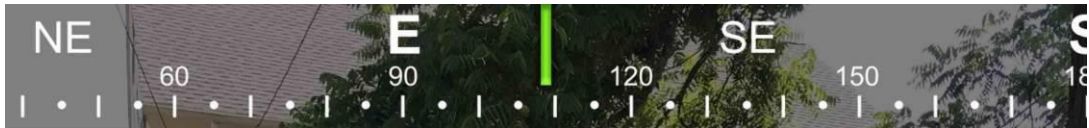


46 Bayside Ave

25 Jul 2023, 12:59:32 PM







☀ 109°E (T) ▲ 49ft



76 Bayside Ave

20 Jul 2023, 12:19:00 PM

Sheet C-7





☀ 87°E (T) ▲ 36ft



162 Narraganset parkway

20 Jul 2023, 12:47:26 PM



☉ 356°N (T) ▲ 32ft



168 Narraganset parkway

20 Jul 2023 12:45:03 PM

Sheet C-8



☀ 176°S (T) ▲ 63ft



26 Benedict Road

20 Jul 2023 2:25:29 PM



☀ 179°S (T) ▲ 58ft

30 Benedict Road

20 Jul 2023, 2:26:09 PM

☀ 3°N (T) ▲ 45ft



117 South Atlantic

20 Jul 2023, 2:28:00 PM

117 Fair St Warwick RI

☉ 314°NW (T) ▲ 47ft



117 Fair st

20 Jul 2023, 2:17:56 PM

☀ 178°S (T) ▲ 55ft



130 Fair st

20 Jul 2023, 2:20:15 PM

☀ 305°NW (T) ▲ 60ft



139 Fair st

20 Jul 2023, 2:09:21 PM

161 Fair St Warwick RI

☉ 294°NW (T) ▲ 75ft



161 Fair St

20 Jul 2023, 2:31:06 PM

Sheet C-9

9 Rosegarden St Warwick RI

☀ 4°N (T) ▲ 47ft



9 Rose Garden

20 Jul 2023, 2:35:10 PM

☉ 311°NW (T) ▲ 52ft



13 Rose Garden

20 Jul 2023, 2:36:16 PM



29 Rosegarden St Warwick RI

☀ 4°N (T) ▲ 49ft



29 Rose Garden

20 Jul 2023, 2:38:23 PM

33 Rosegarden St Warwick RI

☀ 5°N (T) ▲ 52ft



33 Rose Garden

20 Jul 2023, 2:39:00 PM

☀ 182°S (T) ▲ 50ft



34 Rose Garden

20 Jul 2023, 2:39:48 PM

38 Rosegarden St Warwick RI

☀ 183°S (T) ▲ 50ft



38 Rose Garden

20 Jul 2023, 2:41:07 PM

39 Rosegarden St Warwick RI

☀ 6°N (T) ▲ 49ft



39 Rose Garden

20 Jul 2023, 2:40:35 PM

64 Rosegarden St Warwick RI

☀ 183°S (T) ▲ 68ft



64 Rose Garden

20 Jul 2023, 2:43:11 PM

67 Rosegarden St Warwick RI

☀ 2°N (T) ▲ 66ft



67 Rose Garden

20 Jul 2023, 2:43:54 PM

☀ 185°S (T) ▲ 57ft



76 Rose Garden

20 Jul 2023, 2:46:01 PM

77 Rosegarden St Warwick RI

☀ 4°N (T) ▲ 59ft



77 Rose Garden

20 Jul 2023, 2:44:55 PM

☀ 3°N (T) ▲ 55ft



97 Rose Garden

20 Jul 2023, 2:47:12 PM

195 Fair St Warwick RI

☉ 296°NW (T) ▲ 41ft



195 Fair St

20 Jul 2023, 2:34:01 PM

Sheet C-10



☉ 354°N (T) ▲ 43ft



15 Manchester st

20 Jul 2023, 12:54:18 PM

28 Manchester St Warwick RI

☀ 178°S (T) ▲ 50ft



28 Manchester st

20 Jul 2023, 12:55:19 PM

231 Fair St Warwick RI

☀ 285°W (T) ▲ 58ft





☉ 279°W (T) ▲ 60ft

239

239 Fair St

20 Jul 2023, 2:58:30 PM

☉ 281°W (T) ▲ 64ft



245 Fair St

20 Jul 2023, 2:59:20 PM

261 Fair St Warwick RI

☀ 278°W (T) ▲ 72ft



261 Fair St

20 Jul 2023, 3:01:04 PM

7 Adams St Warwick RI

☉ 329°NW (T) ▲ 54ft



7 Adams st

20 Jul 2023, 2:54:33 PM

14 Adams St Warwick RI

☀ 185°S (T) ▲ 54ft



Sheet C-11



☀ 188°S (T) ▲ 61ft



276 Fair St

20 Jul 2023, 3:03:45 PM

25 Hartford Pl Warwick RI

☉ 337°NW (T) ▲ 61ft



25 Hartford Place

20 Jul 2023, 3:10:43 PM

32 Hartford Pl Warwick RI

☀ 184°S (T) ▲ 69ft

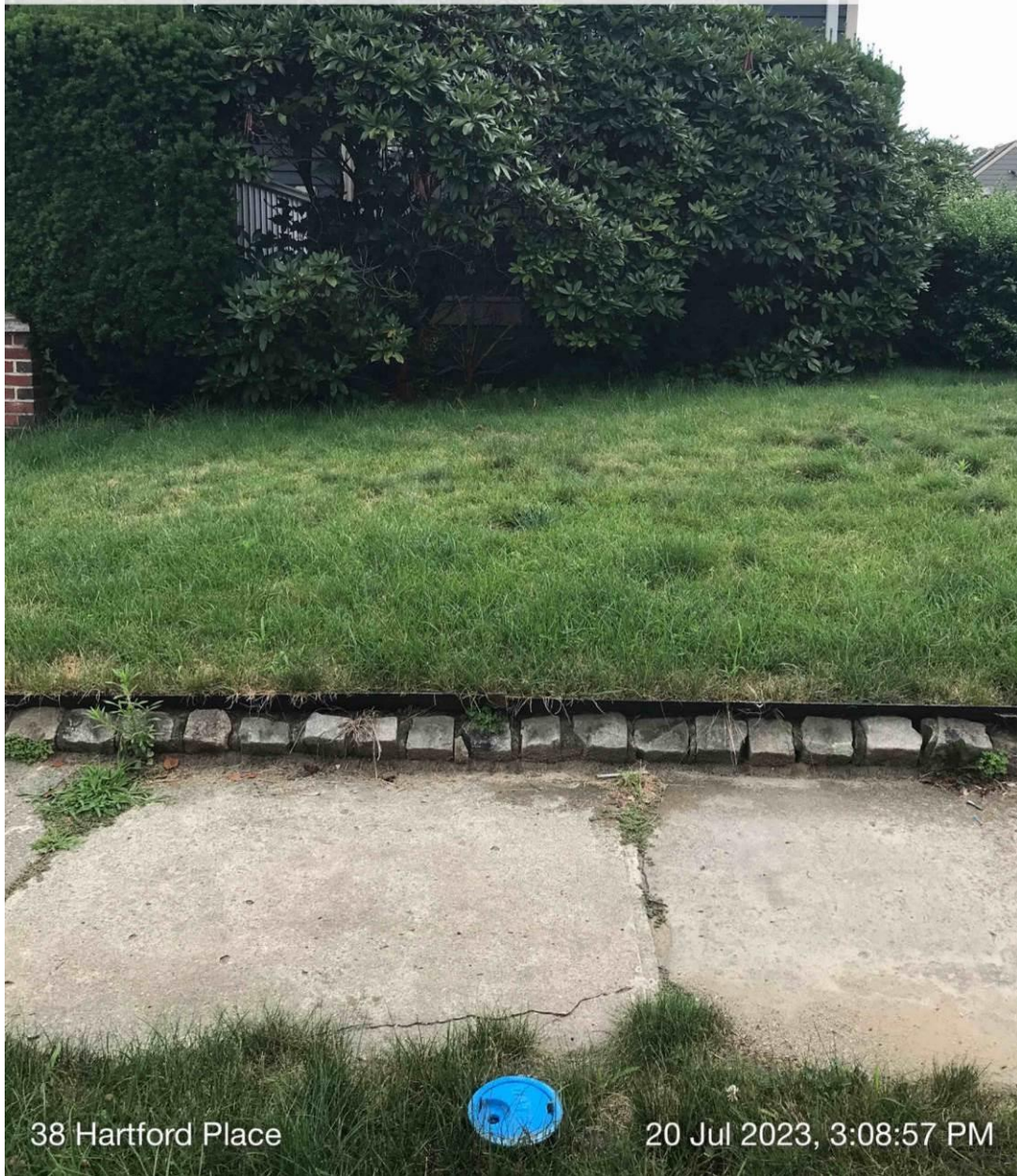


32 Hartford Place

20 Jul 2023, 3:09:45 PM

38 Hartford Pl Warwick RI

☀ 181°S (T) ▲ 65ft



38 Hartford Place

20 Jul 2023, 3:08:57 PM

☀ 185°S (T) ▲ 65ft



40 Hartford Place

20 Jul 2023 3:08:05 PM



47 Hartford Pl Warwick RI

☀ 5°N (T) ▲ 66ft



47 Hartford Place

20 Jul 2023, 3:05:47 PM

☀ 190°S (T) ▲ 64ft



50 Hartford Place

20 Jul 2023, 3:04:49 PM

142 Canonchet Ave Warwick RI

☀ 183°S (T) ▲ 62ft



142 Canonchet

20 Jul 2023, 3:45:42 PM

148 Canonchet Ave Warwick RI

☀ 186°S (T) ▲ 67ft



148 Canonchet

20 Jul 2023, 3:47:02 PM

152 Canonchet Ave Warwick RI

☀ 185°S (T) ▲ 80ft



152 Canonchet

20 Jul 2023, 3:47:39 PM



164 Canonchet Ave Warwick RI

☀ 186°S (T) ▲ 63ft



☀ 174°S (T) ▲ 39ft



174 Canonchet

20 Jul 2023, 3:50:13 PM



☀ 187°S (T) ▲ 42ft

178 Canonchet

20 Jul 2023, 3:50:36 PM

Sheet C-12

68 Canonchet Ave Warwick RI

☀ 166°S (T) ▲ 58ft



68 Canonchet Ave

20 Jul 2023, 3:20:47 PM

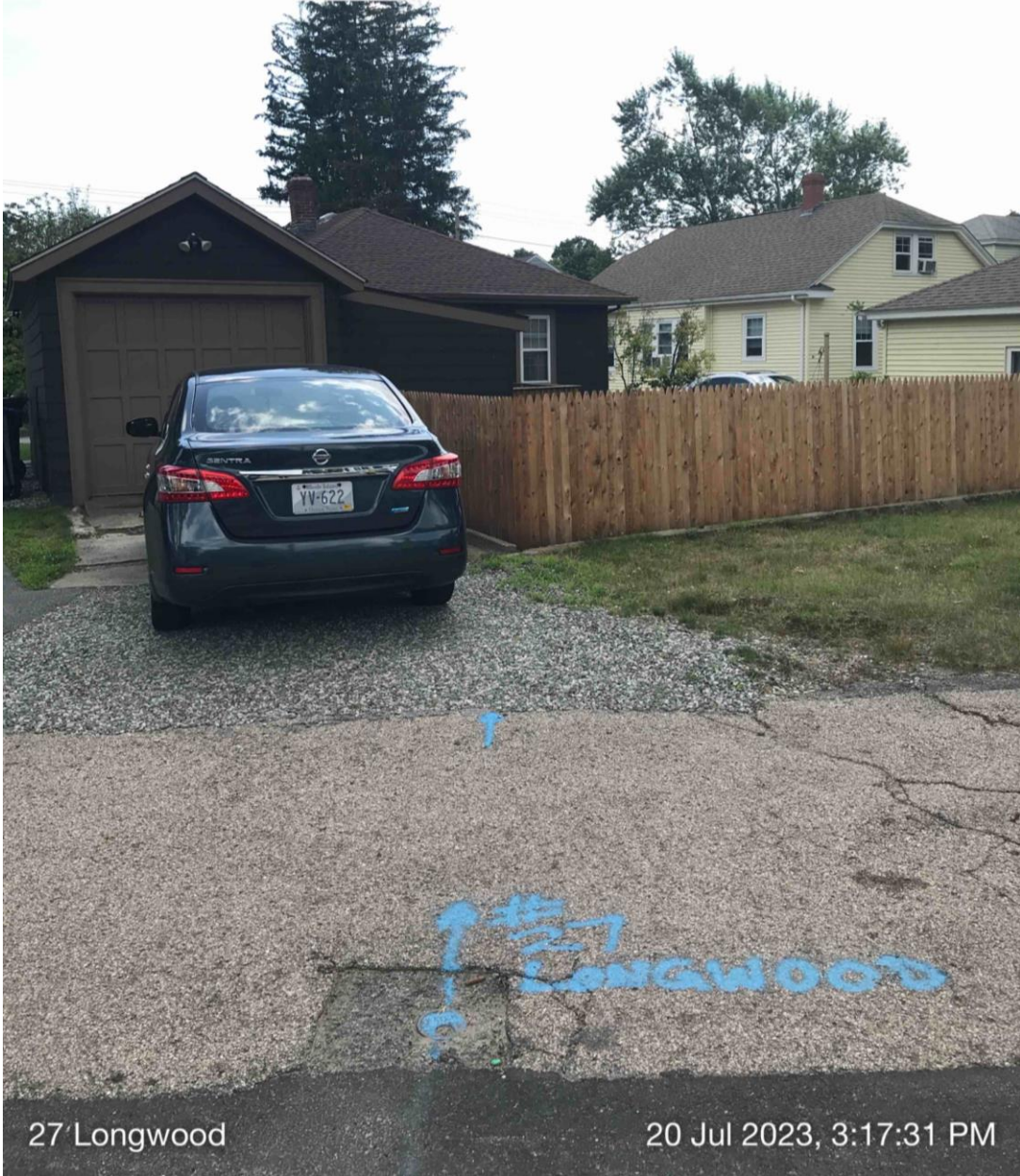
☀ 7°N (T) ▲ 49ft



99 Canonchet Ave

20 Jul 2023, 3:16:49 PM

☀ 182°S (T) ▲ 59ft



27 Longwood

20 Jul 2023, 3:17:31 PM

☉ 160°S (T) ▲ 44ft



291 Narraganset

20 Jul 2023, 3:22:45 PM

30 Longwood Ave Warwick RI

☀ 153°SE (T) ▲ 49ft



30 Longwood Ave

20 Jul 2023, 3:31:47 PM

31 Longwood Ave Warwick RI

☉ 333°NW (T) ▲ 47ft



31 Longwood Ave

20 Jul 2023, 3:32:51 PM

☀ 156°SE (T) ▲ 64ft



36 Longwood Ave

20 Jul 2023, 3:33:57 PM

37 Longwood Ave Warwick RI

☉ 335°NW (T) ▲ 61ft



37 Longwood Ave

20 Jul 2023, 3:33:37 PM

☉ 153°SE (T) ▲ 61ft



40 Longwood Ave

20 Jul 2023, 3:34:58 PM



☉ 156°SE (T) ▲ 61ft

29 Parkside

20 Jul 2023 3:36:32 PM

Sheet C-13



33 Canonchet Ave Warwick RI

☀ 344°N (T) ▲ 39ft



33 Canonchet Ave

20 Jul 2023, 3:24:02 PM



62 Parkside Dr Warwick RI

☀ 74°E (T) ▲ 56ft



62 Parkside

20 Jul 2023, 3:40:01 PM

63 Parkside Dr Warwick RI

☉ 240°SW (T) ▲ 72ft



63 Parkside

20 Jul 2023 3:39:09 PM

Sheet C-14

☉ 54°NE (T) ▲ 69ft



☀ 55°NE (T) ▲ 77ft



119 Lincoln Ave

25 Jul 2023, 1:28:55 PM

☀ 57°NE (T) ▲ 56ft



127 Lincoln Ave

25 Jul 2023, 1:28:21 PM

☉ 215°SW (T) ▲ 65ft



140 Lincoln Ave

25 Jul 2023, 1:25:37 PM

☉ 121°SE (T) ▲ 63ft



4 Montana Ave

☀ 200°S (T) ▲ 59ft



30 Montana Ave

25 Jul 2023, 1:38:16 PM

☀ 22°NE (T) ▲ 58ft



49 Montaña Ave

25 Jul 2023, 1:39:26 PM

Sheet C-15
4 Montana Ave

☉ 200°S (T) ▲ 59ft



30 Montana Ave

25 Jul 2023, 1:38:16 PM



☀ 200°S (T) ▲ 59ft



30 Montana Ave

25 Jul 2023, 1:38:16 PM



180 Massachusetts Ave

☀ 23°NE (T) ▲ 54ft



189 Massachusetts Ave

25 Jul 2023, 1:44:34 PM

☀ 194°S (T) ▲ 49ft



210 Massachusetts Ave

25 Jul 2023, 1:43:20 PM

☀ 199°S (T) ▲ 43ft



142 Maryland Ave

25 Jul 2023, 2:35:04 PM

☀ 23°NE (T) ▲ 53ft



149 Maryland Ave

25 Jul 2023, 2:35:34 PM



Sheet C-16

☀ 198°S (T) ▲ 50ft



146 Massachusetts Ave

25 Jul 2023, 1:52:05 PM

☉ 22°N (T) ▲ 53ft



149 Massachusetts Ave

25 Jul 2023, 1:51:00 PM

☀ 201°S (T) ▲ 48ft



152 Massachusetts Ave

25 Jul 2023, 1:52:30 PM

☀ 26°NE (T) ▲ 57ft



163 Massachusetts Ave

25 Jul 2023, 1:46:31 PM

APPENDIX C

Private Property Letter of Authorization

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CITY OF WARWICK
WATER DEPARTMENT
WARWICK, RHODE ISLAND 02889

Letter of Authorization

Property Address (Street, City, State, Zip): _____ Date: _____

I, the undersigned owner of the property, or authorized agent representing the property owner hereby consent to entry upon said property by personnel and equipment of _____ hereinafter called "CONTRACTOR", as it is necessary to carry out the replacement of the lead water service connection.

I understand that the replacement of the lead water service connection is to be performed by CONTRACTOR., and the CONTRACTOR. is solely responsible for the work that is performed under the Warwick Lead Service Line Replacement contract.

I request and authorize the CONTRACTOR. to enter the aforementioned property as required to perform this work.

I hereby release the CITY OF WARWICK. its officers, agents, and employees from any claims, demands, causes of action or obligation whatsoever arising out of or relating to entry; on my property; any incidental damage to shrubs or plants; the replacement of the lead water service connection hereinabove referred to; and/or appearances of said improvements otherwise.

Name of Property Owner:

Telephone Number Property Owner:

Signature:

Owner or Authorized Agent

Name of Agent for CONTRACTOR.:

Telephone Number CONTRACTOR:

Signature - CONTRACTOR.