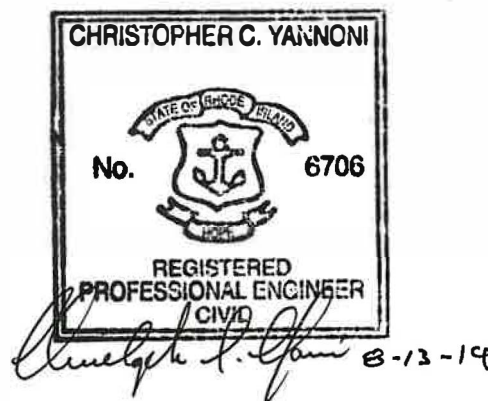


CITY OF WARWICK  
WARWICK WATER DIVISION  
WARWICK, RI

CONTRACT DOCUMENT FOR THE  
INSPECTION OF THE LINCOLN  
AVENUE TRANSMISSION MAINS

MAYOR  
Joseph J. Solomon

WATER DIVISION CHIEF  
Daniel P. O'Rourke



SEPTEMBER • 2019



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**SECTION 00700**

**GENERAL CONDITIONS**

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**SECTION 00700**  
**GENERAL CONDITIONS**

**ARTICLE 1: CONTRACT DOCUMENTS**

The technical specifications and addenda as accepted by the Owner, shall be binding upon the parties to this Agreement as if fully set forth therein. Whenever the term Contract Documents is used, it shall mean and include this Contract, Addenda, and the Technical Specifications. The Owner shall interpret his/her own requirements.

**ARTICLE 2: DEFINITIONS**

The following terms as used in this Contract are defined as follows:

- a. **CONTRACTOR:** A person, firm or corporation with whom the Contract is made by the Owner.
- b. **OWNER:** Shall mean, for the purpose of this Contract, the City of Warwick.
- c. **SUBCONTRACTOR:** A person, firm, or corporation supplying labor and materials, or only labor, for work at the site of the project; for, and under a separate Contract or Agreement with the Contractor.
- d. **WORK ON THE PROJECT:** Work to be performed at the location of the project, including the transportation of materials and supplies to or from the site by employees of the CONTRACTOR OR ANY SUBCONTRACTOR.
- e. **ENGINEER:** Shall mean for the purpose of this Contract the firm who shall act as the authorized representative, of the Owner whenever reference is made for such authorization. The Engineer shall be Stantec Consulting Services Inc.

**ARTICLE 3: QUANTITIES OF ESTIMATE**

Whenever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents including the Bid Proposal, they are given for use in comparing bids and the right is especially reserved by the Owner to increase or diminish them as may be deemed necessary or desirable by the Owner. Such increases or decreases shall in no way affect this Contract, nor shall any such increases or decreases give cause for claims or liabilities for damages.

**ARTICLE 4: CONFLICTING CONDITIONS**

Any provisions in any of the contract documents which may be in conflict or inconsistent with any of the articles in these General conditions, shall be void to the extent of such conflicts or inconsistency.

**ARTICLE 5: PROVISIONS OF LAW DEEMED INSERTED**

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

**ARTICLE 6: NOTICE AND SERVICE THEREOF**

The service of any notice, letter or other communication shall be deemed to have been made by one of the contracting parties on the other party to the Contract when such letter, notice or other communication has been delivered to the legal office address of the addressee, by a duly authorized representative of the addressor in person, or when such notice, letter or other communication has been deposited in any regularly maintained mailbox of the United States Post Office, in a properly addressed, postpaid wrapper. The date of such service shall be considered to be the date of such personal delivery or mailing.

The address of the Contractor noted in his/her bid and/or the address of his/her field office on or near the site of work shall be considered his/her legal address for the purposes as set above.

**ARTICLE 7: REPRESENTATIONS OF THE CONTRACTOR**

The Contractor represents and warrants:

- a. That he/she is financially solvent and that he/she is experienced and competent to perform the type of work required under this Contract and that he/she is able to furnish the plant, materials, supplies, or equipment that may be necessary to perform the work as specified.
- b. That he/she is familiar with all Federal, State and municipal laws, ordinances, orders, and regulations which may in any way affect the project work, or the employment of persons thereon, including but not limited to any special acts relating to the work or to the project of which it is part.
- c. That such temporary and permanent work required by the Contract Documents to be done by him/her will be satisfactorily constructed and can be used for the purpose for which it was intended and that such construction will not injure any person or damage property.
- d. That he/she has carefully examined the plans, specifications, and addenda, if any, and the site of the work and that from his/her own investigations, he/she has satisfied himself/herself as to the nature and location of the work, the character of equipment and other facilities needed for the performance of the work, the general and local conditions, and all other items that may affect the work.
- e. That he/she is aware of the hazards involved in the work and the danger to life and property both evident and inherent and that he/she will conduct the work in a

careful and safe manner without injury to persons or property.

#### **ARTICLE 8: CONTRACTOR'S OBLIGATIONS**

The Contractor shall perform all work in a good workmanlike manner, and in accordance with the contract and specifications and any supplements thereto, and according to any directions or orders given by the Owner. He/she shall furnish all supplies, materials, facilities, equipment and means necessary or proper to perform and complete the work required by this Contract. He/she shall furnish, erect, maintain, and remove any construction plant or temporary work as may be required. He/she alone shall be responsible for the safety, efficiency and adequacy of his/her plant, appliances and methods, and for any damage which may result from their failure or their improper construction, maintenance or operation. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Owner.

The Contractor shall be solely responsible for all the work and shall provide all precautionary measures necessary for preventing injury to persons or damage to property. All injury or damage of whatever nature resulting from the work or resulting to persons, property, or the work during its progress, from whatever cause, shall be the responsibility of the Contractor.

The Contractor shall hold the Owner and Engineer, and their duly authorized agents, harmless and defend and indemnify them against damages or claims for damages due to injuries to persons or property arising out of the execution of the project work, and for damages to materials furnished for the work, for infringement of inventions, patents, and patent rights used in doing the work, and for any act, omission, or instance of neglect by the Contractor, his/her agents, employees or subcontractors.

The Contractor shall bear all losses resulting to him/her, including but not limited to losses sustained on account of the character, quality, or quantity of any part of the work, or all parts of the work, or because the nature of the conditions in or on the project site are different from what was estimated or indicated, or on account of the weather, elements, or other causes.

#### **ARTICLE 9: SUPERINTENDENCE BY THE CONTRACTOR**

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Owner in every possible way. At the site of the work, the Contractor shall, at all times, employ a construction superintendent who shall have full authority to act for the Contractor. It is understood that the employment of such representative shall be acceptable to the Owner and shall be such a person as can be continued in the capacity for the duration of the Contract, unless he/she ceases to be on the Contractor's payroll.

#### **ARTICLE 10: CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

Prior to receiving the "Notice to Proceed", the Contractor shall deliver to the Owner for review and approval, an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each



monthly payment that will be come due the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplied by the Owner:

1. a detailed estimate, giving a complete breakdown of the contract price; and
2. periodic itemized estimates of the work done for the purpose of making partial payments thereon.

#### **ARTICLE 11: PAYMENTS BY THE CONTRACTOR**

The Contractor shall pay:

- a. For all transportation and utility services not later than the 15th day of each calendar month following that which in services were rendered.
- b. For all materials, tools, and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 15th day of the calendar month following that in which such items were delivered to the site of work, and the balance of the cost thereof not later than the 30th day following the completion of that part of the work in or on which material tools, or equipment are incorporated or used.
- c. To each of his/her subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his/her subcontractors to the extent of such subcontractor's interest therein.

#### **ARTICLE 12: USE OF PREMISES AND REMOVAL OF DEBRIS**

The Contractor undertakes, at his/her own expense:

- a. To take every precaution against injuries to persons or damage to property.
- b. To store his/her apparatus, materials, equipment, and supplies in an orderly fashion at the site of work as will not unduly interfere with the progress of his/her work or any others.
- c. To brace upon the work or any part thereof, only such loads as are consistent with the safety of that portion of the work.
- d. To clean frequently all refuse, scrap, and debris caused by his/her operations, so that the work site is maintained in a neat, workmanlike appearance.
- e. To affect all cutting, fitting, or patching of his/her work required to make the same to conform to the plans and specifications, and except with the consent of the Owner, not to cut or otherwise alter the work of any other contractor.
- f. Before final payment, to remove all surplus materials false work, temporary

structures, including foundations thereof, plants of any description, and debris of any nature resulting from his/her operations, so that the site is left in a neat, orderly and workmanlike condition.

#### **ARTICLE 13: GENERAL GUARANTEE**

Neither the final certificate of payment nor any provision in the contract documents nor any partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty workmanship or materials. The Contractor shall remedy any defect in the work and pay for any damage to other work resulting there from, which shall appear within a period of one year (1) from the date of final acceptance of the work, unless a longer period is specified by the Owner. The Owner will give final notice of observed defects with reasonable promptness.

#### **ARTICLE 14: PROTECTION OF WORK AND PROPERTY- EMERGENCY**

- a. The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. The Contractor shall at all times safely guard and protect his/her own work, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss, or injury.
- b. In case of an emergency which threatens loss of injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Owner, in a diligent manner. The Contractor shall notify the Owner immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Owner for approval.
- c. Where the Contractor has not taken action but has notified the Owner of an emergency threatening injury to persons or damage to the work or to any adjoining property, the Contractor shall act as instructed or authorized by the Owner.

#### **ARTICLE 15: WEATHER CONDITIONS**

In the event of temporary suspension of the work, or during inclement weather, or whenever the Owner shall direct, the Contractor shall, and shall cause his/her subcontractors to protect carefully his/her and their work and materials against damage or injury from weather. If, and in the opinion of the Owner, any work or materials are damaged or injured by reason of failure to protect them on the part of the Contractor, or any of his/her subcontractors, or otherwise damaged or injured by the Contractor's negligence, or are found to be defective; such material or work shall be removed and replaced at the expense of the Contractor.

#### **ARTICLE 16: THE OWNER'S AUTHORITY**

The Owner shall give all the orders and directions contemplated under this Contract and specifications relative to the execution of the work. The Owner shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid

for under this Contract and shall decide all questions which may arise in relation to said work and construction thereof. The Owner's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said Contract or specifications, the determination or decision of the Owner shall be a condition precedent to the right of the Contractor to receive any money for payment for work under this Contract affected by such questions. The Owner shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found to be obscure or in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor and other contractors performing work for the Owner shall be adjusted and determined by the Owner.

**ARTICLE 17: ALL WORK SUBJECT TO CONTROL BY THE OWNER**

- a. In the performance of the work, the Contractor shall abide by all orders, directions, and requirements of the Owner; and shall perform all work to the satisfaction of the Owner; and at such times and places, by such methods, and in such manner and sequence as the Owner may require. The Owner shall determine the amounts, quality, acceptability, and fitness of all parts of the work. The Owner shall interpret the plans, specifications, contract documents, all other documents, and the extra work orders. The Owner shall also decide all other questions in connection with the work. The Contractor shall employ no plant, equipment, materials, methods or men to which the Owner objects and shall remove no plant, materials, or equipment or other facilities from the work site without the Owner's permission. Upon request, the Owner will confirm in writing any oral order, direction, requirement, or determination.
- b. Inspectors shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all parts of the work and to the preparation or manufacture of the materials to be used. The presence or absence of an inspector shall not relieve the Contractor from any requirements of the Contract. In case of any dispute arising between the Contractor and the inspector as to materials furnished or the manner in which the work being executed, the inspector shall have the authority to reject material or suspend work until the question has been decided by the Owner. The inspector shall not be authorized to revoke, alter, enlarge, relax, or release any requirement of these specifications, nor to approve or accept any portion of the work, nor to issue any instructions contrary to the contract and specifications. The inspector shall in no case act as foreman or perform other duties for the Contractor, or interfere with the management of the work by the latter. Any advice which the inspector may give the Contractor shall in no way be construed as binding the Owner, or the Engineer in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.

**ARTICLE 18: THE OWNER'S CONTROL NOT LIMITED**

The enumeration in this Contract of particular instances in which the opinion, judgment, discretion, or determination of the Owner shall control or in which the work shall be performed to his/her satisfaction or subject to his/her approval or inspection, shall not imply that only

matters similar to those enumerated shall be governed and performed, but without exception all the work shall be so governed and performed.

#### **ARTICLE 19: RIGHT OF THE OWNER TO TERMINATE THE CONTRACT**

In the event that any of the provisions of this Contract are violated by the Contractor, or any of his/her subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the Contract. If within ten (10) days such violation or delay shall not cease and satisfactory arrangement of correction made, the Contract shall, at the expiration of the ten (10) days, cease and immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the power to take over and perform the Contract, provided, however that if the Surety does not commence performing thereof within ten (10) days from the date of mailing to such Surety of Notice of Termination, the Owner may take over the work and prosecute the same to completion by Contract or force account at the expense of the Contractor, and the Contractor and his/her Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby.

#### **ARTICLE 20: INSPECTION**

The authorized representatives and agents of the Owner shall be permitted to inspect all work equipment and materials, payrolls, records of personnel, invoices for materials, safety records, and other relevant data and records.

#### **ARTICLE 21: SCHEDULES, REPORTS, RECORDS, AND DATA**

The Contractor and each of his/her subcontractors, shall submit to the Owner such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning the work performed under this Contract. Prior to the first partial payment estimate the Contractor shall submit construction progress schedules showing the order in which he proposes to carry-on the work; including dates at which he will start the various parts of the work and an estimate date of completion of each part.

#### **ARTICLE 22: SUBCONTRACTORS**

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall not award work to any subcontractor other than those listed in his/her bid, without the prior written approval of the Owner, which approval will not be given until the Contractor submits a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work, to bind the subcontractors to the contract documents insofar as applicable to the subcontract work and to give the Contractor the same power as regards to terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the contract documents.

Nothing contained in this contract shall create any contractual relationship between the Owner and any subcontractor.

**ARTICLE 23: ASSIGNMENTS**

The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without the written consent of the Owner. In case the Contractor assigns all or part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms, or corporations for services rendered or materials supplied for the performance of the work called for in this Contract.

**ARTICLE 24: MUTUAL RESPONSIBILITY OF CONTRACTORS**

If, through acts of neglect on the part of the Contractor, any other contractor or subcontractor shall suffer loss or damage to the work, the Contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration if such other contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor who shall indemnify and save harmless the Owner against any such claim.

**ARTICLE 25: SEPARATE CONTRACTS**

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

The Contractor shall coordinate his/her operations with those of other contractors. Cooperation will be required in the arrangement for storage of materials and in the detailed execution of the work. Failure by the Contractor to keep informed on the progress of the work, or failure to give notice of the lack of progress or defective workmanship by others, shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with and performance of his/her own work.

**ARTICLE 26: WAGE RATES**

There shall be paid each laborer or craftsman of the Contractor or Subcontractor engaged in work on the project under this Contract, regardless of any contractual relationship which may be alleged to exist between the Contractor or any Subcontractor and any such laborers and craftsmen, not less than the minimum hourly wage rates determined by the Department of Labor in the construction industry for various classifications of work to be performed.

The Contractor shall post at appropriate conspicuous points at the site of the project a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to

be engaged in work on the project under this Contract and all deductions, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics so engaged.

**ARTICLE 27: WAGE UNDERPAYMENTS AND ADJUSTMENTS**

The Contractor agrees that in the case of underpayment of wages to any worker on the project under this Contract by the Contractor or any of his/her subcontractors, the Owner will withhold from the Contractor out of payments due to him, an amount sufficient to pay such worker that difference between the wages required to be paid under this contract and the wages actually paid such worker for the total number of hours worked, and that the Owner may disburse such amount so withheld by it for and on account of the Contractor to the employee to whom such amount is due. The Contractor further agrees that the amount withheld is pursuant to this article may be in addition to the percentages to be retained by the Owner pursuant to other provisions of this Contract.

**ARTICLE 28: PAYMENT OF EMPLOYEES**

The Contractor and each of his/her subcontractors shall pay each of their employees engaged in the work on the project under this Contract in full, and not less than once a week, less legally required deductions, by check which may be cashed without charge, trade requirements, or inconvenience to the worker.

**ARTICLE 29: NON-DISCRIMINATION IN EMPLOYMENT**

In connection with the performance of the work under this Contract, the Contractor agrees not to discriminate against employee because of race, religion, color, or national origin. The aforesaid provisions shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation and selection for training, including apprenticeship.

**ARTICLE 30: APPRENTICES**

Apprentices shall be permitted to work only under a bona fide apprenticeship program registered with a State Apprenticeship Council which is recognized by the Federal Committee on Apprenticeship, United States Department of Labor; or if no such council exists in a State, under a program registered with the Bureau of Apprenticeship, United States Department of Labor.

**ARTICLE 31: SAFETY AND HEALTH REGULATIONS**

These Contract Documents, and the joint and several phases of construction hereby contemplated, are to be governed, at all times, by the applicable provisions of the Federal law (s) including but not limited to the following:

- a. Williams-Steiger Occupational Safety and Health Act, 1970, Public Law 92-596;
- b. Part 1910 of the Occupational Safety and Health Standards, chapter XVII of Title 29, Code of Federal Regulations.

- c. This project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974. Contractors are urged to become familiar with the requirements of these regulations.

In the event of any inconsistencies between the above laws and regulations and the provisions of these Contract Documents, the laws and regulations shall prevail.

#### **ARTICLE 32: SUBMITTALS AND SHOP DRAWINGS**

- a. The Contractor shall submit promptly to the Engineer, before any shop work is commenced or materials are ordered, eight (8) prints of submittals and shop drawings as prepared in accordance with a schedule predetermined by the Contractor. After examination by the Engineer, and the return thereof, if resubmission is required the Contractor shall make such corrections to the submittals or drawings as have been indicated and shall furnish the Engineer with eight (8) prints of corrected copies. Regardless of corrections made in or approval given to such submittals or drawings by the Engineer, the Contractor will, nevertheless, be responsible for the accuracy of such submittals or drawings and for their conformity to the plans and specifications, unless he notifies the Engineer in writing of any deviations at the time he furnishes the drawings.
- b. Shop drawings of all fabricated work shall be submitted to the Engineer for approval and no work shall be fabricated by the Contractor until approval has been given by the Engineer.
- c. The Contractor shall submit all submittals or shop drawings on dates sufficiently in advance of requirements to enable the Engineer ample time for reviewing the same, including time for correcting, resubmission and reviewing, if necessary, and no claim for delay will be granted the Contractor by reason of his/her failure in this respect.
- d. All submittals and shop drawings submitted must bear the stamp of the Contractor as evidence that the drawings have been checked by him. Any submittals or drawings submitted without this stamp of approval will not be considered and will be returned to the Contractor for re-submissions. If the submittals or shop drawings show deviations from the requirements of the Contract Documents because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his/her letter of transmittal to the Engineer, in order that an acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract Documents of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his/her letter of transmittal to the Engineer, in order that an acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract Documents even though the submittals

or shop drawings have been approved.

- e. Where shop drawings are submitted by the Contractor that indicate a departure from the Contract which the Engineer deems to be a minor adjustment in his/her interest and not involving a change in the contract price or extension of time, the Engineer may approve the drawings but the approval will contain in substance, the following:

"The modification shown on the attached drawings is approved on the interest of the Owner to effect an improvement for the project and is ordered with the understanding that it does not involve any change in the contract price or an extension of time, that it is subject generally to all contract stipulations and covenants; and that it is without prejudice to any rights of the Owner under the contract and bond or bonds."

- f. The approval of the submittals or shop drawings will be general and shall not relieve the Contractor from the responsibility for adherence to the Contract, nor shall it relieve him of the responsibility for any error which may exist.
- g. The Contractor agrees to hold the Engineer and the Owner harmless and defend them against damages or claims from damages arising out of injury to others or property of third persons which result from errors on shop, working, or setting drawings whether or not they have been approved by the Engineer and/or the Owner.

### **ARTICLE 33: ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS**

The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the Contract. The additional drawings and instructions thus supplied to the Contractor will coordinate with the contract documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions. The Contractor and the Owner will prepare a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacture, testing, and installation of materials, supplies, and equipment, and the completion of the various parts of the work; each schedule to be subject to change from time to time in accordance with the progress of the work.

### **ARTICLE 34: MATERIALS, SERVICES AND FACILITIES**

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever, necessary to protect, execute, complete, and deliver the work within the specified time.

If approved by the Owner, any work necessary to be performed after regular hours; on Saturdays, Sundays or legal holidays; shall be performed by the Contractor without additional expense to



the Owner.

**ARTICLE 35: CONTRACTOR'S TITLE TO MATERIALS**

No material, supplies, or equipment for the work shall be purchased by the Contractor or any subcontractor, subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies and equipment installed or incorporated in the work and further warrants upon completion of all work, to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by him, to the Owner free from any claims, liens or charges, or encumbrances and further agrees that neither he nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract shall have the right to a lien upon the premises or any improvement or appurtenance thereon.

**ARTICLE 36: INSPECTION AND TESTING OF MATERIALS**

All materials and equipment used in the construction of the project shall be new and of current manufacture. Testing will be done in accordance with accepted standards and as directed by the Owner; the laboratory or inspection agency shall be selected by the Owner. Except as specified elsewhere in these specifications, the Owner will pay for laboratory inspection.

All materials and workmanship shall be subject to inspection, examination, and testing by the Owner at any and all times during manufacture and/or construction and at any and all places where such manufacture and or construction is carried on, to establish conformance with these specifications and suitability for uses intended. Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor, and materials necessary to make tests so required safe and convenient he shall also furnish and mill, factory, or other such tests based on the standards and Tentative Standards of the American Society for Testing Materials (A.S.T.M.) as required by the Owner.

**ARTICLE 37: "OR APPROVED EQUAL CLAUSE"**

- a. Whenever a material or article required is specified or shown on the specifications or plans by using the name of the proprietary product or of a particular manufacturer or vendor, any material or article which will perform adequately the duties imposed by the general design may be considered equal and satisfactory providing the material or article so proposed is of equal substance and function in the Owner's opinion. It shall not be purchased or installed without the Owner's written approval.
- b. If two or more brands, makes of material, devices or equipment are shown or specified, each should be regarded as the approved equal of the other. Any other brand, make or material, device or equipment, which, in the opinion of the Owner or his/her authorized agent, is the recognized approval equal of that specified, considering quality, workmanship, and economy of operation, and is suitable for the purpose intended, may be accepted.

- c. If any other material or article is substituted for items shown or specified, the project must result in a savings in the contract price and the Contractor shall submit evidence that the substitute product is equal. Upon approval of the substitute project, the Owner will issue a deductive change order.
- d. If an equipment manufacturer must have a specified period of experience with his/her project, equipment which does not meet with the specified experience period can be considered, subject to owner's authorization, if the equipment supplier or manufacturer is willing to provide a bond or cash deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

#### **ARTICLE 38: PATENTS**

- a. The Contractor shall hold and save the Owner harmless from liability of any nature or kind, including costs and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the Contract, including its use by the Owner.
- b. License and/or royalty fees for the use of a process which is authorized by the Owner must be reasonable, and paid to the holder of the patent, or his/her authorized agent, directly by the Contractor.
- c. If the Contractor uses any design, device or material covered by letters, patent, or copyright he shall provide for such use by suitable agreement with the Owner of such patent or copyrighted design, device, or material.
- d. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties, license fees, or costs arising out of the use of such process, design, device, or materials, in any way involved in the work. The Contractor and/or his/her Surety shall indemnify and save the Engineer and the Owner harmless from all claims for infringement by reason of use of such patented material, device or design, in connection with the work under this Contract, and shall indemnify the Engineer and the Owner for any cost, expense, or damage which it may be obligated to pay for reason of such infringement at any time during the prosecution of the work.

#### **ARTICLE 39: SURVEYS, PERMITS, AND REGULATIONS**

The Contractor shall procure and pay for all permits, licenses, and approvals necessary for the execution of the Contract work.

The Contractor shall comply with all laws, regulations, ordinances, orders, and rules relating to the performance of the work, the protection of the adjacent property, and the maintenance of passageways, guard fences, and other protective facilities.

**ARTICLE 40: COMPENSATION TO BE PAID TO THE CONTRACTOR**

- a. The Owner will pay and the Contractor shall receive as full compensation for everything furnished and done by the Contractor under this Contract, the unit prices and lump sum prices set opposite the respective items in the accepted bid form herein contained, and payment for approved extra work. The cost of all work required not specifically included in any items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for assuming all duties, and liabilities, herein required, and for well and faithfully completing the work, and the whole thereof, as herein provided, shall be the responsibility of the Contractor.
- b. The amount of the Contract (accepted bid prices) listed in the bid is based on the estimated quantities and the unit and/or lump sum prices as set forth in the bid. It is understood and agreed that the Contractor will accept as payment the actual measured quantities at the unit and/or lump sum price as set forth in the accepted bid.
- c. The estimated quantities, if provided, given in the bid proposal for the various items of work are given for the purpose of comparing the bids offered for the work under this Contract and if it is found in the performance of the Contract work that any or all of the said estimated quantities are not even approximately correct the Contractor shall have no claim for anticipated profits, or for loss of profit, or for increase in prices as listed in the accepted bid because of the difference between the quantities of the various items of work actually done and the estimated quantities stated in the accepted bid.
- d. No payment or compensation will be made to the Contractor for damages because of hindrance or delay from any cause in the progress of the work, whether such hindrances or delays are avoidable or unavoidable.

**ARTICLE 41: PAYMENTS TO THE CONTRACTOR**

- a. At least ten (10) days before each progress payment falls due (but not more than once a month), the Contractor shall submit to the Owner a partial payment estimate filled out and signed by the Owner covering the work performed during the period covered by the partial payment estimate and supported by such data as the Owner may reasonably require. If payment is requested with the Owner's permission on the basis of materials and equipment not incorporated in the work but delivered and suitably stored at or near the site, in accordance with the manufacturers' recommendation and as required by the Owner, the partial payment estimate shall also be accompanied by such supporting data satisfactory to the Owner as will establish the Owner's title to the material and equipment and protect his/her interest therein, including applicable insurance. The Engineer will

within ten (10) days after receipt of each partial payment estimate either indicate in writing his/her approval or return the partial payment estimate to the Owner indicating in writing his/her reasons for refusing to approve payment.

- b. The request for payment may also include with the Owner's permission an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site in accordance with the manufacturer's recommendation and as required by the Owner.
- c. Prior to substantial completion, the Owner, with the approval and concurrence of the Contractor, may use any completed or substantially completed portions of the work. Such use shall not constitute an acceptance of such portions of the work.
- d. The Owner shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the Contractor of their responsibility for the care and protection of the work or the restoration of any damaged work except such as may be caused by agents or employees of the Owner.
- e. The Contractor shall indemnify and save the Owner or Owner's representative harmless from all claims growing out of the lawful demands of SUBCONTRACTORS, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools and all supplies incurred in the furtherance of the performance of the work. The Contractor shall at the Owner's request furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged or waived.
- f. The Owner will hold a five percent (5%) retainage on the entire contract amount until substantial completion for the project is approved by the Owner. A five percent (5%) retainage will be held on the entire contract amount until the Owner has approved and accepted the final construction improvements.

#### **ARTICLE 42: TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

- a. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of beginning and the time of completion of the work as specified in this Contract are ESSENTIAL CONDITIONS of this Contract, and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the Notice to Proceed.
- b. The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified, and further that time of completion as agreed upon is reasonable, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.
- c. If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then

the Contractor does hereby agree, as a partial consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty, but as liquidated damages for such breach of Contract as hereinafter set forth for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the work.

- d. The said amount is fixed and agreed upon by and between the Owner and the Contractor, and said amount is agreed to be the amount of damages the Owner would sustain in such an event as the above-mentioned, and said amount shall be retained from time to time by the Owner from current periodical payments.
- e. It is further agreed that time is of the essence in each and every portion of the Contract and specifications; where in a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence in this Contract. Provided that the Contractor shall not be charged when the delay in completion of the work is due to:
  1. Any preference, priority, or allocation order duly issued by the government, subsequent to the date of the Contract.
  2. Unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to acts of God, or of the public enemy, act of the Owner, acts of another contractor, fires, floods, epidemics, strikes, and unusually severe weather.
  3. Any delays of subcontractors or suppliers approved by the Owner. Provided further that the Contractor shall within ten ( 10) days from the beginning of the delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner in writing of the causes of the delay and notify the Contractor within a reasonable time of its decision in the matter.
- f. The Completion Date, as certified by the Engineer when the construction of the project (and all parts thereof) is fully completed in accordance with the Contract Documents, consisting of the satisfactory fulfillment, in the opinion of the Engineer, of all punch list items, correction of any defective work, start-up/training, testing of equipment, submission and approval of Operations and Maintenance Manuals and record drawings. Should the Completion not be achieved by the Contractor within the Contract Time, or extension of time granted by the Owner, then the provisions of liquidated damages shall apply.

#### **ARTICLE 43: CORRECTION OF WORK**

All work, materials, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Owner, who shall be the final judge of the quality and suitability of the work performed under this Contract. Should any of the work

performed fail to meet with his/her approval, it shall be forthwith constructed, made good, replaced, and/or corrected as the case may be, by the Contractor, at his/her own expense. Rejected material shall be immediately removed from the site. If, in the opinion of the Owner, it is undesirable to replace, reconstruct, or correct any of the work not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor shall be reduced by such amounts as in the judgment of the Owner shall be equitable.

#### **ARTICLE 44: CHANGES IN THE WORK**

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved changes shall be determined in accordance with the Contract Documents.

#### **ARTICLE 45: EXTRAS**

- a. The Owner may, at any time, without notice of the sureties, by written order designated or indicated to be a Change Order, make any change in the work within the general scope of this Contract, including but not limited to changes:
  1. In the Specifications (including drawings and designs);
  2. in the method or manner of performance of the work;
  3. In the Owner-furnished facilities, equipment's, materials, services, or site;  
or
  4. Directing acceleration in the performance of the work.
- b. Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the Owner, which causes any such change, shall be treated as a change order under this clause, provided that the Contractor gives the Owner written notice stating the date, circumstances and source of the order and that the Contractor regards the order as a Change Order.
- c. Except as herein provided, no order, statement, or conduct of the Owner shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.
- d. If any change, by change order, causes an increase or a decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this Contract, an equitable adjustment shall be made and the Contract modified in writing accordingly: Provided, however, that no claim for any change order (b) above shall be allowed for any costs incurred more than twenty (20) days before the Contractor gives written notice as therein required: and, provided, further, that in case of defective specifications for which the Owner is responsible, the equitable adjustment shall include only increased cost reasonably incurred by the Contractor in attempting to comply with such defective specifications.

- e. If the Contractor intends to assert a claim for an equitable adjustment under this clause, he/she must, within thirty (30) days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the Owner a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the Owner. The statement of claim hereunder may be included in the notice under (b) above, submit to the Owner a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the Owner. The statement of claim hereunder may be included in the notice under (b) above.
- f. No claim by the Contractor for an equitable adjustment hereunder for any amount shall be allowed unless agreed to by Change Order prior to the work being done

**ARTICLE 46: CLAIMS FOR EXTRA COST**

No claims for extra work or cost will be allowed unless the same were done in pursuance of a written order of the Owner as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When the work is performed under terms specified elsewhere in the Contract, the Contractor shall furnish satisfactory bills, payrolls, and vouchers covering all items of cost and upon the Owner's request, give him/her full access to the accounts relating thereto.

**ARTICLE 47: FINAL ACCEPTANCE OF THE FINAL PAYMENT  
CONSTITUTES RELEASE**

- a. **SUBSTANTIAL COMPLETION** - Upon written notice from the Contractor of presumptive substantial completion of the project, the Engineer will make an inspection. If all work provided for in the contract is found completed to his satisfaction, that inspection shall constitute substantial completion inspection. The Engineer shall make a written acceptance of the physical work, which shall relieve the Contractor from further responsibility of the physical work except for the maintenance of seeded surfaces required prior to final acceptance.
- b. **FINAL COMPLETION** - Upon written notice from the Contractor of presumptive final completion of the project, the Engineer will make an inspection. If all work provided for in the contract, including final seeded surfaces is found completed to his satisfaction, that inspection shall constitute final inspection. The Engineer shall make a written acceptance of the physical work, which shall relieve the Contractor from further responsibility only with respect to the physical work, notwithstanding any other warranties remaining in effect under the terms of the contract. Subsequent to the final acceptance of the physical work and upon compliance with the terms of the contract relating to submission of required reports or other documents, the Engineer will recommend final acceptance of the contract to the Owner.
- c. The acceptance of the Final Payment by the Contractor shall be and shall operate as a release to the Owner for all claims and all liability to the Contractor for all

things done or furnished in connection with this work and for every act or neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate as a release of the Contractor or his/her Surety from any obligations under this Contract or the performance and payment bond.

**END OF SECTION 00700**



**SECTION 00800  
SUPPLEMENTAL CONDITIONS**

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**SECTION 00800**  
**SUPPLEMENTAL CONDITIONS**

**GENERAL:**

- a. The Owner and the Contractor agree that the following supplemental general provisions shall apply to the work to be performed under this Contract and that such provisions shall supersede any conflicting provisions of this Contract.
- b. The rights and remedies of the Owner provided for in these clauses are in addition to any other rights and remedies provided by law and under this Contract.

**ARTICLE 1: SCOPE OF WORK**

The Contractor shall furnish all labor, materials, supplies, equipment, and other facilities, necessary to complete the work contemplated by this Contract as required by and in strict accordance with the plans, specifications, and addenda and/or required by and in strict accordance with such changes as ordered and approved pursuant to this Contract and the Contractor shall perform all other obligations imposed on him/her by this Contract. The Contractor shall be responsible for materials delivered and work performed until completion and final acceptance. Upon completion of the Contract, the work shall be delivered complete and undamaged.

**ARTICLE 2: PROVISION FOR FLOW OF PRESENT DRAINAGE**

The Contractor shall provide provision for the flow in all sewers, drains, and watercourses that are met or altered during the construction and all connections shall be restored without extra charge. All offensive matter shall be removed immediately with such precautions as may be directed. If required, the Contractor shall install temporary bypass connections for sewer, drains, and water facilities to provide uninterrupted or continuous service during the work of construction.

**ARTICLE 3: WORK TO BE ACCOMPLISHED IN ACCORDANCE WITH THE SPECIFICATIONS**

The work, during its progress and at its completion, shall conform to the specifications and to the directions given by the Owner from time to time, subject to such modifications or additions as he/she shall determine to be necessary during the execution of the work; and in no case will any work be paid in excess of such requirements.

**ARTICLE 4: CONTRACTOR TO CHECK DIMENSIONS AND SCHEDULES**

The Contractor will be required to check all dimensions and quantities shown on the documents or schedules given to him/her by the Owner, and shall notify the Owner of all errors therein which he/she may discover by examining and checking the same. The Contractor shall not take advantage of any error or omissions in these specifications, drawings, or schedules. The Owner will furnish all instructions should such error or omissions be discovered, and the Contractor shall carry out such instructions as if originally specified.

**ARTICLE 5: PROTECTION OF LANDSCAPING**

The Contractor shall take special care to preserve and protect from injury all trees and other permanent structures (e.g. retaining walls) located along the lines of construction, and no such trees shall be cut down, trimmed, or otherwise cut without permission from the Owner.

**ARTICLE 6: HURRICANE PROTECTION**

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

**ARTICLE 7: CONFORMANCE WITH DIRECTIONS**

The Owner may make alterations to the line, grade, plan, form, dimension, or materials of the work, or any part thereof, either before or after the commencement of construction. Should such alterations diminish the quality included in any item of work to be done and paid for at a unit price, the contractor shall have no claim for damages or for anticipated profits on the work that thus may be dispensed with. If they increase the quantity included in any such item, such increase shall be paid for at the stipulated prices.

**ARTICLE 8: PROTECTION AGAINST HIGH WATER AND STORM**

The Contractor shall take precautions to prevent damage to work or equipment by high water or by storms. The Owner may prohibit the carrying out of work at any time when in his/her judgment high waters or storm conditions are unfavorable or unsuitable, or at any time regardless of the weather when proper precautions are not being taken to safeguard previously constructed work or work in progress.

In case of damage caused by failure of the Contractor to take adequate precautions, the Contractor shall repair or replace equipment damaged and shall make such repairs or rebuild parts of the damaged work as the Owner may require, at no additional cost to the Owner.

**ARTICLE 9: SEQUENCE OF THE WORK**

The Contractor shall be required to prosecute his/her work in accordance with a schedule prepared by him/her in advance and in accordance with additional requirements specified herein and approved by the Owner. This scheduling shall state the methods and shall forecast the times of doing each portion of the work. Before beginning any portion of the work, the Contractor shall give the Owner at least twenty-four (24) hours advance notice and ample time for making necessary preparations. In the event that the Contractor fails to meet this schedule, the Engineer's on-site time will be assessed to the Contractor and will be deducted from any sums due or which will become due the Contractor.

**ARTICLE 10: COMPETENT HELP TO BE EMPLOYED**

The Contractor shall employ experienced foremen, craftsmen and other workmen competent in

the work in which they are to be engaged.

#### **ARTICLE 11: LIGHTS, BARRIER, WATCHMEN, AND INDEMNITY**

The Contractor shall erect and maintain such barriers, lighting, warning lights, danger warning signals, and signs that will prevent accidents during the construction work and protect the work and insure the safety of personnel and the public at all times and places; the Contractor shall indemnify and protect the Owner and Engineer in every respect from injury or damage whatsoever caused by any act of neglect by the Contractor or his/her subcontractors, or their servants or agents.

In addition to the above, when and as necessary, or when required by the Owner, the Contractor shall post signs and employ watchmen or flagmen for the direction of traffic at the site and for excluding at all times unauthorized persons from the work site, for which the Contractor shall be paid no additional compensation.

The Contractor shall be responsible for excluding at all times from the land within the work areas, all persons not directly connected with the work.

#### **ARTICLE 12: NIGHT WORK**

Night work, or work on Saturdays, Sundays, or legal holidays requiring the presence of an Engineer or inspector, will not be permitted except in case of an emergency, and only upon the approval of the Owner, or as required by the Contract Documents. Should it be necessary for the Owner to operate an organization for continuous night work or for emergency night work; the lighting, safety and other facilities which are deemed necessary shall be provided by the Contractor. Compensation for this work shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid, and no extra compensation will be paid by the Owner. Night work required per the Contract Documents shall be fully executed in accordance with the Contract Documents at no additional cost to the Owner.

If the Contractor must work beyond the regular work week in order to complete the project within the contract time, all expenses of the Engineer and his/her personnel required for inspection or observation will be deducted monthly from any sums due or which will become due to the Contractor.

#### **ARTICLE 13: WORK IN COLD WEATHER**

The Owner may determine when conditions are unfavorable for work and may order the work, or any portion thereof, suspended whenever, in his/her opinion, the conditions are not such as will insure first class work.

#### **ARTICLE 14: RESERVED MATERIALS**

Materials found on the work site suitable for any special use, shall be preserved for that purpose. Where permitted, the Contractor may use in the various parts of the work, without charge, any materials taken from the excavation.

**ARTICLE 15: DISPOSAL OF MATERIALS**

The materials used in the construction of the work, shall be deposited in such manner so they will not endanger persons or the work, and so that free access may be had at any time to all hydrants and gates in the vicinity of the work. The materials shall be kept trimmed up so that as little inconvenience as possible to the public or adjoining tenants is caused.

**ARTICLE 16: MATERIALS**

All material furnished and used in the completed work shall be new; of best quality, workmanship, and design; and recognized as standard in the work to be done under this Contract. Whenever a specification number of reference is given the subsequent amendments (if any) shall be included. The standards set forth in the selection of materials and supplies are intended to conform with those standards adopted by the Owner. Preference in manufacture shall be given to adopted standards and the Contractor shall further familiarize himself with the requirements of the Owner when the occasion or choice of materials so demands.

**ARTICLE 17: DEFECTIVE MATERIALS AND TESTING**

No materials shall be laid or used which are known, or may be found to be in any way defective. Any materials found to be defective at the site of work or upon installation shall be replaced by the Contractor at his/her own expense. Notice shall be given to the Owner of any defective or imperfect material. Defective or unfit material found to have been laid, shall be removed or replaced by the Contractor with sound and unobjectionable material without additional cost to the Owner.

All materials furnished by the Contractor are subject to thorough inspection and tests by the Owner. The Contractor shall submit samples, as required by the Owner, of the various materials used on the Contract work for testing purposes.

All ordering lists shall be submitted by the Contractor to the Owner for approval and shall be approved before the ordering of the materials.

**ARTICLE 18: SANITARY REGULATIONS**

Adequate sanitary conveniences for use of workman on the premises, properly secluded from public observance, shall be provided and maintained by the Contractor, in accordance with local and State health requirements, and in such a manner and at such points as shall be approved by these authorities, and their use shall be strictly enforced. Sanitary waste shall be treated and disposed of in a manner satisfactory to the Owner and the local and State authorities. Under no circumstances shall sanitary wastes be allowed to flow on the surface of the ground.

The Contractor shall rigorously prohibit the committing of nuisances upon the lanes or right-of-way of the Owner, about the work, or upon adjacent public or private property.

The cost of sanitary conveniences and maintaining the same will be considered to be included in the prices stipulated for the appropriate items of work as listed in the bid, and not as a separate payment.

**ARTICLE 19: SPIRITUOUS LIQUORS**

The Contractor shall neither permit nor suffer the introduction of spirituous liquors upon the work embraced in this Contract, nor the use of the same.

**ARTICLE 20: FINISHING AND CLEANING UP**

In completing his/her operations, the Contractor shall immediately remove all surplus material, tools, and other property belonging to him/her, leaving the entire street or surroundings free and clean and in good order, at no additional expense to the Owner. The Contractor shall exercise special care in keeping the rights-of-way and private lands upon which work is performed free and clean of all debris, and shall remove all tools and other property when they are not in use.

**ARTICLE 21: CLEAN-UP AT CONTRACTOR'S EXPENSE**

In case the Contractor fails or neglects to promptly remove all surplus materials tools, and incidentals after backfilling, leaving the street or surrounding area clean and free of debris, and do the required repaving when ordered, the Owner may, after 24 hours notice, cause the work to be done and the cost thereof deducted from any payment due to the Contractor.

**ARTICLE 22: RIGHTS OF ACCESS**

Nothing herein contained or shown on the drawings shall be construed as giving the Contractor exclusive occupancy of the work area. The Owner or any other contractors employed by him/her, the various utility companies, contractors or subcontractors employed by State or Federal agencies, or any other agencies involved in the general project or upon public rights-of-way, may enter upon or cross the area of work or occupy portions of the area as is directed or necessary. When the territory of one contract is the convenient means of access to the other, the Contractor shall arrange his/her work in such a manner as to permit such access to the other and prevent unnecessary delay to the work as a whole.

**ARTICLE 23: LOADING**

No part of the structures involved in this contract shall be loaded during construction with a load greater than it is calculated to carry with safety. Should any accidents or damage occur through any violation of this requirement, the Contractor will be held responsible under his/her Contract and bond.

**ARTICLE 24: COMPLETENESS OF THE WORK**

In addition to the specified or described portions of the work, all other work and all other materials, equipment and labor of whatever description, necessary or required to complete the work, or for carrying out the full intent of the drawings and specifications; such work, labor, materials, and equipment shall be provided by the Contractor, and payment therefore shall be considered as having been included in the prices stipulated for the appropriate item of work listed in the bid.

**ARTICLE 25: CARE OF THE WORK**

The Contractor shall be responsible for all damages to persons or property that occur as a result of his/her fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the Owner, whether or not the same has been covered by partial payments made by the Owner.

**ARTICLE 26: INDEMNITY**

The Contractor shall at all times indemnify and save harmless the Owner and the Engineer, their servants and agents, from any and all claims and from any suits, litigations, damages, losses or the like arising out of injuries sustained or alleged to have been sustained by any persons or property in connection with the contract work, caused in whole or in part by acts or omissions of the Contractor, his/her subcontractors, material men or anyone directly or indirectly connected with the contract work.

**ARTICLE 27: FIRE PREVENTION AND PROTECTION**

All 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.

All fire protection equipment such as water tanks, hoses, pumps, extinguishers, and other materials, and apparatus, shall be provided for the protection of the contract work, temporary 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.

**ARTICLE 28: WORK BY OTHERS**

The Owner reserves the right to do any other work which may be connected with, or become a part of, or be adjacent to the work embraced by this CONTRACT, at any time, by Contract or otherwise. The Contractor shall not interfere with the work of such others as the Owner may employ, and shall execute his/her own work in such a manner as to aid in the execution of the work of others as may be required.

**ARTICLE 29: CHANGES AND MODIFICATIONS**

The Owner reserves the right to delete or cancel any item or items or parts thereof as listed in the bid, without recourse by the Contractor. The Owner also reserves the right to add any item as listed in the bid. The compensation to be paid to the Contractor for such additional extensions, appurtenances, or items shall be made under the applicable items in the bid. If no applicable items are provided in the bid, the compensation to be paid the Contractor shall be set forth under the article entitled "Changes in the Work" as found in the GENERAL CONDITIONS.

**ARTICLE 30: CONSTRUCTION SCHEDULE**

In addition to other requirements specified, and prior to receiving the written notice to proceed, the Contractor shall submit a construction schedule to the Owner for review and approval, which



is to include all the work under this Contract. The Contractor shall perform the work of this Contract to conform with the schedule as approved by the Owner, except that the Owner reserves the right to amend and alter the construction schedule at any time, in a manner which is deemed to be in the best interest of the Owner to do so. The Contractor shall arrange his/her work to conform with this schedule as it may be revised from time to time by the Owner, at no additional expense to the Owner. The Contractor shall notify the Owner immediately of any circumstances which may affect the performance of the work in accordance with the current construction schedule.

### **ARTICLE 31:           TEMPORARY POWER**

Electrical power is available at the site for use by the Contractor inside an existing storage shed owned by the City. The Contractor shall have a licensed electrician determine if this existing power supply is suitable for the expected demand from the Contractor's equipment. If the existing electrical service is not suitable, the Contractor shall make all the necessary arrangements with the power company for providing temporary electrical power for his/her use. All unauthorized sources of power, such as neighboring homes, shall be prohibited.

### **ARTICLE 32:           FAILURE TO REPAIR**

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

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/her own option, make the necessary repairs using his/her own forces or those of others. The cost of such repairs shall be subtracted from the payments due to the Contractor.

### **ARTICLE 33:           DIFFERING SITE CONDITIONS**

- a.     The Contractor shall promptly and before such conditions are disturbed, notify the Owner in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this Contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The Owner shall promptly investigate the conditions, and if he/she finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any of the work under this Contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the Contract modified in writing accordingly.
- b.     No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefore may be extended by the Owner.
- c.     No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

**ARTICLE 34:           AUDIT, ACCESS TO RECORDS**

The Contractor shall maintain books, records, documents, and other evidence directly pertinent to performance of work under this Contract in accordance with generally accepted accounting principles and practices. The Contractor shall also maintain the financial information and data used by the Contractor in the preparation or support of the cost submission or for any negotiated contract or change order and a copy of the cost summary submitted to the Owner. The Contractor will provide proper facilities for such access and inspection.

Audits conducted pursuant to this Provision shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit agency(ies).

The Contractor agrees to the disclosure of all information and reports resulting from the access to records pursuant to paragraphs above, to any of the agencies referred to above, provided that the Contractor is afforded the opportunity to comment and submit any supporting documentation on the pertinent portions of the draft audit report that the final audit report will include written comments of reasonable length, if any, of the Contractor.

Records under paragraphs above, shall be maintained and made available during performance on work under this Contract and until three (3) years from the date of final payment for the project. In addition, those records which relate to any "Dispute", appeal agreement, or litigation, or the settlement of claims arising out of such performance, or costs or items to which an audit exception has been taken, shall be maintained and made available until three (3) years after the date of resolution of such appeal, litigation, claim or exception.

**ARTICLE 35:           COVENANT AGAINST CONTINGENT FEES**

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the Owner shall have the right to annul this Contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

**ARTICLE 36:           GRATUITIES**

- a. If it is found, after notice and hearing, by the Owner that gratuities (in the form of entertainment, gifts or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any official, employee or agent of the Owner, or of the State, with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate the right of the Contractor to proceed under this Contract or may pursue such other rights and remedies provided by law or under this Contract; provided, that the existence of the facts upon which the Owner makes such findings shall be in issue and may be reviewed

in proceedings pursuant to the "Remedies clause of this Contract.

- b. In the event this Contract is terminated as provided in Paragraph (a) hereof, the Owner shall be entitled (1) to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Contract by the Contractor, and (2) as a penalty in addition to any other damages to which it may be entitled to by law, to exemplary damages in an amount (as determined by the Owner) which shall be not less than three (3) nor more than ten (10) times the cost incurred by the Contractor in providing any such gratuities to any such officer or employee.

**ARTICLE 37: CONTRACTOR TO LAY OUT HIS/HER OWN WORK**

The Owner will establish such general reference points as in his/her judgment will enable the Contractor to proceed with the work. The Contractor, at his/her own expense, shall provide all materials and equipment and such qualified helpers as the Owner may require for setting the general reference points and shall protect and preserve all stakes, benches, and other markers used to identify the reference points. The Contractor shall lay out all the contract work from the above and shall be responsible for the accuracy of all lines, grades, and measurements.

**ARTICLE 38: PROTECTION OF CONSTRUCTION FEATURES**

The Contractor shall take adequate precautions to protect existing sidewalks, curbs, berms, pavements, utilities, adjoining property and such incidentals, and to avoid damage thereto. The Contractor shall completely repair any damage at no additional expense to the Owner.

**END OF SECTION 00800**

## TECHNICAL SPECIFICATIONS

## SECTION 01010 - SUMMARY OF WORK

### PART 1 GENERAL

#### 1.01 LOCATION OF WORK

- A. The proposed work is located within the City of Warwick, and the Cranston, Rhode Island, at the following locations:
  - 1. Route 95: at the end of Lincoln Avenue
    - a. 30-inch ductile iron and cast iron water mains
    - b. Approximately 2,350 linear feet

#### 1.02 DESCRIPTION OF WORK

- A. The work to be done under this Contract includes furnishing all labor, material, tools, and equipment necessary to visually inspect the interior of potable water mains by CCTV as indicated, while the water mains remain in service. Work to be performed is as specified in Section 02660 and as indicated on the Contract Drawings.
- B. Work also includes up to six (6) exploratory excavation (test pits) to be dug to six-inches below pipe bottom for visual inspection as indicated on the Contract Drawings.

#### 1.03 WORK TO BE DONE BY THE OWNER

- A. The Warwick Water Division will perform the following work:
  - 1. Operate all existing line valves, hydrants, and service stops.

#### 1.04 DRAWINGS

- A. The work is located and described further on the Contract Drawings.

#### 1.05 ORDER OF WORK

- A. The work shall be executed in such order and manner as the Owner shall approve. The Contractor shall, immediately and no later than 5 days after the award of the contract, work out in detail a schedule of values including a breakdown of any lump sum prices bid and a monthly progress schedule covering all parts of the work which shall be submitted to the Owner for approval.
- B. If the progress of the work has been or will be materially affected by changes in the work, or if the Contractor's performance has materially failed to conform to

the approved schedule, the Contractor shall, upon request by the Owner, submit for approval a revised progress schedule for the balance of the work.

- C. Before beginning any portion of the work, the Contractor shall give the Owner due notice and ample time for making his necessary preparations.

#### 1.06 INTERRUPTION OF WATER SERVICE

- A. The Contractor shall not interrupt water service.

#### 1.07 OPEN EXCAVATIONS

- A. All open excavations shall be backfilled or steel plated daily. Excavations shall not be left "open." All open excavations shall be safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. This work shall be performed at no additional cost to the owner.

#### 1.08 BARRICADES AND WARNING SIGNS

- A. The Contractor shall at his own expense provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices to protect the work from traffic, pedestrians, or animals. He shall at his own expense provide sufficient temporary lighting, such as flares, bombs, lanterns, or other approved illuminated traffic signs and devices to afford adequate protection to the public. The Contractor shall be held responsible for all damage to the work due to any failure or barricades, barrier fences, warning signs or lights to properly protect the work from traffic, pedestrians, or other causes.

#### 1.09 WEATHER CONDITIONS

- A. No work shall be done when, in the opinion of the Owner, the weather is unsuitable. No mortar, earth backfill, embankment or pavement shall be placed during freezing weather or upon frozen material. If there is delay or interruption in the work due to weather conditions, the necessary precautions must be taken to protect completed work.

#### 1.10 PROTECTION AND RESTORATION OF PROPERTY

- A. The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the proposed work, and he shall be responsible for and repair at his own expense any and all damage and injury thereto, arising out of or in consequence of any act of omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor or his employees or Subcontractors in the performance

of the work covered by the Contract prior to completion and acceptance thereof. He shall exercise special care during his operations to avoid injury to underground structures, such as water mains, pipes, conduits, manholes, catch basins, gas mains and services, etc.

- B. All surfaces which are disturbed by the Contractor's operations shall be restored to their original condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.
- C. Along the location of this work, all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the Contractor shall be replaced in the location indicated by the Owner as soon as conditions permit. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and seeded at the Contractor's expense.
- D. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Schedule of Prices of the Proposal.

1.11 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Prior to Construction. Notice shall be given to DIG-SAFE at 1-888-344-7233 or 811, the Warwick Water Division, Warwick Sewer Authority, and Rhode Island DOT at least 48 hours prior to any excavation under this contract. The Contractor is responsible for the provisions of Local and State ordinances regarding excavation in public ways.
- B. The Contractor shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operations shall be repaired at his expense.

1.12 DISPOSAL OF SURPLUS MATERIAL

- A. The surplus material resulting from excavation, and not required or suitable for re-use on the job, shall be removed from the site by the Contractor and disposed of as the Contractor selects, subject to the approval of local government authorities having jurisdiction over the disposal of such materials.

1.13 WORK BY OTHERS

- A. Other Contractors and utility companies may require access to the site and the Contractor shall do his work in cooperation with them.
- B. The Contractor's attention is directed to the fact that work by utility companies and other contractors may be carried on concurrently within and adjacent to the limits of the Contract.
- C. Certain constructions shall be worked out mutually with the companies or contractors concerned, and the Contractor shall schedule his work accordingly. Any delay occasioned by work of this nature shall be absorbed by the Contractor unless circumstances beyond the normal anticipated time cause serious interference with the Contractor's schedule of operations. If such be the case, the Contractor shall submit a request in writing to the Owner, outlining the facts and reasons therefor, for an extension of contract time.

1.14 EASEMENTS AND RIGHTS OF WAY

- A. Easements, which the Contractor may wish to use in carrying out his construction operations, must be obtained by the Contractor at his own expense. The Contractor shall protect and save harmless all structures on the Owner's property or rights-of-way belonging to the Owner or others who have rights on or across the Owner's property or rights of way.
- B. Prior to the start of construction, the Owner shall obtain all land rights-of-way necessary for the carrying out and completion of work to be performed under this Contract (if applicable).

1.15 MAINTENANCE OF FLOW

- A. The Contractor shall at his own cost provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately remove all offensive materials. The entire procedure of maintaining existing flow shall be fully discussed with the Owner well in advance of the interruption of any flow.
- B. Interruption of water service will not be permitted.

1.16 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with the General Contractor and his subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.



1.17 HOURS OF CONSTRUCTION

- A. The Contractor shall limit the hours of construction to 7:00 AM to 4:00 PM Monday through Friday unless otherwise approved by the Owner.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**\*\*END OF SECTION\*\***

## SECTION 01070 - ABBREVIATIONS

### PART 1 GENERAL

#### 1.01 ABBREVIATIONS

A. Wherever the following abbreviations are used on the Drawings or in these Specifications, they shall mean the following:

1. AMCA Air Moving and Conditioning Association
2. AASHTO American Association of State Highway and Transportation Officials
3. ACI American Concrete Institute
4. AISI American Iron and Steel Institute
5. ANSI American National Standards Institute
6. ASHRAE American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.
7. ASME American Society of Mechanical Engineers.
8. ASTM American Society for Testing and Materials
9. AWWA American Water Works Association
10. AWS American Welding Society
11. CRSI Concrete Reinforcing Steel Institute
12. IEEE Institute of Electronic and Electrical Engineers
13. NFPA National Fire Protection Association
14. OSHA Occupational Safety and Health Act
15. UL Underwriters Laboratories Inc.
16. SSPC Steel Structures Painting Council

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION (NOT USED)

**\*\* END OF SECTION \*\***

## SECTION 01300 - SUBMITTALS

### PART 1 GENERAL

#### 1.01 EXTENT OF WORK

- A. The work to be done under this Section consists of submitting shop and working drawings, product data, certificates, instructional materials and samples.

#### 1.02 DEFINITIONS

- A. Shop Drawings will be returned and stamped with the following classifications:
1. Code 1 – No Exception Taken: No correction or marks.
  2. Code 2 – Make Corrections Noted: Few minor corrections. All items may be fabricated as marked up without further resubmission.
  3. Code 3 – Revise and Resubmit: Minor corrections. Items not noted to be revised and corrected may be fabricated at the Contractor's option. Resubmit shop drawings per original submission with corrections noted.
  4. Code 4 – Rejected – See Remarks: Major correction or not in accordance with Contract Documents. No items shall be fabricated. Correct and resubmit shop drawings per original submission.
  5. Code 5 – Reviewed for Informational Purposes Only: Items not reviewed or items for which submittals are not required.

#### 1.03 DRAWINGS, PRODUCT DATA AND CERTIFICATES

- A. The Contractor shall submit so as to avoid delay in this work, or that of any subcontractor, one (1) electronic copy of all shop, detail or working drawings, production data and certificates required for the work within 10 days of contract execution, and the Owner's Representative shall review them noting comments. If required, the Contractor shall make corrections and resubmit one (1) corrected copy for final review and furnish such other copies as may be needed. The Contractor shall direct specific attention in writing or on resubmitted drawings, data or certificates, to revisions other than those requested by the Owner's Representative on previous submittals. A third submission from the same manufacturer will not be accepted.
- B. The Owner Representative's review of such drawings, data or certificates shall not relieve the Contractor from responsibility for deviations from the Drawings or Specifications, unless he had in writing called the Owner Representative's attention to such deviations at the time of submission, and unless the Owner Representative shall have issued a written waiver of the pertinent Specification, nor shall it relieve him from responsibility for errors of any sort in shop drawings.

- C. Prior to the submission of shop drawings to the Owner's Representative for review, Contractor shall thoroughly examine the details and check all dimensions. Contractor shall be responsible for the accuracy, proper fit, and coordination of all parts of the work.
- D. All drawings, data and certificates shall be properly identified as the Owner's Representative may require, Contractor shall stamp each submission with a rubber stamp stating that he has examined and checked the submission as above, and shall date and sign each. Any submission which, upon examination by the Owner's Representative, shows evidence of not having been thoroughly checked will be returned to the Contractor for completion of checking before it will be considered for review.

1.04 SAMPLES

- A. Samples as required by the Specifications shall be submitted after the award of the Contract, to the Owner's Representative at the site. No materials for which samples are required shall be delivered to the site for use until representative samples of same have been approved in writing by the Owner's Representative. Such samples shall be furnished by the Contractor without charge.
- B. In addition to submission of samples of stone and gravel, the Owner may inspect the material at the source. If approved, such approval shall not preclude a future withdrawal of such approval if the material fails to meet the Specifications.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.01 PREPARATION

- A. General:
  - 1. Submit one (1) electronic copy of each submittal.
  - 2. Consecutively number submittals in direct sequence of submittal.
- B. Stamp all submittals, regardless of origin, with the Contractor's approval and identify with:
  - 1. Name and/or contract number
  - 2. Name of Contractor, Subcontractor and Manufacturer
  - 3. References to applicable Specification Paragraphs and Drawings
  - 4. Date of submittal or resubmittal.

- C. Clearly identify applicable items when catalog pages are submitted and indicate current revision, issue number, and date on all drawings and other descriptive data. Remove or cross out all information that is not pertinent.
- D. Identify all deviations from Contract Documents on each submittal and note in letter of transmittal. Indicate essential details of all proposed changes (including modifications to other facilities that may result from deviation) as pertinent to deviation.
- E. Submit working drawings for changes or substitutions proposed by the Contractor.
  - 1. Working drawings to be submitted are to be stamped and signed by a Professional Engineer registered in the State of Rhode Island. They shall convey or be accompanied by information to completely explain proposed change, and method of construction (when applicable).
- F. Provide vacant space approximately 3 inches high by 4 ½ inches wide adjacent to identification of data to receive submittal status stamp.
- G. Electronic Submissions
  - 1. Shall be in PDF format.
  - 2. PDF page size shall be the same size as the original.
  - 3. Shall contain all details of the original document from which it is made.
- H. Resubmittals
  - 1. Make correction to shop drawings and data which are Code 3 or 4, or Code 2 with instructions to resubmit.
  - 2. When corrected copies are resubmitted, direct attention to all revisions and list any revisions made other than those called for.
  - 3. Verify that all exceptions previously noted have been taken into account.

**\*\*END OF SECTION\*\***

## **SECTION 01500 – TEMPORARY FACILITIES**

### **PART 1 GENERAL**

#### **1.01 EXTENT OF WORK**

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary for furnishing, installing, maintaining and removing temporary facilities required for construction.
- B. The work shall comply with the National Electrical Code; all Federal, State and local codes and regulation; and with utility company requirements.
- C. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

#### **1.02 SHANTIES**

- A. Shanties or other structures for housing or storage of materials, or for office, shall be built only if permission in writing is given by the Owner, and will then be permitted only at such places as the Owner shall approve, and the sanitary conditions on the grounds in or about such shanties or other structures shall at all times be maintained in a manner approved by the Owner.

#### **1.03 UTILITIES**

- A. The Contractor shall provide or arrange for, at his own expense, water, heat, and electricity for construction purposes, sanitary facilities for workmen, telephone, and other facilities and services as found necessary for his operations.
- B. Water for all purposes shall be obtained at the Contractor's expense. Drinking water shall be provided to all workmen and satisfactorily cooled.
- C. Temporary light and power shall be provided for all construction needs by temporary feeders in approved locations from the nearest available service, all at the Contractor's expense. Temporary feeders and wiring shall be removed when no longer needed.

#### **1.04 SANITARY PROVISIONS**

- A. The Contractor shall provide and maintain sanitary units for all persons employed on the work, at the rate of one unit for each 15 persons, beginning with the first workman at the site. The unit shall be near the work at approved locations and shall be an approved chemical or incinerator type, or water closets, if permitted. If an incinerator type, a sufficient number shall be provided to permit daily incineration of 33-1/3 percent of waste. The units shall be adequately screened so

as to be inaccessible to flies. They shall be in a clean, sanitary condition at all times.

#### 1.05 HOISTING, SCAFFOLDING, STAGING AND PLANKING

- A. Except as may be provided in a subcontract, the work to be done under each Section of the Specifications shall include the furnishing, set-up and maintenance of all derricks, hoisting machinery, scaffolds, staging and planking required for the work.
- B. All such facilities shall be set-up and maintained in a safe condition.

#### 1.06 TEMPORARY ROADS

- A. The Contractor shall construct and maintain temporary access or haul roads, at his own expense, as may be required for the work under this contract. The roads shall be of such alignment, grade and width as to provide safe ways for the movement of materials and equipment. The surface shall be maintained in good order, reasonably free from pot holes and ruts. Dust shall be kept down by application of water, oil or calcium chloride as the Contractor may elect, subject to the approval of the Owner.
- B. No separate payment will be made for the construction and maintenance including dust control, of access or haul roads, and all costs thereof shall be included in the contract prices for the various items of work in the Schedule of Prices.

#### 1.07 TEMPORARY BRIDGES

- A. Wherever a trench crosses a traveled way or an entrance to private property, the Contractor shall, if required by the Owner, construct a suitable bridge.

#### 1.08 HANDLING WATER

- A. The Contractor shall furnish all the necessary structures, labor, materials and equipment, shall take all necessary precautions, and shall assume the entire cost of handling all water resulting from intense storms or floods which may be encountered at any time during the construction of the work. The manner of providing against any damage to the work during construction from such causes is left to the discretion of the Contractor, and the cost of all work to prevent such damage or to replace work damaged to the satisfaction of the Owner is included in the prices stated for the various items in the Schedule of Prices.

#### 1.09 EROSION CONTROL

- A. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He shall schedule his operations to limit the duration and surface areas of erodible soil materials exposed by clearing, grubbing, borrow, filling and grading operations. Fine

material placed or exposed during the work shall be so handled and treated as to minimize the possibility of its entry into the work.

- B. The Contractor shall erect and maintain, as required by conditions and progress of the work, temporary berms, dikes, dams, diversion channels, sediment basins, baled hay or mulch to control water runoff.
- C. The Contractor shall operate equipment in a manner to prevent erosion of slopes or creation of sediment in the work.
- D. Disturbance of lands and waters outside the limits of the work is prohibited, except as may be specifically approved in writing.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**\*\*END OF SECTION\*\***



## **SECTION 01505 - MOBILIZATION**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION**

**A. Work includes:**

1. Submittal of shop drawings, ordering and receipt of all materials, neat stockpiling of such materials, delivery and setup of all construction equipment, and cleanup of stockpile area upon completion of construction.

**B. Related work:**

1. Documents affecting work of this Section include, but are not necessarily limited to, Sections in Division 1 and Division 2 of these Specifications.

#### **1.02 QUALITY ASSURANCE**

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.**

### **PART 2 PRODUCTS**

#### **2.01 BONDS AND INSURANCE**

- A. The Contractor shall provide the Owner with the required Bonds and Insurance Certificates with the signed Contract Documents.**
- B. The Contractor shall adhere to the requirements of the “utility permit” with the State of Rhode Island, Department of Transportation (RI DOT). See permit in Appendix.**
- C. The Contractor shall obtain a City of Warwick Physical Alteration Permit for work within city streets. See permit application in Appendix.**

### **PART 3 EXECUTION**

#### **3.01 STORAGE AREA**

- A. It shall be the Contractor's sole responsibility to procure and maintain, either by purchase or rental, any property or easement necessary to provide suitable and adequate storage space for tools, materials and equipment during the progress of the Work. The storage or marshalling area obtained by the Contractor shall in no way obstruct or interfere with pedestrian or vehicular movement and shall not occupy any space within the public right-of-way, except with specific permission**

from the Owner. The storage area shall be kept in a neat and orderly fashion at all times and shall not be allowed to become a public nuisance or safety hazard to adjacent properties and neighborhood children or adults.

- B. The Contractor shall remove all excess materials, stockpiles, and equipment from storage sites, sweep, rake and generally dress area to condition satisfactory to property Owner upon completion of Contract.
  - 1. The Owner shall not be a party to negotiations related to acquisition of area for storage, or cleanup of same.

### 3.02 EQUIPMENT

- A. The Contractor shall transport all equipment to the site and set up operations, to a condition satisfactory to proceed with the intended construction, and upon completion, remove same.

### 3.03 PROJECT MAINTENANCE

- A. The Contractor shall properly maintain the project and storage area during the life of the contract, and upon completion of work dismantle storage area and provide general clean-up along the project site.

**\*\*END OF SECTION\*\***

## **SECTION 01562 – DUST CONTROL**

### **PART 1 GENERAL**

#### **1.01 EXTENT OF WORK**

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary to perform dust control including application of calcium chloride, manual sweeping and/or mechanical.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. CALCIUM CHLORIDE shall conform to AASHTO Standard Specification M 144, Type I or Type II. The calcium chloride shall be packaged in moistureproof bags or in airtight drums with the manufacturer, name of product, net weight, and percentage of calcium chloride guaranteed by the manufacturer legibly marked on each container.
- B. Calcium chloride failing to meet the requirements of the aforementioned specifications or that which has become caked or sticky in shipment may be rejected by the Owner.

### **PART 3 EXECUTION**

#### **3.01 CONSTRUCTION METHODS**

- A. Calcium chloride shall be applied when ordered by the Owner and only in areas which will not be adversely affected by the application.
- B. Calcium chloride shall not be used within 100 feet of the Pawtuxet River.
- C. Calcium chloride shall be uniformly applied at the rate of 1-1/2 pounds per square yard or at any other rate as directed by the Owner. Application shall be by means of a mechanical spreader, or other approved methods. The number and frequency of applications shall be determined by the Owner.
- D. Care shall be taken to avoid application of calcium chloride on any paved surfaces. If calcium chloride is applied to paved surfaces, the affected surfaces shall be immediately cleaned of all calcium chloride.
- E. The Contractor shall manually or mechanically sweep paved surfaces to remove all excavated material. Sweeping shall be performed daily at the conclusion of work or as directed by the Owner.

\*\*END OF SECTION\*\*

## **SECTION 01570 – CONSTRUCTION ZONE SAFETY PLAN**

### **PART 1 GENERAL**

#### **1.01 SUMMARY**

- A. Comply with the Construction Zone Safety Plan items (the Plan) as indicated on the drawings including without limitation installing and maintaining traffic control devices as required by the Plan. Traffic control devices shall include but are not limited to channelizing devices, signs, barricades, temporary impact attenuators in the amounts and locations indicated on the Drawings.
- B. Comply with all aspects of the Plan in the maintenance, support, adjustment, and relocation of all utility systems, regardless of utility owner and regardless of whether the actual work is being performed by the Contractor, by a Subcontractor, by the utility owner's forces, or by a contractor working for the utility owner.

#### **1.02 SEQUENCING AND SCHEDULING**

- A. Schedule implementation of all traffic maintenance equipment and procedures required by the Plan.
- B. Coordinate all Work in this Section with the City's Authorized Representative, the Rhode Island Department of Transportation, and all other governing authorities indicated in the Plan.

#### **1.03 REFERENCE STANDARDS**

- A. U.S. Department of Transportation, Federal Highway Administration "Manual of Uniform Traffic Control Devices for Streets and Highways" (MUTCD), latest edition.
- B. Rhode Island Department of Transportation (RIDOT), Standard Specifications.
- C. Other standards, if any, indicated in the Plan.

### **PART 2 PRODUCTS**

#### **2.01 TRAFFIC CONTROL DEVICES**

- A. Provide all interim traffic signage and traffic control devices in accordance with the Plan. All portable barricades, traffic signs, and other traffic control devices shall conform to the MUTCD and other standards, if any, indicated in the Plan.

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. Vehicular and pedestrian traffic shall be maintained in accordance with the Plan.
- B. Notify all abutters with respect to work that may impede traffic at least one week prior to beginning Work at the site.
- C. Provide at least 72 hours' notice of lane closures indicated in on Plan to the City, all property owners abutting the closure, and other governing authorities with jurisdiction as indicated on the Plan.

### 3.02 LANE CLOSURES

- A. General:
  - 1. Provide and erect all traffic control devices and signage as indicated in the Plan.
- B. Construction in Public Streets without full street closure:
  - 1. Maintain clear passage for emergency vehicles at all times.
  - 2. Any street, road, walk, driveway, private way or land area, public or private that is not indicated to be closed shall be maintained passable and safe by the Contractor. If any street, road or private way shall be rendered unsafe by the Contractor's operations as determined by the City's Authorized Representative, or if the Contractor is not in compliance with the Plan, provide additional personnel and traffic control devised as directed by the City or other governing authorities, at no additional cost to the City.

### 3.03 INSTALLATION

- A. General
  - 1. Conduct work in manner to interfere as little as possible with public travel, whether vehicular or pedestrian.

### 3.04 RESTORATION

- A. Remove all traffic control devices and construction signage upon completion of Work in the area and restore the area to its original condition.

\*\* END OF SECTION \*\*

## SECTION 01710 – CLEANING UP

### PART 1 GENERAL

#### 1.01 EXTENT OF WORK

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary for cleaning up, during progress of the work, and at completion of the work.

#### 1.02 WORK NOT INCLUDED

- A. Cleaning of specific products or work is specified in other Sections of these Specifications.

#### 1.03 CLEANING UP DURING CONSTRUCTION

- A. Debris and waste material shall not be permitted to accumulate, and the work shall be kept satisfactorily clean at all times.
- B. Immediately after unpacking, the Contractor shall collect and remove all packing materials, case lumber, excelsior, wrapping, and other rubbish.
- C. The Contractor shall provide metal containers with tight fitting covers, located where directed or approved by the Engineer, into which all refuse and garbage shall be deposited.
- D. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, or structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.
- E. The Contractor shall manually or mechanically sweep paved surfaces to remove all excavated material. Sweeping shall be performed daily at the conclusion of work or as directed by the Engineer.
- F. Trash shall not be disposed of in trenches, or by burying within the work areas.

#### 1.04 FINAL CLEAN UP

- A. Upon completion of the work and before acceptance and final payment, the Contractor shall remove, at his own expense, all temporary structures and equipment built or furnished by him, all debris and waste materials, and all surplus materials of all kinds from the site of the work, and dispose of them in a manner approved by the Engineer. The premises shall be left in a neat and orderly condition.

1.05 DISPOSAL

- A. No burning at the site will be permitted.
- B. No disposal in streams or bodies of water will be permitted.
- C. Trucks loaded at the site shall have loads trimmed as necessary to assure that no materials will fall off.
- D. Disposal of all unsuitable excavated materials and other debris as a result of the construction work shall be the responsibility of the Contractor and shall be performed at the Contractor's expense.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**\*\*END OF SECTION\*\***

## SECTION 02200 - EARTHWORK

### PART 1 GENERAL

#### 1.01 DESCRIPTION OF WORK

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary to complete excavation of all types of material encountered, placing of excavated material in embankments, or backfill, disposal of unsuitable and/or surplus material, and furnishing and placing borrow and backfill materials; all as shown on the Drawings or necessitated by conditions encountered in the course of the work and as herein specified.
- B. The work shall include power and/or hand excavation, stockpiling, rehandling and all incidental work.
- C. The work includes, but is not limited to, the following items:
  - 1. Miscellaneous and extra earth excavation and backfilling.
  - 2. Excavation and backfilling of trenches.
  - 3. Excavation of rock or boulders, existing paving, foundations, or other underground structures, and pipelines.
  - 4. Control of water by ditching, pumping, well point systems or other methods.
  - 5. Sheet piling, shoring and bracing to support trench walls, sides of excavations, existing structures or utilities.
  - 6. Compaction of embankment, fills, and backfills.
  - 7. Furnishing, placing and compacting gravel borrow materials.
  - 8. Disposal of surplus and/or unsuitable materials. Such materials shall be hauled off the site.
  - 9. Excavation below grade as specified when necessitated by type of material encountered, as ordered by the Owner.
  - 10. Site grading and restoration.

#### 1.02 STANDARDS

- A. The following standards form a part of these Specifications:



1. ASTM D 1556. Test for Density of Soil in Place by the Sand-Cone Method.
2. ASTM D 1557. The Moisture-Density Relations of Soils and Soil Aggregate Mixture Using a 10 lb. (4.5 kg) Rammer and an 18-in. (145 mm) Drop.

**PART 2 PRODUCTS**

2.01 MATERIALS

- A. Common Fill. Material imported or excavated on site which is friable, natural soil composed of gravel, sand, or silty or clayey gravel and sand; free from debris, concrete or other rubble, organic matter, muck, peat, excavated rock and boulders over 4 inches in maximum dimension. It shall have properties such that it may be readily spread and compacted.
- B. Gravel Borrow. Gravel Borrow for backfill, pavement foundations and/or replacement of unsuitable material in trenches, shall be either graded bank-run gravel or screened gravel consisting of hard, durable particles, practically free from loam or clay.
  1. No Recycled Materials Will Be Allowed.
  2. Gravel borrow shall meet the following gradation requirements:

<u>Sieve</u> <u>(Square Openings)</u>	<u>Percent Passing</u> <u>(By Weight)</u>
3"	100
1/2"	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-8

- C. Crushed Stone.
  1. Crushed stone for pipe bedding in rock trench or as directed by the Owner shall consist of durable crushed rock consisting of the angular fragments obtained by breaking and crushing solid or shattered natural rock and shall be reasonably free from thin, flat elongated or other objectional pieces.
  2. The crushed stone shall be free from any organic soil or perishable material and not more than 1.0 percent by weight of satisfactory material

passing a No. 200 sieve will be allowed to adhere to the crushed stone, and the stone shall meet the following gradation requirements:

<u>Sieve (Square Openings)</u>	<u>Percent Passing (By Weight)</u>
5/8"	100
1/2"	85-100
3/8"	15-45
No. 4	0-15
No. 8	0-5

- D. Lumber. Lumber used for sheeting, shoring, bracing, and other construction purposes shall be sound, straight grained, free from shakes, loose knots and other defects liable to impair its strength or durability. Lumber and sheeting may be reused, if in good condition. Lumber shall be spruce, fir or approved equal thereto.
- E. Steel Sheeting. Steel sheeting shall be an approved standard section, either new or used, weighing not less than 22 pounds per square foot of wall.
- F. Bales of Hay for Silt Control. Bales of hay for silt control shall consist of rectangular shaped bales of hay or straw weighing at least 40 pounds per bale. They shall be free from primary noxious weed seeds or rough or woody material.
- G. Silt Sock Type Erosion Control. Erosion control shall be a tubular shaped material comprised of a fabric exterior filled with wood chips or compost, 12-inch diameter, and biodegradable.
- H. Silt Sack Type Erosion Control. Erosion control shall be used in catch basins. Erosion control shall be a "bag like" device which sits under the grate of existing catch basins. Bag is comprised of filtration geotextiles. Bag shall be removed from catch basins and emptied as necessary. After emptying, rinse bag and return to service.

**PART 3 EXECUTION**

3.01 GENERAL

- A. All equipment and methods for excavation shall be submitted to the Owner for review, particularly as to adequacy and suitability to accomplish the work in a safe and satisfactory manner.
- B. Grade line for pipes and masonry is 6 inches below the pipe or masonry except as

otherwise specified or shown on the Drawings.

- C. No pipeline or structures shall be constructed in areas to be filled until the fill has been placed and compacted to at least 2 feet above the grade line of the pipe or bottom of the slab of the structure.
- D. Subgrade at the bottom of excavation shall be undisturbed, or restored at the Contractor's expense. Unauthorized over excavation shall be replaced with compacted gravel borrow as approved by the Owner.
- E. All suitable excavated material shall be used for topsoil, fill or embankment to the extent needed. Suitability of materials shall be determined by the Owner. Such use of excavated materials may include stock-piling and screening until needed.
- F. All unsuitable or surplus excavated material shall be removed from the site as directed by the Owner. The Contractor shall be wholly responsible for the disposal of such excavated material. Such disposal shall be in strict compliance with all State rules, regulations, ordinances and laws which regulate and control the dumping on and filling of land.
- G. All disposal of excavated material is included in the prices for the various categories of excavation.
- H. Except when otherwise specifically approved, all excavation shall be performed in the dry.
- I. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces. The Contractor shall replace or repair any paved surfaces damaged by such equipment at his own expense.

### 3.02 EARTH EXCAVATION BELOW GRADE

- A. Wherever, in the opinion of the Owner, the material at or below grade line as shown on the Drawings is unsuitable for pipe bedding, it shall be excavated to such additional depths as authorized in writing by the Owner, and shall be refilled with gravel borrow. This material shall be compacted to not less than 95 percent of maximum dry density determined by ASTM Standard D1557, Method C.

### 3.03 MISCELLANEOUS AND EXTRA EARTH EXCAVATION

- A. Wherever authorized by the Owner, the Contractor shall do excavation and backfilling in addition to the excavation and backfilling needed to perform the work indicated on the Drawings. Miscellaneous earth excavation and backfilling may be authorized for other unforeseen purposes. It may include hand excavation. Extra earth excavation may be authorized because of filling and grading work which has taken place since completion of the Drawings, or because

of design changes. Miscellaneous and extra earth excavation shall be subject to all requirements for other excavation previously stated herein.

### 3.04 TRENCH EXCAVATION

- A. Trenches in pavement shall have the traveled way surface cut in a straight line by a concrete saw or equivalent method, to the full depth of pavement. Excavation shall only be between these lines. Cutting operations shall not be done by backhoe, gradall, jackhammer or other ripping equipment.
- B. Trenches and related excavations shall be of sufficient width and depth at all points to allow pipes to be laid, joints to be formed, and appurtenant structures to be built in a workmanlike manner, and when needed, to allow for sheeting and shoring, pumping and draining, and/or for removing and replacing any materials unsuitable for foundations.
- C. Trenches shall be at least 12 inches wider than the outside dimension of the pipe or structures they are to contain except as otherwise specified or indicated.
- D. Trenches shall not be unnecessarily wide, so as to increase excessively the load on the pipe resulting from backfill.
- E. Bottoms of trenches shall be carried to lines and shapes approved by the Owner. Bottoms of trenches shall be shaped to conform to the outside of pipes insofar as the material will admit, so that pipes shall have a continuous and even bearing. Bottoms of trenches shall be shaped so that bells of pipes will not bear on the ground.
- F. No tunneling shall be permitted in place of open trench construction, unless specifically authorized by the Owner.
- G. Excavations adjacent to existing underground utility lines and other underground structures shall be done by hand to insure against possible damage.
- H. Excavation just above the bottom of structures in trenches shall be done by hand so that foundations will rest on undisturbed earth, or disturbed subgrade re-compacted to the 95 percent of maximum dry density as determined by ASTM D 1557, Method C.
- I. Side slopes of excavation shall be less than the angle of repose of the material excavated, and flat enough to prevent slides or cave-ins.
- J. Any extra excavation required as a result of slides or cave-ins shall be done by the Contractor at his own expense.
- K. Final trimming excavation at bottom of trenches shall not be done until the ground has been dewatered and the Contractor is ready to install pipe or construct foundations of the appurtenant structures.

- L. Trenches shall only be opened at such times and to such extent as approved by the Owner.

### 3.05 SHEETING, SHORING AND BRACING

- A. Such measures shall always be taken where required for the protection of workmen and to conform to all governing safety regulations. The adequacy of the shoring shall be the responsibility of the Contractor. Shoring, bracing, and sheeting shall be removed as the excavation is backfilled, in a manner to avoid damage or disturbance to the work, unless left in place as hereinafter provided. The following detailed requirements shall be met:
  1. Sheeting shall be driven and excavation work conducted in such a manner as to prevent the material in back of the sheeting from running under the sheeting and into the excavation.
  2. Care shall be taken to prevent voids outside of the sheeting, but, if voids occur, they shall be filled immediately with gravel borrow well compacted, at the Contractor's expense.
  3. Special precautions such as sheeting, shoring and bracing, shall be taken to guard against any damage to or settlement of existing buildings, walls or other structures adjacent to the work.
  4. Sheeting shall not be unnecessarily driven below pipe inverts to necessitate its being left permanently in place.
  5. Sheeting, shoring, bracing or parts thereof, shall be left in place after the completion of the work only in locations indicated or where authorized in writing by the Owner. The Owner may require sheeting left in place at intervals to support existing structures and other sheeting removed. The Owner may permit sheeting to be left at the Contractor's option without cost to the Owner.
  6. All sheeting left in place, for whatever reason, shall be cut off at least 2 feet below the finished ground surface, unless otherwise approved by the Owner.

### 3.06 DEWATERING

- A. The Contractor shall remove by pumping, draining, bailing or otherwise, any water which may accumulate in trenches and other excavations made under this contract. If an unacceptable quickening condition of bottom and walls of the excavation occurs, preventing the construction of the pipeline and structures in a satisfactory manner, the Contractor shall lower the water level a sufficient depth below the bottom of the excavation to remedy the condition. The Contractor shall form all pump wells, sumps, dams, flumes or other works necessary to lower the

water level below the bottom of the excavation or to keep trenches and other excavations entirely clear of water while pipelines and structures and their foundations are being built. Pipe underdrains, or well systems may be used for dewatering, if approved by the Owner. They will not be paid for separately except as provided specifically. The following requirements shall be met, as applicable:

1. The Contractor shall furnish, install and maintain all drainage systems and pumping equipment necessary to keep the ground water level at an elevation low enough so that no structures shall move or float on account of uplift pressure during construction. The Contractor shall make all necessary computations for the weights of the structures during the various stages of construction and be responsible for preventing damage from uplift.
  2. The Contractor shall at all times have upon the work and operate sufficient pumping machinery so that pipelines and structures will be built in the dry by lowering the water level below the bottom of the excavation if necessary.
  3. Final trimming excavation or grading shall not be done until the Owner is satisfied that the manner of dewatering meets his approval.
  4. All water pumped or drained from the work shall be disposed of in a manner which will not result in undue interference with other work or damage to adjacent properties, pavements and other surfaces, buildings, structures and utilities. Suitable temporary pipes, flumes or channels shall be provided for water that may flow along or across the site of the work.
- B. WHEREVER THE CONSTRUCTION AREA crosses a stream, drainage ditch, or where there is a cross flow of surface water, the water shall be channeled in a stone lined ditch or suitable culvert. In either case, no silting or erosion shall result.
- C. WHEN PUMPING is performed, whether across the construction area or from the trench or other excavations, pump discharges shall pass through stilling wells prior to discharging onto natural ground or drainage systems. The effluent shall be free from silt. The Contractor shall take special care that the existing surface is not eroded or otherwise damaged by any pumped or natural discharge.
- D. When underdrains are used, pipe shall be of ample size to dewater the areas during the construction work. The underdrain areas shall be excavated to such additional depth as required to lay the pipe in a bed of clean, free-draining gravel or broken stone.
- E. Pipelines, fresh masonry and other structures shall be protected from damage from dewatering operations by proper covering and other approved methods.

### 3.07

#### PROTECTING EXISTING UNDERGROUND STRUCTURES

- A. Wherever culverts, sewers, drains, manholes, catch basin connections, water mains, valve chambers, gas mains, electric conduits, telephone conduits, or any other underground constructions are encountered in excavating, they shall be protected and firmly supported by the Contractor, at his own expense, until the excavation is backfilled and the existing structures are made secure. Injury to any such structures caused by or resulting from the Contractor's operations shall be repaired at the Contractor's expense. The Authority having charge of any particular underground structure shall be notified promptly of injury to its structure.
- B. Whenever approved by the Owner, pipes or other underground structures encountered in excavating or trenching shall be supported permanently with supports across the excavation or trench. Lumber so used and left in place will be paid for the same as any shoring left in place, as authorized.
- C. If underground utility structures are encountered which are not shown on the Drawings, they shall be reported to the Owner immediately and to the appropriate authority, if known. The Owner shall decide whether any change in the work to be done is involved and what measures are required to deal with such unforeseen obstructions.

### 3.08

#### ROCK EXCAVATION

- A. Rock excavation shall mean boulders exceeding 1 cubic yard in volume or solid rock which, in the opinion of the Owner, requires drilling and chemical blasting for its removal. No hard pan, no soft or disintegrated rock, no loose or previously blasted rock or broken stone smaller than one cubic yard, and no rocks exterior to the maximum limits of excavation which may fall into the excavation, will be allowed as rock excavation.
- B. Rock in Trenches. Wherever the bottom of a trench consists of boulders or solid rock, it shall be excavated to 8-inches below grade and refilled to a depth of 12-inches over the pipe with crushed stone compacted to the satisfaction of the Owner. Compaction operations shall be continued until stones are firmly interlocked and the surface is unyielding.

### 3.09

#### BACKFILLING TRENCHES

- A. After pipelines and appurtenant structures have been built, the trenches and other areas shall be backfilled with suitable excavated material to the extent available or with gravel borrow when excavated material is not available. All material for backfilling shall be free of roots, stumps, frost and stone weighing over 100 pounds. Backfill shall be placed to meet the following requirements:

1. Backfill around pipe or over pipe cradle shall be deposited in layers not over 6 inches deep, placed evenly on both sides of pipe and each layer firmly compacted by hand tools and/or mechanical compactors to the satisfaction of the Owner. (See Sub-paragraph 4.) Joints may be left uncovered for inspection or testing as directed by the Owner, then backfilled as previously specified. Pipe shall be backfilled to a depth of at least 3/4 of the pipe diameter before testing and thereafter to a depth of at least one foot above the top of pipe by the same methods.
2. For trenches in streets, walks, paved areas, or locations to be paved or landscaped upon completion of trench backfill, the entire depth of trench shall be backfilled and compacted in the same manner as the portion around the pipe.
3. For trenches in open areas where no future paving or landscaping/seeding is indicated, backfill shall be placed and compacted by spreading equipment, mechanical compactors, or puddling, to suit the material, and width and depth of trench, and to the approval of the Owner.
4. Unless stated otherwise on the Drawings, the above described compaction of trench backfill around pipes and under paved areas will be deemed satisfactory when field density tests show at least 95 percent of maximum dry densities of the same materials, as determined by ASTM D 1157, except that 2 feet of depth below finished grade shall have 100 percent of maximum density. Where an envelope of selected material is provided around the pipe for which density tests are not feasible the material shall be well-compacted as hereinbefore specified.
5. Backfill around manholes, pits and other structures in trenches shall be placed and compacted as specified for backfill in trenches. Backfill around concrete or masonry structures shall not be placed until approved by the Owner and shall be brought up evenly on all sides to prevent excessive pressure or displacement.
6. Unless otherwise specifically required, all topsoil, sods, shrubs, and other surface material shall be replaced in good condition.

### 3.10 TESTING

- A. Laboratory testing of gravel borrow, crushed stone and sand cushion, for compliance with the specifications will be performed at the Contractor's expense. Field and laboratory density tests will also be performed at the contractor's expense.



3.11 MAINTENANCE OF SURFACE WATER FLOWS

- A. It shall be the Contractor's responsibility to maintain the flow of drainage at all times, during all phases of construction. The methods used to maintain flows will be left to the discretion of the Contractor but must be reviewed by the Owner. Full compensation for maintaining said flows will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

3.12 GRADING

- A. All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth graded to the elevations shown. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations.

**\*\*END OF SECTION\*\***

## SECTION 02210 – EXPLORATORY EXCAVATION

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Work to be done under this Section includes furnishing all materials, labor, tools and equipment, and performing all operations necessary to complete exploratory excavation for the purpose of:
  - 1. Locating the water transmission mains and
  - 2. Visually verifying the condition of the water mains.

#### 1.02 REFERENCES

- A. Section 01300 – Submittals
- B. Section 01562 – Dust Control
- C. Section 01570 – Construction Zone Safety Plan
- D. Section 02200 – Earthwork
- E. Section 02510 – Pavements
- F. Section 02930 – Loaming and Seeding

#### 1.03 SUBMITTALS

- A. Sketch. Submit a sketch showing the location of the subsurface features which were uncovered in the test pit, including the following information:
  - 1. Northing and Easting of each utility (2 points per excavation per utility uncovered). Alternatively, GPS coordinates may be provided.
    - a. GPS coordinates shall be NAD83 tied into the Rhode Island State Plane.
    - b. All GPS measurements shall be to a minimum precision of 1 part in 12,000.
  - 2. Depth of features below ground surface.
  - 3. Diameter, type, material, and condition of pipe or conduit.
  - 4. Orientation of pipe, conduit, or structure relative to other site features.
  - 5. Dimensions between utilities (horizontal plane) from:

- a. edge of pipe to edge of pipe, and
- b. center of pipe to center of pipe.

6. Exploratory excavation identification name / number

7. Discrepancies from plans.

1.04 JOB CONDITIONS

- A. Perform exploratory excavations only within the limits of work, easements, and right of way as indicated on the Drawings.
- B. Excavate exploratory excavations with care to avoid damage to structures and utilities. Excavate by hand if necessary. Promptly repair any damaged utilities and structures at no additional cost to the Owner.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.01 GENERAL

- A. Exploratory excavations shall be performed in advance of construction at the locations indicated on the Drawings or where directed by the Owner. Determine the exact location of all pipes, conduits, duct, or other interfering structures in both horizontal and vertical locations. Excavate to the depth and width necessary to accurately determine the locations of the utilities of interest.
- B. Backfill exploratory excavations in accordance with Sections 02200, 02510, and 02930.
- C. Exploratory excavations performed in areas to be further disturbed shall be graded for temporary traffic or other use. Excavations shall not be left “open” overnight.
- D. Exploratory excavations performed in areas not to be further disturbed shall be restored to pre-construction conditions.

**\*\* END OF SECTION \*\***

## SECTION 02510 - PAVEMENTS

### PART 1 GENERAL

#### 1.01 EXTENT OF WORK

- A. The Work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations to maintain and complete replacement of existing pavements as indicated or specified.
- B. Pavements shall include all base pavement courses above the subgrade prepared under Section 02200.
- C. Bituminous concrete trench paving shall include temporary and permanent replacement of pavement removed for trench excavation inclusive of all sawcutting for matching existing pavements.
- D. All materials and methods of constructing the trench pavements specified in this Section shall conform to the applicable requirements of the Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Design (Blue Book), Current Edition, including all amendments and addenda thereto.

#### 1.02 RELATED SECTIONS

- A. Section 01300 – Submittals
- B. Section 02200 – Earthwork

#### 1.03 STANDARDS

- A. The Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction (Blue Book), latest edition, forms a part of these Specifications to the extent of the references thereto.
- B. Americans with Disabilities Act (ADA) Accessibility Guidelines
- C. American Association of State Highway and Transportation Officials (AASHTO)
  - 1. AASHTO T99 Moisture Density Relations of Soils using a 5.5 lb. Rammer and 12-in Drop.

#### 1.04 SUBMITTALS

- A. Product data shall be submitted.
- B. Certification of mix from production plant. Refer to Section 01300 for further requirements.

## **PART 2 PRODUCTS**

### **2.01 GRAVEL BORROW FOR SUB-BASE COURSE**

- A. Gravel borrow for sub-base course for all pavements shall conform to the requirements for gravel borrow for sub-base in Section 02200, Paragraph 2.02.B.3.

### **2.02 BITUMINOUS CONCRETE**

- A. Bituminous concrete shall conform to the requirements of M.03 and Part 400 of the Blue Book. Mix designs shall conform to the table under M.03.01, Surface Courses.
- B. Temporary Pavement shall consist of Class I-1 surface course mix.
- C. Permanent Pavement shall consist of Class I-1 surface course, a bituminous base course, and a modified bituminous binder course as indicated.

### **2.03 BITUMINOUS EMULSION FOR TACK COAT**

- A. Bituminous emulsion for tack coat shall be in accordance with the requirements of AASHTO M140.

### **2.04 PAVEMENT MARKINGS**

- A. Raw materials used in pavement markings shall conform to the specifications of ASTM and AASHTO, unless otherwise specified by the Blue Book. The proportions, percentages, conditions, and packaging of the pavement marking material shall conform to the Blue Book.
- B. Pavement markings shall be a thermoplastic material in accordance with M.17 and T.20 of the Blue Book. Pavement markings shall include glass beads for reflectorization. Sampling and testing of the paint shall be conducted in conformance with M.17 and T.20 of the Blue Book, before its use.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. No pavement shall be constructed when it is raining, when the temperature is below 32°F, or during the period from December 1 to March 15, unless otherwise permitted in writing. During this time period, no castings shall be left above existing grade, such that they would interfere with winter road maintenance equipment.
- B. Pavement replacement shall conform to the requirements specified and to the requirements included in the RIDOT permit.

### **3.02 GRAVEL BORROW FOR SUB-BASE COURSE**

- A. Sub-base course for all pavements shall be placed and compacted on subgrade to the depth as indicated. The sub-base shall be compacted to at least 95 percent of maximum dry density as determined by the Standard AASHTO test T 99-Method C. The gravel borrow shall be spread and rolled in layers not exceeding 6 inches in compacted thickness. The surface of the gravel borrow base shall be shaped to the cross section of the road. Sub-base courses shall be placed only after the subgrade has been compacted.

### 3.03 BITUMINOUS CONCRETE PAVEMENT

- A. Bituminous concrete pavement for roadways shall be constructed in accordance with Section 400 of the Blue Book. The course thickness shall be as indicated below.

### 3.04 TRENCH PAVING

- A. Temporary Trench Pavements. After the trenches have been backfilled and compacted, the Contractor shall install a 2-inch thick pavement, consisting of a 2-inch Class I-1 bituminous surface course, upon a prepared subgrade. Prior to installation, the original pavement on either side of the trench shall be cut back as necessary to achieve clean, straight lines. All loose material shall then be removed to depth as indicated on the Drawings and legally disposed of off-site and the trench subgrade rerolled, reshaped and recompactd as specified in Section 02200 to receive temporary trench pavements. The edges of abutting pavements shall be coated with an asphalt emulsion to bond new and existing pavements. The finished grade of pavements shall match the adjoining undisturbed pavement. The Contractor shall maintain the temporary trench pavement so that it is suitable for travel until such time as the permanent trench pavement is installed.
- B. Permanent Trench Pavements. Contractor shall remove temporary trench pavement and shall cut trench back 1 foot on either side. All material shall be disposed of properly. The edges of abutting pavements shall be coated with an asphalt emulsion to bond new and existing pavements. Permanent trench patch shall consist of a 5-inch plant mix bituminous base course, a 2-inch modified bituminous binder course and a 2-inch Class I-1 bituminous surface course. Contractor shall install new pavements in accordance with the drawings. Finished grade shall match existing.
- C. The gravel borrow base and bituminous concrete pavement shall be placed in order to facilitate traffic movement and to minimize tracking and dust. Contractor shall be required to place temporary trench pavement anytime barricades are removed. Temporary trench pavement shall be removed and a permanent trench pavement installed after sixty days but no later than ninety days of temporary trench pavement installation.
- D. Compaction:
  - 1. After the paving mixture has been spread as specified, compaction shall be obtained by the use of power rollers of acceptable design and weight per inch

of roller.

2. Along curbs, structures and all places not accessible with a roller, the mixture shall be thoroughly compacted. The surface of the mixture after compaction shall be smooth and true to the established line and grade.
  3. The densities of the completed pavement shall be not less than 95 percent of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions.
- E. All areas of finished paving shall pitch to drain. Where finished paving begins to unravel at joints where preconstruction paving meets new paving, the joints shall be fused using infrared equipment to bond the old to the new.
  - F. All new bituminous pavement shall be backed by compacted gravel borrow or topsoil depending upon the material the pavement abuts.
  - G. No vehicular traffic of any kind shall be allowed to pass over the newly finished surface until it has had time to set.
  - H. Pavement markings shall be replaced. Pavement markings shall conform to the Blue Book requirements and Paragraph 3.05.

### 3.05 PAVEMENT MARKINGS

- A. Pavement markings shall be “cat tracked” and accepted by the engineer prior to any thermoplastic markings being laid.
- B. Thermoplastic pavement markings shall not be installed when the ambient temperature falls below 32 degrees F.
- C. Pavement markings shall be installed in accordance with T.20.03.5 of the Blue Book insofar as it applies.
- D. Pavement markings shall conform to the requirements of the RI DOT Permit.
- E. Temporary pavement markings shall be applied at the time of pavements being laid.
- F. Permanent pavement marking shall be applied within 30 calendar days of pavement being laid.

### 3.06 MAINTENANCE PERIOD OF ROADWAY SURFACE

- A. The Contractor shall maintain the surface of any excavated area in accordance with the requirements of the RI DOT Permit as applicable.
- B. The Contractor shall maintain trench pavement between the placement of temporary and permanent patching of the trench and shall promptly refill and repair areas which

have settled or are otherwise unsatisfactory for pedestrian and vehicular traffic, at no additional cost to the Owner.

**\*\*END OF SECTION\*\***



**SECTION 02660 – NON-DESTRUCTIVE LEAK DETECTION AND INTERIOR  
CONDITION ASSESSMENT**

**PART 1      GENERAL**

1.01      SCOPE OF SERVICES

- A.      Conduct non-destructive leak detection and condition assessment surveys on the following pipelines:
  - 1.      Two (2) 30-inch cast iron and ductile iron water mains, Lincoln Avenue to Pettaconsett Avenue (Cranston, RI) crossing under Route 95 and the Pawtuxet River.
    - a.      Length: approximately 2, 350 linear feet
- B.      Provide CCTV of interior of the water mains.

1.02      RELATED SECTIONS

- A.      Section 01300 – Submittals
- B.      Section 02200 – Earthwork
- C.      Section 02510 - Pavements

1.03      SUBMITTALS

- A.      (4) copies of DVD containing CCTV inspection of interior of each pipe segment.
- B.      (4) copies of Draft Report.
- C.      (4) copies of Final Report.

**PART 2      PRODUCTS**

2.01      MANUFACTURERS

- A.      Pure Technologies
  - 1.      Product: Sahara Leak Detection
  - 2.      Contact:
    - a.      Jeff Zdrojewski, PE  
Pure Technologies  
3040 Route 22 West, Suite 130  
Branchburg, NJ 08876

Cell: 716-207-6619

Email: jeffrey.zdrojewski@puretechltd.com

**B. THIS IS PROPRIETARY ITEM. SUBSTITUTION OF PRODUCTS FROM OTHER MANUFACTURERS WILL NOT BE PERMITTED.**

2.02 LAUNCH LOCATION/ACCESS POINTS

A. Contractor shall provide access points to interior of water main via a wet tap. Wet tap shall conform to the following requirements.

1. For Existing Cast or Ductile Iron Water Mains:

- a. Tapping sleeves shall be capable of containing pressure within the full volume of the sleeve. Tapping sleeves shall be designed for providing a safe, efficient means of connecting branch piping to existing lines, while maintaining the service in the existing line.
- b. Tapping sleeves shall consist of a split ductile iron sleeve tee conforming to ASTM A536 with mechanical joint ends on the main and a flange on the branch. The follower rings shall be of the solid thickness split-ring type, which utilizes two additional bolts to connect the rings. All sleeves shall include end joint accessories and split gland necessary to assemble sleeve to pipe. Side flange seals shall be o-ring type of either round, oval or rectangular cross-sectional shape and size per manufacturer's recommendations.
- c. Sleeve shall be coated with an asphalt varnish in compliance with NSF-61.
- d. Contractor is responsible for verifying the outside diameter of the pipe to be tapped prior to ordering materials. It is recommended that the tapping sleeve and tapping valve be manufactured by the same manufacturer to ensure the proper fit of the alignment ring on the tapping valve with the recess on the tapping sleeve.
- e. Tapping valves shall conform to Paragraph 2.03 of the Specifications insofar as they apply. Valves shall have a mechanical joint on the outlet.

B. Shutdown of water mains shall not be allowed. Insertion and inspection must be done on a live water main.

2.03 GATE VALVES

A. Gate valves shall be furnished in accordance with the latest ANSI/AWWA Standards' Designation C509 for "Resilient-Seated Gate Valves for Water Supply Service," or C515 for "Reduced Wall, Resilient-Seated Gate Valves for Water Supply Service,"

but shall meet the specific requirements and exceptions to the aforementioned specifications, which follow:

1. Gate valves shall open by turning clockwise (right). They shall be of the resilient seat, wedge type with iron body and shall have a non-rising high strength bronze stem mounted with a thermoplastic cartridge stem seal incorporating "O" rings packed and ready for use. Valves 12-inch diameter and under shall be designed for vertical setting. Valves 16-inch diameter and over shall be designed for horizontal mounting and horizontal operational setting.
2. Operating nuts shall be 2-inches square at the base and shall be loosely fitted on the stem. Gate valves shall have mechanical joints.
3. All gate valves shall be suitable for working water pressure of 200 pounds per square inch and shall be tested under a hydrostatic pressure of 400 pounds per square inch and show no leak.
4. All ferrous surfaces of the valve body waterway and vane shall be given a fusion-bonded epoxy coating in compliance with AWWA C550 and NSF 372. This coating shall be applied prior to assembly to ensure that all exposed interior and exterior surfaces receive the epoxy coating.
5. All surfaces of the iron gate, including stem hole shall be encapsulated in rubber tightly bonded to the gate. Design and machining of valves shall permit packing of valves without undue leakage while they are wide open and in service.
6. The guide slots of the gate shall have thermoplastic inserts.
7. Gate Valves shall be manufactured in the USA.

#### 2.04 INSPECTION REQUIREMENTS

- A. Inspection shall be done using a tethered technology. Free floating technologies are not acceptable. No unit shall be left in the pipe.
- B. Distance traveled by the technology shall be logged via a line counter.
- C. Insertion point and End of Run point shall be determined using GPS. GPS point shall be accurate within 1 foot horizontally. GPS coordinates shall be provided in Northing Easting format.
- D. Equipment shall be calibrated prior to use.
- E. Equipment shall be in good working condition.
- F. Equipment shall only be used in potable water applications. No prior use in other

systems.

- G. All equipment shall be disinfected and free of debris prior to insertion.
- H. Leaks and air pockets shall be located within 18 inches and shall be located from insertion point.
- I. The Warwick Water Division shall operate all valves.
- J. Documents available to the Contractor include the plans and specifications. Record plans are not available.

## 2.05 PAVEMENT AND PAVEMENT MARKINGS

- A. Shall be restored in accordance with Section 02510.

## 2.06 REPORTING

- A. Project report shall provide, at a minimum, the following information:
  - 1. Table of Contents
  - 2. Executive Summary
  - 3. Introduction describing the technology, insertion locations and requirements, tracking system, and method of leak and air pocket detection.
  - 4. Leak Detection Results
    - a. Including estimated volumetric flow rate of each leak (in GPM).
  - 5. CCTV Inspection Results
  - 6. Summary of observations
  - 7. GPS Information for:
    - a. Insertion locations
    - b. End of run locations
    - c. Leak location (when possible)
- B. Provide Draft report within four (4) weeks of final inspection.
- C. Owner will review the draft report and return all comments within two (2) weeks.
- D. Provide Final report within two (2) weeks of comment receipts.

**PART 3 EXECUTION**

3.01 INSTALLATION OF APPURTENANCES

- A. All appurtenances shall be laid in accordance with AWWA Standard C-600 insofar as they do not conflict with these Specifications.
- B. Appurtenances shall be examined carefully for cracks or other defects and cleared of all dirt and debris before laying.
- C. Each pipe shall be held firmly in position by tamping backfill material around the barrel of the pipe as specified under Section 02200, Paragraph 3.04.
- D. The Work shall be conducted in such manner that no loose excavation or other foreign material can enter the pipes.

**\*\*END OF SECTION\*\***

## SECTION 02930

### LOAMING AND SEEDING

#### **PART 1 GENERAL**

##### 1.01 SUMMARY OF WORK

- A. Section includes loaming and seeding as indicated and specified.

##### 1.02 REFERENCES

- A. Section 01010 – Summary of Work
- B. Section 01300 – Submittals
- C. Section 01710 – Cleaning Up
- D. Section 02200 – Earthwork

##### 1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01300:
  - 1. Composition of seed mixture, with the percentage of the purity weed content, and germination, the net weight and date of shipment of each variety.
  - 2. Evidence that the loam proposed meets the requirements specified in Paragraph 2.01.G.
  - 3. Test results for loam as specified in Paragraph 2.01.G.
  - 4. Duplicate copies of invoices for fertilizer and lime showing quantities of each grade of fertilizer, percentage of calcium carbonate or magnesium carbonate, and the percentages of limestone that pass the sieves.
  - 5. Manufactured mulch: Manufacturer's literature and one sample.
  - 6. Duplicate copies of seed invoices and a certification from the seed vendor that each container of seed delivered is labeled in accordance with the Federal Seed Act and is as specified in this Section furnished on or with all copies of seed invoices.

##### 1.04 REFERENCE STANDARDS

- A. Work under this Section shall conform with the following standards in effect at bid:

1. ASTM D698, Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>).

**PART 2 PRODUCTS**

2.01 NON-WETLANDS MATERIALS

- A. Non-petroleum tackifier commercially available for spray applications.
- B. Fertilizer shall be of 10-6-4, uniform in composition, free-flowing, equipment, delivered to the site in bags or containers, fully labeled, conforming to Massachusetts Fertilizer Laws MGL Chapter 128, Section 64-83, and bearing the name, trade name or trademark, and warranty of the producer.
- C. Lime shall be agricultural grade limestone ground so that 95 percent of the material will pass a No. 20 sieve and 50 percent will pass a No. 100 sieve.
- D. Manufactured Mulch shall be cellulose-fiber or wood-pulp mulch with non-toxic temporary green dye for visual metering, commercially available for use in spray applications.
- E. Mulch shall be threshed straw of cereal grain such as oats, wheat, barley or rye.
- F. Seed – Lawn Areas:
  1. Mixture shall be fresh, clean, new crop seed, mixed by a dealer. No seed shall be sown until seed certificates specified in Paragraph 1.02 are submitted. Damaged and moldy seed shall be removed from the site and replaced at no additional cost to the Owner.
  2. Seed shall be of the previous year's crop with weed content not exceeding one (1%) percent by weight, conforming to the following:

<u>Species</u>	<u>Percent by Weight</u>	<u>Germination Minimum</u>	<u>Purity Minimum</u>
For Hydroseeding Grass			
Kentucky Bluegrass	10%	85%	90%
Merion Bluegrass	20%	85%	92%
Penlawn Red Fescue	50%	85%	95%
Manhattan Perennial Rye	20%	90%	98%

- G. Topsoil shall be a "fine sandy loam" or a "sandy loam" determined by mechanical analysis and based on the USDA classification system, of uniform composition, without admixture of subsoil, free of stones greater than one inch, lumps, plants and their roots, debris and other extraneous matter over 1/2 inch in diameter,

containing no toxic substances, obtained from naturally well drained areas which have never been stripped before and have a history of vegetative growth.

1. Loam shall have an acidity range of pH 6.2 to pH 6.5, shall contain not less than 5 percent nor more than 12 percent organic matter as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F., plus or minus 9 degrees.
2. Loam stripped from the site may be used and amended to meet the above specifications.

## 2.02 WETLANDS MATERIALS

### A. Soil

1. Shall be soils excavated from impacted wetland area.
2. Soils shall not be compacted or grubbed for the top 18-inches.

### B. Seed – Wetland Areas:

1. Wetlands Seed Mix shall be used within wetlands areas as indicated, however, they shall not be applied to standing water.
2. Mixture shall be fresh, clean, new crop seed, mixed by a dealer. No seed shall be sown until seed certificates specified in Paragraph 1.02 are submitted. Damaged and moldy seed shall be removed from the site and replaced at no additional cost to the Owner.
3. Seed shall be of the previous year's crop with weed content not exceeding one (1%) percent by weight, and shall consist of the following species:
  - a. Fox Sedge (*Carex vulpinoidea*)
  - b. Lurid Sedge (*Carex lurida*)
  - c. Blunt Broom Sedge (*Carex scoparia*)
  - d. Sensitive Fern (*Onoclea sensibilis*)
  - e. Blue Vervain (*Verbena hastata*)
  - f. Hop Sedge (*Carex lupulina*)
  - g. Green Bulrush (*Scirpus atrovirens*)
  - h. Nodding Bur Marigold (*Bidens cer-nua*)



- i. Bristly Sedge (*Carex comosa*)
  - j. Fringed Sedge (*Carex crinita*)
  - k. American Mannagrass (*Glyceria grandis*)
  - l. Wool Grass (*Scirpus cyperinus*)
  - m. Soft Rush (*Juncus effusus*)
  - n. Spotted Joe Pye Weed (*Eupatorium maculatum*)
  - o. Boneset (*Eupatorium perfoliatum*)
  - p. Mud Plantain (*Alisma subcordatum*)
  - q. New England Aster (*Aster novae-angliae*)
  - r. Rattlesnake Grass (*Glyceria canadensis*)
  - s. Purplestem aster (*Aster puniceus*)
  - t. Soft Stem Bulrush (*Scirpus validus*)
  - u. Blueflag (*Iris versicolor*)
  - v. Swamp Milkweed (*Asclepias incarnata*)
  - w. Monkey Flower (*Mimulus ringens*)
4. Wetlands Seed Mixes as manufactured by:
- a. “New England Wetmix”, New England Wetland Plants, Inc., 820 West Street, Amherst, MA, Phone: 413-548-8000, [www.newp.com](http://www.newp.com)
  - b. “New England Wetland’s Mix”, Allen Seed, 693 S. County Trail, Exeter, RI, Phone: 800-527-3898, [www.allenseed.com](http://www.allenseed.com)
  - c. “FACW Meadow Mix”, Ernst Conservation Seeds, Meadville, PA, Phone: 800-873-3321, [www.ernstseed.com](http://www.ernstseed.com)
5. Wetlands Seed Mixes shall be placed in accordance with manufacturer’s written instructions and recommended time of year for placement of seeds.

## 2.03 INSPECTION AND TESTS

- A. Fertilizer and Lime. Upon completion of the Project, a final check of total quantities of fertilizer and limestone used (based on invoices) will be made against total area treated, and if minimum rates of application have not been met, additional

quantities of these materials shall be distributed to make up minimum application at no additional cost to the Owner.

- B. Each lot of seed will be sampled and tested, in accordance with latest Rules and Regulations under the Federal Seed Act.
- C. Topsoil shall be tested by an independent testing laboratory.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. Grassed areas indicated shall be loamed and seeded.
- B. After the areas to be seeded have been brought to the final grades, the soil shall be tilled to a depth of 4 inches and seeded.

**3.02 PLACING TOPSOIL**

- A. Prior to spreading of loam, subgrades shall be compacted, unless otherwise specified or indicated, to not less than 90% of maximum density in accordance with ASTM D698.
- B. Topsoil shall be distributed uniformly and spread and uniformly compacted to a minimum depth of 6 inches with a smooth surface.
- C. Surface irregularities resulting from topsoiling or other operations shall be leveled to prevent depressions.
- D. Topsoil shall not be placed where the subgrade is frozen, excessively wet, extremely dry, excessively compacted, or in a condition detrimental to the proposed planting or grading.
- E. Soil compacted by construction equipment or soil on compacted cut slopes or grades shall be pulverized to a minimum depth of 4 inches before applying topsoil.

**3.03 LIMING, FERTILIZATION AND SEEDING.**

- A. The quantities of materials to be used are as follows:
 

Grass Seed	1 pound per 150 square feet
Fertilizer	1 pound per 130 square feet
Lime	as required to obtain PH value of soil of 6.5 for grass and 7.2 for trefoil areas
- B. Seed shall be sown between April 1 and June 1 or between August 15 and October 15.

- C. Fertilizer and limestone shall not be mixed together prior to their application, but may be worked into the soil together to a depth of two-inches. Do not hydroseed for 24 hours after installation of fertilizer.
- D. If inspection shows areas that have been left unplanted or poor growth after two weeks, additional seed shall be sown.

3.04 APPLYING AND ANCHORING MULCH

- A. Oak straw mulch shall be spread uniformly by hand on seeded areas in a continuous blanket, using 2 tons per acre.
- B. Manufactured mulch, if used, shall be spread uniformly on seeded areas at the minimum rate of 1,400 pounds per acre.

3.05 CARE AND MAINTENANCE

A. Maintenance of Seeded Areas:

- 1. Maintain and mow hydroseeded areas to a height of two and one-half (2-1/2) inches until Substantial Completion.
- 2. All areas and parts of areas that do not show a uniform stand of grass at Substantial Completion: Areas shall be reseeded at no additional cost to the Owner.

B. Watering of Hydroseeded Areas:

- 1. First Week: In the absence of rainfall, watering shall be performed daily during the first week to maintain moist soil to a depth of two (2) inches.
- 2. Second and Subsequent Weeks: Water to maintain moisture in the upper two (2) inches of soil.
- 3. Watering shall provide uniform coverage, prevent erosion and prevent damage to the finished surface. Watering equipment shall apply one (1) inch of water for complete coverage to the seeded areas in an eight (8) hour period.

\*\* END OF SECTION \*\*

## APPENDIX

STATE OF RHODE ISLAND UTILITY PERMIT

CITY OF WARWICK PHYSICAL ALTERATION PERMIT

DAVID PICOZZI  
DIRECTOR OF PUBLIC WORKS



SCOTT AVEDISIAN  
MAYOR

CITY OF WARWICK  
DEPARTMENT OF PUBLIC WORKS  
925 SANDY LANE • WARWICK, RHODE ISLAND 02889  
TEL (401) 738-2000 EXT 6500 • FAX (401) 732-5208  
T.D.D. (401) 739-9150

### APPLICATION FOR PHYSICAL ALTERATION

**OWNER'S INFORMATION**

NAME \_\_\_\_\_ TELEPHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_ EMAIL \_\_\_\_\_  
WORK LOCATION \_\_\_\_\_ PLAT \_\_\_\_\_ LOT \_\_\_\_\_

**CONTRACTOR'S INFORMATION**

NAME \_\_\_\_\_ TELEPHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_ EMAIL \_\_\_\_\_  
CONTACT PERSON \_\_\_\_\_

**DESCRIPTION OF WORK**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OWNER TO ENSURE THAT CONTRACTOR:**

- Notify Police and Fire Departments before streets are closed to traffic.
- Keep log on openings, backfilling and temporary asphalt work.
- Backfill trenches and apply temporary asphalt for settlement period (90 day minimum).
- Patch openings with permanent mix after settlement.
- Notify Engineering Division for work inspection at 738-2000 Ext. 6539.
- Provide a Certificate of Insurance with the City of Warwick indicated as Certificate Holder as being Additionally Insured.
- Be responsible for area until accepted by Director of Public Works, including precautions to protect the handicapped day and night.
- Notify Dig Safe to located utilities at 1-888-DIG-SAFE (1-888-344-7233). Dig Safe Ticket No. \_\_\_\_\_
- Notify Warwick Water Department to located water line at 401-738-2000 Ext. 6610. Date Notified \_\_\_\_\_
- Notify Warwick Sewer Authority to locate sewers at 401-468-4716. Date Notified \_\_\_\_\_
- Notify the Director of Public Works when the service is complete and the road restored, returning this form to Public Works
- ***No excavation shall be allowed between December 15<sup>th</sup> and March 15<sup>th</sup>.***

Applicant's Signature: \_\_\_\_\_ Date \_\_\_\_\_

Dept. of Public Works Permission to Proceed: \_\_\_\_\_ Date \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

DEPARTMENT OF PUBLIC WORKS FINAL APPROVAL AND ACCEPTANCE \_\_\_\_\_

SYSTEM VALVE PAGES



2-002

G.V.(2-5)  
 G.V.(2-6)  
 G.V.(2-2)

Stone Bound

G.V.(2-4)

11+08  
 11+26  
 11+33  
 11+41-24" Flexible

From	To	Distance
G.V.(2-5)	G.V.(2-6)	7'-4"
G.V.(2-5)	G.V.(2-4)	5'-5"
G.V.(2-5)	G.V.(2-2)	17'-7"
G.V.(2-2)	G.V.(2-4)	12'-0"
G.V.(2-4)	G.V.(2-6)	5'-6"
RIVER → Flow		
G.V.(2-9)	G.V.(2-3)	17'-3"

PAWTUCKET

24" Flexible Joint

VAULT HAS BEEN REMOVED

G.V.(2-9)

BFV ~~G.V.(2-298)~~

24" to 30"  
 13+07

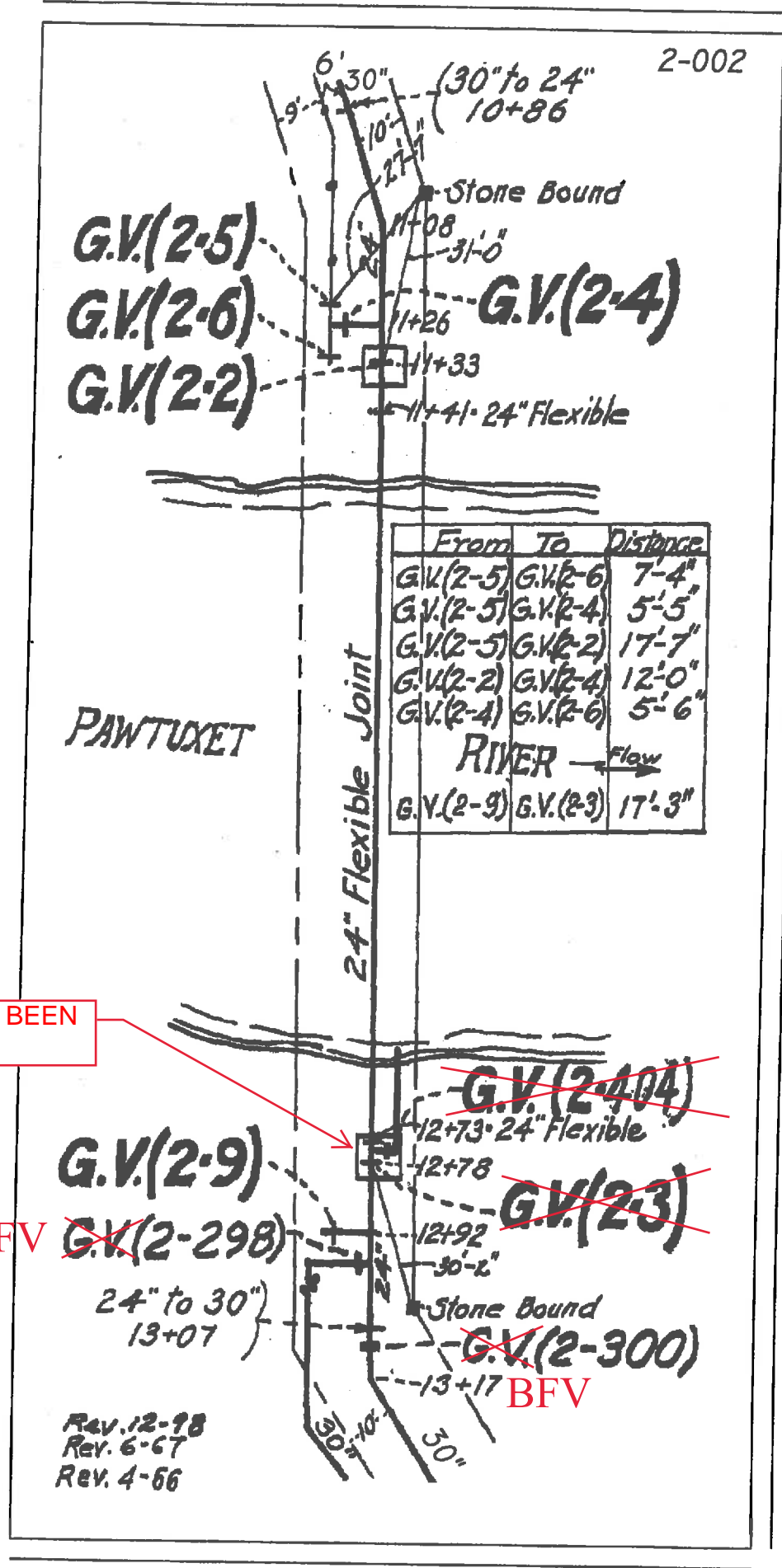
~~G.V.(2-404)~~

~~G.V.(2-3)~~

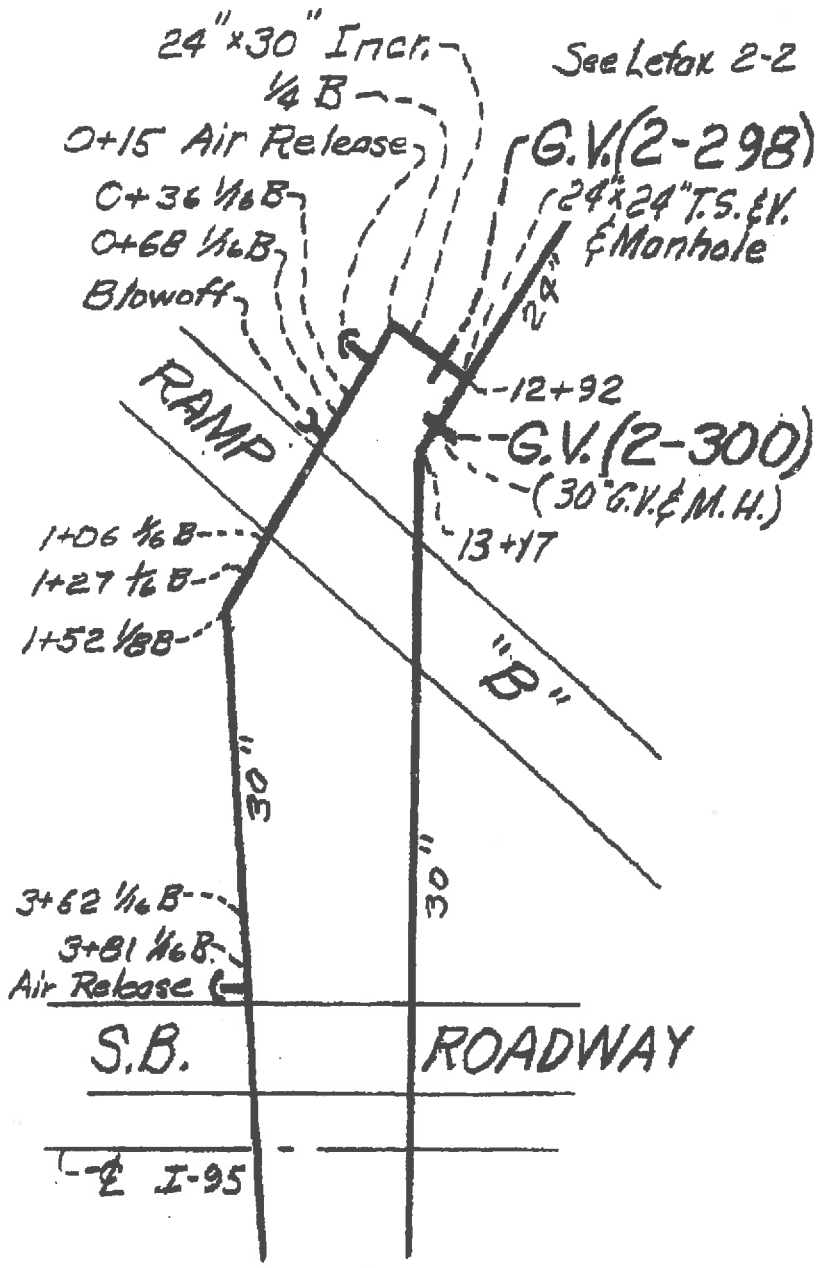
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BFV

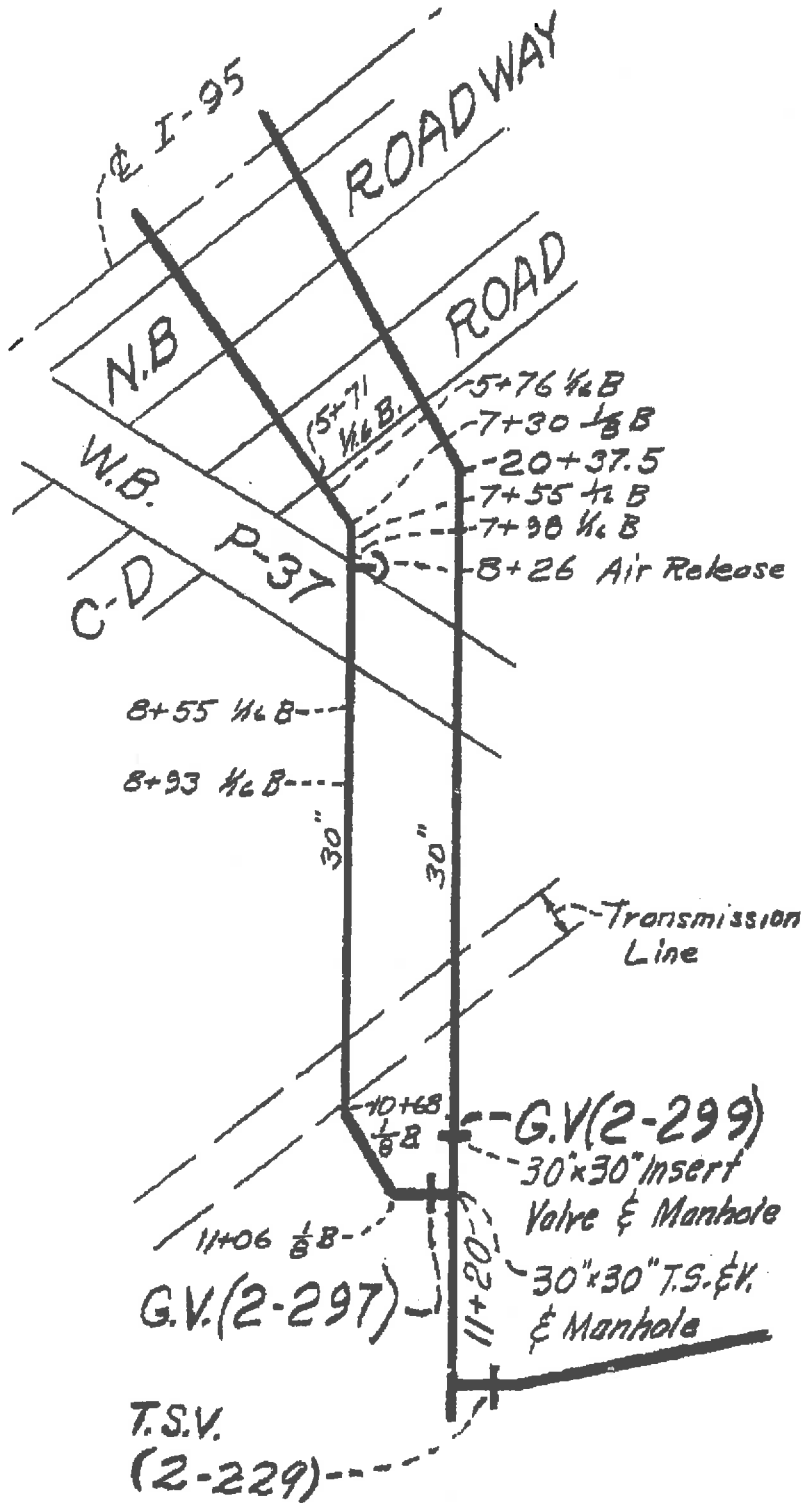
Rev. 12-98  
 Rev. 6-67  
 Rev. 4-66



2-206

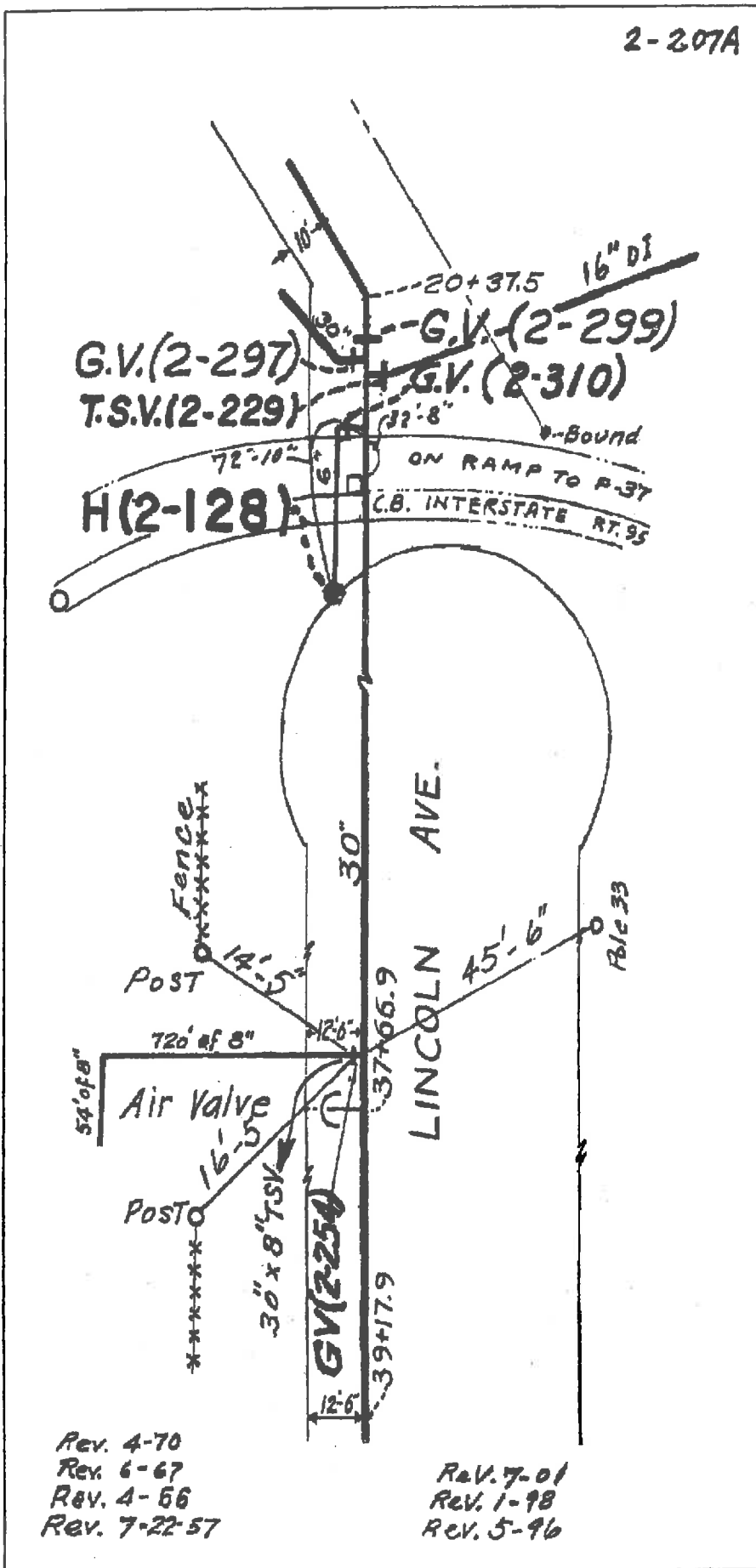


2-207



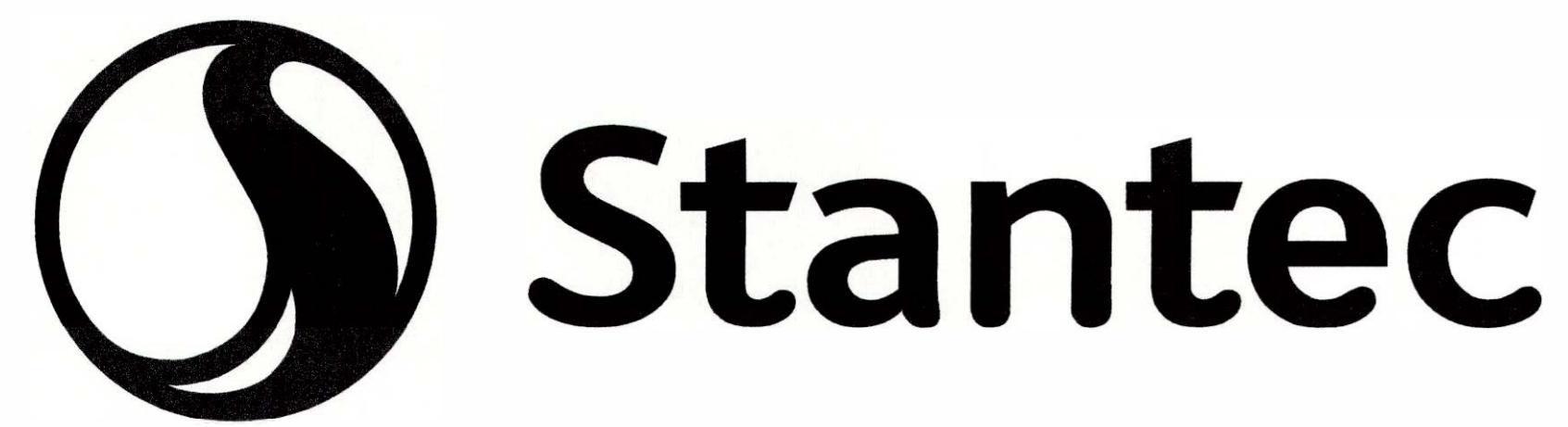
Rev. 10-96

2-207A



Rev. 4-70  
Rev. 6-67  
Rev. 4-66  
Rev. 7-22-57

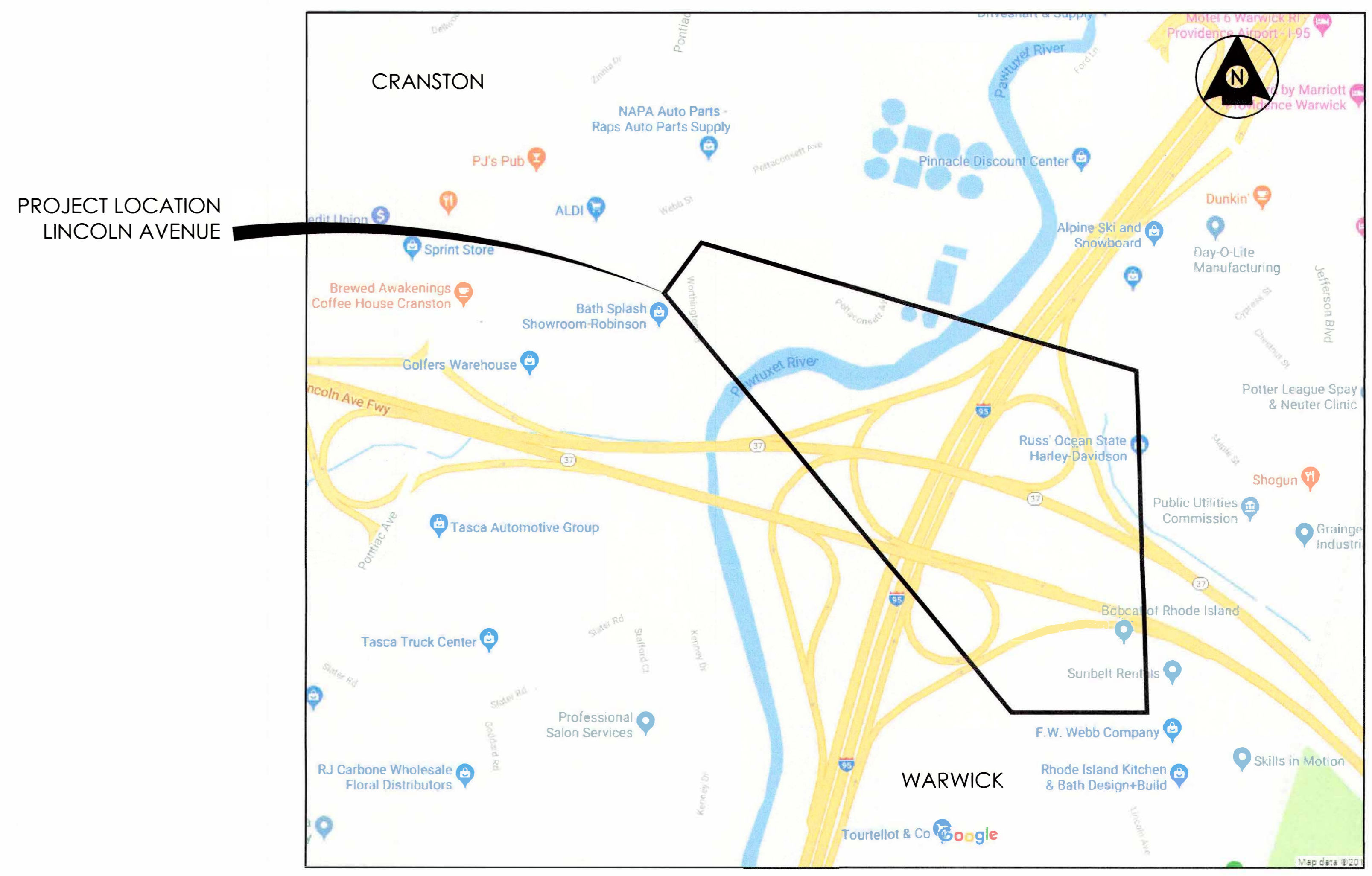
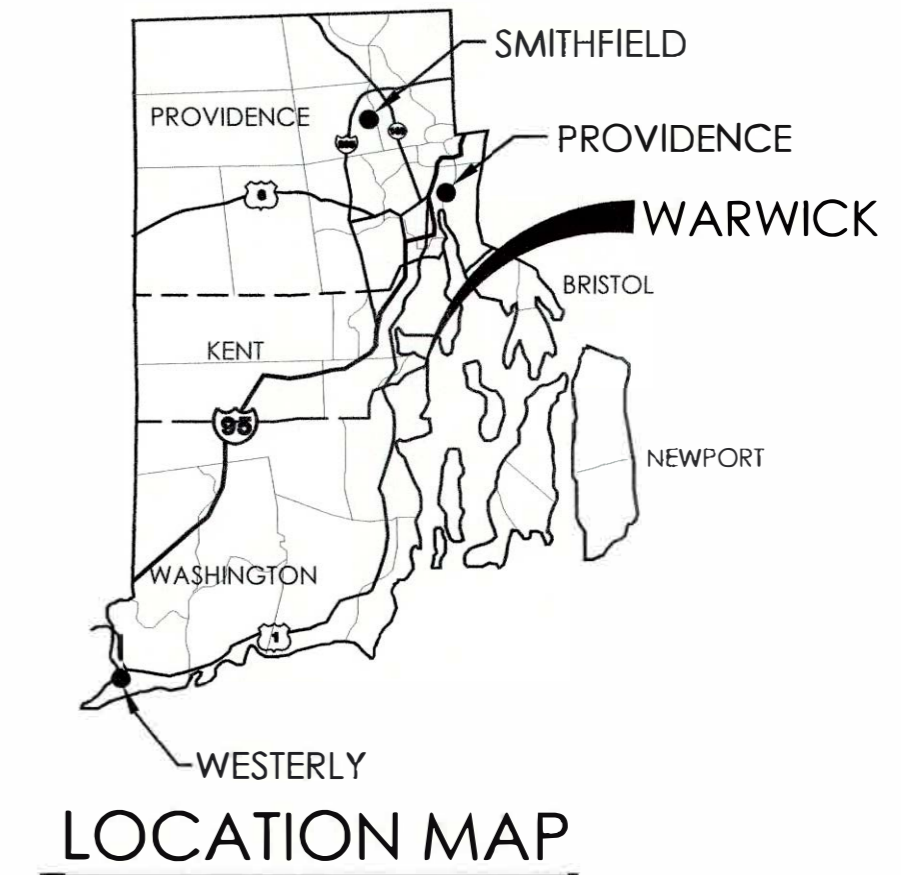
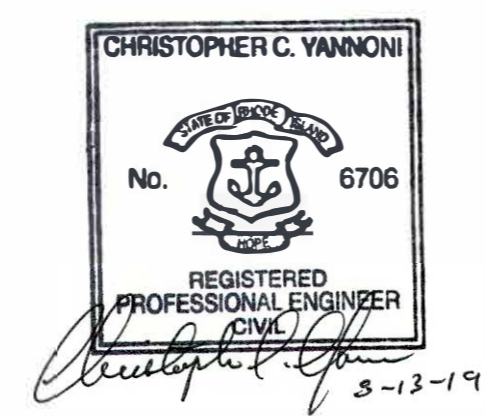
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Rev. 5-96



# WARWICK WATER DIVISION CITY OF WARWICK, RI

# INSPECTION OF THE LINCOLN AVENUE TRANSMISSION MAINS

**SEPTEMBER 2019**  
Project Number: 195150561



VICINITY MAP  
NOT TO SCALE

INDEX OF SHEETS		
SHEET NO.	DRAWING	TITLE
1.	G-001	COVER SHEET, INDEX, LOCATION MAP
2.	C-001	GENERAL NOTES, LEGEND, ABBREVIATIONS, DETAILS
3.	C-002	TRAFFIC LEGEND AND SUMMARY
4.	C-101	LINCOLN AVENUE SITE PLAN PART 1
5.	C-102	LINCOLN AVENUE SITE PLAN PART 2

**MAYOR**  
**JOSEPH J. SOLOMON**

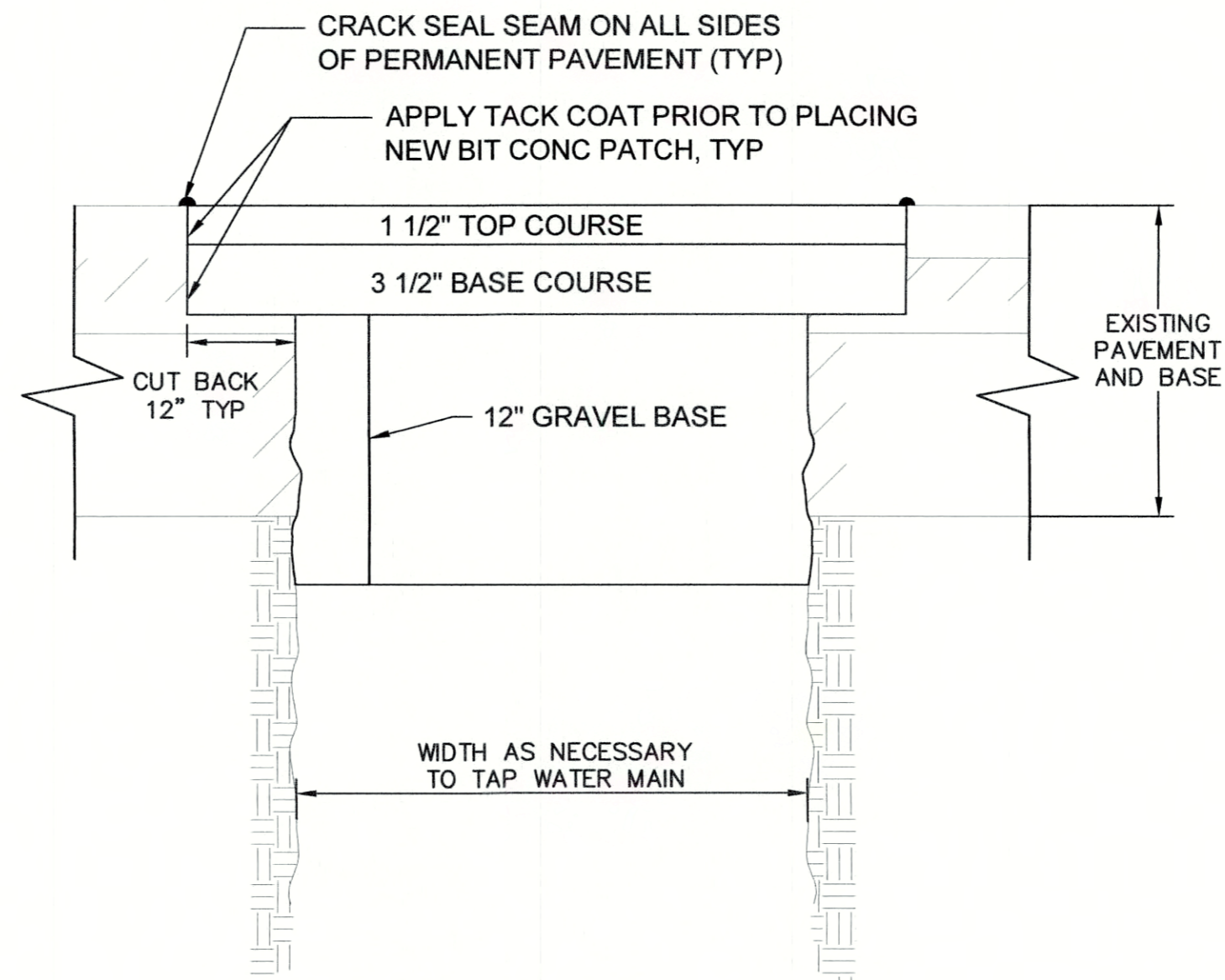
**WATER DIVISION CHIEF**  
**DANIEL P. O'ROURKE**

**GENERAL NOTES:**

- PROPERTY LINES SHOWN ARE BASED ON LIMITED REVIEW OF EXISTING PLANS AND ARE NOT THE RESULT OF A PROPERTY LINE SURVEY.
- LOCATIONS OF UTILITIES SHOWN HEREIN ARE THE RESULT OF SURFACE EVIDENCE AS LOCATED BY SITE WALK, PLANS OF RECORD, AND OTHER AVAILABLE SOURCES.
- THIS PLAN DOES NOT DEPICT THE EXACT LOCATIONS OF ALL UTILITIES WHICH MAY EXIST AT THIS TIME WITHIN THE PREMISES SURVEYED.
- THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS TO HIS SATISFACTION PRIOR TO BEGINNING ANY EXCAVATION. "DIG SAFE" SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO BEGINNING ANY WORK. DEPTH OF EXISTING UTILITIES SHALL BE VERIFIED BY TEST EXCAVATION WHENEVER POSSIBLE PRIOR TO INSTALLATION OR PROPOSED WORK.
- CONSTRUCTION DETAILS ARE INCLUDED HEREIN THE CONTRACT DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES DAMAGED DURING THE CONSTRUCTION AT NO COST TO THE OWNER.
- THE LOCATION OF EXISTING SUBSURFACE ROCK AND GROUNDWATER IS NOT KNOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN DETERMINATION AS TO THE LOCATION OF SUBSURFACE ROCK AND GROUNDWATER.
- ANY AREA DISTURBED BY THE CONTRACTOR OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING GRADE.
- FOR PAVEMENT REPLACEMENTS, SEE SPECIFICATION SECTION 02510.
- TRENCH PAVEMENT REQUIREMENTS SHALL CONFORM TO THE SPECIFICATION AND THE ROAD OPENING PERMITS ISSUED BY THE CITY OF WARWICK DPW AND THE CITY OF CRANSTON. CONTRACTOR TO PAY ALL FEES AND OBTAIN ALL BONDS AND INSURANCE REQUIRED BY THE PERMITS. GUARANTEE PERIOD FOR PAVEMENT WORK SHALL BE ONE YEAR FOLLOWING THE COMPLETION OF THE WORK.
- CONTRACTOR TO DETERMINE ACCESS PIT SIZE AND LOCATION FOR WATER MAIN ACCESS.
- WATER MAIN INFORMATION IS COMPILED FROM WATER SYSTEM MAPS. PROFILES AND OTHER RECORD PLAN INFORMATION IS NOT AVAILABLE. FLOW DIRECTION HAS BEEN SHOWN WHERE KNOWN.
- WATER MAIN COVER IS ASSUMED TO BE A MAXIMUM OF 10-FEET.

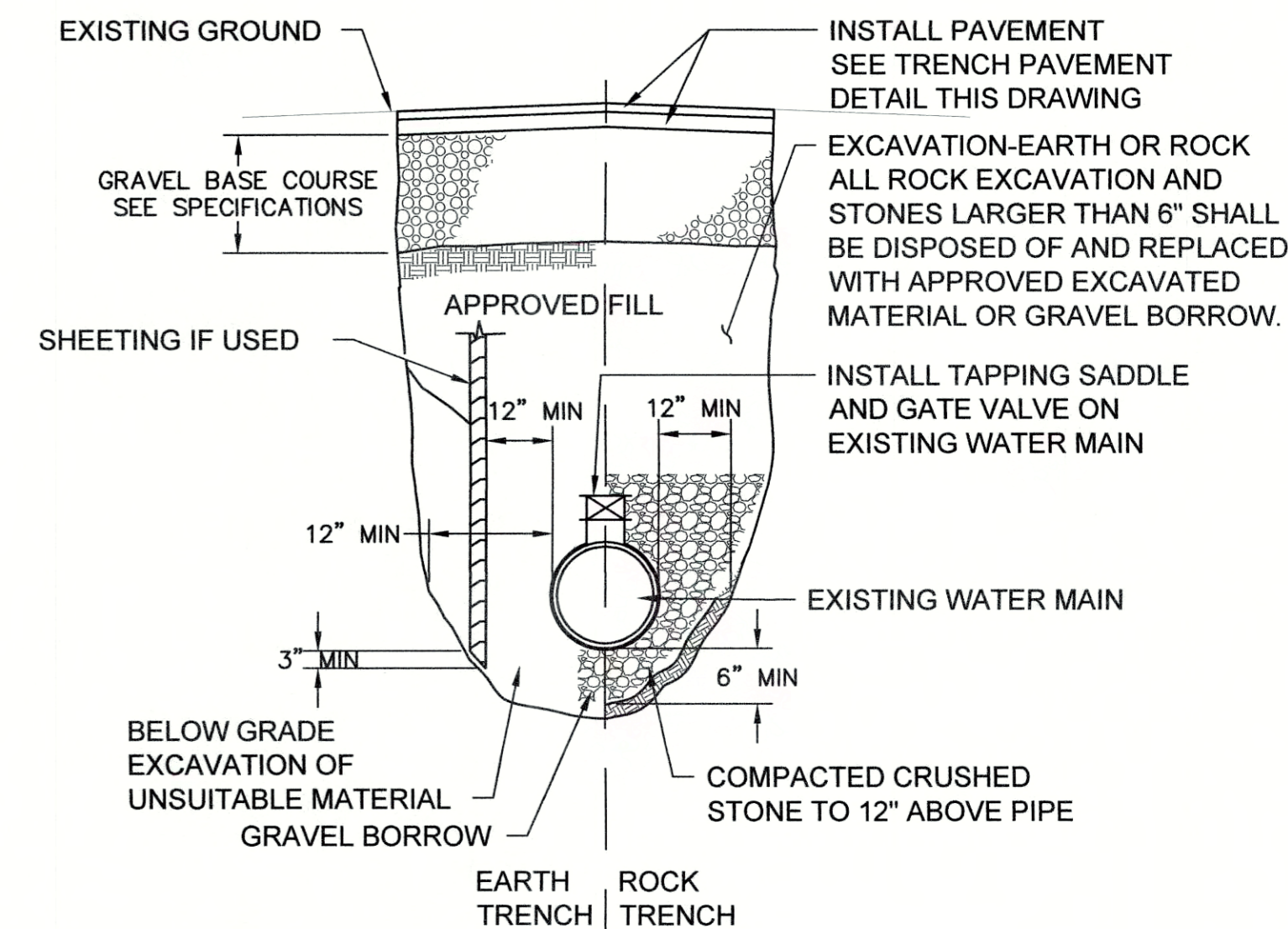
**ABBREVIATIONS**

BIT	BITUMINOUS
BFV	BUTTERFLY VALVE
CO	COMPANY, CORPORATION
CONC	CONCRETE
GV	GATE VALVE, GAS VALVE
INC	INCORPORATED
LF	LINEAR FEET
MIN	MINIMUM
MAX	MAXIMUM
RI	RHODE ISLAND
TEMP	TEMPORARY
TYP	TYPICAL
WV	WATER VALVE



**TRENCH PAVEMENT**

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**TYPICAL TRENCH DETAIL**

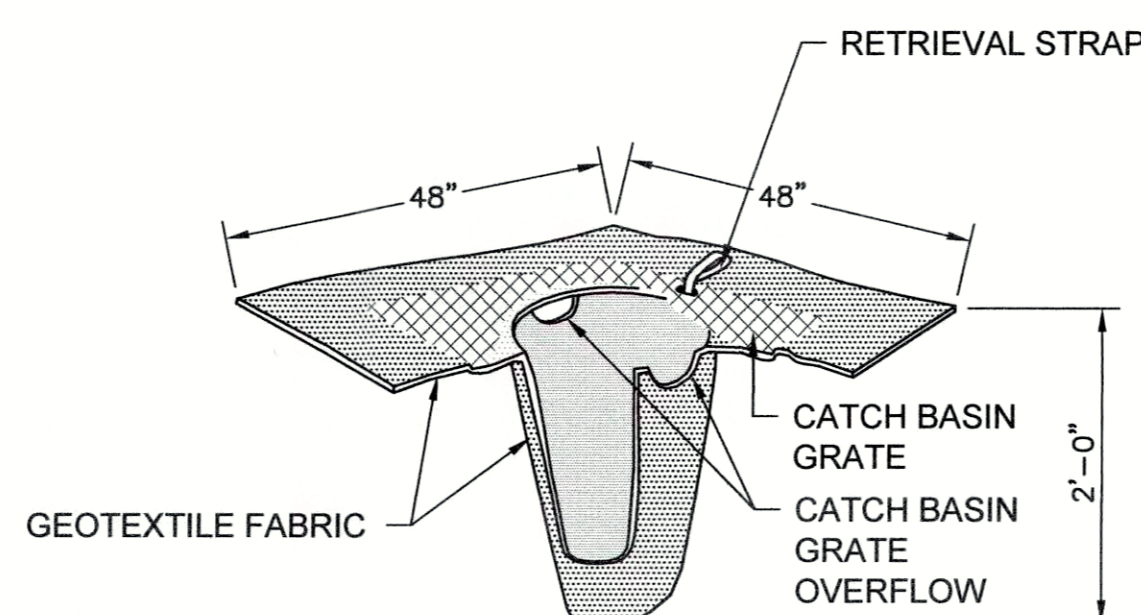
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**EXISTING LEGEND**

	EXISTING AIR VALVE		EXISTING MAJOR CONTOUR
	EXISTING BOUND		EXISTING MINOR CONTOUR
	EXISTING BENCHMARK		EXISTING DITCH/SWALE
	EXISTING SURVEY POINT		EXISTING RAILROAD TRACKS
	EXISTING CATCH BASIN (SQUARE)		EXISTING EDGE OF WATER
	EXISTING CATCH BASIN (ROUND)		EXISTING WETLAND BOUNDARY
	EXISTING COMMUNICATION MANHOLE		EXISTING EASEMENT
	EXISTING CURB INLET		EXISTING PROPERTY LINE
	EXISTING DRAIN MANHOLE (DMH)		EXISTING RIGHT-OF-WAY
	EXISTING ELECTRICAL MANHOLE		EXISTING SPOT ELEVATION
	EXISTING GATE VALVE		EXISTING FUEL GAS
	EXISTING GUY POLE		EXISTING NATURAL GAS
	EXISTING HYDRANT		EXISTING OVERHEAD POWER
	EXISTING IRON PIN		EXISTING UNDERGROUND POWER
	EXISTING NATURAL GAS MANHOLE		EXISTING SANITARY SEWER
	EXISTING SEWER MANHOLE (SMH)		EXISTING SANITARY SEWER (FORCE MAIN)
	EXISTING SINGLE POLE SIGN		EXISTING STORM DRAIN
	EXISTING DOUBLE POLE SIGN		EXISTING PRESSURE STEAM
	EXISTING FLOOD LIGHT		EXISTING WATER LINE
	EXISTING LIGHT POST		EXISTING CABLE TV
	EXISTING DRAINAGE FLOW		EXISTING OVERHEAD TELEPHONE
	EXISTING TEST PIT		EXISTING UNDERGROUND TELEPHONE
	EXISTING BORING		EXISTING GUARD RAIL
	EXISTING STUMP		EXISTING FENCE
	EXISTING CONIFEROUS TREE		EXISTING CHAINLINK FENCE
	EXISTING DECIDUOUS TREE		EXISTING WOODEN FENCE
	EXISTING WETLAND		EXISTING RETAINING WALL
	EXISTING TELEPHONE MANHOLE		EXISTING HAYBALES
	EXISTING UTILITY POLE		EXISTING STONE WALL
	EXISTING WATER SHUTOFF		EXISTING TREE/SHRUB LINE
	EXISTING WATER VALVE		
	EXISTING WELL		

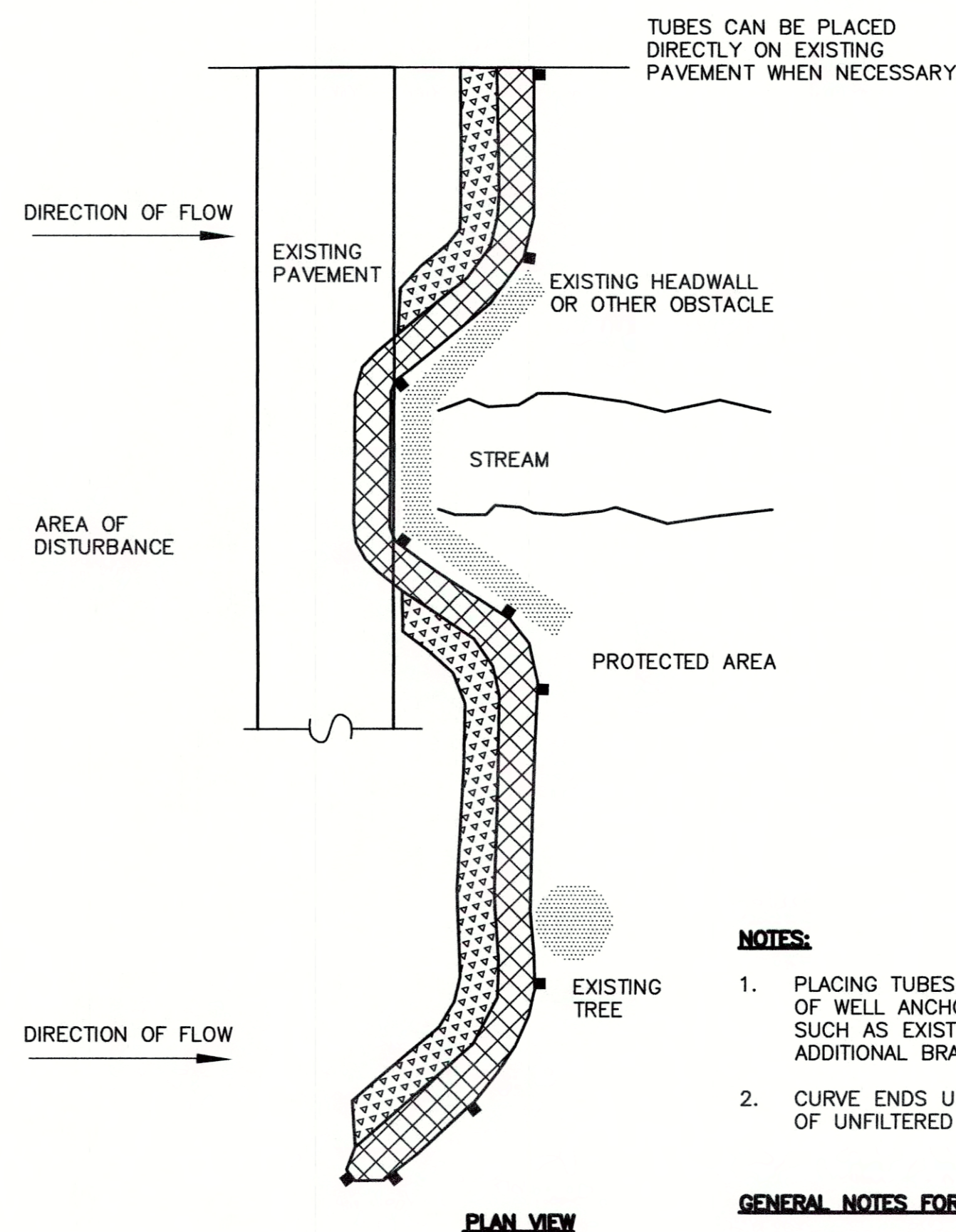
**PROPOSED WORK LEGEND**

	EROSION CONTROL - SILT FENCE
	EROSION CONTROL - SILT SACK
	LIMITS OF CLEARING, GRUBBING AND TREE REMOVAL
	MAIN TAPPING LOCATION
	WATER MAIN TO BE TELEVISED
	TEST PIT LOCATION



**SILT SACK**

SCALE: NOT TO SCALE



**PLAN VIEW**

**NOTES:**

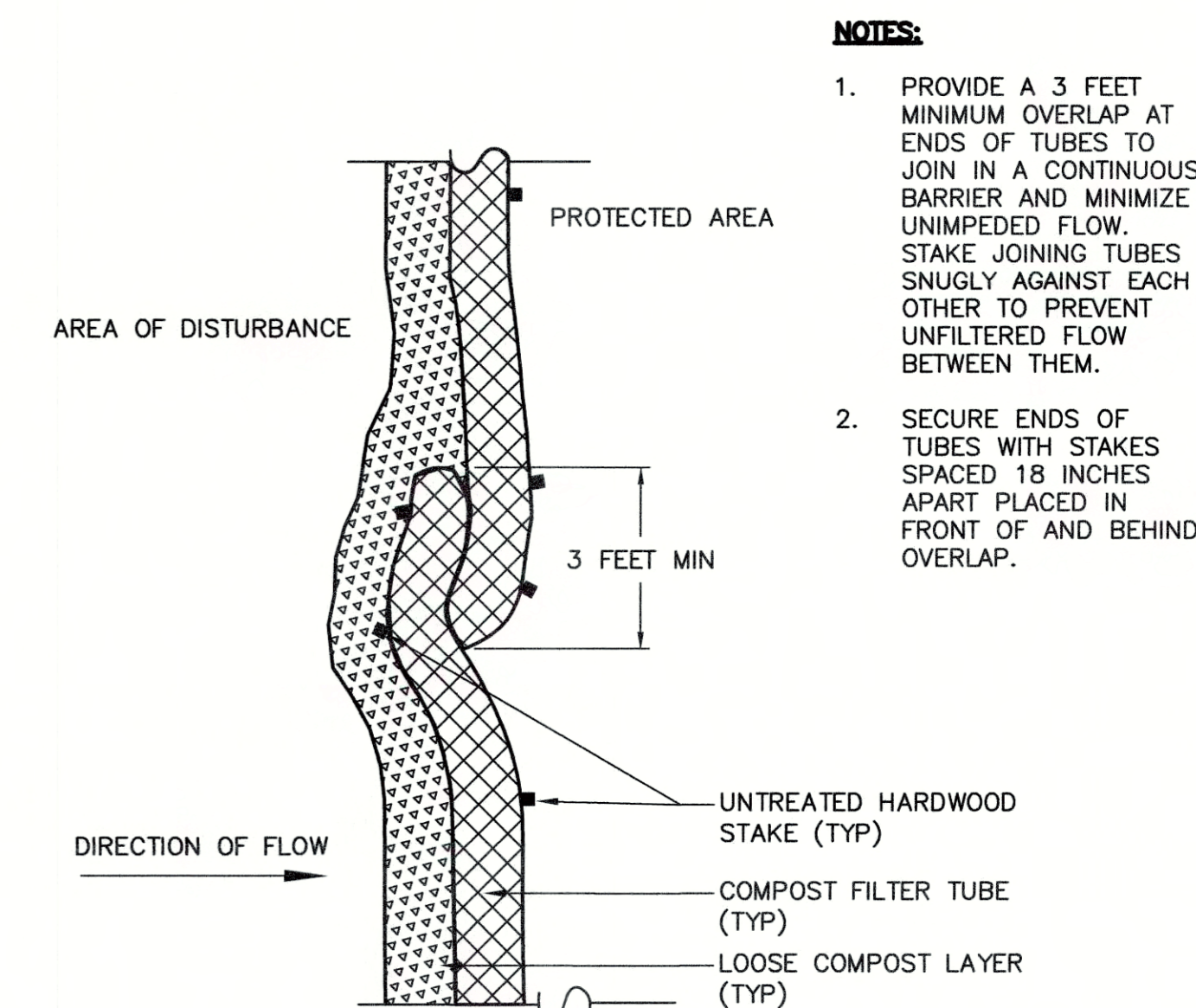
- PLACING TUBES AGAINST THE UPHILL SIDE OF WELL ANCHORED, STATIONARY FEATURES SUCH AS EXISTING TREES CAN PROVIDE ADDITIONAL BRACING.
- CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.

**GENERAL NOTES FOR COMPOST FILTER TUBE:**

- PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
- INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
- DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
- CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

**COMPOST FILTER TUBE**

SCALE: NOT TO SCALE

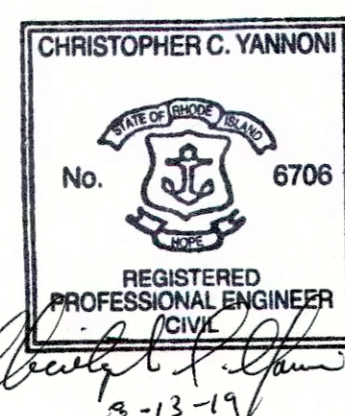


**PLAN VIEW - JOIN DETAIL**

**NOTES:**

- PROVIDE A 3 FEET MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.
- SECURE ENDS OF TUBES WITH STAKES SPACED 18 INCHES APART PLACED IN FRONT OF AND BEHIND OVERLAP.

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INSPECTION OF THE LINCOLN AVENUE TRANSMISSION MAINS  
WARWICK, RHODE ISLAND

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Dwn. Chkd. Dgn. Yr.MM.DD

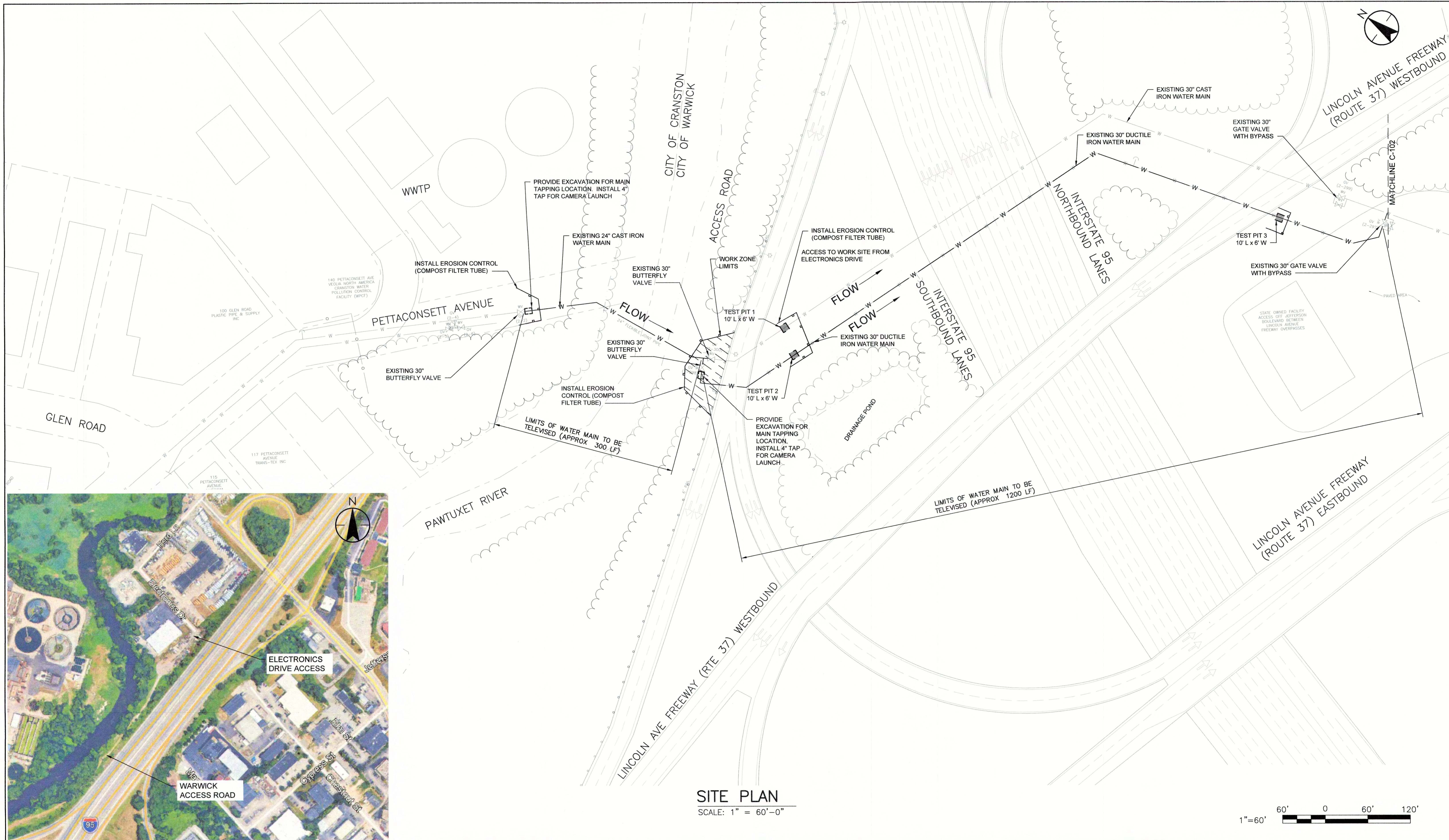
Title

GENERAL NOTES, LEGEND, ABBREVIATIONS, DETAILS

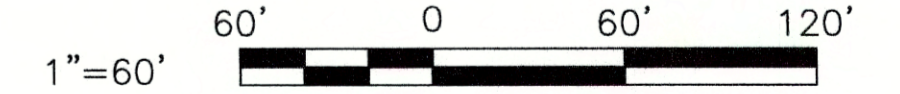
Project No. 195150561 Scale NOT TO SCALE  
Drawing No. Sheet Revision

C-001 2 of 5





**SITE PLAN**  
SCALE: 1" = 60'-0"



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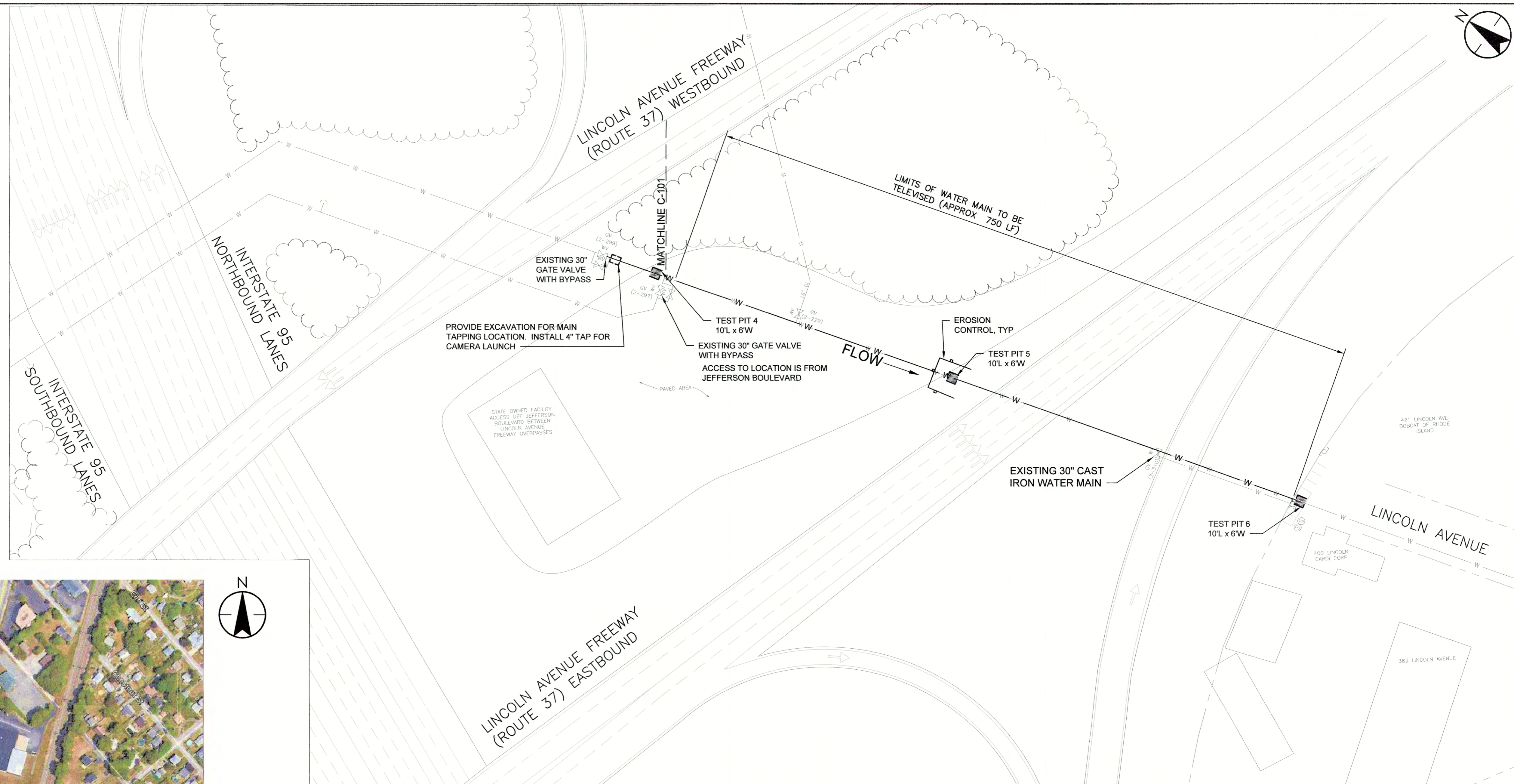
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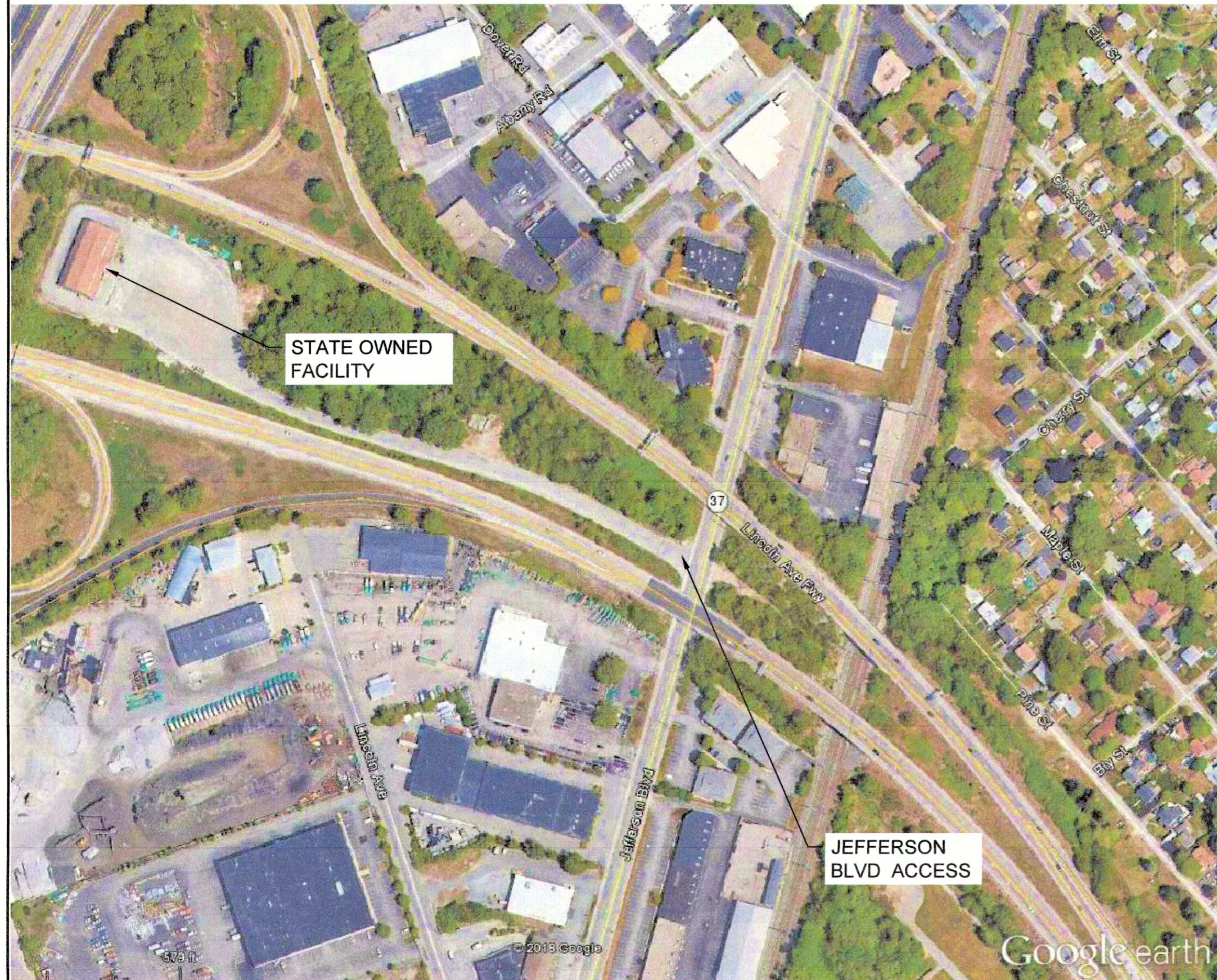
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		CHd.	
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Title		
LINCOLN AVENUE SITE PLAN PART 1		
Project No.	Scale	
195150561	1"=60'-0"	
Drawing No.	Sheet	Revision
C-101	4 of 5	

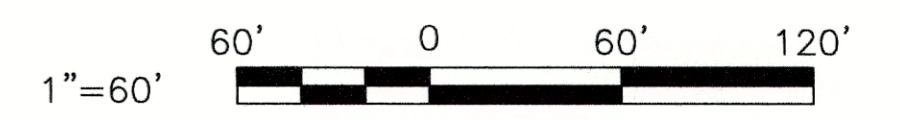




**SITE PLAN**  
SCALE: 1" = 60'-0"



**ACCESS PLAN**  
SCALE: NOT TO SCALE



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WARWICK, RHODE ISLAND

File Name: 50561-C-101-C-107  
Dwn. ED DPN ED  
Chkd. DPN DPN  
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Title  
LINCOLN AVENUE SITE PLAN PART 2

Project No. 195150561  
Scale 1"=60'-0"

Drawing No. C-102  
Sheet 5 of 5  
Revision