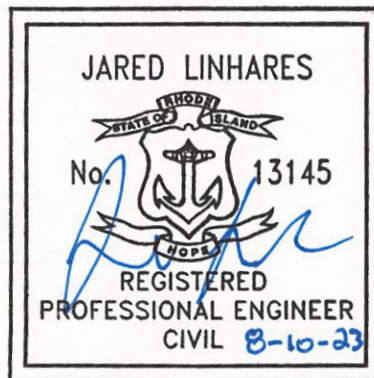


East Providence, Rhode Island  
Potter Street and Burgess Street  
Parking Lots  
*Bid No. EP22/23-29*  
*August 2023*

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

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Professional Registration No.: 13145



701 George Washington Highway  
Lincoln, Rhode Island 02865  
401.333.2382

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## **DIVISION 0**



**CITY OF EAST PROVIDENCE  
POTTER STREET AND BURGESS STREET PARKING LOTS  
ADVERTISEMENT  
REQUEST FOR PROPOSAL  
RFP EP22/23-29  
BID OPENING FRIDAY SEPTEMBER 8, 2023 AT 11:00AM**

The City of East Providence is soliciting proposals from experienced vendor for Porous Parking Lot Paving at two locations: Potter Street at Warren Avenue (Volume 1 Plans) and Burgess Street at Warren Avenue (Volume 2 Plans). Specifications may be downloaded from the City's website <https://eastprovidenceri.gov/rfp>

(1) original, Two (2) copies of proposals and (1) one thumb drive shall be submitted in one (1) sealed envelope to East Providence City Hall, Controllers Office, Room 103, Attn: Ralph Mitchell Procurement Specialist, 145 Taunton Ave., East Providence, RI 02914 no later than **FRIDAY SEPTEMBER 8, 2023 at 11:00 AM**. The bids will be publicly recorded. Bids received with a time of 11:01 AM or later will be rejected. The outside envelope needs to be marked **RFP EP22/23-29**.

The City reserves the right to reject any/or all companies, to waive any informality in the proposal statement and to accept the proposal of any company based on what the City deems to be in its best interest.

Any questions regarding the RFP may be directed in writing to Erik Skadberg, City Engineer at [eskadberg@eastprovidenceri.gov](mailto:eskadberg@eastprovidenceri.gov) and Ralph Mitchell, Procurement Specialist at [rmitchell@eastprovidenceri.gov](mailto:rmitchell@eastprovidenceri.gov) no later than **FRIDAY AUGUST 25, 2023 AT 11:00 AM**.

Equal Opportunity/Affirmative Action Employer

Ralph Mitchell  
[rmitchell@eastprovidenceri.gov](mailto:rmitchell@eastprovidenceri.gov)

## SECTION 00200

### INFORMATION FOR BIDDERS

#### **1.0 RECEIPT AND OPENING OF BIDS**

Sealed proposals will be received and date stamped East Providence City Hall, Controllers Office, Room 103, Attn: Procurement Specialist 145 Taunton Avenue, East Providence, Rhode Island 02914, until the time and date indicated on the Request for Proposals. No proposal received after that time will be considered. Mark outside bid envelope with item being proposed, and time and date of proposal due date.

#### **2.0 FORM OF PROPOSAL:**

Proposals must be submitted on and in accordance with the proposal forms attached hereto, blank places must be filled in as noted, no change shall be made in the phraseology of the proposal form or in the item or items mentioned therein. Additionally, the proposals must contain the name and proper address of the proposing firm, and must be signed by a responsible member of the firm with his signature and official title. Proposals, which are not complete, or contain erasures or alterations, not initiated by the signer, may be rejected. FAXED proposals will not be accepted.

#### **3.0 SUBMISSION OF PROPOSALS:**

- 3.1 Envelopes containing proposals must be sealed and addressed to the East Providence City Hall, Controllers Office, Room 103, Attn: Procurement Specialist 145 Taunton Avenue, East Providence, Rhode Island 02914 and must be marked with the name and address of the proposer, date and time of proposal due date, and name of item being proposed.
- 3.2 The Procurement Specialist will decide when the specified time has arrived to collect the proposals, and no proposal received thereafter will be considered.
- 3.3 Any proposer may withdraw his proposal by written request at any time prior to the advertised time for proposal due date. Telephonic proposals, amendments, or withdrawals will not be accepted. Additionally, FAXED bids will not be accepted.
- 3.4 No proposal may be withdrawn for a period of ninety (90) calendar days from the date and time of proposal due date. The City reserves the right to waive this requirement in order to best serve the interests of the City.
- 3.5 Negligence on the part of the proposer in preparing the proposal confers no rights for the withdrawal of the proposal after it has been opened.

- 3.6 Proposals received prior to the time of the due date will be securely kept unopened. No responsibility will attach to an officer or person of the City for the premature opening of a proposal not properly addressed and identified as a proposal.

#### **4.0 ADDENDA:**

Copies of all Addenda will be posted to the City's Website. It is the Vendor's responsibility to check and download any and all addenda from the City's Website.

- 4.1 No Addenda will be posted later than four (4) working days prior to the date for receipt of bids except an Addendum, if necessary, postponing the date for receipt of bids or withdrawing the request for bids. Each bidder shall ascertain prior to submitting their bid that they have received all Addenda issued, and shall acknowledge their receipt in his bid.

#### **5.0 QUALIFICATION OF PROPOSER:**

The City may make such investigations as it deems necessary to determine the ability of the proposer to perform the work, and the proposer shall furnish to the City all such information and data for this purpose as the City may request. The City reserves the right to reject any proposal if the evidence submitted by, or investigation of such proposer fails to satisfy the City that such proposer is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

#### **6.0 CONTRACT SECURITY:**

Only when a Contract Security is required in the Request for Proposal, the Contractor shall furnish a Bid Bond in the amount of Five Percent (5%) and a Surety Bond/Performance Bond in an amount equal to at least One Hundred Percent (100%) of the contract price as security for the faithful performance of the contract and for the payment of all persons performing labor on the project under the contract and furnishing materials, equipment and all other incidentals in connection with the contract. The surety on such bonds shall be a duly authorized surety company licensed to bond in the State of Rhode Island, and the cost of same will be paid by the Contractor. Before final acceptance, the bonds must be approved by the City.

The bonding company providing surety must be listed in the Federal Register as issued by the Department of Treasury, Department Circular 570, latest edition, as well as being licensed in the State of Rhode Island to provide surety.

In addition, as part of the RIDOT Physical Alteration Permit Application (PAPA), the Contractor is required to list RIDOT as an additional obligee on any performance bond related to this project. A copy of all documents including RIDOT as the additional obligee shall be submitted to RIDOT before the PAP can be issued.

#### **7.0 BID PRICES:**

Bidders shall state the proposed price/s in the manner as designated in the Bid Proposal Form. In the event that there is a discrepancy between the unit prices and the extended totals, the unit

prices shall govern. In the event there is a discrepancy between the price written in words and in figures, the price written in words shall govern.

## **8.0 TERMS:**

Cash Discounts offered will be considered in determining awards. However, discounts for a period less than twenty (20) days will not be considered. The discount period shall be computed from date of delivery or from date the correct invoice is received by the City Controller, whichever date is later. The date of delivery shall be construed to mean the date on which the bid item is determined to meet the specifications and is therefore acceptable.

## **9.0 RHODE ISLAND SALES TAX:**

The City of East Providence is exempt from the Rhode Island Sales or Use Tax under the 1956 General Laws of the State of Rhode Island, Section 44-18-30, Para. 1, as amended.

## **10.0 "OR EQUAL" BIDDING:**

When the name of a manufacturer, a brand name, or manufacturer's catalogue number is issued as the bid standard in describing an item followed by "Or Approved Equal", this description is used to indicate quality, performance and other essential characteristics of the item required. If bidding on other than the make, model, brand or sample specified, but equal thereto, bidder must so state by giving the manufacturer's name, catalogue number and any other information necessary to prove that his intended substitution of a commodity is equal in all essential respects to the bid standard. Bidder must prove to the satisfaction of the City Manager, or by person or persons designated by him, that the bidders designated substitute is equal to the bid standard; otherwise, his bid will be rejected.

## **11.0 AWARD AND CONTRACT:**

- 11.1 Unless otherwise specified, the City reserves the right to make award by item, or items, or by total, as may be in the best interest of the City.
- 11.2 A written award (or acceptance of bid) mailed (or otherwise furnished) to the successful bidder followed by a City Purchase Order, shall be deemed to result in a binding contract without further action by either party.
- 11.3 It is the intent of the City to award a contract to the lowest responsible bidder in accordance with City Ordinances, Article V. Purchasing, Sec. 2- 243, and provided that the bid has been submitted in accordance with the requirements of the Bidding Documents, is judged to be reasonable, and does not exceed the funds available.

## **12.0 CONSIDERATION OF PROPOSALS REJECTION OF PROPOSALS:**

- 12.1 The City reserves the right to reject the proposal of any proposer who has previously failed to perform properly or complete on time, contracts of a similar nature, or who is not in a position to perform the contract, or who has habitually and without just cause,



neglected the payment of bills or disregarded its obligations to sub-contractors, material, or employees.

- 12.2 The City reserves the right to reject any or all proposals and in particular to reject a proposal not accompanied by any data required by the Bidding Documents or a proposal in any way incomplete or irregular, and to waive any informality in the proposals received, and to accept the proposal or parts thereof deemed to be most favorable to the best interest of the City.
- 12.3 The City shall have the right to waive any informality or irregularity in any proposal received.
- 12.4 It is the intent of the City, if it accepts any Alternates, to accept them in the order in which they are listed in the proposal form, but the City shall have the right to accept Alternates in any order or combination and to determine the low bidder on the basis of the sum of the Base Bid and the Alternates accepted.

### **13.0 DELIVERY:**

All prices bid must be on the basis of F.O.B. Delivery Point, East Providence, Rhode Island. Therefore, shipping costs are to be included within the prices quoted. Deliveries must consist only of new merchandise or equipment and shall be made between 8:00 A.M. and 4:00 P.M. Prevailing Time, Monday through Friday.

No delivery shall become due or be acceptable without a written Purchase Order, issued by the Procurement Specialist.

### **14.0 AFFIRMATIVE ACTION REQUIREMENTS MBE/WBE PARTICIPATION:**

Any firm or Contractor providing services to or doing business with the City shall adhere to the City's Affirmative Action Plan for MBE/WBE Participation. Said plan is on file with the City's Affirmative Action Officer.

#### **14.1 All bidders are required to submit the MBE/WBE Participation Affidavit.**

### **15.0 INSURANCE REQUIREMENTS:**

The Contractor shall carry the following insurance coverages at his own expense:

(a) General: All insurance for this contract shall be written by a company (or companies) acceptable to the city and all policies or certificates shall be submitted to the City for examination prior to commencement of operations by the contractor. In the event any policy or certificate, the amount of the insurance, or the company writing same are not satisfactory to the City, the contractor shall secure other policies or certificates in form and amount with a company satisfactory to the City. The contractor shall not permit policies to be changed, cancelled, or to lapse and all policies shall include a clause to the effect that the policy shall not be subject to cancellation or a reduction in the limits of liability or amounts of insurance until notice has been

sent by mail to the city stating when, (not less than 30 days thereafter) such cancellation or reduction shall be effective. All certificates of insurance shall be delivered to the City and contain true transcripts from the policy or policies authenticated by the proper officer of the insurer evidencing in particular those insured, the extent of the insurance, the location and operations to which the insurance applies, the expiration date and the above mentioned notice as to the location and operations involved.

The Contractor is required to list the City of East Providence not only as Certificate Holder but as an Additional Insured as well, on the "Certificate of Insurance". In addition, as part of the RIDOT Physical Alteration Permit Application (PAPA), the Contractor is required to list RIDOT as an additional insured on any insurance policy related to this project. A copy of all documents including RIDOT as the additional insured shall be submitted to RIDOT before the PAP can be issued.

If any part of the work is sublet, similar insurance shall be provided by or in behalf of the subcontractors to cover their operations. The contractor shall be charged with the responsibility for insurance protection for all his subcontract operations and should the contractor's policy not cover each and every subcontractor, certificates of insurance acceptable to the City covering each and every subcontractor shall be filed with said City prior to the commencement of subcontract operations.

Statutory Workman's Compensation Insurance: shall be provided by the contractor for all labor employed on the project who may come within the protection of such laws, and Employer's General Liability Insurance shall be provided for the benefit of employees not protected by compensation laws. The contractor will be charged with the responsibility for proper and adequate workman's compensation for all subcontract operations.

Contractors Comprehensive General Liability and Property Damage Insurance INCLUDING Owner's Protective: the contractor shall carry the above insurance for a minimum limit of not less than \$1,000,000.00 for all damages arising out of injury to or death of one person and subject to that limit for each person, a total limit of not less than \$1,000,000.00 for all damages arising out of injury to, or death of two or more persons in any one occurrence and Property Damage Liability Insurance providing for a limit of not less than \$1,000,000.00 for all damages arising out of injury to or destruction of property (including loss of use) in any occurrence and subject to that limit per occurrence total limit of \$1,000,000.00 all damages arising out of injury to or destruction of property during the policy period.

Contractor's Liability Insurance: Shall also include all major divisions of coverage and be on a comprehensive general liability basis including:

Premises - Operations

Independent Contractor's protective

Products and completed operations

Blanket Contractual

Owned, non-owned and hired motor vehicles

Broad form coverage for property damage (including explosion, Collapse and underground).

Comprehensive Automobile Liability and Property Damage Insurance: The Contractor shall carry the above insurance covering all owned, hired or non-owned vehicles in the amount of \$300,000.00 for all damages arising out of bodily injuries to death of one person and subject to that limit for each person, a total of \$500,000.00 for all damages arising out of bodily injuries to or death of two or more persons in any one accident and Property Damage coverage in the amount of \$300,000.00 for all damages arising out of injury to or destruction of property.

**16.0 OSHA SAFETY AWARENESS PROGRAM:**

In accordance with R.I.G.L. 28-20-35, all contractors bidding on construction projects of the City with a total project cost of one hundred thousand dollars (\$100,000.) or more, are required to have an OSHA "ten hour construction safety program", for their on-site employees. The training program shall utilize instructors trained by the Occupational Safety and Health Administration, using an OSHA approved curriculum.



## MBE/WBE PARTICIPATION AFFIDAVIT

Item Description (as seen on RFP): \_\_\_\_\_

Prime Bidder: \_\_\_\_\_

Prime Bidder (Company) Phone Number: \_\_\_\_\_

Prime Bidder (Company) Zip Code: \_\_\_\_\_

Which one of the following describes your business' status in terms of Minority and/or Woman-Owned Business Enterprise certification with the State of Rhode Island? \_\_\_\_\_ MBE \_\_\_\_\_ WBE \_\_\_\_\_ Neither MBE nor WBE

**By initialing the following sections and signing the bottom of this document in my capacity as the contractor or an authorized representative of contractor, I make this Affidavit:**

It is the policy of the City of East Providence that minority business enterprises (**MBEs**) and women business enterprises (**WBEs**) should have the maximum opportunity to participate in procurements and projects as prime contractors and vendors. Pursuant to Sec. 21-52 of the Providence Code of Ordinances and Chapter 31-14 et seq. of the Rhode Island General Laws (as amended), MBE and WBE participation goals apply to contracts.

The goal for Minority Business Enterprise (MBE) participation is 10% of the total bid value.

The goal for Women's Business Enterprise (WBE) participation is 10% of the total bid value.

The goal for combined MBE/WBE participation is 20% of the total bid value.

**I acknowledge the City of East Providence's goals of supporting MBE/WBE certified businesses.** Initial \_\_\_\_\_

Are you subcontracting with other parties on this project: Yes \_\_\_ No \_\_\_ if yes fill out page 2, **Subcontractor Disclosure Form**.

Are you using any subcontractors on this job and not meeting the 20% MBE/WBE participation goal: Yes \_\_\_ No \_\_\_ if yes fill out page 3, **MBE/WBE Waiver Request Form**.

If awarded the contract, I understand that my company must submit to the Minority and Women's Business Coordinator at the City of East Providence (MBE/WBE Office), copies of all executed agreements with the subcontractor(s) being utilized to achieve the participation goals and other requirements of the RI General Laws. **I understand that these documents must be submitted prior to the issuance of a notice to proceed.** Initial \_\_\_\_\_

**I understand that, if awarded the contract, my firm must submit to the MBE/WBE Office canceled checks and reports required by the MBE/WBE Office on a quarterly basis verifying payments to the subcontractors(s) utilized on the contract.** Initial \_\_\_\_\_

If I am awarded this contract and find that I am unable to utilize the subcontractor(s) identified in my Statement of Intent, I understand that I must substitute another certified MBE and WBE firm(s) to meet the participation goals. **I understand that I may not make a substitution until I have obtained the written approval of the MBE/WBE Office.** Initial \_\_\_\_\_

**If awarded this contract, I understand that authorized representatives of the City of East Providence may examine the books, records and files of my firm from time to time, to the extent that such material is relevant to a determination of whether my firm is complying with the City's MBE/WBE participation requirements.** Initial \_\_\_\_\_

**I do solemnly declare and affirm under the penalty of perjury that the contents of the foregoing Affidavit are true and correct to the best of my knowledge, information and belief.**

Signature of Bidder \_\_\_\_\_ Printed Name \_\_\_\_\_

Company Name \_\_\_\_\_ Date \_\_\_\_\_

## SUBCONTRACTOR DISCLOSURE FORM

**Fill out this form only if you WILL SUBCONTRACT with other parties. If you will not subcontract any portion of the proposed bid, do not fill out this form.**

Prime Bidder: \_\_\_\_\_ Primary NAICS Code: \_\_\_\_\_

Item Description (as seen on RFP): \_\_\_\_\_

**Please List all Subcontractors below.** Include the total dollar value that you propose to share with each subcontractor and the dollar amount to be subcontracted. Please check off MBE and WBE where applicable. The directory of all state-certified MBE/WBE firms is located at [www.mbe.ri.gov](http://www.mbe.ri.gov). Business NAICS codes can be found at <http://www.naics.como/search/>

Proposed Subcontractor	MBE	WBE	Primary NAICS Code	Date of Mobilization	\$ Value of Subcontract
					\$
					\$
					\$
					\$
					\$
					\$
<b>A. MBE SUBCONTRACTED AMOUNT:</b>					\$
<b>B. WBE SUBCONTRACTED AMOUNT:</b>					\$
<b>C. NON MBE WBE SUBCONTRACTED AMOUNT:</b>					\$
<b>D. DOLLAR AMOUNT OF WORK DONE BY THE PRIME CONTRACTOR:</b>					\$
<b>E. TOTAL AMOUNT OF BID (SUM OF A, B, C &amp; D):</b>					\$
<b>F. PERCENTAGE OF BID SUBCONTRACTED TO MBEs AND WBEs. (Add A and B. Divide by E and multiply by 100).</b>					%

Please read and initial the following statement acknowledging you understand.

If the percentage of the total amount of the bid being awarded to MBE or WBE vendors is less than 20% (Box F) and the prime contractor is NOT a Rhode Island State-certified MBE or WBE, **you must fill out the MBE/WBE WAIVER REQUEST FORM for consideration by City of East Providence MBE/WBE Outreach Director.** Initial \_\_\_\_\_

\_\_\_\_\_  
*Signature of Prime Contractor*

\_\_\_\_\_  
*Printed Name*

\_\_\_\_\_  
*Date Signed*

## MBE/WBE WAIVER REQUEST FORM

**Fill out this form only if you are using subcontractors and did not meet the 20% MBE/WBE participation goal. MBE or WBE Prime Bidders that are certified by the State of Rhode Island are NOT REQUIRED to fill out this form.**

Submit this form to the City of East Providence MBE/WBE Outreach Director, Elmer Carvalho-Pina at [epina@eastprovidenceri.gov](mailto:epina@eastprovidenceri.gov) and Procurement Specialist, Ralph Mitchell at [rmitchell@eastprovidenceri.gov](mailto:rmitchell@eastprovidenceri.gov) for review prior to bid submission.

This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit for in the future.

Prime Bidder: \_\_\_\_\_

Company Trade: \_\_\_\_\_

Item Description (as seen on RFP): \_\_\_\_\_

To receive a waiver, you must list the certified MBE and/or WBE companies you contacted, the name of the primary individual with whom you interacted and the reason the MBE/WBE company could not participate on the project.

MBE/WBE Company name	Individual's Name	Company Trade	Why did you choose not to work with this company?

I acknowledge the City of East Providence's goal of a combined MBE/WBE participation is 20% of the total bid value. I am requesting a waiver of \_\_\_\_\_% MBE/WBE (20% minus the Value of Box F on the Subcontractor Disclosure Form). If an opportunity is identified to subcontract any task associated with the fulfillment of this contract, a good faith effort will be made to select MBE/WBE certified businesses as partners.

\_\_\_\_\_  
Signature of Prime Contractor

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Signature of City of East Providence  
MBE/WBE Outreach Director

\_\_\_\_\_  
Printed Name of City of East Providence  
MBE/WBE Outreach Director

\_\_\_\_\_  
Date Signed



## **ANTI-COLLUSION DECLARATION**

The Bidder, by virtue of issuing a Bid certifies that Bidder has not divulged, discussed or compared the Bid with other Bidders and has not colluded with any other Bidder of parties to a Bid whomsoever. Bidder further certifies and agrees that premiums, rebates or gratuities are prohibited whether with, prior to, or after any delivery of material or services. Any such violation will result in the cancellation of this contract and the removal of offending parties from all Bid lists.

### **CONFLICT OF INTEREST**

The Bidder and all sub-contractors shall disclose in writing as part of their Bid any possible or potential conflicts of interest which are known to, or reasonably should be known to the Bidder or sub-contractors, which may exist between their firms and the City of East Providence.

All Bidders and their subcontractors and business partners must disclose with their Bid, the name of any officer, director, agent or employee who is also an employee or family member of an employee of the City of East Providence.

Further, the Bidder must disclose the name of any City of East Providence employee or family member or any elected official who owns, directly or indirectly, an investment or other proprietary interest, in the firm or any of its parent company, subsidiaries or affiliates.

The Bidder and all sub-contractors and business partners shall disclose in writing as part of their Bid, any familial, personal or business relationships between members of Bidders, sub-contractor's or business partner's firms and members of the City of East Providence, whether or not there is any belief that the relationship might constitute a possible conflict of interests.

**BIDDING FIRM:**

**SIGNATURE:**

**DATE:**

**PRINT NAME:**

**TITLE:**



**City of East Providence**  
**Attn: Procurement Specialist**

**ELECTRONIC BID DOCUMENT NOTIFICATION OF RECEIPT**

In order to compile a complete listing of all recipients of the initial bid package please return this completed form by e-mail [to Controllers@eastprovidenceri.gov](mailto:to%20Controllers@eastprovidenceri.gov)

It is the responsibility of all potential bidders to ensure any and all addenda are downloaded from the City website <https://eastprovidenceri.gov/rfp>

The undersigned hereby acknowledges electronic receipt of the bid documents for the procurement specified below.

***From:***

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Bid No.: \_\_\_\_\_

Title of Specification received: \_\_\_\_\_

Date: \_\_\_\_\_



# Request for Taxpayer Identification Number and Certification

► Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Give Form to the  
requester. Do not  
send to the IRS.

Print or type. See Specific Instructions on page 3.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.				
	3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.				
	Individual/sole proprietor or single-member LLC	C Corporation	S Corporation	Partnership	Trust/estate
	Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____				
	Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.				
	Other (see instructions) ► _____				
	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):				
	Exempt payee code (if any) _____				
	Exemption from FATCA reporting code (if any) _____				
	(Applies to accounts maintained outside the U.S.)				
	2 Business name/disregarded entity name, if different from above				
	5 Address (number, street, and apt. or suite no.) See instructions.				
	Requester's name and address (optional)				
	6 City, state, and ZIP code				
	7 List account number(s) here (optional)				

## Part I Taxpayer Identification Number (TIN)

Social security number

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

or

Employer identification number

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments

other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign  
Here

Signature of  
U.S. person ►

Date ►

## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

## Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer

identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

**Note:** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

### **Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

**a. Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

**Note: ITIN applicant:** Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

**b. Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

**c. Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

**d. Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

**e. Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

### Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

### Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

#### Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Note:** You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

## Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

## Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note:** See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.**

You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
6. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor <sup>4</sup>
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity <sup>4</sup> The
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

**\*Note:** The grantor also must provide a Form W-9 to trustee of trust.

**Note:** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records From Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.**

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.





**CITY OF EAST PROVIDENCE  
POTTER STREET AND BURGESS STREET PARKING LOTS  
ADVERTISEMENT  
BID FORM  
RFP EP22/23-29  
BID OPENING FRIDAY SEPTEMBER 8, 2023 AT 11:00AM**

The undersigned bidder, being familiar with local conditions affecting the cost of the work, hereby proposes to provide all necessary labor, materials, equipment and incidental items necessary to do all the work called for in the Specifications and in accordance with the Contract Documents.

A pre-bid conference will be held on **Monday, August 21, 2023, at East Providence City Hall at 10:00 AM.** Questions on the bid are due by **Friday, August 25, 2023, at 11:00 AM.**

The undersigned further understands that the quantities of work as shown are approximate only and are subject to increase or decrease and offers to do the work whether the quantities are increased or decreased, at the unit prices stated. Davis–Bacon wages apply to this proposal.

All prices must be written in words and figures. In case of discrepancy, the amount shown in words will govern.

Bidder acknowledges receipt of the following addendum:

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At the time of the opening of bids, the bidder shall have inspected the sites of the work to familiarize himself with the conditions relating to the work under the contract.

No Bidder may withdraw their Bid within sixty (60) days following the closing time for receipt of Bids.

Bidder hereby agrees to begin work within ten (10) days after the date of the NOTICE TO PROCEED, unless otherwise specified or permitted by the CITY, and shall complete the work under the provisions of the Contract within 60 calendar days.

The undersigned bidder submits herewith Bid Security in the form of a Bid Bond or a Certified Check, in favor of the City of East Providence, in the amount not less than five (5) percent of the total amount bid in dollars, and agrees and consents that, if he is the successful bidder, the Bid Security shall be forfeited to the City of East Providence as liquidated damages, if the required Contract and Surety Bond are not executed within ten (10) days from the date of the NOTICE OF AWARD.

LIQUIDATED DAMAGES will be assessed at the rate of \$500.00 per day for each day beyond the contract length herein stipulated.

The undersigned bidder further agrees to pay the premiums for the Surety Bond (Performance, Labor and Materials Payment Bonds) for which said premiums are to be included in the Bid Price.

BIDDING FIRM: \_\_\_\_\_

NUMBER & STREET: \_\_\_\_\_

CITY/STATE/ZIP: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

TELEPHONE NO.: \_\_\_\_\_

Being a Corporation, incorporated under  
the laws of the State of

\_\_\_\_\_

(Partnership)

(Individual)

Composed of officers, partners  
or owner as follows:

\_\_\_\_\_  
(President, Owner, Partner)

(Corporate Seal)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>Item No.</b>	<b>Estimated Quantity</b>	<b>Brief description; Bid Price in both words and figures</b>	<b>Total Figure</b>
201.0303	3* EACH	CUTTING, REMOVING AND DISPOSING ISOLATED TREE AND STUMPS  _____Dollars and _____cents (\$ _____)	\$
201.0403	55 SY	REMOVE AND DISPOSE SIDEWALKS  _____Dollars and _____cents (\$ _____)	\$
201.0428	1 EACH	REMOVE AND DISPOSE FRAME AND GRATE OR FRAME AND COVER  _____Dollars and _____cents (\$ _____)	\$
201.0437	1 EACH	REMOVAL AND DISPOSAL OF DRAINAGE AND UTILITY STRUCTURES  _____Dollars and _____cents (\$ _____)	\$
201.0438	50 LF	REMOVAL AND DISPOSAL OF FENCES AND RAILINGS  _____Dollars and _____cents (\$ _____)	\$
202.0200	130* CY	ROCK EXCAVATION COMMON  _____Dollars and _____cents (\$ _____)	\$
202.0300	2,250 CY	UNCLASSIFIED EXCAVATION  _____Dollars and _____cents (\$ _____)	\$
206.0301	675 LF	COMPOST FILTER SOCK  _____Dollars and _____cents (\$ _____)	\$

Item No.	Estimated Quantity	Brief description; Bid Price in both words and figures	Total Figure
209.0220	7 EACH	SACK INSERT INLET PROTECTION  _____Dollars and _____cents (\$_____)	\$
211.0220	2 EACH	CONSTRUCTION ACCESS STANDARD 9.9.0  _____Dollars and _____cents (\$_____)	\$
302.0100	40 CY	GRAVEL BORROW SUBBASE COURSE  _____Dollars and _____cents (\$_____)	\$
701.5302	25 LF	DUCTILE IRON WATER PIPE PUSH-ON JOINT - ALL SIZES  _____Dollars and _____cents (\$_____)	\$
702.0501	2 EACH	FRAME AND GRATE - ALL SIZES AND TYPES  _____Dollars and _____cents (\$_____)	\$
702.0502	1 EACH	FRAME AND COVER - ALL SIZES AND TYPES  _____Dollars and _____cents (\$_____)	\$
702.1000	2 EACH	MANHOLE, CATCH BASIN, OR DROP INLET ASSEMBLY - (0' - 12' DEPTH)  _____Dollars and _____cents (\$_____)	\$
903.0510	460 LF	FENCE - PERMANENT ALL TYPES AND SIZES  _____Dollars and _____cents (\$_____)	\$

Item No.	Estimated Quantity	Brief description; Bid Price in both words and figures	Total Figure
903.0520	1,125 LF	FENCE - TEMPORARY ALL TYPES AND SIZES  _____Dollars and _____cents (\$_____)	\$
905.1000	150 SY	PORTLAND CEMENT SIDEWALKS AND DRIVEWAYS  _____Dollars and _____cents (\$_____)	\$
905.9901	2,500 SY	POROUS PAVEMENT SYSTEM  _____Dollars and _____cents (\$_____)	\$
906.0310	105 LF	GRANITE CURB  _____Dollars and _____cents (\$_____)	\$
906.0600	580 LF	BITUMINOUS CURBING STANDARD 7.5.0  _____Dollars and _____cents (\$_____)	\$
906.0700	120 LF	REMOVE, HANDLE, HAUL TRIM RESET CURB EDGING, STRAIGHT, CIRCULAR ALL TYPES  _____Dollars and _____cents (\$_____)	\$
906.9901	39 EACH	GRANITE BLOCK  _____Dollars and _____cents (\$_____)	\$
920.0320	5 SY	RIPRAP R-3, R-4, R-5 STANDARD 8.3.0  _____Dollars and _____cents (\$_____)	\$
936.0110	1 LS	MOBILIZATION  _____Dollars and _____cents (\$_____)	\$

Item No.	Estimated Quantity	Brief description; Bid Price in both words and figures	Total Figure
937.0100	1 LS	FURNISH, INSTALL, MAINTAIN, AND MOVE TEMPORARY TRAFFIC PROTECTION  _____Dollars and _____cents (\$_____)	\$
L01.0102	970 SY	LOAM BORROW 4 INCHES DEEP  _____Dollars and _____cents (\$_____)	\$
L02.0102	970 SY	RESIDENTIAL SEEDING (TYPE 2)  _____Dollars and _____cents (\$_____)	\$
L11.0102	3 EACH	TREE PLANT PROTECTION DEVICE STANDARD 51.1.0  _____Dollars and _____cents (\$_____)	\$
T08.9901	3 EACH	SOLAR LIGHTING  _____Dollars and _____cents (\$_____)	\$
T15.0200	1 EACH	REMOVE AND RELOCATE DIRECTIONAL REGULATORY AND WARNING SIGN  _____Dollars and _____cents (\$_____)	\$
T15.2000	5 SF	PARKING SIGNS  _____Dollars and _____cents (\$_____)	\$
T20.0101	1,670 LF	PAVEMENT MARKINGS  _____Dollars and _____cents (\$_____)	\$
T20.0103	3 EACH	ARROWS, WORDS, OR SYMBOLS PAVEMENT MARKINGS  _____Dollars and _____cents (\$_____)	\$

<b>Item No.</b>	<b>Estimated Quantity</b>	<b>Brief description; Bid Price in both words and figures</b>	<b>Total Figure</b>
<b>Total Bid Price in Words</b>			
<b>Total Bid Price in Figures</b>			

\*Denotes indeterminate item; quantity assumed for comparison of bids.

SECTION 00400

BID BOND

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

The condition of the above obligation is such that whereas the Principal has submitted to the City  
of East Providence, Rhode Island a certain Bid attached hereto and hereby made a part hereof, to  
enter into a contract in writing, hereinafter referred to as the "AGREEMENT" and/or "Contract",  
for **Potter Street and Burgess Street Parking Lots, Bid No. EP22/23-29.**

NOW THEREFORE,

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

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

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



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

(SEAL)

\_\_\_\_\_  
(Name of Principal) L.S.

BY: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Name of Surety (Seal)

BY: \_\_\_\_\_  
(Signature and Title)

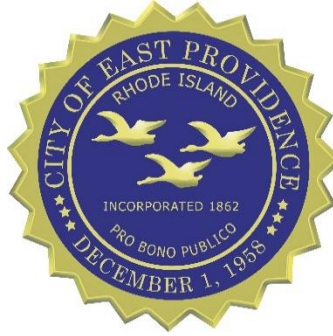
BY: \_\_\_\_\_  
Attorney-In-Fact

Sealed and delivered in  
the presence of:

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

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

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



SECTION 00500

CONTRACT AGREEMENT  
**CITY OF EAST PROVIDENCE, RHODE ISLAND**  
**POTTER STREET AND BURGESS STREET PARKING LOTS**  
**BID NO. EP22/23-29**

This Contract (the “Contract”) is made and entered into by and between The City of East Providence, (the “City”) and \_\_\_\_\_ (the “Contractor”). This Contract shall become effective on the date it is executed by the last party to execute it (“the Effective Date”). The City intends on using Municipal Infrastructure Grant Program (MIGP) funding from the Rhode Island Infrastructure Bank (RIIB). Any contract or contracts awarded under the Advertisement for Bids will be funded in part by a grant from the MIGP.

This Contract is for a project identified as **RFP EP22/23-29**

For and in consideration of the mutual promises, covenants and agreements set forth herein, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, the City and the Contractor agree as follows:

**ARTICLE 1**  
**THE WORK OF THIS CONTRACT**

The Contractor shall execute the entire work described in the Contract Documents, within twelve (12) weeks from date of signed contract except to the extent specifically indicated in the Contract Documents to be the responsibility of others, or as follows:

**ARTICLE 2**  
**DOCUMENTS INCORPORATED BY REFERENCE**

This Contract includes the plans and specifications for the Potter Street and Burgess Street Parking Lots as identified thereon for the City’s Request for Proposal issued **FRIDAY AUGUST 11, 2023**, all of which are hereby incorporated herein by reference and made a part hereof. Change

Orders issued hereafter, and any other amendments executed by the City and the Contractor, shall become and be a part of this Contract. Documents not included or expressly contemplated in this Article 2 do not, and shall not, form any part of this Contract.

### **ARTICLE 3**

#### **REPRESENTATIONS OF THE CONTRACTOR**

In order to induce the City to execute this Contract and recognizing that the City is relying thereon, the Contractor, by executing this Contract, makes the following express representation to the City.

- (A) The Contractor is fully qualified to act as the contractor for the Project and has, and shall maintain, any and all licenses, permits or other authorizations necessary to act as the contractor for, and to construct, the Project;
- (B) The Contractor has become familiar with the Project site and the local conditions under which the Project is to be constructed and operated;
- (C) The Contractor has received, reviewed and carefully examined all the documents which make up this Contract, including, but not limited to, the plans and specifications, and has found them in all respects to be complete, accurate, adequate, consistent, coordinated and sufficient for construction;
- (D) The Contractor is familiar with all Federal, State, municipal, and department laws, ordinances, orders, and regulations which may in any way affect the work of those employed therein, including, but not limited to, any special acts relating to the work or the Project of which it is a part;
- (E) The Contractor is aware of the hazards involved in the work and the danger to life and property both evident and inherent, and that the Contractor will conduct the work in a careful and safe manner without injury to persons or property.

### **ARTICLE 4**

#### **INTENT AND INTERPRETATION**

With respect to the intent and interpretation of this Contract, the City and the Contractor agree as follows:

- (A) This Contract, together with the Contractor's and Surety's performance in the total amount of the project cost and payment bonds for the Project, constitute the entire and exclusive agreements between the parties with reference to the Project, and said Contract supersedes any and all prior discussions, communications, representations, understandings, negotiations, or agreements. This Contract also supersedes any bid documents not incorporated herein pursuant to Article 2.

- (B) Anything that may be required, implied or inferred by the documents which make up this Contract, or any one or more of them, shall be provided by the Contractor for the Contract Price;
- (C) Nothing contained in this Contract shall create, nor be interpreted to create, privity or any other relationship whatsoever between the City and any person except the Contractor;
- (D) When a word, term, or phrase is used in this Contract, it shall be interpreted or construed first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage;
- (E) The Contractor shall have a continuing duty to read, examine, review, compare and contrast each of the documents which make up this Contract, shop drawings, and other submittals and shall give written notice to the City of any conflict, ambiguity, error or omission which the Contractor may find with respect to these documents before proceeding with the affected work. The express or implied approval by the City of any shop drawings or other submittals shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. **HOWEVER, THE CITY MAKES NO REPRESENTATION OR WARRANTY OF ANY NATURE WHATSOEVER TO THE CONTRACTOR CONCERNING SUCH DOCUMENTS.** The Contractor again hereby acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representations or warranties by the City concerning such documents, as no such representations or warranties have been or are hereby made;
- (F) In the event of any conflict, discrepancy, or inconsistency among any of the documents which make up this Contract, the following shall control:
  - (1) As between drawings and specifications, the specifications shall govern;
  - (2) As between figures given on plans and scaled measurements, the figures shall govern;
  - (3) As between this document and the plans or specifications, this document shall govern.

**ARTICLE 5**  
**OWNERSHIP OF DOCUMENTS WHICH MAKE UP THE CONTRACT**

The documents which make up this Contract, and each of them, as well as any other documents furnished by the City, shall remain the property of the City. The City shall provide the Contractor with a sufficient number of copies of the complete Contract as the City determines is

necessary. The Contractor shall have the right to keep the Contractor's executed set; provided, however, that in no event shall the Contractor use, or permit to be used, any portion or all of such Contract on other projects without the City's prior written authorization. All sets in usable condition, with the exception of the Contractor's executed set, shall be returned to the City at the completion or cessation of the work or termination of the Contract.

## **ARTICLE 6**

### **CONTRACTOR'S PERFORMANCE**

The Contractor shall perform all of the work required, implied or reasonably inferable from this Contract including, but not limited to, the following:

- (A) Construction of the Project;
- (B) The furnishing of the required 100% Performance Bond and Certificate of General Liability insurance coverage of \$1,000,000, as well as Workers' Compensation Insurance as required by the State of Rhode Island for itself and any of its employees.
- (C) The provision and furnishing, and prompt payment of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, fuel, heat, light, cooling, or other utilities, required for construction and all necessary building permits and other permits required for the construction of the Project;
- (D) The creation and submission to the City of detailed and comprehensive as-built drawings depicting all as-built construction. Said as-built drawings shall be submitted to the City upon final completion of the Project and receipt of same by the City shall be a condition precedent to final payment to the Contractor.

## **ARTICLE 7**

### **TIME FOR CONTRACTOR'S PERFORMANCE**

- (A) The Contractor shall commence the performance of this Contract within ten (10) calendar days after the Notice to Proceed and shall diligently continue its performance to and until final completion of the Project (subject to a winter shutdown period if necessary as provided for in Article 8 Paragraph (L)). The Contractor shall accomplish Substantial Completion of the Project on or before the date established pursuant to Paragraphs (K) and (L) in Article 8.
- (B) The Contractor shall pay the City the sum of \$1,000 Dollars per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the City, estimated at the time of executing this Contract. When the City reasonably believes that Substantial Completion will be inexcusably delayed, the City shall be entitled, but not required, to withhold from

any amounts otherwise due the Contractor an amount then believed by the City to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the City has withheld payment, the City shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

- (C) The term “Substantial Completion”, as used herein, shall mean that point as determined by the City at which the Project is at a level of completion in strict compliance with this Contract such that the City or its designee can enjoy beneficial use or occupancy and can use or operate in all respects, for its intended purpose. Partial use or occupancy of the Project being deemed substantially complete, and such partial use or occupancy shall not be evidence of Substantial Completion.
- (D) All limitations of time set forth herein are material and are of the essence of this Contract.

## **ARTICLE 8**

### **PAYMENTS TO CONTRACTOR**

- (A) The City shall pay, and the Contractor shall accept, as full and complete payment for the Contractor’s timely performance of its obligations hereunder, the Contract Sum of the price set forth in the Bid, and shall constitute the Contract Price, which shall not be modified except by Change Order as provided in this contract.
- (B) The City shall pay the Contract Price to the Contractor in accordance with the procedures set forth in this Article 8. On or before the 15th day of each month after commencement of performance, but no more frequently than one monthly, the Contractor may submit a Payment Request for the period ending the 31st day of preceding the month. Said Payment Request shall be in such format and include whatever supporting information as may be required by the City. Each Payment Request shall be signed by the Contractor and shall constitute the Contractor’s representation that the quantity of work has reached the level for which payment is requested, that the work has been properly installed or performed in strict compliance with this Contract and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the City shall review the Payment Request and may also review the work at the project site or elsewhere to determine whether the quantity and quality of the work is as represented in the Payment Request and is as required by this Contract. The City shall approve in writing the amount which, in the opinion of the City, is properly owing to the Contractor. The payment of the Contractor’s invoice will be made no later than thirty (30) days after the receipt of the invoice subject to the above. The submission of weekly certified payroll reports on the U.S Department of Labor Payroll form in compliance with the Davis Bacon Act for federally funded contracts are required. No payment will be made until such time that all certified payroll are current for the period covered by the payment request, and the city has verified that the correct wage rate and classification (RI20230001 dated 06/30/2023) was used on the certified payroll. The Contractor shall submit progress invoices dated the last day of the month. These invoices will be submitted on G702 and G703 (AIA approved) documents.

- (C) The City will retain a percentage of the progress or monthly payments claimed, including approved change orders. The retainage shall remain at five percent (5%) until seventy-five percent (75%) of the Contract is complete, as determined by the City. At that time if the City decides the Contractor is making adequate progress, the City may reduce retainage to two and one half percent (2.5%) of the dollar value of all work satisfactorily complete to date, including change orders. Any further reduction in the retainage amount shall be at the City's discretion. The retainage shall be paid by the City to the Contractor within ninety (90) days of the date the work is accepted by the City unless a dispute exists with respect to the work.
- (D) Upon Substantial Completion, the City may reduce the amount of retainage to the final retainage of 1% of the dollar value of all work satisfactorily completed to date, including approved change orders plus an additional retainage based on the City's estimate of the fair value of any punch list items and the cost of completing and/or correcting such incomplete or defective items or work. As these items are completed or corrected, they shall be paid for out of the retainage until Final Completion and Acceptance of Work is declared by the City. The final (1%) retainage shall be paid to the Contractor by the City within ninety (90) days of the date the work is accepted by the City unless a dispute exists with respect to the work.
- (E) Upon Final Completion and Acceptance of the Work, City shall issue a certificate attached to the final payment request stating that the Work has been accepted by the City under the conditions of the Contract Documents. The entire balance to be due the Contractor shall be paid to the Contractor within ninety (90) days of Final Completion and Acceptance of Work.
- (F) When payment is received from the City, the Contractor shall immediately pay all subcontractor, materialmen, laborers and suppliers the amounts they are due for the work covered by such payment. In the event the City becomes informed that the Contractor has not paid a subcontractor, materialman, laborer, or supplier as provided herein, the City shall have the right, but not the duty, to issue future checks and payment to the Contractor of amounts otherwise due hereunder naming the Contractor and any such subcontractor, materialman, laborer, or supplier as joint payees. Such joint check procedure, if employed by the City, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the City to repeat the procedure in the future.
- (G) Neither payment to the Contractor, utilization of the Project for any purpose by the City, nor any other act or omission by the City shall be interpreted or construed as an acceptance of any work of the Contractor not strictly in compliance with this Contract.
- (H) The City shall have the right to refuse to make payment and, if necessary, may demand the return of a portion or all of the amount previously paid to the Contractor due to:

- (1) The quality of a portion, or all, of the Contractor's work not being in accordance with the requirements of this Contract;
- (2) The quantity of the Contractor's work not being as represented in the Contractor's Payment Request, or otherwise;
- (3) The Contractor's rate of progress being such that, in the City's opinion, substantial or final completion, or both, may be inexcusably delayed;
- (4) The Contractor's failure to use Contract funds, previously paid the Contractor by the City, to pay Contractor's Project-related obligations including, but not limited to, subcontractors, laborers and material and equipment suppliers;
- (5) Claims made, or likely to be made, against the City or its property;
- (6) Loss caused by the Contractor;
- (7) The Contractor's failure or refusal to perform any of its obligations to the City;

In the event that the City makes a written demand upon the Contractor for amounts previously paid by the City as contemplated in this paragraph, the Contractor shall promptly comply with such demand.

- (I) When Substantial Completion has been achieved, the Contractor shall notify the City in writing and shall furnish to the City a listing of those matters yet to be finished. The City will thereupon conduct an inspection to confirm that the work is in fact substantially complete. Upon its confirmation that the Contractor's work is substantially complete, the City will so notify the Contractor in writing and will therein set forth the date of Substantial Completion. If the City, through its inspection, fails to find that the Contractor's work is substantially complete, and is required to repeat all, or any portion, of its Substantial Completion inspection, the Contractor shall bear the cost of such repeat inspection(s) which cost may be deducted by the City from any payment then or thereafter due to the Contractor.
- (J) When the Project is finally complete and the Contractor is ready for final inspection, it shall notify the City thereof in writing. Thereupon, the City will perform a final inspection of the project. If the City confirms that the project is complete in full accordance with this Contract and the Contractor has performed all of its obligations to the City hereunder, the City will furnish a final Approval for Payment certifying that the project is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to this Contract. If the City is unable to issue its final Approval for Payment and is required to repeat its final inspection of the Project, the Contractor shall bear the cost of such repeat inspection(s), which costs may be deducted by the City from the Contractor's final payment.



- (K) The Contractor is to begin work within ten (10) days after the date of the Notice to Proceed and shall complete the work within 90 consecutive days of notification of each assignment. If the Contractor fails to complete the work as set forth in this paragraph 8(L), the Contractor shall pay the City the sum of one thousand (\$1,000) per day for each and every calendar day of unexcused delay in completing the work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the City, estimated at or before the time of executing this Contract. When the City reasonably believes that the date of completion will be inexcusably delayed, the City shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the City to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving completion of the work, or any part thereof, for which the City has withheld payment, the City shall promptly release the Contractor those funds withheld, but no longer applicable, as liquidated damages.
- (L) The time for completion noted above has been developed upon the assumption that the work may be suspended during winter shutdown if necessary. Winter shutdown shall be determined by the Director of Public Works for the City of East Providence. The time period specified for completion of the work in Paragraph (K) above shall be suspended during such winter shutdown. The contractor shall plan on winter shutdown period based upon these dates unless otherwise directed by the City. The winter shutdown dates are subject to change depending upon weather conditions. The City shall notify the Contractor in writing if there is a change in the winter shutdown period due to weather, environmental or other conditions which preclude the work from being executed in accordance with these documents.
- (M) Prior to being entitled to receive final payment, and as a condition precedent thereto, the Contract shall furnish to the City, in the form and manner required by the City:
- (1) An affidavit that all of the Contractor's obligations to subcontractors, laborers, equipment or material suppliers, or other third parties in connection with the Project, have been paid or otherwise satisfied;
  - (2) If required by the City, separate releases of lien or lien waivers from each subcontractor, lower tier subcontractor, laborer, supplier or other person or entity who has, or might have a claim against the City or the City's property;
  - (3) If applicable, consent(s) of surety to final payment;
  - (4) All product warranties, operating manuals, instruction manuals and other record documents, drawings and things customarily required of the Contractor, or expressly required herein, as a part of or prior to Project closeout.

**ARTICLE 9**  
**MUNICIPAL POLICE TRAFFIC CONTROL**

The cost of municipal police traffic control shall be paid in accordance with RIGL §37-12-10. The Contractor shall be responsible for scheduling municipal police officers for traffic control purposes through the police department. If traffic control assignments are cancelled without twenty-four (24) hours notice, the Contractor is responsible to pay the City of East Providence for the hours police officers would have worked it if had not been for the untimely cancellation of the assignment. The City at its sole discretion may require such scheduling to be pre-approved by the Public Works Department. The Contractor is responsible for all highway safety equipment for traffic control purposes including but not limited to proper signage and traffic cones.

**ARTICLE 10**  
**CEASE AND DESIST ORDER**

In the event the Contractor fails or refuses to perform the work as required herein, the City may instruct the Contractor to cease and desist from performing further work in whole or in part. Upon receipt of such instruction, the Contractor shall immediately cease and desist as instructed by the City and shall not proceed further until the cause for the City's instruction has been corrected, no longer exists, or the City instructs that the work resume. In the event the City issues instructions to cease and desist, and in the further event that the Contractor fails and refuses within seven (7) calendar days of receipt of same to provide adequate assurance to the City that the cause of such instructions will be eliminated or corrected, then the City shall have the right, but not the obligation, to carry out the work with its own forces, or with the forces of another contractor, and the Contractor shall be fully responsible and liable for the costs of performing such work by the City. The rights set forth herein are in addition to, and without prejudice to, any other rights or remedies the City may have against the Contractor.

**ARTICLE 11**  
**DUTIES, OBLIGATIONS AND RESPONSIBILITIES OF THE CONTRACTOR**

In addition to any and all other duties, obligations and responsibilities of the Contractor set forth in this Contract, the Contractor shall have and perform the following duties, obligations and responsibilities to the City:

- (A) The Contractor is again reminded of its continuing duties set forth in Subparagraph 4(E) which are by reference hereby incorporated in this Subparagraph 10(A). The Contractor shall not perform work without adequate plans and specifications, or, as appropriate, approved shop drawings, or other submittals. If the Contractor performs work knowing or believing it involves an error, inconsistency or omission in the Contract without first providing written notice to the City and the Architect, the Contractor shall be responsible for such work and pay the cost of correcting same;

- (B) All work shall strictly conform to the requirements of this Contract;
- (C) The work shall be strictly supervised, the Contractor bearing full responsibility for any and all acts or omissions of those engaged in the work on behalf of the Contractor;
- (D) The Contractor hereby warrants that all labor furnished under this Contract shall be competent to perform the tasks undertaken, that the product of such labor shall yield only first-class results, that all materials and equipment provided shall be new and of high quality, that the completed work will be complete, of high quality, without defects, and that all work strictly complies with the requirements of this Contract. Any work not strictly complying with the requirements of this Subparagraph shall constitute a breach of the Contractor's warranty;
- (E) The Contractor shall obtain and pay for all required permits, fees and licenses customarily obtained by the Contractor. The Contractor shall comply with all legal requirements applicable to the work;
- (F) The Contractor shall employ and maintain at the Project site only competent supervisory personnel.
- (G) The Contractor shall keep an updated copy of this Contract at the Project site. Additionally, the Contractor shall keep a copy of approved shop drawings and other submittals. All of these items shall be available to the City at all regular business hours. Upon final completion of the work, all of these items shall be finally updated and provided to the City and shall become the property of the City.
- (H) The Contractor shall maintain the Project site in a reasonably clean condition during performance of the work. Upon final completion, the Contractor shall thoroughly clean the Project site of all debris, trash and excess materials or equipment.
- (I) At all times relevant to this Contract, the Contractor shall permit the City to enter upon the Project site and to review or inspect the work without formality or other procedure.

## **ARTICLE 12**

### **DUTIES, OBLIGATIONS AND RESPONSIBILITIES OF THE CITY**

- (A) Except for permit fees which are the responsibility of the Contractor, the City shall secure and pay for necessary approvals, easements, assessments and charges required for the construction, and services performed pursuant to the Contract.
- (B) If the Contractor fails to correct work which is not in accordance with the requirements of the contract, and persistently fails to carry out the work in accordance with the Contract, the City, by a written letter, may order the contractor to stop all work, or any portion thereof, until the cause of such order has been eliminated; however, the right of the City to stop the work shall not give rise to a duty on the part of the city to exercise this right for the benefit of the Contractor or any other person or entity.

- (C) Upon completion and acceptance of the work, the City shall issue a certificate attached to the final payment request that the work has been accepted by the City under the conditions of the Contract.

**ARTICLE 13**  
**“OR EQUAL” CLAUSE**

- (A) Whenever a material or article required is specified or shown on the drawings by using the name of the proprietary product of a particular manufacturer or vendor, any material or article which will perform adequately 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 City’s opinion. It shall not be purchased or installed without the City’s written approval. In all cases new material shall be used in the project.
- (B) If more than one brand, make of material, device, or piece of equipment is shown or specified, each should be regarded as the equal of the other. Any other brand, make of material, device, or equipment, which in the opinion of the City or its Authorized Representative, is the recognized equal of that specified (considering quality, workmanship and economy of operation), and is suitable for the purpose intended, may be accepted.

**ARTICLE 14**  
**INDEMNITY**

The Contractor shall indemnify and hold the City harmless from any and all claims, liability, damages, loss, cost and expense of every type whatsoever including, without limitation, attorney’s fees and expenses, in connection with the Contractor’s performance of this Contract, provided that such claims, liability, damage, loss, cost or expense is due to sickness, personal injury, disease or death, or loss or destruction of tangible property (other than the work itself), including loss of use resulting therefrom, to the extent caused by the Contractor, or anyone for whose acts the Contractor may be liable, regardless of whether such liability, claim, damage, loss, cost or expense is caused in part by the City.

**ARTICLE 15**  
**CLAIMS BY THE CONTRACTOR**

Claims by the Contractor against the City are subject to the following terms and conditions:

- (A) All Contractor claims against the City shall be initiated by a written claim submitted to the City. Such claim shall be received by the City no later than seven (7) calendar days after the event, or the first appearance of the circumstances, causing the claim, and the same shall set forth in detail all known facts and circumstances supporting the claim;
- (B) The Contractor and City shall continue their performance hereunder regardless of the existence of any claims submitted by the Contractor.

- (C) In the event the Contractor discovers previously concealed and unknown site conditions which are materially at variance from those typically and ordinarily encountered in the general geographical location of the Project, the Contract Price shall be modified, either upward or downward, upon the written claim made by either party within seven (7) calendar days after the first appearance to such party of the circumstances. As a condition precedent to the City having any liability to the Contractor due to concealed and unknown conditions, the Contractor must give the City written notice of, and an opportunity to observe, such condition prior to disturbing it. The failure by the Contractor to give written notice and make the claim as provided by this Subparagraph 15(c) shall constitute a waiver by the Contractor of any rights arising out of or relating to such concealed and unknown condition.
- (D) In the event the Contractor seeks to make a claim for an increase in the Contract Price, as a condition precedent to any liability of the City therefor, the Contractor shall strictly comply with the requirements of Subparagraph 15(A) above and such claim shall be made by the Contractor before proceeding to execute any additional or change work. Failure of the condition precedent to occur shall constitute a waiver by the Contractor of any claim for additional compensation.
- (E) In connection with any claim by the Contractor against the City for compensation in excess of the Contract Price, any liability of the City for the Contractor's cost shall be strictly limited to direct cost incurred by the Contractor and shall in no event include indirect cost or consequential damages of the Contractor. The City shall not be liable to the Contractor for claims of third-parties including subcontractors, unless and until liability of the Contractor has been established therefor in a court of competent jurisdiction.
- (F) In the event the Contractor shall be delayed in performing any task which at the time of the delay is then critical, or which during the delay becomes critical, as the sole result of any act or omission by the City or someone acting in the City's behalf, or by City-authorized Change Orders, unusually bad weather not reasonably anticipatable, fire or other Acts of God, the date for achieving Substantial Completion, or, as applicable, final completion, shall be appropriately adjusted by the City upon the written claim of the Contractor to the City. A task is critical within the meaning of this Subparagraph 15(A) if, and only if, said task is on the critical path of the Project schedule so that delay in performing such task will delay the ultimate completion of the Project. Any claim for an extension of time by the Contractor shall strictly comply with the requirements of Subparagraph 15(A) above. If the Contractor fails to make such claim as required in this Subparagraph 15(F), any claim for an extension of time shall be waived.

## **ARTICLE 16**

### **SUBCONTRACTORS**

Upon execution of this Contract, the Contractor shall identify to the City, in writing, those parties intended as subcontractors on the Project. The City shall, in writing, state any objections the City may have to one or more of such subcontractors. The Contractor shall not enter into a

subcontract with an intended subcontractor with reference to whom the City objects. The Contractor shall not award work to a subcontractor(s) in excess of fifty (50) percent of the Contract Price, without prior written approval of the City. All subcontracts shall afford the Contractor rights against the subcontractor which correspond to those rights afforded to the City against the Contractor herein. Nothing contained in this Contract shall create any contractual relation between any subcontractor and the City.

## **ARTICLE 17**

### **WAGE RATES**

- (A) There shall be paid to each laborer or mechanic of the Contractor or subcontractor engaged in the work on the Project under this Contract in the trade or occupation, an hourly wage rate pursuant to §37-13-7 of the General Laws of the State of Rhode Island regardless of any contractual relationship which may be alleged to exist between the Contractor or any subcontractor and such laborers and mechanics. The City may delay and/or withhold payment if the contractor is not in compliance with the wage rates required by the Davis Bacon Act. The contractor and any sub-contracted firms must submit to the city the US Department of Labor Certified Weekly Payroll forms listing employees' compensation employed on the project on a weekly basis for the preceding week. "General Decision Number: RI20230001 dated 06/30/2023 governs the wages to be used and required by the contractor and all subcontracts for compliance with the Davis Bacon Act.
- (B) If, after the award of the Contract, it becomes necessary to employ any person in a trade or occupation not classified in the Contract, such person shall be paid at not less than a rate to be determined by the same authority which established the other wage rates for this Contract. Such approved minimum rate shall be retroactive to the time of the initial employment of such person in such trade or occupation. The Contractor shall notify the City of his intention to employ persons in trades or occupations not classified in sufficient time for the City to obtain approved rates for such trades or occupations.
- (C) The foregoing specified wage rates are minimum rates only, and the City will not consider any claims for additional compensation made by the Contractor because of payment by the Contractor of any wage rate in excess of the applicable rate contained in this Contract. All disputes in regard to the payment of wages in excess of those specified in this Contract, shall be adjusted by the Contractor.
- (D) Except as may otherwise be required by law, all claims and disputes pertaining to the classification of labor employed on the Project under this Contract, shall be decided by the City's governing body or other duly designated official.

**ARTICLE 18**  
**CHANGE ORDERS**

One or more changes to the work within the general scope of this Contract, may be ordered by Change Order. The Contractor shall proceed with any such changes, and the same shall be accomplished in strict accordance with the following terms and conditions:

- (A) Change Order shall mean a written order to the Contractor executed by the City after execution of this Contract, directing a change in the work and may include a change in the Contract Price or the time for the Contractor's performance, or any combination thereof. Said change orders must be approved by the City Manager on behalf of the City;
- (B) Any change in the Contract Price resulting from a Change Order shall be determined as follows:
  - (1) By mutual agreement between the City and the Contractor as evidenced by (a) the change in the Contract Price being set forth in the Change Order, (b) such change in the Contract Price, together with any conditions or requirements relating thereto, being initialed by both parties and (c) the Contractor's execution of the Change Order; or,
  - (2) If no mutual agreement occurs between the City and the Contractor, the change in the Contract Price, if any, shall be derived by determining the reasonable actual costs incurred or savings achieved, resulting from revisions in the work. Any such costs or savings shall be documented in the format, and with such content and detail as the City requires.
- (C) The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the work, this Contract as thus amended, the Contract Price and the time for performance by the Contractor. The Contractor, by executing the Change Order, waives and forever releases any claim against the City for additional time or compensation for matters relating to or arising out of or resulting from the work included within or affected by the executed Change Order.
- (D) The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval are required by the City, the Contractor's surety or law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the City that the surety has been notified of, and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

**ARTICLE 19**  
**DISCOVERING AND CORRECTING DEFECTIVE OR INCOMPLETE WORK**

- (A) In the event that the Contractor covers, conceals or obscures its work in violation of this Contract or in violation of a directive from the City, such work shall be uncovered and displayed for the City's inspection upon request, and shall be reworked at no cost in time or money to the City;
- (B) If any of the work is covered, concealed or obscured in a manner not covered by Subparagraph 19(A) above, it shall, if directed by the City, be uncovered and displayed for the City's inspection. If the uncovered work conforms strictly with this Contract, the costs incurred by the Contractor to uncover and subsequently, replace such work shall be borne by the City. Otherwise, such costs shall be borne by the Contractor;
- (C) The Contractor shall, at no cost in time or money to the City, correct work rejected by the City as defective or failing to conform to this Contract. Additionally, the Contractor shall reimburse the City for all testing, inspections and other expenses incurred as a result thereof;
- (D) In addition to its warranty obligations set forth elsewhere herein, the Contractor shall be specifically obligated to correct any and all defective or nonconforming work for a period of twelve (12) months following final completion upon written direction from the City.
- (E) The City may, but in no event be required to, choose to accept defective or nonconforming work. In such event, the Contract Price shall be reduced by the greater of (1) the reasonable costs of removing and correcting the defective or nonconforming work, and (2) the difference between the fair market value of the Project as constructed and the fair market value of the project had it not been constructed in a manner as to include defective or nonconforming work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the City for the acceptance of defective or nonconforming work, the Contractor shall, upon written demand from the City, pay the City such remaining compensation for accepting defective or nonconforming work.

**ARTICLE 20**  
**TERMINATION BY THE CONTRACTOR**

If the City repeatedly fails to perform its material obligations to the Contractor for a period of thirty (30) days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance of this Contract by written notice to the City. In such event, the Contractor shall be entitled to recover from the City as though the City had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 22(A) hereunder.



**ARTICLE 21**  
**CITY'S RIGHT TO SUSPEND CONTRACTOR'S PERFORMANCE**

- (A) The City shall have the right at any time to direct the Contractor to suspend its performance, or any designated part thereof, for any reason whatsoever, or without reason, for a cumulative period of up to thirty (30) calendar days. If any such suspension is directed by the City, the Contractor shall immediately comply with same;
- (B) In the event the City directs a suspension of performance under this Paragraph 21, through no fault of the Contractor, the City shall pay the Contractor as full compensation for such suspension the Contractor's reasonable costs, actually incurred and paid, of:
- (1) demobilization and remobilization, including such costs paid to subcontractors;
  - (2) preserving and protecting work in place;
  - (3) storage of materials or equipment purchased for the Project, including insurance thereon;
  - (4) performing in a later, or during a longer, time frame than that contemplated by this Contract.

**ARTICLE 22**  
**TERMINATION BY THE CITY**

The City may terminate this Contract in accordance with the following terms and conditions:

- (A) The City may, for any reason whatsoever, terminate performance under this Contract by the Contractor for convenience. The City shall give written notice of such termination to the Contractor specifying when termination becomes effective. The Contractor shall incur no further obligations in connection with the work and the Contractor shall stop work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Contractor to assign the Contractor's right, title and interest under termination orders or subcontracts to the City or designee. The Contractor shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has. When terminated for convenience, the contractor shall be compensated as follows:
- (1) The Contractor shall submit a termination claim to the City specifying the amounts due because of termination for convenience together with costs, pricing or other data required by the City. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Contractor, an amount derived in accordance with Subparagraph (3) below;

- (2) The City and the Contractor may agree to the compensation, if any, due to the Contractor hereunder;
- (3) Absent agreement to the amount due to the Contractor, the City shall pay the Contractor the following amounts:
  - a) Contract prices for labor, materials, equipment and other services accepted under this contract;
  - b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for jobsite overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it appears that the Contractor would not have profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;
  - c) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 18(A) of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 18(A) shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

- (B) If the Contractor does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment, and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Contract, then the City, in addition to any rights it may have against the Contractor or others, may terminate the performance of the Contractor and assume possession of the Project site and of all materials and equipment at the site and may complete the work. In such case, the Contractor shall not be paid further until the work is complete. After final completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Contractor. Otherwise, the Contractor shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Contract. In the event the employment of the Contractor is terminated by the City for cause pursuant to this Subparagraph 22(B) and is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 2(A) and the provision of Subparagraph 22(A) shall apply.

## **ARTICLE 23**

### **INSURANCE**

The Contractor shall carry and maintain the following insurance coverage at his own expense and add the City of East Providence as an additionally insured

- (A) All insurance for this Contract shall be written by a company (or companies) acceptable to the City and all policies or certificates shall be submitted to the City for examination prior to commencement of operations by the Contractor. In the event any policy or certificate, the amount of the insurance, or the company writing same are not satisfactory to the City, the Contractor shall secure other policies or certificates in form and amount with a company satisfactory to the City. The Contractor shall not permit policies to be changed, cancelled, or to lapse and all policies shall include a clause to the effect that the policy shall not be subject to cancellation or a reduction in the limits of liability or amounts of insurance until notice has been sent by mail to the City stating when, (not less than thirty days thereafter) such cancellation or reduction shall be effective. All certificates of insurance shall be delivered to the City and contain true transcripts from the policy or policies authenticated by the proper officer of the insurer evidencing in particular those insured, the extent of the insurance, the location and operations to which the insurance applies, the expiration date and the above mentioned notice as to the location and operations involved.

If any part of the work is sublet, similar insurance shall be provided by or in behalf of the subcontractors to cover their operations. The Contractor shall be charged with the responsibility for insurance protection for all his subcontract operations and should the Contractor's policy not cover each and every subcontractor, certificates of insurance acceptable to the City covering each and every subcontractor shall be filed with said City prior to the commencement of subcontract operations.

- (B) Contractor's Liability Insurance.  
Liability insurance shall include all major divisions of coverage and be on a comprehensive general liability basis including:  
Premises - Operations (including X-C-U)  
Independent Contractor's protective  
Products & completed operations  
Blanket Contractual  
Owned, non-owned and hired motor vehicles  
Broad form coverage for property damage (including explosion, collapse and underground).
- (C) The insurance required by this Subparagraph (b) shall be written for not less than the following, or greater if required by Law:
- (1) Workers' Compensation:  
a. State of Rhode Island - Statutory  
b. Employer's Liability

- (2) Comprehensive General Liability (including Premises Operations; Independent Contractor's Protective; Products & Completed Operations; Broad Form Property Damage):
- (a) Bodily Injury:  
\$1,000,000 - Each Occurrence  
\$1,000,000 - Annual Aggregate
  - (b) Property Damage:  
\$1,000,000 - Each Occurrence  
\$1,000,000 - Annual Aggregate
  - (c) Products & Completed Operations to be maintained for one (1) year after final payment.
  - (d) Property Damage Liability Insurance will provide X, C, or U coverage as applicable.
- (3) Contractor's Liability:
- (a) Bodily Injury:  
\$1,000,000 - Each Occurrence
  - (b) Property Damage:  
\$1,000,000 - Each Occurrence  
\$1,000,000 - Annual Aggregate
- (4) Personal injury, with Employment Exclusion deleted:  
\$1,000,000 Annual Aggregate
- (5) Comprehensive Automobile Liability:
- (a) Bodily Injury:  
\$ 500,000 - Each Person  
\$1,000,000 - Each Occurrence
  - (b) Property Damage:  
\$1,000,000 - Each Occurrence
- (6) Property Insurance:

The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. This insurance shall include the interests of the City, the Contractor, Subcontractors and Subcontractors in the Work shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, theft, vandalism and malicious mischief.

(D) Insurance Covering Special Hazards:

Special hazards shall be covered by rider or riders to the Public Liability and Property Damage Insurance policy or policies herein above required to be furnished by the Contractor or by separate policies of insurance in the amounts stated in Paragraph 5(C).

- (1) Property Damage Liability arising out of the collapse of or injury to any building or structure due to excavation (including burrowing, filling or backfilling in connection therewith), tunneling, pile driving, cofferdam work, or caisson work; or moving, shoring, underpinning, razing or demolition of any building or structure, or removal or rebuilding of any structural support thereof.
- (2) Property Damage Liability for injury to or destruction of property arising directly or indirectly from blasting or explosions, however caused, other than explosions of air or steam vessels, piping under pressure, prime movers, machinery, or power transmitting equipment.
- (3) Property Damage Liability for injury to or destruction of wires, conduits, pipes, mains, sewers, or other similar property, or any apparatus in connection therewith below the surface of the ground arising from and during the use of mechanical equipment for the purpose of excavating or drilling within project limits; injury to or destruction of property at any time resulting there from.
- (4) The Contractor shall require similar insurance in such amounts to be taken out and maintained by each subcontractor.

(E) “ALL RISK” Insurance:

The Contractor shall acquire and maintain “All Risk” type Builder’s Insurance. This insurance shall be in an amount equal to 100% of the insurable portion of the Project, and shall be for the benefit of the City, the Contractor, and each subcontractor as their interest may respectively appear.

**ARTICLE 24**  
**SURETY BONDS**

The Contractor shall be licensed to do business in the State of Rhode Island and shall furnish separate performance and payment bonds to the City. Each bond shall set forth a penal sum in an amount of not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by the Contractor shall be in form suitable to the City and shall be executed by a surety, or sureties, reasonably acceptable to the City.

**ARTICLE 25**  
**PATENTS**

The Contractor shall pay all applicable royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights, and save the City harmless from loss on account thereof, except that the City shall be responsible for any such loss on when a particular process, design, or product of a manufacturer(s) is specified. However, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, the Contractor shall be responsible for such loss unless the Contractor promptly gives such information to the City.

**ARTICLE 26**  
**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 of 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 27**  
**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 City. In case the Contractor assigns all or any 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 28**  
**APPLICABLE LAW**

The law is hereby agreed to be the law of the State of Rhode Island.

**ARTICLE 29**  
**SUCCESSORS AND ASSIGNS**

Each party binds itself, its successors, assigns, executors, administrators or other representatives to the other party hereto and to successors, assigns, executors, administrators or other representatives of such party in connection with all terms and conditions of this Contract.

**CITY**

The City of East Providence  
East Providence, RI 02914

By:

\_\_\_\_\_  
(Signature)

ROBERTO L. DASILVA, MAYOR  
(Printed Name and Title)

\_\_\_\_\_  
(Date of Execution)

**CONTRACTOR**

By:

\_\_\_\_\_  
(Signature)

(Printed Name and Title)

\_\_\_\_\_  
(Date of Execution)

SECTION 00600

CONTRACT BONDS

PERFORMANCE BOND

(NOTE: This Bond is issued simultaneously with the attached Labor and Materials Bond in favor of the Owner.)

KNOW ALL MEN BY THESE PRESENTS:

That we, \_\_\_\_\_  
(an individual, a partnership, a corporation)

duly organized under the Laws of the State (or Commonwealth) of \_\_\_\_\_,

and having a usual place of business at \_\_\_\_\_,

\_\_\_\_\_

as Principal, and \_\_\_\_\_, a corporation duly organized

under the Laws of the State (or Commonwealth) of \_\_\_\_\_,

and duly authorized to do business in the State (or Commonwealth) of Rhode Island ,

and having a usual place of business at \_\_\_\_\_

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

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

WHEREAS, the Principal, be means of a written AGREEMENT (which together with the Contract Documents in said AGREEMENT referred to are collectively sometimes referred to as the "Contract") dated \_\_\_\_\_, has entered into a contract with the said obligee for **Potter Street and Burgess Street Parking Lots, Bid No. EP22/23-29** in the **City of East Providence, Rhode Island**, a copy of which agreement is attached hereto and by references made a part hereof.

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



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

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

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

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

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

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Surety (SEAL)

\_\_\_\_\_  
Surety (SEAL)

**NOTE:**

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

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

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

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

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

**Important**

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

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

## LABOR AND MATERIALS BOND

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

KNOW ALL MEN BY THESE PRESENTS:

That we, \_\_\_\_\_  
(an individual, a partnership, a corporation)

duly organized under the Laws of the State (or Commonwealth) of \_\_\_\_\_,

having a usual place of business at \_\_\_\_\_,

\_\_\_\_\_

as Principal, and \_\_\_\_\_ a corporation duly organized

under the Laws of the State (or Commonwealth) of \_\_\_\_\_,

and duly authorized to do business in the State(or Commonwealth) of \_\_\_\_\_,

and having a usual place of business at \_\_\_\_\_,

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

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

WHEREAS, the Principal, be means of a written AGREEMENT (which together with the Contract Documents in said AGREEMENT referred to are collectively sometimes referred to as the "Contract") dated \_\_\_\_\_, has entered into a contract with the said Obligee for **Potter Street and Burgess Street Parking Lots, Bid No. EP22/23-29** in the **City of East Providence, Rhode Island**, a copy of which agreement is attached hereto and by references made a part hereof.

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

- (a) A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, materials and/or equipment used or reasonably required for use in the performance of the said Work, labor and materials being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental or equipment directly applicable to the said AGREEMENT and/or Contract and any modifications thereof.
- (b) The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials or equipment were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
- (c) No suit or action shall be commenced hereunder by any claimant.

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

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

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

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

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

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

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Principal (SEAL)

\_\_\_\_\_  
Surety (SEAL)

\_\_\_\_\_  
Surety (SEAL)

**NOTE:**

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

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

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

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

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

**Important**

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

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

CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR IF A CORPORATION  
For CONTRACT BONDS

State of \_\_\_\_\_ )

County of \_\_\_\_\_ )

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

That he resides at \_\_\_\_\_

and is the \_\_\_\_\_

of \_\_\_\_\_

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

\_\_\_\_\_  
Notary Public (Seal)

My commission expires \_\_\_\_\_

## SECTION 00700

### GENERAL CONDITIONS

- 1.01 General Provisions
- 1.02 Definitions
- 1.03 Materials and Equipment
  - A. General
  - B. Handling
  - C. Storage of Excavated Material
  - D. Inspection
  - E. Inspection Away from Site
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- 1.20 Payments by Contractor
- 1.21 "Dig Safe" Law
- 1.22 Fire Prevention and Protection
- 1.23 Dust Control
- 1.24 Disposal of Debris
- 1.25 Night, Saturday, Sunday and Holiday Work
- 1.26 Length of Work Day
- 1.27 Hurricane Protection
- 1.28 Reduction in Scope of Work

#### 1.01 GENERAL PROVISIONS

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

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

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

#### 1.02 DEFINITIONS

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

#### 1.03 MATERIALS AND EQUIPMENT

##### A. General

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

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

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

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

##### B. Handling

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



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

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

#### C. Storage of Excavated Material

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

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

#### D. Inspection

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

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

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

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

#### E. Inspection away from Site

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

#### F. Samples

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

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

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

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

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

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

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

#### G. Shop Testing

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

#### 1.04 CONTRACTOR'S SHOP AND WORKING DRAWINGS

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

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

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

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

#### 1.05 OCCUPYING PRIVATE LAND

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

#### 1.06 INTERFERENCE WITH AND PROTECTION OF STREETS

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

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

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

#### 1.07 SAFETY

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

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

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

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

#### 1.08 EXISTING FACILITIES

##### A. Dimensions of Existing Structures

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

##### B. Proposed Pipe Location

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

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

##### C. Interference with Existing Works

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

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

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

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

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

#### D. Existing Utilities or Connections

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

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

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

4. Comply with all requirements of utility organizations involved.

#### E. Failure to Repair

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

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

#### F. Disturbance of Bounds

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

#### 1.09 WORK TO CONFORM

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

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

#### 1.10 PLANNING AND PROGRESS SCHEDULES

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

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

#### 1.11 PRECAUTIONS DURING ADVERSE WEATHER

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

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

#### 1.12 TEMPORARY HEAT

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

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

#### 1.13 ELECTRICAL ENERGY

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

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

#### 1.14 CERTIFICATES OF CONFORMANCE

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

#### 1.15 PATENTS

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

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

#### 1.16 "OR EQUAL" CLAUSE

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

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

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

#### 1.17 ADDITIONAL OR SUBSTITUTE BONDS

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

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

#### 1.18 SEPARATE CONTRACTS

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

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

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

#### 1.19 PAYROLLS OF CONTRACTOR AND SUBCONTRACTORS

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

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

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

#### 1.20 PAYMENTS BY CONTRACTOR

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

#### 1.21 "DIG SAFE" LAW

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

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

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

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

#### 1.22 FIRE PREVENTION AND PROTECTION

A. State and municipal rules and regulations with respect to fire prevention, fire-resistant construction and fire protection shall be strictly adhered to and all

work and facilities necessary therefore shall be provided and maintained by the Contractor in an approved manner.

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

#### 1.23 DUST CONTROL

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

#### 1.24 DISPOSAL OF DEBRIS

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

B. The materials being removed from the pipelines and manholes during the cleaning process shall be deposited in such a manner as to not endanger the public, plant personnel or persons performing the work. Such debris deposits may be of such nature,

high in biological organic contents, or chemically aggressive that they will require proper disposal in a safe, health risk free, environment. Contact the Owner and Engineer and all agencies having jurisdiction thereof, for approval of debris disposal methods and locations of disposal, prior to disposing of any or all debris removed from pipe cleaning methods. All debris shall be removed and satisfactorily disposed of off the work site, at no additional expense to the Owner.

#### 1.25 NIGHT, SATURDAY, SUNDAY AND HOLIDAY WORK

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

#### 1.26 LENGTH OF WORK DAY

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

B. The Contractor's attention is also directed to the fact that should it be deemed necessary to perform various items of work during off-peak flow or traffic hours, early morning or late night hours, then he shall notify the Engineer a minimum of 24 hours in advance as to his intentions and reasons for the change in work hours. The Contractor shall be responsible for properly contacting and informing all involved parties of such a change in work hours. The

Contractor shall not be entitled to any additional compensation from the Owner for any expenses that may be incurred by change of working hours and/or scheduling.

#### 1.27 HURRICANE PROTECTION

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

#### 1.28 REDUCTION IN SCOPE OF WORK

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

END OF SECTION

## SECTION 00800

### SUPPLEMENTARY CONDITIONS

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

#### 1.01 GENERAL

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

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

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

#### 1.02 LIMITS OF NORMAL EXCAVATION

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

1. For pipes in trenches, less than or equal to a depth of 10.0-feet, the normal width of the trench shall be measured between vertical planes which are a

distance apart equal to the sum of 48 inches plus the nominal inside diameter of the pipe.

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

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

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

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

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

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

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

F. No additional width or depth of trenches excavated in earth or rock shall be allowed at standard circular manholes. The pay limit for rock



removed outside proposed manholes shall commence one foot (1.0) outside the widest dimension of the structure or shall be the maximum connecting trench width, whichever is greater.

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

#### 1.03 BOLTS, ANCHOR BOLTS AND NUTS

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

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

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

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

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

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

G. Anchor bolts and expansion bolts shall be set accurately. If anchor bolts are set before the concrete has been placed, they shall be carefully held in suitable templates of acceptable design. Where indicated on the Drawings, specified, or required, anchor bolts shall be provided with square plates at

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

#### 1.04 CONCRETE INSERTS

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

#### 1.05 SLEEVES

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

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

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

#### 1.06 CUTTING AND PATCHING

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

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

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

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

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

#### 1.07 FOUNDATIONS, INSTALLATION AND GROUTING

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

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

C. In setting pumps, motors, and other items of equipment customarily grouted, make an allowance of at least 1-in. for grout under the equipment bases. Shims used to level and adjust the bases shall be

steel. Shims may be left embedded in the grout, in which case they shall be installed neatly and so as to be as inconspicuous as possible in the completed work. Unless otherwise permitted, all grout shall be a suitable nonshrink grout.

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

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

#### 1.08 SERVICES OF MANUFACTURER'S REPRESENTATIVE

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

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

1. Soundness (without cracked or otherwise damaged parts).

2. Completeness in all details, as specified.

3. Correctness of setting, alignment, and relative arrangement of various parts.

4. Adequacy and correctness of packing, sealing and lubricants.

C. The operation, testing, and adjustment shall be as required to prove that the equipment is left in proper condition for satisfactory operation under the conditions specified.

D. On completion of his work, the manufacturer's or supplier's representative shall submit in triplicate to the Engineer a complete signed report of the result

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

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

#### 1.09 OPERATING INSTRUCTIONS AND PARTS LISTS

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

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

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

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

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

#### 1.10 LUBRICANTS

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

#### 1.11 SPECIAL TOOLS

A. For each type of equipment furnished provide a complete set of all special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation,

maintenance, and disassembly of such equipment. Tools shall be high-grade, smooth, forged, alloy, tool steel. Grease guns shall be lever type.

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

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

#### 1.12 EQUIPMENT DRIVE GUARDS

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

#### 1.13 PROTECTION AGAINST ELECTROLYSIS

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

#### 1.14 COVERING EXCAVATED TRENCH

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

#### 1.15 MAINTAINING TRENCH EXCAVATIONS

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

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

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

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

#### 1.16 DISRUPTION OF STORM DRAINS

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

#### 1.17 PRECAUTION AGAINST HYDRAULIC UPLIFT DURING CONSTRUCTION

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

#### 1.18 BLASTING AND PRE-CONSTRUCTION BLASTING SURVEY

A. Blasting will not be permitted.

#### 1.19 NAMEPLATES

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

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

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

#### 1.20 SPECIAL SAFETY PRECAUTIONS

A. Contractor to note that the project involves working near bodies of water. Use appropriate equipment and provide adequate safety equipment.

B. Contractor to note that the project involves working within a right-of-way and the presence of overhead utility lines. Use appropriate equipment and provide adequate safety equipment.

C. Contractor shall take all necessary safety precautions in completing the work including coordinating with and complying with emergency procedures and requirements of the Owner, Police Department, Fire Department, and the Rhode Island Department of Environmental Management. The Contractor shall comply with all applicable federal, state and local laws, ordinances, rules and regulations and lawful orders of all authorities having jurisdiction for the safety of persons and protection of property. The Contractor shall have all necessary safety apparatus on-site and workers shall be instructed in its use.

#### 1.21 LAND, EASEMENTS, AND RIGHTS-OF-WAY

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

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

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

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

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

#### 1.22 CLEANING FINISHED WORK

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

END OF SECTION

## **DIVISION 1**

## SECTION 01010

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work includes, but is not necessarily limited to:

###### **Potter Street at Warren Avenue Parking Lot (Volume 1)**

- Removal of existing cement concrete sidewalk
- Installation of a porous pavement parking lot
- Installation of new cement concrete sidewalk and concrete driveway
- Removal of subgrade material and replacement with crushed stone, pea gravel, sand, washed stone, and/or gravel borrow base course material.
- Installation of new bituminous curb and granite curb
- Installation of solar lighting
- Installation of Granite blocks from RIDOT Storage
- Installation of pavement markings and signage
- All other incidental items included in the contract documents

###### **Burgess Street at Warren Avenue Parking Lot (Volume 2)**

- Removal of existing cement concrete sidewalk
- Installation of a porous pavement parking lot
- Installation of new cement concrete sidewalk and concrete driveway
- Removal of subgrade material and replacement with crushed stone, pea gravel, sand, washed stone, and/or gravel borrow base course material.
- Installation of new bituminous berm and granite curb
- Installation of drainage structures and pipe
- Installation of pavement markings and signage
- All other incidental items included in the contract documents

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

- B. All work done under this contract shall be in conformance with the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, December 2022 edition with all revisions and the State and Federal Special Provisions included in the Contract Documents. Standard details for this project are Rhode Island Standard Details, 1998 edition, with all revisions or the City of East Providence Standard Details. All traffic control devices and signage to be in accordance with the U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD), latest edition at time of Bid.
- C. References within the Standard Specifications to RIDOT, the Department, or the Engineer shall, for the purposes of this Contract, be construed to mean the City of East Providence or its designated representative.

#### 1.03 OWNER

- A. City of East Providence, Rhode Island  
145 Taunton Avenue  
East Providence, Rhode Island 02914  
Telephone: 401-435-7703  
Contact: Erik Skadberg, City Engineer

#### 1.04 PROJECT LOCATION

- A. Potter Street at Warren Avenue; Burgess Street at Warren Avenue

#### 1.05 ENGINEER

- A. BETA Group, Inc.  
701 George Washington Highway  
Lincoln, Rhode Island 02865  
Telephone: 401-333-2382  
Fax: 401-333-9225  
Contact: Jared Linhares, P.E.

#### 1.06 WORK SEQUENCE

- A. In order that Work may be conducted with minimum inconvenience to the public and, work under this Contract may be coordinated with other work which may be under construction or contemplated, and that work under the Contract may conform to conditions which it has been undertaken or conditions attached to a right-of-way or particular location for this work, the Engineer may determine the point or points and time or times when portions of work will commence or be carried on and may issue orders pertaining to the work sequence, relative to the rate of progress on several portions of the work.



- B. All trench work shall be covered at the end of the work day with either temporary bituminous patching or steel plates to ensure public safety.

#### 1.07 CONTRACTOR USE OF PREMISES

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

#### 1.08 OWNER OCCUPANCY REQUIREMENTS

- A. Unless otherwise specifically approved, all roadways within the project area must remain in full service at all times throughout the duration of the project unless otherwise approved by the City. Also, access to properties must be maintained.

### PART 2 PRODUCTS

NOT USED

### PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

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

###### B. RELATED SECTIONS

1. Section 00300 - Bid
2. Section 00500 - Agreement

##### 1.02 UNIT QUANTITIES SPECIFIED

- A. Quantities and measurements indicated in SECTION 00300 are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer shall determine payment.

- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit price contracted.

##### 1.03 MEASUREMENTS OF QUANTITIES

- A. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

- B. Measurement by Area: Measured by square dimension using mean length and width or radius.

- C. Linear Measurement: Measured by linear dimension, along the horizontal projection of the centerline or mean chord.

- D. At appropriate points in this text, specifications are given with respect to measuring or estimating certain quantities and the sums due for the same. Except as otherwise provided, the Engineer shall determine the appropriate method for measuring and computing each quantity, and for estimating the sums due for the various kinds of work and material, using such methods, tools and degrees of precision as are suitable for the particular measurement, Item or computation. When so requested by the Engineer, assistance in measuring or determining quantities, shall be provided by furnishing the help of unskilled laborers on the site, by furnishing copies of invoices, or by other means.

- E. For estimating quantities in which the computations of areas by analytic and geometric methods would be laborious, as determined by the Engineer, it is stipulated and agreed that the planimeter shall be considered an instrument of precision adapted to the measurement of such areas and may be used for this purpose.

#### 1.04 UNIT PRICES

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

#### 1.05 LUMP SUM PRICES

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

#### 1.06 PRICES INCLUDE

- A. The prices stated in the Proposal include full compensation not only for furnishing all the labor, equipment and material needed for, and for performing the work, but also for assuming all risks of any kind for expenses arising by reason of the nature of the soil, ground water, or the action of the elements; for all excavation and backfilling; for the removal of and delay or damage occasioned by trees, stumps, pipes, ducts, timber, masonry or other obstacles; for removing, protecting, repairing, or restoring, without cost to the Owner, all pipes, ducts, drains, sewers, culverts, conduits, curbs, gutters, walks, fences, tracks, or other obstacles, road pavements and other ground surfacing whether shown on plans or not for draining, damming, pumping or otherwise handling and removing, without damage to the work or to other parties, and without needless nuisance, all water or sewage from whatever source which might affect the work or its progress, or be encountered in excavations made for the work; for all signs, fencing, lighting, watching, guarding, temporary surfacing, bridging, snow removal, etc., necessary to maintain and protect travel on streets, walks and private ways; for making all provisions necessary to maintain and protect buildings, fences, poles, trees, structures, pipes, ducts and other public or private property affected or endangered by the work; for the repair or replacement of such things if injured by neglect of such provisions for removing all surplus or rejected materials as may be directed; for replacing, repairing and maintaining the surfaces of streets, highways, public and private lands if and where disturbed by work performed under the Contract or by negligence in the performance of work under the Contract; for furnishing the requisite filling materials in case of any deficiency or lack of suitable materials; for obtaining all permits and licenses and complying with the requirements thereof, including the cost of furnishing any security needed in connection therewith;

for protection against inclement or cold weather; for all expenses incurred by or on account of the suspension; interruption or discontinuance of work; for the cost of the surety bond and adequate insurance; for all taxes, fees, union dues, etc., for which the Contractor may be or become liable, arising out of his operations incidental to the Contract; for providing equipment on the site and off site; for providing a field office and its appurtenances and for all general and incidental expenses; for tools, implements and equipment required to build and put into good working order all work contemplated by the Contract; for maintaining and guaranteeing the same as provided; and for fulfilling all obligations assumed by the Contractor under the Contract and its related documents.

- B. The Owner shall pay, and the Contractor shall receive the prices stipulated in the BID made a part hereof as full compensation for everything performed and for all risks and obligations undertaken by the Contractor under and as required by the Contract.
- C. The prices for those Items which involve excavation shall include compensation for disposal of surplus excavated material and handling water.

#### 1.07 PAYMENT

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

#### 1.08 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- A. All bid items listed below are applicable for all work included in the Contract Documents.

**BID ITEM NO. 201.0303****CUTTING, REMOVING AND DISPOSING  
ISOLATED TREES AND STUMPS****A. METHOD OF MEASUREMENT**

1. The quantity of cutting, removing and disposing isolated trees and stumps is to be paid for under this item shall be measured per each, based on the actual number of trees and stumps in excess of 4 inches in diameter cut, removed and legally disposed of, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to cut, remove and legally dispose of isolated trees and stumps in excess of 4 inches.

**BID ITEM NO. 201.0403****REMOVE AND DISPOSE SIDEWALKS****A. METHOD OF MEASUREMENT**

1. The quantity of remove and dispose sidewalks to be paid for under this item shall be measured per square yard, based on the actual area of existing sidewalk removed and disposed, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Sawcutting and excavation required for removing and legally disposing of existing sidewalks of all types and materials in their entirety to the limits as indicated on the Drawings, or as directed by the engineer;
  - b. No separate payment will be made for saw cutting;
  - c. Any and all other work, whether direct or incidental, associated with the removal and disposal of sidewalks, not specifically identified herein.

**BID ITEM NO. 201.0428****REMOVE AND DISPOSE FRAME AND GRATE OR  
FRAME AND COVER****A. METHOD OF MEASUREMENT**

1. The quantity of Remove and Dispose Frame and Grate or Frame and Cover to be paid for under this item shall be measured per each, based on the actual number of frame and grates/covers removed and disposed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

## **B. BASIS OF PAYMENT**

1. The unit price shall include full and complete compensation for removing and disposing frames and grates or frames and covers as directed by the Engineer, at the locations shown on the Drawings or as otherwise directed by the Engineer, and all other materials, tools, equipment, labor and incidentals necessary to complete the work.

### **BID ITEM NO. 201.0437**

### **REMOVAL AND DISPOSAL OF DRAINAGE AND UTILITY STRUCTURES**

#### **A. METHOD OF MEASUREMENT**

1. The quantity of remove and dispose drainage and utility structures to be paid for under this item shall be measured per each, based on the actual number of existing drain structures removed and disposed, as indicated on the Drawings or as otherwise directed by the Engineer.

#### **B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Excavation, removal and legally disposing of the existing structures; including any sawcutting of the existing pavements and removal and disposal of all existing pavements, including any existing bituminous concrete and concrete base or reinforced concrete base, and masonry or concrete walls;
  - b. The work shall include any temporary excavation support, dewatering, furnishing and installing backfill material including compacting the material as specified;
  - c. Removing and legally disposing of any accumulated debris within the structure;
  - d. Protection and support of existing utilities, maintaining flows of all utilities, and repairing and/or replacing damaged or impacted existing utilities not specifically included for payment under other items;
  - e. Any and all other work, whether direct or incidental, associated with removing and disposing drain structures not specifically identified herein.

### **BID ITEM NO. 201.0438**

### **REMOVE AND DISPOSAL OF FENCES AND RAILINGS**

#### **A. METHOD OF MEASUREMENT**

1. The quantity of remove and disposal of fences and railings to be paid for under this item shall be measured per the linear foot of fencing and or railings removed and disposed, as indicated on the Drawings, or as otherwise directed by the Engineer.

#### **B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Excavation, removal, and legally disposing of the existing fence;
  - b. The work shall include any temporary excavation support, furnishing and installing gravel backfill material including compacting the material as specified;
  - c. Removing and legally disposing of any foundations;
  - d. Any and all other work, whether direct or incidental, associated with the removal and disposal of the existing fence not specifically identified herein.

**BID ITEM NO. 202.0200**

**ROCK EXCAVATION COMMON**

**A. METHOD OF MEASUREMENT**

1. The quantity of rock excavation to be paid for under this item shall be measured per cubic yard, based on the total number of cubic yards of rock removed, measured in place before excavation, within the payment limits indicated on the Drawings and as defined in the Specifications, unless rock excavation beyond such limits has been authorized in writing by the Engineer, in which case, measurements shall be made to the authorized limits.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Removal and proper disposal of boulders in excess of 1 C.Y. in volume (measurement and volume determination to be made by Engineer);
  - b. Breaking or fracturing of solid contiguous rock by mechanical means (rock hammer, jackhammer); blasting of rock shall not be allowed under any circumstances;
  - c. Excavation of all broken rock to the authorized limits as determined by the Engineer;
  - d. Replacement of excavated rock with sand, gravel or crushed stone as specified and detailed on the Drawings, at the direction of the Engineer;
  - e. Proper disposal of excavated rock at an off-site location;
  - f. Any and all other work, whether direct or incidental, associated with the excavation and disposal of rock not specifically identified herein.
2. Where rock is encountered, it shall be uncovered but not excavated until measurements have been made by the Engineer, unless in the opinion of the Engineer, satisfactory measurements can be made in some other manner.
3. Excavated rock which has not yet been disposed of shall not be included for payment.
4. For bid items which include incidental earth excavation, the bidder shall include in his unit prices the cost of performing the entire excavation as earth. The unit price for this item is intended to represent the difference between the cost of rock excavation &

disposal and the cost of earth excavation which would have taken place as part of the other bid items. The unit price for this item shall be paid in addition to the incidental earth excavation costs included in the other items; no adjustment to the unit prices for other items which include earth excavation shall be made in the event that rock is encountered and excavated in lieu of earth.

**BID ITEM NO. 202.0300**

**UNCLASSIFIED EXCAVATION**

**A. METHOD OF MEASUREMENT**

1. The quantity of unclassified excavation to be paid for under this item shall be measured per cubic yard, based on the total number of cubic yards of materials excavated and either re-used in the Work or disposed of at an off-site location which are not incidental to the performance of other work items.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Excavation of all materials (except rock), including but not limited to silt, sand, gravel or other soils, berms, curbs, and any other materials;
  - b. Stockpiling and re-handling excavated materials for reuse on other portions of this project, or removing and legally disposing of excavated materials at an off-site location (the Contractor shall locate and secure an acceptable disposal site for all excess materials);
  - c. Any and all other work, whether direct or incidental, associated with excavation of unclassified materials not specifically identified herein.

**BID ITEM NO. 206.0301**

**COMPOST FILTER SOCK**

**A. METHOD OF MEASUREMENT**

1. The quantity of compost filter sock shall be measured in place by the foot of filter sock installed, approved, and maintained, as indicated in the Contract Documents, or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The price constitutes full compensation for all labor, materials, and equipment, including mesh filter socks, removal of mesh filter socks, compost filter material, stakes, removal of stakes, grading, raking and seeding as necessary to match the surrounding area, and all incidentals required to finish the work complete and accepted.
2. Price shall include all furnishing, installing, repairing, replacing, maintaining, and removing of the filter sock as necessary.



**BID ITEM NO. 209.0220****SACK INSERT INLET PROTECTION****A. METHOD OF MEASUREMENT**

1. The quantity of Sack Insert Inlet Protection devices to be paid for under this item shall be measured per each, based on the actual number of inlet protection devices installed and maintained, as indicated in the Contract Documents, or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this shall include full compensation for all materials, including sacks, labor, equipment, and all incidentals required to finish the work, including final removal of the inlet protection device and removal and legal disposal of entrapped material, complete and accepted.
2. Price shall include all furnishing, installing, repairing, replacing, maintaining, and removing of the inlet device as necessary.

**BID ITEM NO. 211.0200****CONSTRUCTION ACCESSES STANDARD 9.9.0****A. METHOD OF MEASUREMENT**

1. The quantity of Construction Accesses to be paid for under this item shall be measured per each, based on the actual number of construction accesses installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The price constitutes full for all labor, materials, and equipment, including excavating geosynthetic materials, stabilized stone pad, and subsequent removal and legal disposal of the construction accesses and all incidentals required to finish the work, complete and accepted.
2. Price shall include all furnishing, installing, repairing, replacing, maintaining, and removing of the construction access as necessary.

**BID ITEM NO. 302.0100****GRAVEL BORROW SUBBASE COURSE****A. METHOD OF MEASUREMENT**

1. The quantity of gravel base course to be paid for under this item shall be equal to the actual amount of gravel base course, furnished and installed to the depths indicated, measured by the cubic yard to the payment limits indicated on the drawings or as directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing, placing, fine grading and compacting gravel borrow to the relative density required for the specific location or application for which it is being used.
  - b. Any and all other work, whether direct or incidental, associated with furnishing and placing gravel borrow not specifically identified herein.
2. Gravel borrow outside the limits of normal excavation shall be furnished, placed, and compacted at the Contractor's expense, and no payment under this item will be made for such gravel.
3. Gravel borrow used to backfill rock excavations will not be measured for payment under this Item but shall be included in the unit price for "Rock Excavation Common".

**BID ITEM NO. 701.5302**

**DUCTILE IRON PIPE PUSH-ON JOINT – ALL SIZES**

**A. METHOD OF MEASUREMENT**

1. The quantities of gravity drain pipe to be paid for under this item shall be measured by the linear foot along the horizontal projection of the centerline of the completed drain, excluding the length of manholes and catch basins, measured to the limits of the manhole inside diameter or the catch basin inside face of wall.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing and installing the gravity drains, complete-in-place, including all excavation, excavation support, disposal of material, furnishing and installing gravel borrow backfill, crushed stone for pipe bedding/backfill material, compacting materials as specified, filter fabric and all incidental work not specifically included for payment under other items;
  - b. Excavation shall also include any sawcutting of the existing pavements and removal and disposal of all existing pavements, including any existing bituminous concrete, masonry or concrete walls or reinforced concrete base (if encountered);
  - c. Protection and support of existing utilities, maintaining flows of all utilities, and repairing and/or replacing damaged or impacted existing utilities not specifically included for payment under other items;
  - d. Implementing safety precautions, including designing and implementing excavation support;
  - e. Designing, furnishing, installing, operating, maintaining and removing temporary dewatering systems required to lower and control water levels and hydrostatic pressures during construction, as well as the appropriate disposal of pumped water;

- f. Furnishing and installing tees, cleanouts and other adapters or couplings required to install the system complete-in-place, as specified and indicated on the Drawings;
- g. Connecting new gravity drains to the new/existing gravity drain structures or system, including all excavation, modifications to existing structures (including but not limited to form work, coring, cutting, concrete work, masonry and bricks), modifying and/or removing existing pipe (all materials and sizes), and furnishing and installing adapters and couplings;
- h. Any and all other work, whether direct or incidental, associated with the furnishing and installation of the gravity drains not specifically identified herein.

**BID ITEM NO. 702.0501**

**FRAME AND GRATE – ALL SIZES AND TYPES**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of Frame and Grate – All Sizes and Types to be paid for under this item shall be measured per each, based on the actual number of frame and grates installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit price shall include full and complete compensation for installing frames and grates as directed by the Engineer, including any required rebuilding and/or remodeling of the brick or cone of the drainage structure, at the locations shown on the Drawings or as otherwise directed by the Engineer, and all other materials, tools, equipment, labor and incidentals necessary to complete the work.

**BID ITEM NO. 702.0502**

**FRAME AND COVER – ALL SIZES AND TYPES**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of Frame and Cover – All Sizes and Types to be paid for under this item shall be measured per each, based on the actual number of frame and covers installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit price shall include full and complete compensation for installing frames and covers as directed by the Engineer, including any required rebuilding and/or remodeling of the brick or cone of the drainage structure, at the locations shown on the Drawings or as otherwise directed by the Engineer, and all other materials, tools, equipment, labor and incidentals necessary to complete the work.

**BID ITEM NO. 702.1000****MANHOLE, CATCH BASIN, OR DROP INLET  
ASSEMBLY – (0'-12' DEPTH)****A. METHOD OF MEASUREMENT**

1. The quantity of manhole, catch basin, or drop inlet assemblies (0'-12' depth) to be paid for under this item shall be measured per each, based on the actual number of drainage structures installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing and installing, complete-in-place, manhole, catch basin, or drop inlet assemblies (0'-12' depth), including sawcutting, temporary excavation support, dewatering, excavation and disposal of material, furnishing and installing bedding materials, furnishing and installing catch basin hoods, base sections, concrete block & mortar, flat slab tops, backfill with gravel borrow, connection of proposed underdrains, and all other work and materials required to complete the work as indicated on the Drawings and as specified;
  - b. Where applicable, the unit price for this item shall also include full compensation for furnishing all labor, equipment, materials and incidentals necessary for installing new curb inlets or apron stones of all sizes and materials as indicated on the Drawings or as directed by the Engineer, including excavation, backfill, compaction, bedding material, concrete formwork and placement of concrete, matching line and grade of existing curb, and all other work incidental to installation of the new inlets or aprons and not specifically included for payment under other items;
  - c. Any and all other work, whether direct or incidental, associated with the construction of the concrete block catch basins not specifically identified herein.

**BID ITEM NO. 903.0510****FENCE – PERMANENT ALL TYPES AND SIZES****A. METHOD OF MEASUREMENT**

1. The quantity of Fence – Permanent All Types and Sizes to be paid for under this Item shall be measured by the linear foot of actual fence furnished and installed, complete-in-place, in accordance with the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit prices for these items shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing and installing all types and sizes of permanent fence including posts and post foundations, framework, fabric, hardware and appurtenances;

- b. Furnishing and installing single or double gates (if required);
- c. Excavation for, backfill for, concrete for, and installation of post bases;
- d. Establishing a connection to the existing fence including cutting and removing existing fence to the closest fence post.
- e. Any and all other work, whether direct or incidental, associated with the installation of the chain link fence not specifically identified herein.

**BID ITEM NO. 903.0520**

**FENCE – TEMPORARY ALL TYPES AND SIZES**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of Fence – Temporary All Types and Sizes to be paid for under this Item shall be measured by the linear foot of actual temporary fence furnished and installed, complete-in-place, in accordance with the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit prices for these items shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing and installing all types and sizes of temporary fence including posts and post foundations, framework, fabric, hardware and appurtenances;
  - b. Furnishing and installing temporary single or double gates (if required);
  - c. Excavation for, backfill for, concrete for, and installation of post bases (if required)
  - d. Relocation of temporary fencing to various locations within the project limits, as necessary;
  - e. Removal of all temporary fencing;
  - f. Any and all other work, whether direct or incidental, associated with the installation of the chain link fence not specifically identified herein.

**BID ITEM NO. 905.1000**

**PORTLAND CEMENT SIDEWALKS AND DRIVEWAYS**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of Cement Concrete Sidewalks and Driveways will be measured by the number of square yards of Portland cement concrete installed in accordance with the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit price shall constitute full and complete compensation for all labor, materials and equipment, including expansion joint material, wire mesh, reinforcement, and all other incidentals required to finish the work, complete and accepted by the Engineer.

2. The unit price shall include saw cutting, trimming and fine grading gravel sub base, formwork, placing concrete, finishing, properly curing and protecting the fresh concrete, removing and resetting granite street marker, and resetting of curb boxes and castings all as required to construct the Work and not specifically included for payment under other items.
3. Gravel will be paid for at the contract unit price per cubic yard under Item 302.0100, Gravel Borrow Subbase.
4. Excavation will be paid for at the contract unit price per cubic yard under Item 202.0300, Unclassified Excavation.
5. Removal and disposal of curb, all types and sizes, shall be included under this item. No separate payment will be made of removal and disposal of curbing.

## **BID ITEM NO. 905.9901**

## **POROUS PAVEMENT**

### **A. METHOD OF MEASUREMENT**

1. The quantity of Porous Pavement to be paid for under this item shall be measured by the number of square yards of porous pavement installed, along with subgrade porous media bed materials, complete-in-place, in accordance with the Drawings or as otherwise directed by the Engineer.

### **B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Trimming and fine grading the sub base;
  - b. Furnishing and installing reservoir course crushed stone to the depths and grades shown on the Drawings;
  - c. Furnishing and installing filter blanket material to the depths and grades shown on the Drawings;
  - d. Furnishing and installing filter course material to the depths and grades shown on the Drawings;
  - e. Furnishing and installing choker course crushed stone to the depths and grades shown on the Drawings;
  - f. Furnishing and installing porous pavement
  - g. Furnishing and installing Bituminous Concrete Lib Curb (RI. STD 7.5.1) as shown on the Drawings;
  - h. Sawcutting, removal and disposal of any temporary pavement, grading of the subgrade, special compaction requirements, matching existing pavement, and casting and valve box adjustments;
  - i. Any and all other work, whether direct or incidental, associated with the furnishing and installing of permeable pavers not specifically identified herein.

**BID ITEM NO. 906.0310****GRANITE CURB****A. METHOD OF MEASUREMENT**

1. The quantity of Granite Curb shall be as measured per linear foot, along the front arris of the curb, except that where the curb is set on a curve having a radius of 10 feet or less, the measurement will be made along the curb at the lowest exposed level after completion of shoulder or pavement.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, materials, and equipment, including excavation, joints, gravel borrow subbase course, including compaction and trimming and fine grading, saw cutting existing or new granite curb to meet field conditions, Portland cement concrete curb lock, backfilling, compacting, saw cutting flexible or rigid pavement, removal and disposal of existing pavements, removal and disposal of existing sidewalks, furnishing and installation of bituminous asphalt and all incidentals required to finish the work, complete and accepted.

**BID ITEM NO. 906.0600****BITUMINOUS CURBING STANDARD 7.5.0****A. METHOD OF MEASUREMENT**

1. The quantity of bituminous curbing shall be as measured per linear foot, along the front arris of the curb, except that where the curb is set on a curve having a radius of 10 feet or less, the measurement will be made along the curb at the lowest exposed level after completion of shoulder or pavement.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, materials, and equipment, including excavation, joints, gravel borrow subbase course, including compaction and trimming and fine grading, saw cutting existing or new granite curb to meet field conditions, backfilling, compacting, saw cutting flexible or rigid pavement, removal and disposal of existing pavements, removal and disposal of existing sidewalks, furnishing and installation of bituminous asphalt and all incidentals required to finish the work, complete and accepted.

**BID ITEM NO. 906.0700****REMOVE, HANDLE, HAUL TRIM RESET CURB  
EDGING, STRAIGHT, CIRCULAR, ALL TYPES****A. METHOD OF MEASUREMENT**

1. The quantity to be paid for under this item shall be actual amount of curb removed and reset, measured by the linear foot along the centerline of the curb, complete as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for curb removed and reset shall constitute full compensation for removing, handling, stockpiling, hauling, trimming, and resetting all types and sizes of curb and/or curb corners, including all excavation, backfill, compaction, bedding, concrete, formwork, removal and replacement of gravel and all other work incidental to removing and resetting existing curbing and not specifically included for payment under other Items. No additional compensation will be made for transporting curb to another area of the project to be reset.
2. The unit price shall constitute full compensation for furnishing all labor, materials, tools and equipment necessary for furnishing, trimming and installing existing curbing as detailed on the Drawings and as directed by the Engineer.
3. Any required excavation and sawcuts made in existing pavement, will be included in unit price under this item, no separate payment will be made.
4. Curbing damaged during removal or other construction operations shall be replaced in kind at no expense to the Owner. Removal and disposal of curb, all types and sizes, shall be included under this item. No separate payment will be made of removal and disposal of curbing.

**BID ITEM NO. 906.9901**

**GRANITE BLOCK**

**A. METHOD OF MEASUREMENT**

1. The quantity of granite blocks to be paid for under this item shall be measured per each, based on the actual number of granite blocks installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The price constitutes full for all labor, materials, and equipment, preparation of subgrade, trimming and fine grading, transporting from the RIDOT storage stockpile location, hauling and placing the blocks, and all incidentals required to finish the work, complete and accepted.

**BID ITEM NO. 920.0320**

**RIPRAP R-3, R-4, R-5 STANDAR 8.3.0**

**A. METHOD OF MEASUREMENT**

1. The quantity of Riprap to be paid for under this item shall be measured by the number of square yards of riprap installed, complete-in-place, in accordance with the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item constitutes full for all labor, materials, and equipment, including excavation for riprap or bedding, preparation of subgrade, filter fabric,



- bedding material, trimming and fine grading, hauling and placing the material, and all incidentals required to finish the work, complete and accepted.
2. Riprap placed outside the specified limits will not be paid for, and the Contractor will be required to remove and dispose of the excess riprap at no additional cost to the Owner.

**BID ITEM NO. 936.0110**

**MOBILIZATION**

**A. METHOD OF MEASUREMENT**

1. This item shall be paid for at the contract unit price bid per lump sum.
2. The lump sum price for this item shall not exceed five percent (5%) of the total amount of the bid, excluding this item.
3. A maximum of fifty percent (50%) of the Mobilization lump sum shall be payable in the initial payment requisition. The balance of the lump sum shall be payable upon completion of the project, after all temporary items and measures have been removed and suitably disposed of and final restoration has been completed.

**B. BASIS OF PAYMENT**

1. The lump sum price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Initiating and administering the contract, including but not limited to furnishing performance and payment bonds and all other securities and insurances required, project meetings, securing of all necessary permits, etc., for providing all other materials, supplies, tools, equipment, labor, financing, supervision, temporary structures, and any and all other administrative expenses incurred in carrying out the work and furnishing the materials, keeping records and preparing required reports, and assuming risks, which have not been included in the prices in other items of the Bid Proposal;
  - b. Costs, exclusive of the cost of materials, for mobilizing all machinery, plant, tools, and other equipment necessary to carry on and complete the work;
  - c. Establishing and maintaining survey controls for the construction layout of the overall project by a qualified professional, using appropriate means and methods to insure the accuracy of the layout, as specified and/or as directed by the Engineer;
  - d. Re-establishing all benchmarks, concrete bounds, iron pins, and all permanent property boundary markers;
  - e. Coordinating and scheduling the use of uniformed traffic persons including tracking or verifying hours worked by traffic persons;
  - f. Costs for all material testing and quality control testing required by the Contract Documents;
  - g. Furnishing and spreading calcium chloride and/or water in order to control (minimize) dust at the Work areas;

- h. Compliance with all RIDOT permit and Soil Erosion and Sedimental Control Plan (SESCP) requirements;
- i. Costs for demobilizing all machinery, plant, tools, and other equipment used to perform the work upon completion of the project;
- j. Costs for performing final cleanup of the project area, exclusive of specific restoration to be paid for under other items.

**BID ITEM NO. 937.0100**

**FURNISH, INSTALL, MAINTAIN, AND MOVE  
TEMPORARY TRAFFIC PROTECTION**

**A. METHOD OF MEASUREMENT**

- 1. Traffic Protection shall be paid for on a lump sum basis.
- 2. A maximum of fifty percent (50%) of the traffic control lump sum shall be payable in the initial payment requisition. The balance of the lump sum shall be payable upon completion of the project, after all temporary items and measures have been removed and suitably disposed of and final restoration has been completed.

**B. BASIS OF PAYMENT**

- 1. The lump sum for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Fabricating, furnishing, erecting, maintaining, removing and relocating the traffic management devices for the overall project, complete-in-place, as directed by the Engineer;
  - b. Providing additional traffic management devices to provide a clear and visible traffic control through the project area, if required;
  - c. The Contractor shall be required to reposition the traffic control devices as many times as necessary to ensure the safe passage of vehicular traffic and pedestrians. Supplemental signs and traffic control devices directing traffic around and/or through the work zones shall be supplied as operations require or as directed by the Engineer. Payment for these traffic control measures shall be included as part of this item and no additional payment will be made.
  - d. At a minimum, traffic control shall include the following:

<u>Quantity</u>	<u>Description</u>
2	Road Work Ahead sign
2	One-Lane Road Ahead sign
2	Police Officer Ahead sign
2	End Road Work sign
2	Traffic Fines Doubled
10	Reflectorized Drum

These signs shall be modified as necessary to reflect the actual work and roadway conditions at all times. The Contractor shall be responsible for making the determination as to which signs are appropriate.

- e. The services of flagpersons as deemed necessary by the Contractor shall be included in this lump sum bid price. No separate payment shall be made for flagpersons.
- f. Other work, whether direct or incidental, associated with the traffic control not specifically identified herein.

**BID ITEM NO. L01.0102**

**LOAM BORROW 4 INCHES DEEP**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of loam borrow shall be measured by the number of square yards of loam borrow installed with a minimum depth of 4 inches, complete-in-place, in accordance with the Drawings and/or as directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Trimming and fine grading the sub base;
  - b. Placing loam borrow;
  - c. Resetting or replacement of all signposts and resetting of curb boxes and castings in loamed and seeded areas;
  - d. Any and all other work, whether direct or incidental, associated with the furnishing and installing loam borrow not specifically identified herein.

**BID ITEM NO. L02.0102**

**RESIDENTIAL SEEDING (TYPE 2)**

**A. METHOD OF MEASUREMENT**

- 1. The quantity of residential seeding type II shall be measured by the number of square yards, surface measurement, of the area in which seed has been installed, complete-in-place, in accordance with the Drawings and/or as directed by the Engineer.

**B. BASIS OF PAYMENT**

- 1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Furnishing and placing seed, lime and fertilizer;
  - b. Protecting and maintaining the loamed and seeded area until such time as an acceptable level of grass growth has been established;
  - c. Any and all other work, whether direct or incidental, associated with the restoration of vegetated areas not specifically identified herein.

**BID ITEM NO. L11.0102****TREE PLANT PROTECTION DEVICE STD 51.1.0****A. METHOD OF MEASUREMENT**

1. Where the plans show specific, individual trees to remain and where grading or other disturbance is shown within the drip line of these trees or where the Engineer determines that an individual tree must be protected, these trees shall be protected and paid for per each tree protected.

**B. BASIS OF PAYMENT**

1. Compensation for tree plant protection devices will be paid for at the contract unit price per each under this item. This item shall include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work, including the services of a certified arborist, water and fertilizer, and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract.

**BID ITEM NO. T08.9901****SOLAR LIGHTING****A. METHOD OF MEASUREMENT**

1. The quantity of Solar Lighting to be paid for under this item shall be measured per each, based on the actual number of solar light fixtures and bases installed, complete-in-place, as indicated on the Drawings or as otherwise directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price for this item shall include full compensation for all labor, equipment, materials and incidentals needed to complete the following:
  - a. Excavation for, backfill for, concrete for, reinforcement for and installation of pole bases as detailed on the Drawings;
  - b. Furnishing and installation of Clear Blue Technologies Illumient Strada Dual Solar Smart Off Grid Lighting fixtures, or approved equal, including the following components;
    - i. 24.5 foot black steel pole including base cabinet;
    - ii. Sigma series ESLD-60-62W light fixture on a 6' light arm;
    - iii. Bosh Motion Sensor;
    - iv. Dual 315 Watt 60 Cell Solar Panel;
    - v. Dual 145Ah AGM, thick plate, long life, deep cycle lead acid batteries;
    - vi. Prepackaged cabling harness kit;
    - vii. Clear Blue Technologies Smart Off Grid Controller;
    - viii. 3 years of Illumience Smart Off-Grid Cloud-Based Monitoring and Control.
    - ix. 3 years of communications, cellular for single units and mesh/ethernet or mesh/cellular for multi-pole projects.

- x. Precast or cast-in-place light pole base, rebar, tie rods, ground clamps, anchor bolts, and all other work as required per the manufacturer's specifications.
- xi. Contractor shall be responsible for submitting a stamped design of the light pole base foundation to confirm it is adequate for the selected solar light fixture.
- c. Any and all other work, whether direct or incidental, associated with the restoration of vegetated areas not specifically identified herein.

**BID ITEM NO. T15.0200**

**REMOVE AND RELOCATE DIRECTIONAL  
REGULATORY AND WARNING SIGNS**

**A. METHOD OF MEASUREMENT**

- 1. Removing and relocating signs will be measured per each sign actually removed and reset, complete in place, including the foundation, excavation, backfilling and compaction for foundations and the structural supports.

**B. BASIS OF PAYMENT**

- 1. Payment for work to be done under this item will be by the unit price bid per each, which will be full compensation for the satisfactory removal, stockpiling and resetting of existing posts, installation of new post and concrete base, and for all excavation and backfill, and for furnishing all labor, tools, equipment and any other incidentals to complete the work. The contract unit price shall also include excavation and disposal of existing foundations and the supplying and placing of compacted gravel backfill where foundations and posts are removed and restoration of surface for which no additional payment will be made. If posts are damaged during excavation and determined by the Engineer to be unfit for reuse, the Contractor shall replace the sign at no additional cost to the Owner.

**BID ITEM NO. T15.2000**

**PARKING SIGNS**

**A. METHOD OF MEASUREMENT**

- 1. Parking Signs will be measured per square foot of signage actually installed, complete in place, including the foundation, excavation, backfilling and compaction for foundations and the structural supports.

**B. BASIS OF PAYMENT**

- 1. The unit price shall include full compensation for furnishing and erecting the supports, including construction of the concrete bases, steel reinforcement and anchor bolts, furnishing and installing post assembly, furnishing and installing the signage, and all excavation, gravel backfill, and all incidental costs required to complete the work.

**BID ITEM NO. T20.0101****PAVEMENT MARKINGS****A. METHOD OF MEASUREMENT**

1. Pavement Markings are to be paid for on the actual length of lines measured by the linear foot applied under the various items of the Contract. The lengths of solid lines will be obtained by:
  - a. Use of a measuring wheel or

**B. BASIS OF PAYMENT**

1. The unit price constitutes full compensation for all labor, tools, materials and equipment, including protection of newly applied markings from traffic, layout, cleaning and sweeping, furnishing and applying the pavement markings, and all incidentals required to finish the work, complete and accepted.
2. No payment will be made for the repair or replacement of defective pavement markings.

**BID ITEM NO. T20.0103****ARROWS, WORDS, OR SYMBOLS PAVEMENT MARKINGS****A. METHOD OF MEASUREMENT**

1. Arrows, Words, or Symbol Pavement Markings shall be measured per each pavement marking applied, complete-in-place, in accordance with the Drawings and/or as directed by the Engineer.

**B. BASIS OF PAYMENT**

1. The unit price constitutes full compensation for all labor, tools, materials and equipment, including protection of newly applied markings from traffic, layout, cleaning and sweeping, furnishing and applying the pavement markings, and all incidentals required to finish the work, complete and accepted.
2. No payment will be made for the repair or replacement of defective pavement markings.

**PART 2 PRODUCTS     NOT USED**

**PART 3 EXECUTION     NOT USED**

**END OF SECTION**

## SECTION 01035

### MODIFICATION PROCEDURES

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Procedures for making modifications to the Contract by change orders or other means.

###### B. Related Sections

1. Document 00500 - Agreement

##### 1.02 CHANGE ORDERS

- A. In general Change Orders will be issued for modification of Contract documents which will incorporate changes in the Contract requirements, including additions or deletions in the Work; for unforeseen field conditions which will necessitate changes in the Work; changes in code provisions or other requirements of federal, state or local authority requiring changes in the Work; changes in the availability of products or for incorporating new products into the work and for changes directed by the Engineer for the benefit of the Owner.
- B. Authority to execute Change Orders shall be that of the Engineer and not of the Contractor. Changes Orders will, in general, originate by a "Change Order Proposal Request" or by issuance of a "Construction Change Authorization".
- C. Unless authorized by the Engineer, no work shall be performed that is involved in the change until a formal Change Order is issued.
- D. To initiate a Change Order, the Engineer will forward a Change Order proposal request describing the proposed changes and if required, include additional or revised drawings and specifications soliciting a formal quotation of cost and time to complete the proposed Change Order work. Upon reaching mutual agreement on the cost and time, the Engineer will sign his approval of the Change Order and submit it to the Contractor for his full signature of acceptance.

### 1.03 FIELD ORDERS

- A. The Engineer may, to avoid costly removal of, or alterations to, present on-going work, issue a Work Directive Change authorizing the Contractor to proceed, subject to later negotiation of the price of the change.

### 1.04 PRICE AGREEMENTS

- A. Prices agreed upon to cover the Change Orders may be either by mutual acceptance of a lump sum or by unit prices as stated in the Contract bid proposal or actual direct cost plus a percentage for overhead, profit and other expenses consistent with Section 00500 – Contract Agreement.
- B. Work done by a subcontractor entitles the General Contractor a percentage of the sum of the actual direct cost, not including the subcontractor's overhead and profit, consistent with Section 00500 – Contract Agreement.
- C. Method for computing the cost of the change shall be based on the net additional increase. No overhead and profit shall be deducted from prices for changes deleting work.
- D. The Change Order form document shall indicate the net adjustment (+/-) to the total Contract price as a result thereof including extension or reduction of time when applicable.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

NOT USED

END OF SECTION



## SECTION 01040

### COORDINATION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Requirements for coordinating the various parts of Work under this Contract.

##### 1.02 REQUIREMENTS

- A. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Coordinate completion and cleanup of Work of separate Sections in preparation for Substantial Completion.
- C. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- D. Coordinate work with all utility companies necessary for completion of work under this contract.
  - 1. East Providence Water Department  
Jim Marvel  
401-435-7741
  - 2. Rhode Island Energy – Gas  
James Paulette  
401-465-8580
  - 3. Rhode Island Energy – Electric  
Patrick Ventre  
732-672-3359
  - 4. East Providence Wastewater Department  
Thomas Azevedo  
401-433-6363

E. Coordinate work with all other interested parties necessary for completion of work under this contract.

1. City of East Providence Public Works Department  
Daniel Borges  
401-435-7701

PART 2    PRODUCTS       NOT USED

PART 3    EXECUTION       NOT USED

END OF SECTION

## SECTION 01045

### CUTTING, CORING AND PATCHING

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements and limitations for cutting, coring and rough and finish patching of holes and openings in existing construction.

###### B. Related Sections

1. Section 01300 – Submittals

##### 1.02 SUBMITTALS

###### A. In accordance with Section 01300 submit written request in advance of cutting or alteration which affects the following:

1. Structural integrity of any element of Project.
2. Integrity of weather-exposed or moisture-resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of sight exposed elements.
5. Work of Owner or separate contractor.

###### B. Include in request:

1. Identification of Project.
2. Location and description of affected work.
3. Necessity for cutting or alteration.
4. Description of proposed work, and products to be used.
5. Alternatives to cutting and patching.
6. Effect on work of Owner or separate contractor.
7. Written permission of affected separate contractor.
8. Date and time work will be executed.

###### C. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, notify the Engineer and secure his written permission and the required Change Order prior to proceeding.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Concrete and grout for rough patching shall be as specified in Division 3 of this Specification.
- B. Materials for finish patching shall be equal to those of adjacent construction.
- C. For replacement of items removed, use materials complying with pertinent sections of these specifications.
- D. Sealing cored holes in sewer manholes and other structures to be with a resilient seal similar to Kor-N-Seal made by National Pollution Control Systems, Inc., Nashua, NH or similar product.

## PART 3 EXECUTION

### 3.01 GENERAL:

- A. All cutting and coring shall be performed in such a manner as to limit the extent of patching.
- B. All holes cut through concrete and masonry walls, slabs or arches shall be core drilled unless otherwise approved in writing to the Engineer. No structural members shall be cut without approval of the Engineer and all such cutting shall be done in a manner directed by the Engineer. No holes may be drilled in beams or other structural members without obtaining prior approval. All work shall be performed by craftsmen skilled in this type of work.
- C. If holes are cored through floor slabs they shall be drilled from below the slab.
- D. Rough patching shall be such as to bring the cut or cored area flush with existing construction unless otherwise shown. Finish patching shall match the color, texture and finish of existing surfaces as approved.

### 3.02 EXAMINATION

- A. Site Verification of Conditions
  - 1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.
  - 2. After uncovering the work, inspect conditions affecting installation of new work.
  - 3. If uncovered conditions are not as anticipated, immediately notify the Engineer.

4. Do not proceed until unsatisfactory conditions are corrected.

### 3.03 PREPARATION

#### A. Protection

1. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.
2. Perform cutting and demolition by methods which will prevent damage to portions of the Work.

#### B. Surface Preparation

1. Provide proper surfaces to receive installation of repair and new work.

### 3.04 CORING:

- A. Coring shall be performed with an approved non-impact rotary tool with diamond core drills. Size of holes shall be suitable for pipe, conduit, sleeves, equipment or mechanical seals to be installed.
- B. All equipment shall conform to OSHA standards and specifications pertaining to plugs, noise and fume pollution, wiring and maintenance.
- C. Provide protection for existing equipment, utilities and critical areas against water or other damage caused by drilling operation.
- D. Slurry or tailings resulting from coring operations shall be vacuumed or otherwise removed from the area following drilling.

### 3.05 CUTTING:

- A. Cutting shall be performed with a concrete wall saw and diamond saw blades of proper size.
- B. Provide for control of slurry generated by sawing operation on both sides of wall.
- C. The cutting of a reinforced concrete wall shall be done so as not to damage the bond between the concrete and the reinforcing steel left in structure. The cut shall be made so that steel neither protrudes nor is recessed from face of the cut.
- D. Adequate bracing of area to be cut shall be installed prior to start of cutting. Check area during sawing operations for partial cracking and provide additional bracing as required to prevent a release or toppling of cut area during sawing operations.
- E. Provide equipment of adequate size to remove cut panel.

### 3.06 FIELD QUALITY CONTROL

- A. In addition to other requirements specified, upon the Engineer's request uncover work to provide for inspection by the Engineer of covered work, and remove samples of installed materials for testing.
- B. Do not cut or alter work performed under separate contracts without the Engineer's written permission.

### 3.07 ADJUSTING

- A. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

END OF SECTION

## SECTION 01050

### FIELD ENGINEERING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Survey work and other field engineering responsibilities of the Contractor.

##### 1.02 REQUIREMENTS

- A. The Contractor shall be responsible for layout of the work and the establishing of lines and grades.
- B. Establish elevations, lines, levels, reference marks, batter boards, etc., required during the progress of the Work. Verify such marks by instrument to confirm accuracy.
- C. Locate and protect survey control and reference points.
- D. Make, check, and be responsible for all measurements and dimensions necessary for the proper construction of the Work.
- E. The Engineer will be permitted to check the lines, elevations, reference marks, batter boards, etc., set by the Contractor. The Contractor shall correct any errors found in lines, elevations, reference marks, batter boards, etc. Such a check shall not be construed as approval of the Contractor's work and shall not relieve or diminish the responsibility of the Contractor for the accurate construction and completion of the Work.
- F. Control datum for survey as shown on Drawings.

##### 1.03 QUALITY ASSURANCE

###### A. Qualifications

- 1. Employ a Civil Engineer or Land Surveyor registered within the State of Rhode Island, acceptable to the Engineer.

###### B. Certifications

- 1. Submit certificate signed by the Contractor's Engineer or Land Surveyor stating elevations and locations of the Work are in conformance with the Contract Documents.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION



## SECTION 01060

### REGULATORY REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 PERMITS BY CONTRACTOR

- A. The Contractor shall secure all necessary permits from the state, city or town authorities having jurisdiction, for digging of trenches in the streets or highways and all other building and construction operations requiring permits.
- B. The Contractor shall be responsible for submitting the required insurance and bond documentation to the Owner to obtain the Physical Alteration Permits from RIDOT. Physical Alteration Permit Applications (PAPA) have been submitted and accepted pending final insurance and bond requirements. Refer to Appendix C of these Contract Documents for the acceptance letters and requirements for the following:
  - PAPA No. 21-85 – Potter Street at Warren Avenue
  - PAPA No. 23-84 – Burgess Street at Warren Avenue
- C. The Contractor shall be responsible for obtaining a utility permit from RIDOT for all utility work within the State Highway ROW prior to the start of work. Note this utility permit is separate from the Physical Alteration Permit noted above. Refer to Appendix D of these Contract Documents for the utility permit application.

##### 1.03 CODES

- A. The Contractor shall conform to the requirements of and pay all fees imposed by local and State Building Authorities having jurisdiction over the Work. The Contractor is responsible to conform to all building, mechanical, electrical and plumbing code requirements.
- B. The Contractor shall conform to the latest requirements of the following codes:
  - 1. Federal, State and Municipal Laws
  - 2. Rhode Island State Building Codes, National Building Code Regulation SBC-1
  - 3. Rhode Island State Building Codes, Plumbing Code Regulation SBC-3
  - 4. Rhode Island State Building Codes, Mechanical Code Regulation SBC-4

5. Rhode Island State Building Codes, Electrical Code Regulation SBC-5
6. Any prevailing rules and regulations pertaining to adequate protection and/or guarding of any moving parts or otherwise hazardous locations.

#### 1.04 FEES

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

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01067

### STATE OF RHODE ISLAND AND FEDERAL REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 RHODE ISLAND SALES AND USE TAX

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

##### 1.03 HISTORICAL ARTICLES

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

##### 1.04 PREVAILING MINIMUM WAGE RATES

- A. Local prevailing minimum wage rates apply to this project. It is the responsibility of the Contractor before bid openings to request, if necessary, any additional information on local prevailing Wage Rates for those tradespeople who are not covered by the applicable local Wage Decision, but who may be employed for the proposed work under this Contract.

- B. The attention of the Contractor is also directed to Specification Subsection 00700, 1.19 in regards to the requirements for certified payrolls. The Contractor shall routinely prepare and submit as a part of the required certified payrolls the "PRIME CONTRACTOR'S OVERALL PAYROLL CERTIFICATION" form.
- C. The Contractor is required to adhere to the requirements of the Davis-Bacon Act.

#### 1.05 EXCERPTS FROM RHODE ISLAND LAWS

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

R.I.G.L.

Title, Chapter, Section                      EXCERPT

#### 5-6-2 WORK FOR WHICH LICENSE REQUIRED

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

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

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

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

## Chapter 116

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

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

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

### 1.06 REQUIREMENTS FOR MINORITY BUSINESS ENTERPRISE, EQUAL OPPORTUNITY AND NONDISCRIMINATION

- A. Contracts for work under the bid (proposal) will obligate the contractors and subcontractors not to discriminate in employment practices.
- B. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, handicap, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex, age, handicap, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotions, or transfers; recruitment or recruitment advertising, selection for training including apprenticeship; and participation in recreational and educational activities. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notice to be provided, setting forth the provisions of this non-discrimination clause. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Contract so that such provisions will be binding upon each subcontractor and upon subcontractors for standard commercial supplies or raw materials.
- C. The Contractor shall keep such records and submit such reports concerning the racial and ethnic origin of applicants for employment and employees as the Owner may require as consistent with Federal and State law.
- D. The Contractor agrees to comply with such rules, regulations, or guidelines as the State of Rhode Island may issue to implement these requirements. The Contractor further warrants that it will comply with, Title VI of the Civil rights Act of 1964, 42 U.S.C. 200d to d4.

- E. Contractors shall comply with the provisions of the General Laws of Rhode Island and attention is called to Title 37, Chapter 13, Section 1-16, relative to the payment of wages, obligations and charges by Contractors on public works projects. Non-resident Contractors are subject to Section 44-1-6 of the RI General Laws, as amended, regarding OUT-OF-STATE CONTRACTORS.
- F. The Contractor will be required to comply with Equal Opportunity Requirements and to abide by the prevailing wage rates for Public Works Projects for all employees on the job. It is the responsibility of contractors to inform themselves as to the local labor conditions, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustment of wage rates. Information is available at the Department of Labor.
- G. The attention of the Contractor is directed to the fact that this Contract is subject to both Federal and State requirements regarding Minority Business Enterprises (MBE) and Woman's Business Enterprises (WBE) participation. The Contractor hereby agrees to ensure compliance with all Federal and State MBE/WBE requirements to provide maximum opportunity for such participation.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01090

### REFERENCE STANDARDS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 QUALITY ASSURANCE

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

##### 1.03 SCHEDULE OF REFERENCES

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

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



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

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

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

#### 1.04 EDITION DATES

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

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01300

### SUBMITTALS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 PROGRESS SCHEDULE

- A. Within fourteen (14) calendar days after execution of the Contract Documents, the Contractor shall submit to the Engineer for review a construction progress schedule conforming to requirements specified. This schedule should show the proposed dates of commencement and completion of each of the various subdivisions of work required under this Contract and the anticipated monthly percentage of completion based on the total contract price. The Contractor shall be responsible for updating and/or revising this schedule whenever directed by the Engineer throughout the duration of the Contract.
- B. Special attention is directed to the requirement that the Contractor shall start the Work, as specified under this Contract, no later than thirty (30) calendar days after the execution of the Contract Documents, unless otherwise directed by the Owner. The Contractor shall comply with all pre-construction requirements as specified. The Owner reserves the right to delay the commencement of the Work or any part thereof if the specified requirements as determined by the Engineer have not been satisfied. The Owner further reserves the right to limit or, delay construction, or certain activities thereof, in certain areas of the Contract should the Owner deem it to be in the public's best interest and/or safety to do so.
- C. The Contractor shall contact the appropriate town or city authorities concerning any public or semi-public events that may occur during the construction period that may affect construction. The Contractor alone shall be responsible for arranging his construction sequence to conform to any restrictions these events may impose. No claims for extras will be allowed because of any delay, extra materials handling, extra excavation, etc. caused by the imposed restrictions. However, additional time may be granted for completion of the work to compensate for delays caused by said restrictions.

##### 1.03 SHOP DRAWINGS

- A. Submit six (6) copies of all shop and working drawings of concrete reinforcement, structural details, piping layout, wiring, materials fabricated especially for the Contract, and materials and equipment for which such drawings are specifically requested.

- B. A maximum of two (2) submittals of each shop drawing will be reviewed by the Engineer. If more submittals are required due to the Contractor's neglect or failure to fulfill the requirements of the Contract plans and specifications, or to make corrections or modifications required by the Engineer in the review of the first two submittals, the Engineer will review the submittal and the Contractor will be responsible for the cost of the review, as determined by the Owner based on the Engineer's documentation of time and rates for additional services established in the Engineering Agreement between the Owner and the Engineer.
- C. If resubmittals on shop and working drawings are required, the Engineer will retain three (3) copies and three (3) copies will be returned to the Contractor. When resubmittals are returned to the Engineer, six copies of the complete submittal shall again be required.
- D. Such drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When the dimensions are of particular importance, or when specified, the drawings shall be certified by the manufacturer or fabricator as correct for the Contract.
- E. When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted in place of shop and working drawings.
- F. The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings to eliminate delay to the Work due to the absence of such drawings. All shop and working drawings must be submitted to the Engineer within thirty (30) calendar days prior to incorporation into the Work, unless otherwise permitted by the Engineer. **Prior to the submittal of any shop drawings, the Contractor shall submit a schedule of proposed shop drawing transmittals.** The schedule shall identify the subject matter of each transmittal, the corresponding specification section number and the proposed date of submission. Prior to and during the progress of the Work the schedule shall be revised and resubmitted as requested by the Engineer.
- G. No material or equipment shall be purchased or fabricated for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.
- H. Until the necessary review has been made, the Contractor shall not proceed with any portion of the Work (such as the construction of foundations) for which review is required.

- I. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24 inch by 36 inch sheets, except those which are made by changing existing standard shop and working drawings. All drawings shall be clearly marked with the names of the Owner, Contractor, and building, equipment, or structure to which the drawing applies, and shall be suitable numbered. Submitted shop drawings shall be accompanied by a letter of transmittal, completed by the Contractor as approved by the Engineer.
- J. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer; other drawings shall be returned for correction.
- K. If a shop drawing shows any deviation from the Contract requirements, the Contractor shall make specific mention of the deviations in his letter of transmittal.
- L. The review of shop and working drawings by the Engineer will be general only, and nothing contained in this Section shall relieve, diminish or alter in any respect the responsibilities of the Contractor under the Contract Documents and in particular, the specific responsibility of the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance as specified. The Contractor shall be responsible for errors and omissions in shop drawings.
- M. Should the Contractor submit equipment that requires modifications to the structures, piping, electrical conduit, wires, appurtenances, or layouts etc., either existing or as detailed on the Drawings, he shall also submit details of the proposed modifications. If such equipment and modifications are accepted, the Contractor, at no additional cost to the Owner, shall do the work necessary to make such modifications.
- N. The Contractor shall furnish additional copies of shop drawings or catalog cuts when so requested.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01400  
QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

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

1.03 FIELD SAMPLES

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

1.04 CERTIFIED WELDERS

- A. Structural welds shall be made only by operators who have been qualified by tests, as prescribed in the "Standard Qualification Procedure" of the American Welders Society, to perform the type of work required.

- B. Pipe welds shall be made only by operators who have been qualified by the National Certified Pipe Welding Bureau and each operator's qualification record shall be submitted to the Engineer before any work is performed.
- C. Shop welding shall be in accordance with the "Code for Welding in Building Construction".

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

NOT USED

END OF SECTION



## SECTION 01410

### TESTING LABORATORY SERVICES

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Qualification, duties and responsibilities of testing laboratories.
2. Coordination and scheduling responsibilities of the Contractor.

###### B. Related Sections

1. Section 01600 - Materials and Equipment

##### 1.02 PAYMENT PROCEDURES

###### A. Initial Testing

1. Testing will be performed as required by the Engineer.

###### B. Retesting

1. When initial tests indicate noncompliance with the Contract Documents, subsequent retesting occasioned by the noncompliance shall be performed by the same testing agency.

###### C. Contractors Convenience Testing

1. Inspecting and testing performed exclusively for the Contractor's quality control purpose and for conformance with the specifications shall be the sole responsibility of the Contractor.

##### 1.03 REFERENCES

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

1. E329, Agencies Engaged in Construction Inspection and/or Testing

##### 1.04 REQUIREMENTS

###### A. Work included:

1. Cooperate with the Owner's selected testing agency and all others responsible or testing and inspecting the Work.
2. Provide other testing and inspecting as specified to be furnished by the Contractor in this Section and/or elsewhere in the Contract Documents.
3. Where no testing requirements are described, but the Owner directs testing, the Contractor shall provide testing under the requirements of this Specification.

B. Work not included:

1. Selection of testing laboratory: The Owner will select a qualified independent testing laboratory.

## 1.05 QUALITY ASSURANCE

A. Qualifications

1. The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329.

B. Regulatory requirements

1. Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.
2. Regulatory Requirements Inspections and tests required by codes or ordinances, or by a plan approved authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

## 1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01600 - Materials and Equipment.

B. Promptly process and distribute, to the Engineer, required copies of test reports and instructions to assure necessary retesting and replacement of materials with the least possible delay in progress of the Work.

## 1.07 SCHEDULING

A. Establishing schedule

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
2. Provide all required time within the construction schedule.
3. Coordinate testing activity with the appropriate testing laboratory.

## B. Revising schedule

1. When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.

## C. Adherence to schedule

1. When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

## PART 2 PRODUCTS

### NOT USED

## PART 3 EXECUTION

### 3.01 FIELD QUALITY CONTROL

#### A. Site Tests

1. Representatives of the testing laboratory shall have access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.
2. All specimens and samples for testing, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.
3. Sieve and Proctor analysis are required for all in-situ aggregate to be used in the Work. Sieve and Proctor analysis to be stamped and signed by a Professional Engineer registered in the State of Rhode Island.
4. Sieve analysis are required for all aggregate and soils delivered to the job site to be used in the Work. Sieve analysis to be stamped and signed by a Professional Engineer registered in the State of Rhode Island. Contractor responsible for sieve analysis for this purpose.
5. Sample all imported soils and aggregates at a minimum frequency of one (1) per one thousand cubic yards each to verify materials free of contamination. The material shall be tested for the following: volatile organic compounds (VOC's) (EPA method 8260), Poly-Nuclear Aromatic Hydrocarbons (PAH's) (EPA method 8270), total Petroleum Hydrocarbons ((TPH), and RCRA 8 Metals.
6. If identified by Engineer and based on results of field testing, soil compaction testing for paved areas shall be performed for every 3,000 square feet of roadway

or parking lot, minimum. Soil compaction testing to be performed for every 50 linear feet of excavated trench repair.

7. Asphalt compaction testing each day permanent bituminous concrete is placed. Testing shall be provided for every 3,000 square feet of roadway or parking lot, minimum.

END OF SECTION

## SECTION 01560

### TEMPORARY CONTROLS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 CLEANING DURING CONSTRUCTION

- A. Unless otherwise specified under the various trade Sections of the Specifications, the General Contractor shall perform clean-up operations during construction as herein specified.
  - 1. Control accumulation of waste materials and rubbish; periodically dispose of off-site. Bear all costs, including fees resulting from disposal.
  - 2. Clean interior areas prior to start finish work and maintain areas free of dust and other contaminants during finishing operations.
  - 3. Maintain project in accordance with all local, State and Federal Regulatory Requirements.
  - 4. Store volatile wastes in covered metal containers, and remove from premises.
  - 5. Prevent accumulation of wastes that create hazardous conditions.
  - 6. Provide adequate ventilation during use of volatile or noxious substances
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  - 1. Do not burn or bury rubbish and waste materials on site.
  - 2. Do not dispose or volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 3. Do not dispose of wastes into streams or waterways.
  - 4. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
  - 5. Use only those cleaning materials and methods recommended by manufacturer of surface material to be cleaned.
  - 6. Execute cleaning to ensure that the buildings, the sites, and adjacent properties are maintained free from accumulations of waste materials and rubbish and wind-blown debris, resulting from construction operations.

7. Provide on-site containers for collection of waste materials, debris, and rubbish.
8. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas off the construction site.
9. Handle material in a controlled manner with as little handling as possible. Do not drop or throw materials from heights.
10. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not damage surrounding surfaces.
11. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.
12. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, work done under this contract, or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc. shall, upon completion of the work, be left in a clean and neat condition.

#### 1.03 DUST CONTROL

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

#### 1.04 EROSION AND SEDIMENT CONTROL

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

F. Construct sediment control devices for discharge from dewatering trenches.

G. Construct all sedimentation control devices shown on the plans.

#### 1.05 NOISE CONTROL

A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.

B. Execute construction work by methods and by use of equipment which will reduce excess noise.

1. Equip air compressors with Silencers, and power equipment with mufflers.

2. Manage vehicular traffic and scheduling to reduce noise.

#### 1.06 POLLUTION CONTROL

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

#### 1.07 SURFACE WATER CONTROL

A. Take all precautions to prevent damage to the work or equipment by high waters or by storms. The Engineer with the approval of the Owner may prohibit the carrying out of any work at any time when in his judgement, high water or storm conditions are unfavorable or not suitable, or at any time, regardless of the weather, when proper precautions are not being taken to safeguard previously constructed work or work in progress.

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

#### 1.08 BARRIERS AND ENCLOSURES

A. Fences and Barricades

1. Provide and maintain temporary fences, barriers, lights, guardrails, and barricades as indicated in the Contract Documents, or as necessary to secure the Work and adjacent property, and protect persons and property.

2. Obtain necessary approvals and permits and provide temporary expedients as necessary to accommodate tasks requiring items mentioned herein.

B. Protection of Trees

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

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION



## SECTION 01570

### TRAFFIC REGULATIONS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 REFERENCES

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

##### 1.03 PERFORMANCE REQUIREMENTS

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

##### 1.04 SUBMITTALS

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

## 1.05 SITE CONDITIONS

- A. Replace at no cost to the City of East Providence pavement markings, legends and lane arrows removed or damaged by the construction operation.
- B. Restore temporary detours to original condition.
- C. Replace traffic signal loops damaged during construction within 72 hours.

## 1.06 SCHEDULING

- A. There shall be no time limitations on construction operations except those hours and locations where noise regulations may apply and except as required for the maintenance of traffic as required by the City of East Providence.
- B. Keep closing of travel lanes to a minimum.
- C. Notify Town departments 48 hours prior to construction operations on travel ways.
  - 1. Police Department
  - 2. Fire Department
  - 3. Department of Public Works

## PART 2 PRODUCTS

### 2.01 TRAFFIC CONTROL DEVICES

- A. In accordance with the Standard Specification.

## PART 3 EXECUTION

### 3.01 INSTALLATION OF TRAFFIC CONTROL DEVICES

- A. In accordance with the Standard Specification.

### 3.02 PROTECTION OF TRAFFIC

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

- B. Maintain and protect traffic movements for the entire length of the project.
- C. Keep one lane of traffic open at all times except for brief stoppages dictated by the construction operation involving safety of vehicles in the travel lanes.
- D. Maintain access to business and private ways during construction operations as much as possible. The contractor shall coordinate access to private ways and parking restrictions within the roadways with the DPW Director, the resident engineer and the residents adjacent to the project prior to commencing work within the neighborhood block.
- E. Furnish sufficient number of signs, temporary precast concrete barriers, warning lights, drums and traffic cones to warn traffic of construction and guide traffic through the construction area.

### 3.03 TRAFFIC PERSONS

- A. Contractor shall procure the service of uniformed traffic persons as required to perform construction while safely managing the movement of non-construction traffic through active project areas. Contractor shall be responsible for determining the need for uniformed traffic persons over the course of the project, and shall schedule traffic persons in a timely fashion in advance of when said traffic persons will be needed.
- B. Traffic persons shall be City of East Providence police officers, unless otherwise authorized or required.
- C. Traffic persons used by the Contractor shall be compensated directly by the City of East Providence, based on the number of hours actually worked (both straight time and overtime) and the corresponding hourly rates for each time classification. Contractor shall be responsible for tracking or verifying hours worked by traffic persons on the project.
- D. The intent is to insure public safety by police direction of traffic. Police are not to serve as watchmen to protect the Contractor's equipment and materials, or to warn pedestrians of such hazards as open trenches.
- E. Nothing contained herein shall be construed as relieving the Contractor of any of his responsibilities for protection of persons and property under the terms of the Contract.

END OF SECTION

## SECTION 01600

### MATERIALS AND EQUIPMENT

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for delivery, storage, handling and installation of systems, materials, manufactured units, equipment, components, and accessories used in the work.

###### B. Related Sections

1. Section 01300 - Submittals

##### 1.02 DELIVERY

- A. Refer to Specifications' Sections for requirements pertaining to delivery and handling of materials and equipment.
- B. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturers' unopened containers or packaging, dry.
- C. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- D. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct, and products are undamaged.

##### 1.03 STORAGE AND PROTECTION

- A. Refer to Specifications' Sections for requirements pertaining to storage and protection of materials and equipment.
- B. Store products in accordance with manufacturers' instruction, with seals and labels intact and legible. Store sensitive products in weather tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.
- C. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

- D. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- E. Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged, and are maintained under required conditions.

#### 1.04 INSTALLATION STANDARDS

- A. Comply with Specifications and referenced standards as minimum requirements.
- B. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.
- C. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the Contract Documents.
- D. Perform work by persons qualified to produce workmanship of specified quality.
- E. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
- F. When work is specified to comply with manufacturers' instructions, submit copies as specified in Section 01300 - Submittals, distribute copies to persons involved, and maintain one set in field office.
- G. Perform work in accordance with details of instructions and specified requirements.

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01700

### CONTRACT CLOSE-OUT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

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

##### 1.02 FINAL CLEANING

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

- F. Refer to Sections of the Specifications for cleaning of specific products or work.
- G. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
- H. Use only those cleaning materials and methods that are recommended by the manufacturer of surfaces material to be cleaned.
- I. Employ experienced workmen, or professional cleaners, for final cleaning operations.

### 1.03 PROJECT RECORD DOCUMENTS

- A. Project Record Documents also referred here as As-Built Drawings shall consist of all the contract drawings.
- B. The Contractor and all Subcontractors shall be required to maintain one set of As-Built Drawings, as the work relates to their Sections of the Specifications, at the site.
- C. As-Built Drawings shall be stored and maintained in the General Contractor's field office apart from other documents used for construction. The As-Built Drawings shall be maintained in a clean, dry, and legible condition and shall not be used for construction purposes.
- D. As-Built Drawings shall be available at all time for inspection by the Engineer. All deficiencies noted shall be promptly corrected.
- E. The following information shall be indicated on the As-Built Drawings for storm drain construction:
  - 1. Rim elevations on inlets, catch basins, manholes and other structures.
  - 2. Invert elevations of all pipes within inlets, catch basins, manholes, end sections, headwalls, culverts and other structures.
  - 3. Linear distance along drain from structure to structure, and branch connections, including size and type of pipe.
  - 4. Recalculated pipe slopes based on as-built elevations.
  - 5. Location of manholes, inlets, catch basins, outlets, headwalls, other structures and service line connections with 3 swing ties.
- F. At the end of each month and before payment for materials installed, the Contractor, and his Subcontractors, shall review As-Built Drawings for purpose of payment. If the changes in location of all installed elements are not shown on the as-built drawings and verified in the field, then the material shall not be considered as installed and payment will be withheld.

- G. At the completion of the contract, each Subcontractor shall submit to the Contractor a complete set of his respective As-Built Drawings indicating all changes. After checking the above drawings, the Contractor shall certify in writing on the title sheet of the drawings that they are complete and correct and shall submit the As-Built Drawings to the Engineer.

#### 1.04 WARRANTIES

- A. Comply with requirements of Section 01740 Warranties.

#### 1.05 FINAL INSPECTION

- A. The Contractor shall submit written certification that:

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

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

NOT USED

END OF SECTION



## SECTION 01740

### WARRANTIES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. General administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

##### 1.02 SUBMITTAL

- A. Submit written warranties to the Owner prior to the date fixed by the Engineer for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than a date of Substantial Completion for the Work, or a designed portion of the Work, submit written warranties upon request of the Owner.
- B. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Owner prior to acceptance of this portion of the Work.
- C. Refer to individual Sections of Division 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.

##### 1.03 WARRANTY REQUIREMENT

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the contract Documents.
- F. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

#### 1.04 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

NOT USED

END OF SECTION

## SECTION 01800

### MAINTENANCE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Procedures for maintaining work completed under this Contract.

##### 1.02 MAINTENANCE PERIOD

- A. The general maintenance period for all construction or materials under this Contract shall be one (1) year subsequent to the date of the acceptance of the work by the Owner, or as provided by other sections of this Specification.
- B. If the Owner puts any structure or equipment to use prior to acceptance of all work under the Contract, the maintenance period for such structures or equipment shall be calculated from the time use begins.
- C. Contractor agrees to replace the material which does not conform to the Contract requirements, and to repair any damage of material or work without cost to the Owner, to satisfaction of Engineer, in conformance with Contract Documents provided orders for replacement and/or repairs are received in writing by the Contractor within the one year period.
- D. This Section shall in no way limit the duration of the Contractor's responsibility for the correction of any defect due to workmanship or materials provided by the Contractor which are not in compliance with the Contract Documents.

##### 1.03 ABUSE OF WORK

- A. Contractor is not obligated to perform work of replacement or repair that he may prove is required because of abuse by parties other than the Contractor, after the date the Owner puts to continuous use the work requiring replacements or repair, or after date the Owner has approved the Certificate of Completion.

##### 1.04 EMERGENCY REPAIRS

- A. If the Owner deems necessary, the Owner shall order replacement or repairs be undertaken within 24 hours.

- B. If the Contractor delays or fails to make the ordered replacement or repairs within the time specified, the Owner shall have the right to make such replacements or repairs and the expense shall be deducted from moneys due the Contractor, or moneys of the Contractor retained by the Owner.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

## **DIVISION 2**

## SECTION 02140

### DEWATERING

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for designing, furnishing, installing, maintaining, operating and removal of temporary dewatering systems required to lower and control water levels and hydrostatic pressures during construction.
2. Requirements for disposing of pumped water.

###### B. Related Sections

1. Section 02200 – Earth Excavation, Backfill and Grading

##### 1.02 DEFINITIONS

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

##### 1.03 DESIGN REQUIREMENTS

- A. The Contractor is responsible for the adequacy of the dewatering system.

###### B. Design dewatering systems to:

1. Effectively reduce the hydrostatic pressure and lower the groundwater levels to a minimum of 2 feet below excavation in soil;
2. Develop a substantially dry and stable subgrade for the protection of subsequent operations;
3. Result in no damage to adjacent buildings, structures, utilities and other work, included in this contract.
4. Depressurize stratified layers of sand that may be confined by silt layers so that a stable excavation bottom is maintained.

- C. Methods may include sump pumping, single or multiple stage well point or jet eductor well point systems, deep wells, or combinations thereof.

- D. Locate dewatering facilities where they will not interfere with existing utilities, facilities and/or construction work to be done under this Contract.

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

#### 1.04 SUBMITTALS

##### A. Shop Drawings

1. In accordance with Section 01300 submit the following prior to dewatering system installation:
  - a. Proposed system components.
  - b. Operational plan to include locations and depth of components.
  - c. Method of disposal of pumped water, including method of insuring proper sediment removal should upset in dewatering system occur.
2. Provide test pit data.
  - a. Depth
  - b. Soil material encountered
  - c. Depth to groundwater
  - d. Depth to sewer

##### B. Quality Assurance/Control Submittals

1. In accordance with Section 01300 submit the following:
  - a. Dewatering systems to be designed under the direct supervision of a professional Civil Engineer registered in the state which the work is to be done.
  - b. Complete Certificate of Design at the end of this section.
  - c. Provide documentation demonstrating ability and experience of installing contractor for the type of conditions under this contract.
  - d. Names, addresses and telephone numbers of supervisory personnel actively involved in at least five successful projects requiring dewatering.

#### 1.05 PROJECT/SITE CONDITIONS

##### A. Environmental Requirements

1. Dispose of all pumped water in accordance with all U.S. Environmental Protection Agency, Rhode Island Department of Environmental Management (RIDEM), and City of East Providence requirements.

##### B. Existing Conditions

1. Groundwater surface is subject to fluctuations during periods of heavy precipitation.
2. Conduct test pits during the initial phases of work to determine soil conditions.

#### PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

### 3.01 SITE PREPARATION

#### A. Surface Drainage

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

#### B. Drainage of Excavated Areas

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

### 3.02 INSTALLATION

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

### 3.03 MONITORING

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

### 3.04 OPERATION

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

### 3.05 DISPOSAL OF WATER

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



### 3.06 REMOVAL

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

END OF SECTION

CERTIFICATE OF DESIGN

Re: Contract Between

OWNER: \_\_\_\_\_  
(Name)

and  
CONTRACTOR: \_\_\_\_\_  
(Name)

on  
CONTRACT: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Number) Dated: \_\_\_\_\_

Contractor hereby certifies that \_\_\_\_\_  
(Designer)

1. Is licensed or registered to perform professional engineering work in the state of \_\_\_\_\_  
(Location of Project)
2. Is qualified to design the \_\_\_\_\_  
(Item)  
specified in Section \_\_\_\_\_ of the subject contract;
3. Has designed \_\_\_\_\_ before;
4. Has prepared the design in full compliance with the applications and requirements of  
Section \_\_\_\_\_ of subject contract including all applicable laws, regulations, rules and  
codes; and
5. The work has been signed and sealed pursuant to the applicable state law.

FOR: \_\_\_\_\_  
(Contractor)

BY: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name and Title) Dated: \_\_\_\_\_

## SECTION 02160

### EXCAVATION SUPPORT

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. The Contractor shall properly design and furnish all labor and materials necessary and shall construct complete, all sheeting, bracing supports, and appurtenances required to perform the Work including sheet piling for construction of structures and buildings, trench support and cofferdams, permanent and temporary alike, as indicated on the Drawings and specified or as otherwise directed by the Engineer or required by agencies having jurisdiction over the Work.
- B. Wood timber or steel sheeting shall be used except where otherwise indicated, specified or directed by the Engineer and agencies having jurisdiction over the work.

##### 1.02 DESIGN RESPONSIBILITY

- A. The Contractor shall be fully responsible for providing complete and adequately designed sheeting as required and/or directed by the Engineer in accordance with the provisions set forth herein. The sheeting shall be designed to resist hydrostatic pressures in accordance with the Contractor's dewatering design.
- B. The Contractor shall engage, at his own expense, the services of a fully competent and qualified Professional Engineer, hereinafter referred to as the "Contractor's Engineer", registered in the State in which the Work is being constructed, for the design of all sheeting requirements to accomplish the Work specified, and for supervising the proper on-site installation associated therewith. The Contractor's Engineer shall be acceptable to the Engineer and demonstrate a minimum of ten (10) years documented experience in the field of sheeting design and implementation. Prior to the actual employment of the Contractor's Engineer, the Contractor shall submit to the Engineer, to the full extent deemed necessary, a detailed resume stating the Contractor's Engineer's professional qualifications, related experience and references, and if requested, examples of work similar to that required for the Work specified, for a general review by the Engineer and a means of documenting the requisite experience hereinbefore specified. Only after a satisfactory review of the Contractor's Engineer's overall qualifications by the Engineer in fulfillment of the requisite experience hereinbefore specified shall the Contractor finalize such employment and begin the design aspects of the Work.
- C. The Contractor's attention is directed to the fact the acceptance of the Contractor's Engineer and/or his/her qualifications by the Owner and/or Engineer shall not be an overall approval of the Contractor's Engineer nor the sheeting designs and methods of installation employed during the Work. It being understood that all sheeting requirements necessary to accomplish the Work specified and/or indicated on the Drawings shall be designed by and installed under the direct supervision of the Contractor's Engineer who shall ultimately and fully bear the responsibility for that Work.

### 1.03 QUALITY ASSURANCE

- A. The Contractor's Engineer shall provide and maintain throughout the sheeting installation and/or Work sufficient supervision and technical guidance to the Contractor for proper sheeting materials, equipment, operations and methods to the extent necessary to assure strict compliance with the Contractor's Engineer's design, all safety procedures and standard requirements for such Work, and the successful completion of the Work. Failure to provide and/or maintain such supervision and/or technical guidance during the Work shall in no way relieve the Contractor's Engineer and/or the Contractor from their overall responsibilities and obligations under the Contract, nor shall it be a basis for any claim by either against the Owner and/or Engineer.
- B. The Contractor and Contractor's Engineer shall fully indemnify and save harmless the Owner and Engineer and their agents, employees and representatives, from and against any and all claims as stipulated under the Agreement, whether directly or indirectly arising out of, relating to or in connection with the Work.
- C. Quality assurances and proper safety procedures must be maintained at all times and be in strict accordance with the Contractor's Engineer's requirements and consistent with all federal, state and local regulatory agencies having jurisdiction over the Work. Should any conflict in requirements, regulations, restrictions or codes exist between that which is specified by the Contractor's Engineer and any federal, state or local agency, the more stringent application shall prevail.

### 1.04 PRODUCTS AND DESIGN CRITERIA

- A. The overall sheeting design, quality of materials and methods of installation for all sheeting applications necessary to accomplish the Work specified shall be consistent with the established standards of the construction industry and must, as a minimum, comply with the requirements for earth support systems for excavations as defined by current US Department of Labor, Occupational Safety and Health Act (OSHA) regulation applicable thereto, and any other federal, state and local agencies having jurisdiction and/or requirements pertaining thereto including Building Code requirements for the State in which the work is being performed. The design and implementation thereof shall be in accordance with sound engineering practice and modern accepted principles of soil mechanics, and shall include the effects of hydrostatic forces and all surcharge loads which may be reasonable anticipated. The methods employed shall be to the extent necessary to permit the proper and satisfactory installation and construction of the Work specified; to withstand all loads and forces encountered; to provide soil restraint and control of water as required; to insure the safety of the workers and all other personnel on or near the site; to prevent injurious caving or erosion, or loss of ground; to maintain at all times proper and safe pedestrian, vehicular traffic on public and private streets, property and rights-of-way; and to stabilize unforeseen areas of work encountered during the execution of the Work as deemed necessary by the Owner and/or Engineer.
- B. The Contractor and Contractor's Engineer's attention is directed to the fact that should any additional investigations, subsurface explorations and/or other appurtenant information be required to fulfill the needs of this design, as determined by the Contractor's Engineer above and beyond that which is already provided under these Contract Documents, the Contractor shall obtain all such information and data required at his own expense.

## 1.05 SHOP DRAWINGS AND/OR DESCRIPTIVE LITERATURE

- A. Prior to the installation of any sheeting, the Contractor shall submit to the Engineer for documentation ONLY, complete sheeting layout and detail drawings and sheeting descriptions bearing the Contractor's Engineer's State of Rhode Island Professional Seal and signature. Said submission shall be for informational purposes only as a means of documenting the work to be performed and will not be considered an approval or disapproval of the design and/or the implementation thereof. This submission will not relieve the Contractor of the sole responsibility for the adequacy of the system nor shall it be construed as an approval or guarantee that the Contractor's proposed equipment, materials and methods for the sheeting, bracing or appurtenances will be adequate for the work required at the locations of and for the Work required by this Contract.
- B. Included as part of this submission, the Contractor's Engineer must provide a complete listing of all references, codes and specifications used by the Contractor's Engineer and required by any federal, state or local agency having jurisdiction, and to which the sheeting design conforms.
- C. Specific design calculations are not to be submitted to the Engineer. In the event design calculations are submitted to the Engineer, they shall be returned to the Contractor without review or checking by the Engineer.

## 1.06 CERTIFICATE OF DESIGN

- A. The Contractor's special attention is directed to the required "Certificate of Design", the form of which is provided at the end of this Section. The Contractor and Contractor's Engineer shall complete this "Certificate" in its entirety for each location of work to be done, and any revisions associated there with, and submit it simultaneously with, as an integral part thereof, the sheeting submission. Any submission made without the completed "Certificate", appropriately signed and sealed, shall be returned to the Contractor. The Owner and/or Engineer hereby reserves the right to delay sheeting work and/or any work associated with, or dependent upon, the proper implementation of sheeting, without cause for claim against the Owner or Engineer, until a complete and appropriate submission is rendered. This Certification shall indicate that the sheeting, bracing and all appurtenances related thereto are designed to withstand the required loads, forces to be encountered, and to provide soil and water control, and are in compliance with these specifications and all federal, state or local agencies having jurisdiction over the Work to be performed.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Timber sheeting and bracing:
  - 1. Timber sheeting and bracing may be of any species of wood which will satisfactorily withstand all driving and construction stresses and the loads to which the members will be subjected. Sheeting shall not be less than 3 inches nominal thickness and shall be provided with continuous interlocks. All timber sheeting and bracing shall be free from

worm-holes, windshakes, loose knots, decayed or unsound portions or other defects which might impair its strength or tightness.

B. Steel sheeting:

1. The shapes, sizes, and lengths of steel sheeting to be utilized are optional with the Contractor, providing they are satisfactory to withstand all driving and construction stresses and provided with continuous interlocks.

C. Bracing, Hardware and Fastenings:

1. Bracing and other supports whether of steel or of timber, shall be of the strength and dimensions necessary to satisfactorily withstand the loads to which they will be subjected. All bracing and other supports shall be free from any defects which might impair this strength. The Contractor shall provide all necessary hardware and fastenings necessary in connections with satisfactory installation of all sheeting and bracing.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. The Contractor shall be fully responsible for ensuring adequate safety measures are provided at all times and shall comply with all safety requirements of federal, state and local agencies having jurisdiction over the Work. Installation of the sheeting including all bracing, supports and appurtenances, shall be adequate to permit the performance of the Work and be in accordance with the requirements of the Contractor's Engineer and the sheeting design associated therewith.
- B. Any movements of sheeting and/or appurtenances which prevent the proper completion of the work shall be corrected at the expense of the Contractor.
- C. Sheeting shall be installed in a manner which will prevent the disturbance of the surrounding surface, subsurface conditions and/or structures. Any such disturbances shall be corrected at the Contractor's expense and to the satisfaction of the Engineer.

### 3.02 REMOVAL

- A. All sheeting shall be removed except as shown on the Contract Drawings or directed by the Engineer.
- B. All sheeting approved for removal by the Engineer shall become the property of the Contractor.
- C. All restoration and clean up shall be as indicated and as specified.

# CERTIFICATE OF DESIGN

\_\_\_\_\_  
(Owner)

Contract Reference: \_\_\_\_\_  
\_\_\_\_\_, dated \_\_\_\_\_.

In accordance with the provisions of the above referenced Contract, as the designated Contractor,

\_\_\_\_\_  
\_\_\_\_\_  
(Contractor's Name and Address)

hereby certifies that \_\_\_\_\_

\_\_\_\_\_  
(Contractor's Engineer's Name and Address)

- (1) Is properly licensed and currently registered as a Professional Engineer in the State (or Commonwealth) of \_\_\_\_\_;
- (2) Is fully qualified to design and supervise the \_\_\_\_\_

\_\_\_\_\_  
(Item of work and location)

In accordance with the provision specified under the appropriate Section and/or Subsections of the Contract Documents:

- (3) Has successfully designed and supervised \_\_\_\_\_

\_\_\_\_\_  
(Item of work)

before and demonstrates a minimum of ten (10) documented years of proven experience in such field;

- (4) Has personally examined the type(s) and locations(s) of the Work required under this Contract, and the overall conditions associated therewith, to the extent necessary to fully satisfy his or her professional responsibilities for designing and supervising the above referenced work;

- (5) Has prepared the attached design in full compliance with the applications and requirements of the Contract Documents, sound engineering practice, modern accepted principles of construction, and all applicable federal, state and local laws, regulations, rules and codes having jurisdiction over the Work;
- (6) Will provide sufficient supervision and technical guidance to the Contractor throughout the Work to ensure compliance with the design and all quality assurances necessary to successfully complete the Work;
- (7) Hereby indemnifies and holds harmless the \_\_\_\_\_  
\_\_\_\_\_ and BETA Group, Inc.,  
(name of owner)  
and their agents, employees and representatives, from and against any and all claims, whether directly or indirectly, arising out of, relating to or in connection with the Work; and
- (8) This "Certificate of Design" together with all applicable designs, drawings, details, specifications on other related documents necessary to complete the Work as specified, have been signed and sealed pursuant to applicable state law.

In recognition and observance of the above referenced statements, the undersigned parties hereby acknowledge and accept the responsibilities and obligations associated therewith.

CONTRACTOR:

\_\_\_\_\_  
(Contractor's Name)

By: \_\_\_\_\_

\_\_\_\_\_  
(Name and Title)

Date: \_\_\_\_\_

(SEAL)

CONTRACTOR'S ENGINEER:

\_\_\_\_\_  
(Engineer's Name)

By: \_\_\_\_\_

\_\_\_\_\_  
(Name and Title)

Date: \_\_\_\_\_

(P.E. STAMP)



(Note: Contractor to fully reference all attachments below)

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END OF SECTION

## SECTION 02200

### EARTH EXCAVATION, BACKFILL, FILL AND GRADING

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

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

###### B. Related Sections

1. Section 01025 - Measurement and Payment
2. Section 01410 - Testing Laboratory Services
3. Section 02140 – Dewatering
4. Section 02149 – Maintaining Existing Flow
5. Section 02160 – Excavation Support
6. Section 02215 - Aggregate Materials
7. Section 03300 - Cast-In-Place Concrete

##### 1.02 REFERENCES

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

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).

##### 1.03 MEASUREMENT AND PAYMENT PROCEDURES

###### A. Test Pits

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

## 1.04 QUALITY ASSURANCE

### A. Field Samples

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

## 1.05 PROJECT/SITE CONDITIONS

### A. Existing Conditions

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

## 1.06 MAINTENANCE

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

## PART 2 PRODUCTS

## 2.01 MATERIALS

### A. Suitable Aggregate

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

### B. Trench and Excavation Backfill

1. In general, and unless other material is indicated on drawings or specified, material used for backfilling trenches and excavations shall be suitable material which was removed in the course of making the construction excavations. If sufficient suitable material is not available from the excavations, the backfill material shall be crushed stone, gravel borrow or select borrow as directed by the Engineer, in according to respective Specification Sections.

### C. Structure Backfill

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

### D. Filling and Embankment Backfill

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

### E. Additional materials

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

## 2.02 EQUIPMENT

### A. Well Points

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

### B. Pumping Units

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

### C. Underdrain Pipe

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

## 2.03 SOURCE QUALITY CONTROL

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

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify all existing utilities and facilities prior to excavation.

### 3.02 PROTECTION

#### A. Utilities

1. Support and protect from damage existing pipes, poles, wires, fences, curbing, property line markers, and other structures, which the Engineer decides must be preserved in place without being temporarily or permanently relocated.
2. Restore items damaged during construction without compensation, to a condition at least equal prior to construction.

#### B. Trees

1. Enclose the trunks of trees adjacent to work with substantial wooden boxes of height necessary to protect trees from injury from piled material, equipment, operations or otherwise.
2. Employ excavating machinery and cranes of suitable type and size and operate with care to prevent injury to trees not to be cut and particularly to overhanging branches and limbs.
3. When trimming is required, make all cuts smooth and neat without splitting or crushing.
4. Cover cut areas with an application of grafting wax or tree healing paint.
5. Branches, limbs, and roots shall not be cut except by permission of the Engineer.

#### C. Plantings

1. Protect by suitable means or temporarily replant and maintain cultivated hedges, shrubs, and plants which may be injured by the Contractor's operations
2. Replant in their original positions and care for until growth is re-established, once the construction operations have been substantially completed.
3. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to which existed prior to the start of the Work.

#### D. Paved surfaces

1. Do not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels shaped as to cut or injure paved surfaces.
2. All surfaces which have been injured by the Contractor's operations shall be restored to a condition at least equal to which existed prior to start of the Work.
3. Suitable materials and methods shall be used for such restoration.

### 3.03 PREPARATION

#### A. Pavement Removal

1. Remove only existing pavement as necessary for the prosecution of the work.
2. Engineer may require that pavement be cut with pneumatic tools or saws without extra compensation to Contractor, where in the opinion of the Engineer it is necessary to prevent damage to the remaining road surface.
3. Dispose of large pieces of broken pavement before proceeding with excavation.

#### B. Top Soil Removal

1. Unless otherwise noted, from areas which excavations are to be made, loam and topsoil shall be carefully removed and separately stored to be used again as directed; or, if the Contractor prefers not to separate surface materials, he shall furnish, as directed, loam and topsoil at least equal in quantity and quality to that excavated, at no cost to the owner.

#### C. Subgrade

1. Remove loam and topsoil, loose vegetable matter, stumps, large roots, etc., from areas where embankments will be built or material will be placed for grading.
2. Shape as indicated on the drawings and prepare by forking, furrowing, or plowing to bond first layer of the new material placed.

### 3.04 RELOCATION AND REPLACEMENT OF EXISTING STRUCTURES

- A. The structures to which the provisions of this article apply include pipes, wires, and other structures which meet all of the following:
  1. Are not indicated on the drawings or otherwise provided for.
  2. Encroach upon or are encountered near and substantially parallel to the edge of the excavation.
  3. In the opinion of the Engineer will impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced.

- B. In removing existing pipes or other structures, the Contractor should use care to avoid damage to materials, and the Engineer shall include for payment only those new materials which, in his judgment, are necessary to replace those unavoidably damaged.
- C. Whenever the Contractor encounters certain existing structures as described above and is so ordered in writing, he shall do the whole or such portions of the work as he may be directed to change the location of, remove and later restore, or replace such structures, or to assist the Owner thereof in so doing. For all such work, the Contractor shall be paid under such items of work as may be applicable, otherwise as Extra Work.
- D. When fences interfere with the Contractor's operations, he shall remove and (unless otherwise specified) later restore them to a condition which existed prior to the start of the Work, all without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

### 3.05 SHEETING AND BRACING

- A. Provide in accordance with specification Section 02160.

### 3.06 DEWATERING

- A. Provide in accordance with specification Section 02140.

### 3.07 EXCAVATION

- A. Execute operation of dewatering, sheeting and bracing without undermining or disturbing foundations of existing structures or of work previously completed under this contract.
- B. Excavate to widths that provide suitable room for:
  - 1. Building structures or laying and jointing piping.
  - 2. Placing all sheeting, bracing, and supports.
  - 3. Cofferdamming, pumping and draining.
- C. Render bottom of excavations firm, dry and acceptable in all respects.
- D. Do not plow, scrap or dig by machinery, earth at finished subgrade which results in disturbance of material below subgrade, unless indicated or specified, and remove with pick and shovel, last of material to be excavated, just before placing pipe, masonry or other structure.
- E. Make all excavations in open, except as otherwise specified or permitted.

#### F. Excavation Near Existing Facilities

1. As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools. Such manual excavation when incidental to normal excavation shall be included in the work to be done under items involving normal excavation.

#### G. Unauthorized Excavation

1. If the bottom of any excavation is taken out beyond the limits indicated or prescribed, the resulting void shall be backfilled at the Contractor's expense with thoroughly compacted gravel borrow, if the excavation was for a pipeline, or with Class B concrete, if the excavation was for a masonry structure.

#### H. Unsuitable Material

1. If material unsuitable for foundation (in the opinion of the Engineer) is found at or below the grade to which excavation would normally be carried in accordance with the drawings and/or specifications, the Contractor shall remove such material to the required width and depth and replace it with thoroughly compacted, crushed stone, gravel borrow, fine aggregate or concrete as directed.

### 3.08 TRENCHING

#### A. Trench Excavation

1. Where pipe is to be laid in specified bedding material or concrete cradle, the trench may be excavated by machinery to, or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed, as approved by the Engineer.
2. Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery, but, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

#### B. Depth Of Trench

1. Excavate trench to depths permitting the pipe to be laid at the elevations, slopes, or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.



### C. Width Of Trench

1. Excavate trench as narrow as practicable and do not widen by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.
2. Excavate trenches with approximately vertical sides between the elevation of the center of the pipe and an elevation 1 ft. above the top of the pipe.

### D. Trench Excavation In Fill

1. If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to a height of at least 1 ft. above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall then be excavated as though in undisturbed material.

- E. Length of trench open at any one time will be controlled by conditions, subject to any limits that may be prescribed by Engineer.

## 3.09 BACKFILLING

### A. General

1. Frozen material shall not be placed in the backfill nor shall backfill be placed upon frozen material. Previously frozen material shall be removed or shall be otherwise treated as required, before new backfill is placed.

### B. Fill And Backfill Under Structures

1. The fill and backfill materials shall be placed in layers not exceeding 6 in. in thickness. Unless otherwise indicated or specified, each layer shall be compacted to 95 percent in accordance with ASTM D1557.

### C. Backfilling Around Structures

1. Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking, or other damage. As soon as practicable after the structures are structurally adequate and other necessary work has been done, special leakage tests, if required, shall be made. Promptly after the completion of such tests, the backfilling shall be started and then shall proceed until its completion. The best of the excavated materials shall be used in backfilling within 2 ft. of the structure. Unequal soil pressures shall be avoided by depositing the material evenly around the structure.
2. The material shall be placed and compacted to 90 percent in accordance with ASTM D1557 unless otherwise indicated or specified.

#### D. Backfilling Pipe Trenches

1. As soon as practicable after the pipes have been laid and the joints have acquired a suitable degree of hardness, if applicable, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started and thereafter it shall proceed until its completion.
2. With the exception mentioned below in this paragraph, trenches shall not be backfilled at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights and barricades and the obstruction of traffic, he may, at his own risk backfill the entire trench, omitting or including backfill at joints as soon as practicable after the joints have acquired a suitable degree of hardness, if applicable, and the related structures have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.
3. No stone or rock fragment larger than 12 in. in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than 5 ft. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.
4. Zone Around Pipe
  - a. Backfilled with the materials and to the limits indicated on the drawings.
  - b. Material shall be compacted to 90 percent by tamping.
5. Remainder of Trench
  - a. Compact by water-jetting, or tamping, in accordance with the nature of the material to 95 percent in accordance with ASTM D1557. Water-jetting may be used wherever the material does not contain so much clay or loam as to delay or prevent satisfactory drainage. However, tamping shall be used if water-jetting does not compact the material to the density required.
6. Excavated material which is acceptable to the Engineer for surfacing or pavement subbase shall be placed at the top of the backfill to such depths as may be specified elsewhere or as directed. The surface shall be brought to the required grade and stones raked out and removed.

#### E. Placing And Compacting Embankment Material

1. After the subgrade has been prepared as hereinbefore specified, the material shall be placed thereon and built up in successive layers until it has reached the required elevation.

2. Layers shall not exceed 12 in. in thickness before compaction. In embankments at structures, the layers shall have a slight downward slope away from the structure; in other embankments the layers shall have a slight downward slope away from the center. In general, the finer and less pervious materials shall be placed against the structures or in the center, and the coarser and more pervious materials, upon the outer parts of embankments.
3. Each layer of material shall be compacted by the use of approved rollers or other approved means so as to secure a dense, stable, and thoroughly compacted mass. At such points as cannot be reached by mobile mechanical equipment, the materials shall be thoroughly compacted by the use of suitable power-driven tampers.
4. Previously placed or new materials shall be moistened by sprinkling, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or too great an application of water, to compact it properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compaction, or such other precautions shall be taken as may be necessary to obtain proper compaction.
5. The portion of embankments constructed below proposed structures shall be compacted to 95 percent in accordance with ASTM D1557. The top 2 ft. of an embankment below a pavement base shall be compacted to 95 percent. All other embankments shall be compacted to 90 percent in accordance with ASTM D1557.

### 3.10 METHODS OF COMPACTION

#### A. Water-Jetting

1. Saturate backfill material throughout its full depth and at frequent intervals across and along the trench until all slumping ceases.
2. Furnish one or more jet pipes, each of sufficient length to reach the specified depth and of sufficient diameter (not less than 1-1/4 in.) to supply an adequate flow of water to compact the material.
3. Equip jet pipe with a quick-acting valve, supply water through a fire hose from a hydrant or a pump having adequate pressure and capacity to achieve the required results.

#### B. Tamping and Rolling

1. Deposit backfill material and spread in uniform, parallel layers not exceeding 8 in. thick before compaction. Before the next layer is placed, each layer shall be tamped to obtain a thoroughly compacted mass. Care shall be taken that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively

and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers, tractors, or similar power equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling, and compacting.

2. If necessary to ensure proper compaction by tamping (or rolling), the backfill material shall first be wet by sprinkling. However, no compaction by tamping (or rolling) shall be done when the material is too wet either from rain or too great an application of water to be compacted properly; at such times the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compacting, or such other precautions shall be taken as may be necessary to obtain proper compaction.

C. Miscellaneous Requirements.

1. Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be completely filled with fine material. Only suitable quantities of stones and rock fragments shall be used in the backfill; the Contractor shall, as part of the work done under the items involving earth excavation and rock excavation as appropriate, furnish and place all other necessary backfill material.
2. All voids left by the removal of sheeting shall be completely backfilled with suitable materials, and thoroughly compacted.

3.11 DISPOSAL OF SURPLUS EXCAVATED MATERIALS

- A. No excavated materials shall be removed from the site of the work or disposed of by the Contractor except as directed or permitted by the Engineer.
- B. Surplus excavated materials suitable for backfill shall be used to backfill normal excavations in rock or to replace other materials unacceptable for use as backfill; shall be neatly deposited and graded so as to make or widen fills, flatten side slopes, or fill depressions; or shall be neatly deposited for other purposes within a haul of 1 mile from the point of excavation; all as directed or permitted and without additional compensation. Prior to re-use of in-situ material, the material shall be tested to determine if the material meets the requirements of applicable Specification Section for crushed stone, gravel borrow, or select borrow.
- C. Surplus excavated materials not needed as specified above shall be hauled away and dumped by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him.

3.12 DUST CONTROL

- A. During the progress of the Work, maintain the area of activities, by sweeping and sprinkling of streets to minimize the creation and dispersion of dust. If the Engineer

decides that it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.

### 3.13 BRIDGING TRENCHES

- A. Provide suitable and safe bridges and other crossings where required for the accommodation of travel, and to provide access to private property during construction. Remove once bridges and crossings are no longer needed.

### 3.14 FIELD QUALITY CONTROL

#### A. Site Tests

- 1. In accordance with SECTION 01410

### 3.15 CARE AND RESTORATION OF PROPERTY

- A. Restoration of existing property or structures shall be completed within 5 business days of completing the work within the property. and not left until the end of the construction period.

END OF SECTION

## SECTION 02210

### ROCK EXCAVATION

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for removal and disposal of rock.

###### B. Related Sections

1. Section 00500-Agreement
2. Section 00800- Supplementary Conditions
3. Section 02200-Earth Excavation, Backfill, Fill and Grading

##### 1.02 DEFINITIONS

- ###### A. Rock-as defined in SECTION 00500.

##### 1.03 REQUIREMENTS

- ###### A. Excavate rock if encountered, to the lines and grades indicated on the drawings or as directed, dispose of the excavated material, and furnish acceptable material for backfill in place of the excavated rock.
- ###### B. Excavate rock in pipe trenches to a limit which provides 6-inches clearance minimum from the pipe after it has been laid. Before the pipe is laid, the trench shall be backfilled to the correct subgrade with thoroughly compacted, suitable material or, when so specified or indicated on the drawings, with the same material as that required for bedding the pipe, furnished and placed at the expense of the Contractor.
- ###### C. The use of explosives will not be allowed.

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

##### 3.01 EXCESS ROCK EXCAVATION

- ###### A. If rock is excavated beyond the limits of payment indicated on the drawings, specified, or authorized in writing by the Engineer, the excess excavation, whether resulting from overbreakage or other causes, shall be backfilled, by and at the expense of the Contractor, as specified below in this section.

- B. In pipe trenches, excess excavation below the elevation of the top of the bedding, cradle, or envelope shall be filled with material of the same type, placed and compacted in the same manner, as specified for the bedding, cradle, or envelope. Excess excavation above said elevation shall be filled with earth as specified in the article titled "Backfilling Pipe Trenches" in SECTION 02200.
- C. In excavations for structures, excess excavation in the rock beneath foundations shall be filled with 3000 psi concrete. Other excess excavation shall be filled with earth as specified in the article titled "Backfilling Around Structures" in SECTION 02200.

### 3.02 SHATTERED ROCK

- A. If the rock below normal depth is shattered, and the Engineer considers such shattered rock to be unfit for foundations, the shattered rock shall be removed and the excavation shall be backfilled with concrete as required, except that in pipe trenches screened gravel shall be used for backfill. All such removal and backfilling shall be done by and at the expense of the Contractor.

### 3.03 PREPARATION OF ROCK SURFACES

- A. Whenever so directed during the progress of the work, remove all dirt and loose rock from designated areas and shall clean the surface of the rock thoroughly, using steam to melt snow and ice, if necessary. Water in depressions shall then be removed as required so that the whole surface of the designated area can be inspected to determine whether seams or other defects exist.
- B. The surfaces of rock foundations shall be left sufficiently rough to bond well with the masonry and embankments to be built thereon, and if required, shall be cut to rough benches or steps.
- C. Before any masonry or embankment is built on or against the rock, the rock shall be scrupulously freed from all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means shall be used to accomplish this cleaning. Remove free water left on the surface of the rock.

### 3.04 REMOVAL OF BOULDERS

- A. Remove piles of boulders and loose rock encountered within the limits of earth embankments and dispose in a suitable place.

### 3.05 DISPOSAL OF EXCAVATED ROCK

- A. All excavated rock shall be handled, transported and disposed of by the Contractor, at his expense, at appropriate locations, and in accordance with arrangements made by him without additional cost to the Owner.
- B. Excavated rock may be used in backfilling trenches subject to the following limitations:
  - 1. Pieces of rock larger than permitted under the article titled "Backfilling Pipe Trenches" in SECTION 02200 shall not be used for this purpose.

2. The quantity of rock used as backfill in any location shall not be so great as to result in the formation of voids.
  3. Rock backfill shall not be placed within 36 in. of the surface of the finish grade.
- C. Surplus excavated rock shall be disposed of as specified for surplus excavated material as specified in SECTION 02200.

### 3.06 BACKFILLING ROCK EXCAVATIONS

- A. Where rock has been excavated and the excavation is to be backfilled, the backfilling above normal depth shall be done as specified in SECTION 02200. If material suitable for backfilling is not available in sufficient quantity from other excavations, the Contractor shall, at his own expense, furnish suitable material from outside sources.

END OF SECTION



## SECTION 02215

### AGGREGATE MATERIALS

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for furnishing and placing materials, which include Crushed Stone, Gravel Borrow and Common Borrow.
2. Location of specified materials as detailed on the Drawings or as directed by the Engineer for excavation below normal depth, utility support, replacement of unsuitable material or elsewhere, as ordered.

###### B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading.
2. Section 02500 - Paving

##### 1.02 REFERENCES

###### A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification.

1. Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, together with all errata addenda additional revisions, and supplemental specifications, (referred to as Standard Specification).

###### B. American Association of State Highway and Transportation Officials (AASHTO).

1. T11, Amount of Material Finer than 0.075 mm Sieve in Aggregate
2. T27, Sieve Analysis of Fine and Coarse Aggregates.

###### C. American Society for Testing and Materials (ASTM).

1. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).

##### 1.03 DEFINITIONS

###### A. The term Screened Gravel as used in the Contract Documents shall mean Crushed Stone.

##### 1.04 SUBMITTALS

###### A. Shop Drawings

1. Provide sieve analysis when gradation requirements are given in the Specification.

B. Samples

1. Furnish representative sample including location of source with Shop Drawing transmittal sheet.

1.05 QUALITY ASSURANCE

A. Field Samples

1. The attention of the Contractor is directed to the fact that under Specification SECTION 00700, 1.03 Materials and Equipment, all materials furnished by the Contractor to be incorporated into the Work shall be subject to the inspection of the Engineer. The Engineer shall be the sole judge as to the acceptability of proposed materials and said judgement shall be final, conclusive, and binding.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. In accordance with Specification SECTION 00700, 1.03 Materials and Equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. Crushed Stone

1. For bedding and pipe zone material for pipe larger than 3 inches diameter. Well graded in size from 3/8 inches to 3/4 inches or such other sizes as may be approved.
2. For bedding and pipe zone material for plastic pipe 3 inches diameter and less, maximum particle size shall be 3/8 inches.
3. Clean, hard, and durable particles or fragments, free from dirt, vegetation, or other objectionable matter, and free from an excess of soft, thin elongated, laminated or disintegrated pieces.
4. Screened Stone of similar size and grading to this specification may be used instead of Crushed Stone.

B. Crushed Stone Under Structures

1. Crushed stone material must meet the requirements set forth in the Standard Specifications.

C. Gravel Borrow

1. Shall be in accordance with the RIDOT Standard Specifications, Section M01.09, Table 1, Column 1b.

D. Common Borrow

1. Shall meet RIDOT Standard M01.01 Common Borrow.

E. Gravel Base Course

1. Shall be in accordance with the RIDOT Standard Specifications, Section M01.09, Table 1, Column 1b.

F. Suitable Material

1. Shall meet RIDOT Standard M01.01 Common Borrow.

2.02 SOURCE QUALITY CONTROL

A. Test, Inspection

1. Engineer may elect to sample material supplied at the source.
2. Assist the Engineer and/or personnel from the designated testing laboratory in obtaining samples.

PART 3 EXECUTION

3.01 INSTALLATION

A. Crushed Stone

1. Spread in layers of uniform thickness not greater than 6 inches.
2. Compact thoroughly by means of a suitable vibrator or mechanical tamper.

B. Gravel Borrow

1. Spread in layers of uniform thickness not exceeding 12 inches before compaction and moistened or allowed to dry as directed.
2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment.
3. Compaction shall conform to 95% of minimum dry density per ASTM D1557.
4. The percolation rate for the compacted bank-run gravel shall not exceed 5 minutes per inch.

C. Common Borrow/Suitable Material

1. Spread in layers of uniform thickness not exceeding 12 in. (loose lift) before compaction and moistened or allowed to dry.
2. Compact thoroughly by means of suitable power-driven tampers or other power-driven equipment unless otherwise directed by the Engineer.

3.02 FIELD QUALITY CONTROL

A. Material and compaction testing

1. In accordance with SECTION 01410.

END OF SECTION

## SECTION 02500

### PAVING

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for construction of all temporary and permanent pavement on paved areas affected or damaged by his operations, whether inside or outside the normal trench limits, as indicated on the drawings and as herein specified.

###### B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading

##### 1.02 REFERENCES

- ###### A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification prior to preparation and installation of any pavements.

1. Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition including all addenda, issued by the State of Rhode Island Department of Transportation, (referred to as the Standard Specification).

###### B. American Society for Testing and Materials

1. C117 Standard Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
2. C136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

##### 1.03. PAVEMENT SCHEDULE

- ###### A. The Contractors attention is directed to the various pavements required under this contract, and their locations as detailed below.

- ###### B. All pavement thickness specified in this specification shall be of the thickness required after compaction.

#### **Pavement:**

Description:	Pavement
Requirements:	2" Class 9.5 HMA Base Course
	3" Class 12.5 HMA Surface Course
	8" Gravel Base Course (Minimum)

## PART 2 PRODUCTS

### 2.01 MATERIALS

#### A. Asphalt Tack

1. Tack coat shall consist of emulsified asphalt, grade RS-1 or cutback asphalt grade RC-70 conforming to the requirements of the Rhode Island Standard Specification Section 403 and M03.01.

#### B. Bituminous Base

1. Bituminous Base shall conform to the requirements of the Rhode Island Standard Specification Section 401 and Class 12.5 HMA for Base Course.

#### C. Bituminous Surface

1. Bituminous Surface Course shall conform to the requirements of the Rhode Island Standard Specification Section 401 and Class 9.5 HMA for Surface Course.

#### D. Temporary Trench Patch

1. Temporary Pavement shall be Temporary Patching Material conforming to the requirements of the State of Rhode Island Standard Specification, Subsection 410, Class 9.5 HMA, and M03.04 for High Performance Cold Patching Material.

#### E. Gravel Base Course

1. Gravel base course in accordance with State of Rhode Island Standard Specification, Subsection M01.09, Meeting the gradation requirements of Table 1, Column 1, with 100% passing 3-inch Square Mesh Sieves.

### 2.02 SOURCE QUALITY CONTROL

- A. The paving plant used by the Contractor for preparation of bituminous paving materials shall be acceptable to the Engineer who shall have the right to inspect the plant and the making of the material.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Prior to placing pavement, all backfill shall have been properly compacted as specified under SECTION 02200 to eliminate settling of backfill. No pavement shall be placed over poorly compacted backfill. Backfill and gravel base course shall be compacted, brought to the proper elevation, and dressed so that new pavement construction shall be at the required grade. The Contractor shall maintain the surfaces of all excavated and disturbed areas until the pavement is placed. If there is a time lapse of more than 24 hours between completion of preparation of subgrade or placing of gravel base course and placing of paving, or if subgrade or gravel base

course has been eroded or disturbed by traffic, the subgrade or gravel base course shall be restored before placing pavement.

- B. When installing permanent pavement on bituminous concrete roadway the edges of existing pavement shall be cut back 12-inches, or more as required, from the trench excavation wall or damaged area to sound undamaged material, straightened, cleaned, and painted with an accepted asphalt emulsion to ensure a satisfactory bond between it and the newly placed surface courses. Existing surface courses shall be stripped from the bituminous concrete base course for at least a 6-inch width and trimmed square and straight so that new permanent surfacing shall be placed on undisturbed bituminous concrete base course. Existing pavement shall be swept clean prior to placing any asphalt emulsion over it. Existing pavement that will be under new pavement shall be painted with asphalt emulsion to ensure a satisfactory bond.
- C. Before permanent pavement is installed, the base shall be brought to the proper grade, and temporary pavement and excess gravel base shall be removed.
- D. All manhole covers, catch basin grates, valve and meter boxes, curbs, walks, walls and fences shall be adequately protected and left in a clean condition. Where required, the grades of manhole covers, catch basin grates, valve boxes, and other similar items shall be adjusted to conform to the finished pavement grade.
- E. Contractor shall remove and acceptably dispose of all surplus and unsuitable material.
- F. The bituminous base course within the trench shall be brought to the surface (total 5-inches of base course installed).
- G. Existing pavement shall be swept clean prior to placing any asphalt emulsion over it. Existing pavement that will be under new pavement shall be painted with asphalt emulsion to ensure a satisfactory bond.
- H. Temporary trench patch shall be installed at the end of each working day, no open trenches will be allowed overnight unless otherwise approved by the Engineer.

### 3.02 INSTALLATION

- A. General
  - 1. All construction methods and materials shall be satisfactory to the Engineer.
  - 2. Unless indicated otherwise, all permanent bituminous pavements shall be installed in two courses or more. Bituminous base courses shall be carefully spread and raked to a uniform surface and thoroughly rolled before application of the top course.
  - 3. All top courses of permanent paving shall be applied with acceptable mechanical spreaders in widths of at least 9 feet.

4. The rolling for all bituminous and gravel base courses shall conform to the standards listed in the appropriate Subsection of the Standard Specification.
5. Pavement shall be placed so that the entire roadway or paved area shall have a true and uniform surface, and the pavement shall conform to the proper grade and cross section with a smooth transition to existing pavement.

B. Gravel Base Course

1. The gravel base shall be placed to such depth that the furnished compacted gravel base course is the depth as indicated on the drawings and specified herein.
2. The top of the compacted gravel base shall be below the furnish grade a distance required to accommodate the compacted pavement material as indicated on the drawings and specified herein.

C. Bituminous Base

1. Bituminous Base shall be used in city streets and parking areas as listed in Article 1.03 of this specification.
2. Bituminous Base shall be placed to the thickness as indicated in Article 1.03 of this Specification and installed in accordance with the requirements of the Standard Specification and as detailed in the Contract Drawings.

D. Permanent Pavement Patch

1. Permanent pavement patch shall be placed over all trenches in paved areas where directed by the Engineer.
2. The Contractor, shall install the permanent trench patch upon the removal of the temporary trench patch, completing the backfilling and compaction of the trenches in the streets and the placing of the gravel base course.
2. Maximum pavement thickness per course not to exceed 3 inches.
3. Permanent Pavement Patch shall be placed in two courses and shall consist of 4-inch compacted thickness of Class 12.5 HMA Base Course, on a 12-inch compacted thickness gravel base as directed by the Engineer.
4. Contractor to vary pavement thickness to maintain a minimum cross sectional slope equaling 0.02 ft/ft.
5. Cut back distances shall be directed by the Engineer, however under no circumstances less than the minimum indicated in the chart below.

E. Temporary Pavement Patch

1. Temporary pavement shall be placed over all trenches in paved areas where directed by the Engineer.
2. The Contractor, upon completing the backfilling and compaction of the trenches in the streets and the placing of the gravel base course, shall be required to construct temporary pavement at the end of each day.
2. Maximum pavement thickness per course not to exceed 3 inches.
3. Temporary Pavement Patch shall be placed in one course and shall consist of a 3-inch compacted thickness of Class 9.5 HMA Surface Course, on a 12-inch compacted thickness gravel base as directed by the Engineer.
4. Contractor to vary pavement thickness to maintain a minimum cross sectional slope equaling 0.02 ft/ft.

5. Cut back distances shall be directed by the Engineer, however under no circumstances less than the minimum indicated in the chart below.

MAXIMUM PAVEMENT LIMITS				
DIAMETER OF PIPE D IN INCHES	TRENCH WIDTH IN FEET		PERMANENT TRENCH PAVEMENT WIDTH IN FEET*	
	TRENCH DEPTH		TRENCH DEPTH	
	< OR = 10'	> 10' TO 20'	< OR = 10'	> 10' TO 20'
12 AND SMALLER	5.00	6.00	8.00	9.00
15	5.25	6.25	8.25	9.25
18	5.50	6.50	8.50	9.50
21	5.75	6.75	8.75	9.75
24	6.00	7.00	9.00	10.00
27	6.25	7.25	9.25	10.25
30	6.50	7.50	9.50	10.50
36	7.00	8.00	10.00	11.00
42	7.50	8.50	10.50	11.50
48	8.00	9.00	11.00	12.00
54	8.50	9.50	11.50	12.50
60	9.00	10.00	12.00	13.00
66	9.50	10.50	12.50	13.50
72	10.00	11.00	13.00	14.00

#### Notes

1. Temporary trench pavement includes 1' cut back of existing pavement along each side of the trench.
2. Trench depth measured from the existing ground surface to 6" below the bottom of the constructed pipe.
3. Quantities for pavement shall be in accordance with the above limits or the actual widths, whichever is less.

#### F. Bituminous Surface

1. Bituminous Surface shall be used in the streets as listed in Article 1.03 of this specification.
2. Bituminous Surface shall be placed to the thickness as indicated in Article 1.03 of this Specification and installed in accordance with the requirements of the Standard Specification and as detailed in the Contract Drawings.



#### G. Sidewalks, Driveways, Parking Lots and Curbing

1. Sidewalks, driveways, parking lots and curbing that are removed or damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they are found immediately prior to the start of operations. Materials and methods used for such restoration shall be in conformance with the requirements of the State of Rhode Island Standard Specification.
2. Where the trench location is in a sidewalk, the entire width of the sidewalk shall be replaced with new material. Side forms shall be set so as to obtain and preserve a straight edge along both sides of the walk.
3. Where trench is in a driveway, the driveway shall be repaved across its entire width with even edges.
4. Parking lots shall be repaved in accordance with Article 3.01 of this section.
5. Gravel base course under sidewalks and driveways shall not be less than 12" inch thick.

#### H. Surface Maintenance

1. During the guarantee period, the Contractor shall maintain the bituminous surface and shall promptly make good all defects such as cracks, depressions, and holes that may occur. At all times, the surfacing shall be kept in a safe and satisfactory condition for traffic. If defects occur in surfacing constructed by the Contractor, the Contractor shall remove all bituminous concrete and base course as is necessary to properly correct the defect. After removing bituminous concrete and base course, the Contractor shall correct the cause of the defect and replace the base course and bituminous concrete in accordance with these specifications.

END OF SECTION

## SECTION 02530

### RESTORATION OF CURB, SIDEWALKS AND VEGETATED AREAS

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for removal and replacement of granite curb, concrete and bituminous sidewalks including sidewalks at driveways and wheelchair ramps.
2. Requirements for restoration of vegetated areas, plantings and tree beds.
3. Requirements for construction of sidewalks in sensitive tree areas.
4. Restoration to include those areas designated by the Contract Drawings and those affected or damaged by the construction operations, outside the limits of Work.

###### B. Related Sections

1. Section 01060 – Regulatory Requirements
2. Section 02200 – Earth Excavation, Backfill, Fill and Grading

##### 1.02 REFERENCES

- A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification.
1. Materials and construction methods shall conform, insofar as applicable, to the requirements of the Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition, together with all errata addenda additional revisions, and supplemental specifications, (referred to as the Standard Specification).

##### 1.03 SUBMITTALS

###### A. Submit in accordance with Section 01300,

1. Sieve analysis for aggregates and loams.
2. Mix designs for batched materials.
3. Certifications for landscape material.
4. Samples when requested by the Engineer.

5. Submit with seed, certificates confirming seed mixture, purity, germinating value, and crop year identification.

## PART 2 PRODUCTS

### 2.01 MATERIALS

#### A. Gravel Borrow

1. In accordance with State of Rhode Island Standard Specification, Subsection M01.02, Meeting the gradation requirements of Table 1, Column 1, with 100% Passing 3-inch Square Mesh Sieves.

#### B. Concrete Curb

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M09.

#### C. Granite Curb

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M09.

#### D. Cement Concrete

1. In accordance with the requirements of the State of Rhode Island Standard Specification, Section M02.

#### E. Bituminous Concrete

1. In accordance with the requirements of the Rhode Island Standard Specification Section 401 for Surface Course, Class 12.5 HMA and the gradation requirements for Class 12.5 HMA or sidewalk in section M03.01.

#### F. Loam, Seed, Lime, Fertilizer, Mulch and Water

1. In accordance with Section M18 of the Rhode Island Standard Specification.

#### G. Plant Materials

1. In accordance with Section M18 of the Rhode Island Standard Specification.

### 2.02 SOURCE QUALITY CONTROL

- A. The plants used by the Contractor for preparation of bituminous paving materials and cement concrete shall be acceptable to the Engineer who shall have the right to inspect the plant and the making of the material.

## PART 3 EXECUTION

### 3.01 INSTALLATION/RESTORATION

A. Excavation to be in accordance with Section 02200 unless otherwise noted in the referenced specification below.

B. Granite Curb

1. Installing or Remove, Salvage and Reset granite curb at the locations indicated on the Drawings or as directed by the Engineer shall be in accordance with Section 906 of the State of Rhode Island Standard Specification.

C. Concrete Curb

1. Installation of concrete curb at the locations indicated on the Drawings or as directed by the Engineer shall be in accordance with Section 906 of the State of Rhode Island Standard Specification.

D. Bituminous Concrete Berm or Bituminous Concrete Curb

1. Installation of concrete curb at the locations indicated on the Drawings or as directed by the Engineer shall be in accordance with Section 906 of the State of Rhode Island Standard Specification.
2. Installation of bituminous concrete berm shall conform to Section 906.03.3 Method A of the Rhode Island Standard Specification.

E. Sidewalks

1. Installation of new or replacing existing sidewalks, driveways and wheelchair ramps at the locations shown on the Drawings or as directed by the Engineer to be in accordance with Section 905 of the State of Rhode Island Standard Specification.

F. Vegetated Areas, Plantings and Tree Beds

1. Restore all disturbed areas in accordance with the following Sections of the State of Rhode Island Standard Specification.
  - a. Loam in accordance with L01
  - b. Seeding in accordance with L02
  - c. Plantings and Tree Beds in accordance with L06 and L08

G. Tree Root Pruning

1. This work shall include both mechanical and manual pruning of existing tree roots in order to allow for the installation of drain lines and/or other work without causing extensive damage to the root system. Pruning work shall be performed at the locations indicated on the Plans or as directed by the Engineer.

2. All work shall be performed under direct on site supervision of the Engineer.
3. All work indicated on the plans or as directed by the Engineer shall be performed under direct on-site supervision of a Rhode Island Licensed Arborist (A copy of the arborist's current license must be given to the Engineer seven days in advance of the work beginning) and shall be retained by the Contractor.
4. Excavation shall proceed in shallow layers that do not exceed 4 inches in depth until the root system is located. The Contractor shall carefully hand dig the soil from the delineated areas taking care not to rip or otherwise damage the roots during excavation process.
5. Remove material taking special care not to damage underlying tree roots. The root system may be located directly existing surface in some areas. The Engineer must be present during work near tree roots.
6. Remove and dispose all debris immediately from the job site. No stockpiling of removed material will be allowed around the root zone of any tree.
7. The tree roots will not be allowed to remain uncovered for more than one (1) hour. Loam borrow will be placed over the tree roots until the final cover is installed. The roots will also be kept moist, and not allowed to dry out. Water shall be provided by the contractor until the actual surface is placed within the sidewalk area. Heavy equipment shall not be permitted to traverse the remaining root system.
8. The roots to be pruned shall be field verified prior to commencement of this item by the Contractor and the Engineer. Roots shall be pruned using hand equipment which must be disinfected, sharp, and approved by the Engineer. Manual root pruning limits may be extended to other areas within the project area at the discretion of the Engineer.

#### H. Restoration Limits

1. Where the trench location is in a sidewalk, the entire width of the sidewalk shall be replaced with new material. Side forms shall be set so as to obtain and preserve a straight edge along both sides of the walk.
2. Sidewalks shall be cut at existing joints or as directed otherwise by the Engineer.
3. Where trench is in a driveway, the driveway shall be repaved across its entire width with even edges.

#### I. Restoration Outside Limits of Work

1. Sidewalks, driveways, parking lots and curbing that are or damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they are found immediately prior to the start of operations. Materials and methods used for such restoration shall be in conformance with the requirements of the Standard Specification.
2. There shall be no cost to the Owner for this work.

J. Salvaged Granite Curb

1. All existing granite curb which remains unused at the end of the project shall be returned by the Contractor to the City of East Providence Department of Public Works. Coordinate delivery of unused curb with Department of Public Works personnel.

END OF SECTION

## SECTION 02599

### POROUS PAVEMENT

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements for this work consists of furnishing and installing porous pavement on prepared aggregate setting beds in conformance with the Plans and/or as directed by the Engineer, all in accordance with the Rhode Island Standard Specifications for Road and Bridge Construction, latest Edition.

###### B. Related Sections

1. Section 02200 - Earth Excavation, Backfill, Fill and Grading

##### 1.02 REFERENCES

###### A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification prior to preparation and installation of any pavements.

1. Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition including all addenda, issued by the State of Rhode Island Department of Transportation, (referred to as the Standard Specification).

###### B. American Society for Testing and Materials

1. C117 Standard Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
2. C136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

###### A. Porous Asphalt Mix:

###### 1. Mix materials

Mix materials consist of modified performance grade asphalt binder (PGAB), coarse and fine aggregates, and optional additives such as silicone, fibers, mineral fillers, fatty amines, and hydrated lime. Materials shall meet the requirements of the NAPA's Design, Construction, and Maintenance of Open- Graded Friction Courses, Information Series 115 (2002), except where noted otherwise below or approved in writing by the Engineer.

2. Polymer Modified PGAB and Mix Designs.

The asphalt binder shall be a polymer and/or fiber modified Performance Graded asphalt binder (PGAB) used in the production of Superpave Hot Mix Asphalt (HMA) mixtures. Ideally for maximum durability, the PGAB shall be two grades stiffer than that required for dense mix asphalt (DMA) parking lot installations, which is often achieved by adding a polymer and/or fiber. Mix designs will meet or exceed criteria listed in Table F-10.

The PGAB polymer modifiers are to be either styrene butadiene rubber (SBR) or styrene butadiene styrene (SBS). SBS is typically reserved for large projects as terminal pre-blending is required. SBR is feasible for smaller projects as it be blended at the plant or terminal blended. The quantity of rubber solids in the SBR shall typically be 1.5-3% by weight of the bitumen content of the mix.

The dosage of fiber additives shall be either 0.3 percent cellulose fibers or 0.4 percent mineral fibers by total mixture mass. Fibers are a simple addition either manually for a batch plant or automated for larger drum plants. The binder shall meet the requirements of AASHTO M320.

The PGAB may be pre-blended or post-blended. The pre-blended binder can be pre-blended at the source or at a terminal. For post-blended addition, the modifier can either be in-line blended or injected into the pugmill at the plant.

The following asphalt mix designs are recommended:

- a. Pre-Blended PG 76-28 modified with SBS (this mix has been used with great success since 2011 in New England). This mix is recommended for large sites anticipating high wheel load (H-20) and traffic counts for maximum durability. The SBS will be supplied by an approved PGAB supplier holding a Quality Control Plan approved by the state DOT. A Bill of Lading (BOL) will be delivered with each transport of PG 76-28 SBS. A copy of the BOL will be furnished to the QA inspector at the Plant.
- b. Quality control plans may be altered at the discretion of the Engineer and based on feasible testing as suggested by the asphalt producer. Certain QC testing requirements during production may not be feasible for small projects in which limited asphalt is generated. Some testing methods cannot be completed during the time needed during small batch (less than approximately 50 tons of porous asphalt mix) production. The feasibility should be assessed with the Engineer and producer.

3. Anti-Stripping Mix Additives.

The mix shall be tested for moisture susceptibility and asphalt stripping from the aggregate by AASHTO T283. If the retained tensile strength (TSR) < 80% upon testing, a heat stable additive shall be furnished to improve the anti-stripping properties of the asphalt binder. Test with one freeze-thaw



cycle (rather than five recommended in NAPA IS 115). The amount and type of additive (e.g. fatty amines or hydrated lime) to be used shall be based on the manufacturer's recommendations, the mix design test results, and shall be approved by the Engineer. Silicone shall be added to the binder at the rate of 1.5 mL/m<sup>3</sup> (1 oz. per 5000 gal). Fibers may be added per manufacturer and NAPA IS 115 recommendation if the draindown requirement cannot be met (<0.3% via ASTM D6390) provided that the air void content requirement is met (>18%, or >16% as tested with CoreLok device). Additives should be added per the relevant DOT specification and NAPA IS 115.

4. Coarse Aggregate.

Coarse aggregate shall be that part of the aggregate retained on the No. 8 sieve; it shall consist of clean, tough, durable fragments of crushed stone, or crushed gravel of uniform quality throughout. Coarse aggregate shall be crushed stone or crushed gravel and shall have a percentage of wear as determined by AASHTO T96 of not more than 40 percent. In the mixture, at least 75 percent, by mass (weight), of the material coarser than the 4.75 mm (No. 4) sieve shall have at least two fractured faces, and 90 percent shall have one or more fractured faces (ASTM D5821). Coarse aggregate shall be free from clay balls, organic matter, deleterious substances, and a not more than 8.0% of flat or elongated pieces (>3:1) as specified in ASTM D4791.

5. Fine Aggregate.

The fine aggregate shall be that part of the aggregate mixture passing the No. 8 sieve and shall consist of sand, screenings, or combination thereof with uniform quality throughout. Fine aggregate shall consist of durable particles, free from injurious foreign matter. Screenings shall be of the same or similar materials as specified for coarse aggregate. The plasticity index of that part of the fine aggregate passing the No. 40 sieve shall be not more than 6 when tested in accordance with AASHTO T90. Fine aggregate from the total mixture shall meet plasticity requirements.

**Table F-9 Post Blended SBR Binder QC Plan Requirements**

<p>The QC Plan will contain:</p> <ol style="list-style-type: none"><li>1. Company name and address</li><li>2. Plant location and address</li><li>3. Type of Facility</li><li>4. Contact information for the Quality Control Plan Administrator</li><li>5. QC Tests to be performed on each PGAB</li><li>6. Name(s) of QC Testing Lab to perform QC and Process Control testing.</li><li>7. Actions to be taken for PG Binders and SBR in Non compliance</li><li>8. List of mechanical controls (requirements below)</li><li>9. List of process controls and documentation (requirements below)</li></ol>
<p>List of Mechanical Controls</p> <ol style="list-style-type: none"><li>1. Liquid SBR no-flow alert system with an “alert” located in the control room and automatic documentation of a no flow situation on the printout</li><li>2. Provide means of calibrating the liquid SBR metering system to a delivery tolerance of 1%.</li><li>3. A batching tolerance at the end of each day’s production must be within 0.5% of the amount of SBR solids specified.</li><li>4. Mag-flow meter (other metering system may be considered)</li><li>5. Method of sampling liquid SBR</li></ol>
<p>List of Process Controls and Documentation</p> <ol style="list-style-type: none"><li>1. Printouts of liquid SBR and PG binder quantities must be synchronized within one minute of each other</li><li>2. SBR supplier certification showing the percent of SBR solids in liquid SBR</li><li>3. Test results of a lab sample blended with the specified dosage of SBR. At a minimum, provide the name of the PGAB and liquid SBR suppliers, and PGAB information such as grade and lot number, and SBR product name used for the sample.</li><li>4. MSDS sheet for liquid SBR</li><li>5. Handling, storage, and usage requirements will be followed as required by the liquid SBR manufacturer</li><li>6. At a minimum, provide a table showing proposed rate of SBR liquid (L/min.) in relation to HMA production rate (tons per hour, TPH) for the % solids in liquid SBR, quantity of SBR specified for HMA production, and the specific gravity of the SBR.</li><li>7. QCT or QC Plan Administrator must be responsible for documenting quantities, ensuring actual use is within tolerance, etc. All printouts, calculations, supplier certifications etc. must be filed and retained as part of the QCTs daily diary/reports.</li><li>8. Method and Frequency of testing at the HMA plant, including initial testing and specification testing.</li></ol>
<p>*This Plan shall be submitted to the Engineer 10 days before production.</p>

#### 6. Porous Asphalt Mix Design Criteria.

The Contractor shall submit a mix design at least 10 working days prior to the beginning of production. The Contractor shall make available samples of coarse aggregate, fine aggregate, mineral filler, fibers and a sample of the PGAB that will be used in the design of the mixture. A certificate of analysis (COA) of the PGAB will be submitted with the mix design. The COA will be certified by a laboratory meeting the requirements of AASHTO R18. The Laboratory will be certified by the RIDOT, regional equivalent (e.g. NETTCP), and/or qualified under ASTM D3666. Technicians will be certified by the regional certification agency (e.g. NETTCP) in the discipline of HMA Plant Technician.

Bulk specific gravity (SG) used in air void content calculations shall not be determined and results will not be accepted using AASHTO T166 (saturated surface dry), since it is not intended for open graded specimens (>10% AV).

The materials shall be combined and graded to meet the composition limits by mass (weight) as shown in Table F-10.

**Table F-10 Porous Asphalt Mix Design Criteria.**

<b>Sieve Size (inch/mm)</b>	<b>Percent Passing (%)</b>
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No.4/4.75	10-25
No.8/2.36	5-10
No.200/0.075 (#200)	2-4
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass	0.3% cellulose or 0.4% mineral
Rubber Solids (SBR) Content by Weight of the Bitumen	1.5-3% or TBD
Air Void Content (ASTM D6752/AASHTO T275)	16.0-22.0%
Draindown (ASTM D6390)*	≤ 0.3 %
Retained Tensile Strength (AASHTO 283)**	≥ 80 %
Cantabro abrasion test on unaged samples (ASTM D7064-04)	≤ 20%
Cantabro abrasion test on 7 day aged samples	≤ 30%

\*Cellulose or mineral fibers may be used to reduce draindown.

\*\*If the TSR (retained tensile strength) values fall below 80% when tested per NAPA IS 131 (with a single freeze thaw cycle rather than 5), then in Step 4, the contractor shall employ an antistripping additive, such as hydrated lime (ASTM C977) or a fatty amine, to raise the TSR value above 80%.

## **B. Porous Asphalt Mix Production:**

1. Mixing Plants.

Mixing plants shall meet the requirements of hot mix asphalt plants as specified in the RIDOT or regional equivalent unless otherwise approved by the Engineer.

2. Preparation of Asphalt Binder.

The asphalt material shall be heated to the temperature specified in the RIDOT specification Part 400 (if using a DOT spec for the mix) in a manner that will avoid local overheating. A continuous supply of asphalt material shall be furnished to the mixer at a uniform temperature.

3. Preparation of Aggregates.

The aggregate for the mixture shall be dried and heated at the mixing plant before being placed in the mixer. Flames used for drying and heating shall be properly adjusted to avoid damaging the aggregate and depositing soot or unburned fuel on the aggregate.

4. Mineral filler

Mineral filler if required to meet the grading requirements, shall be added in a manner approved by the Engineer after the aggregates have passed through the dryer.

5. Mixing.

The above preparation of aggregates does not apply for drum-mix plants. The dried aggregate shall be combined in the mixer in the amount of each fraction of aggregate required to meet the job-mix formula and thoroughly mixed prior to adding the asphalt material.

The dried aggregates shall be combined with the asphalt material in such a manner as to produce a mixture that when discharged from the pugmill is at a target temperature in the range that corresponds to an asphalt binder viscosity of 700 to 900 centistokes and within a tolerance of  $\pm 11$  °C ( $\pm 20$  °F).

The asphalt material shall be measured or gauged and introduced into the mixer in the quantity determined by the Engineer for the particular material being used and at the temperature specified in the relevant specification.

After the required quantity of aggregate and asphalt material has been introduced into the mixer, the materials shall be mixed until a complete and uniform coating of the particles and a thorough distribution of the asphalt material throughout the aggregate is secured. The mixing time will be regulated by the Engineer.

All plants shall have a positive means of eliminating oversized and foreign material from being incorporated into the mixer.

6. QC/QA During Production

The Contractor shall provide at Contractors' expense and the Engineer's approval a third-party QA Inspector to oversee and document mix production. All mix testing results during production should be submitted to the QA Inspector.

The QC plan may be altered at the discretion of the Engineer and based on feasible testing as suggested by the asphalt producer. Certain QC testing requirements during production may not be feasible for small projects in which limited asphalt is generated. Some testing methods cannot be completed during the time needed during small batch production. The feasibility should be assessed with the Engineer and producer.

The mixing plant shall employ a Quality Control Technician (QCT). The QCT will perform QC/QA testing and will be certified in the discipline of HMA Plant Technician by the relevant certifying agency (e.g. NETTCP in New England). The Contractor shall sample, test and evaluate the mix in accordance with the methods and minimum frequencies in Table F-11 and the Post-Blended SBR Binder Quality Control Plan (if applicable).

**Table F-11 QC/QA Testing Requirements During Production**

<b>Test</b>	<b>Min. Frequency</b>	<b>Test Method</b>
Temperature in Truck at Plant	6 times per day	
Gradation	greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 3 per job	AASHTO T30
Binder Content	greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 3 per job	AASHTO T164
Air Void Content	greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 3 per job	ASTM D6752
Binder Draindown	greater of either (a) 1 per 500 tons, (b) 2 per day, or (c) 3 per job	ASTM D6390

If an analyzed sample is outside the testing tolerances immediate corrective action will be taken. After the corrective action has been taken the resulting mix will be sampled and tested. If the re-sampled mix test values are outside the tolerances the Engineer will be immediately informed. The Engineer may determine that it is in the best interest of project that production is ceased. The Contractor will be responsible for all mix produced for the project.

Testing Tolerances During Production. Testing of the air void content, binder draindown, and TSR shall be within the limits set in Table F-11. The paving mixture produced should not vary from the design criteria for aggregate gradation and binder content by more than the tolerances in Table F-12.

**Table F-12 QAQC Testing Tolerances During Production.**

<b>Sieve Size (inch/mm)</b>	<b>Percent Passing (%)</b>
0.75/19	-
0.50/12.5	± 6.0
0.375/9.5	± 6.0
No.4/4.75	± 5.0
No.8/2.36	± 4.0
No.200/0.075 (#200)	± 2.0
%PGAB	± 0.4, -0.2

Should the paving mixture produced vary from the designated grading and asphalt content by more than the above tolerances, the appropriate production modifications are to be made until the porous asphalt mix is within these tolerances.

Samples of the mixture, when tested in accordance with AASHTO T164 and T30, shall not vary from the grading proportions of the aggregate and binder content designated by the Engineer by more than the respective tolerances specified above and shall be within the limits specified for the design gradation.

7. Plant Shutdown and Rejection of Mix.

Should the porous asphalt mix not meet the tolerances specified in this section upon repeat testing, the Engineer may reject further loads of mix. Mix that is loaded into trucks during the time that the plant is changing operations to comply with a failed test shall not be accepted, and should be recycled at the plant.

8. Striping Paint

Striping paint shall be latex, water-base emulsion, ready-mixed, and complying with pavement marking specifications PS TT-P-1952.

C. **Choker Course:** Shall consist of clean, washed stone conforming to AASHTO No. 57.

**Choker Course (AASHTO No. 57)**

<b>Sieve Size</b>	<b>Percent Passing (by weight)</b>
1-1/2"	100%
1"	95% - 100%
1/2"	25% - 60%
#4	0% - 10%
#8	0% - 5%

D. **Filter Course:** Shall consist of AASHTO M-6 or ASTM C-33 subbase material with a hydraulic conductivity of 10 to 60 feet per day at 95% Standard Proctor. The filter course shall meet the following grain size distribution ranges:

**Filter Course (AASHTO M-6)**

Sieve Size	Percent Passing (by weight)
3/8"	100%
#4	70% - 100%
#200	0% - 6% **

\*\*Preferably less than 4% fines.

- E. **Filter Blanket:** Shall consist of 3/8" to 3/4" size pea gravel conforming to gradation listed in Section M01.06-Keystone and M01.09, Table I, Column III of the RIDOT Standards. In addition, the material shall have  $D_{15}$  (of filter blanket)  $\leq 5D_{85}$  (of filter course) and  $D_{50}$  (of filter blanket)  $\leq 25D_{50}$  (of filter course).

**Keystone Filter Blanket (M01.09 Table I Column III)**

Sieve Size	Percent Passing (by weight)
1"	100%
3/4"	90-100%
1/2"	20-55%
3/8"	0-20%
#4	0-5%

- F. **Reservoir Course:** Shall consist of washed crushed stone conforming to gradation listed in Section M01.09, Table I, Column II of the RIDOT Standards.

**Reservoir Course (M01.09 Table I Column II)**

Sieve Size	Percent Passing (by weight)
2"	100%
1-1/2"	90-100%
1"	30-55%
3/4"	0-25%
1/2"	0-10%

**PART 3 EXECUTION****3.01 INSTALLATION****A. Porous Media Beds:**

Protection of native materials from over compaction is important. Proper compaction of select subbase materials is essential. Improper compaction of subbase materials will result in either 1) low pavement durability from insufficient compaction, or 2)

poor infiltration due to over-compaction of subbase. Care must be taken to assure proper compaction as detailed below.

1. Grade Control

- a. Establish and maintain required lines and elevations. The Engineer shall be notified for review and approval of final stake lines for the work before construction work is to begin. Finished surfaces shall be true to grade and even, free of roller marks and free of puddle-forming low spots. All areas must drain freely. Excavation elevations should be within +/- 0.1 ft (+/- 3 cm).
- b. If, in the opinion of the Engineer, based upon reports of the testing service and inspection, the quality of the work is below the standards which have been specified, additional work and testing will be required until satisfactory results are obtained.
- c. The Engineer shall be notified at least 24 hours prior to all porous media bed and porous pavement work.

2. Subgrade Preparation

- a. Native subgrade refers to materials beyond the limit of the excavation. The existing native subgrade material under all bed areas shall NOT be compacted or subject to excessive construction equipment traffic prior to geotextile and stone bed placement. Compaction is acceptable if an impermeable liner is used at the base of the porous asphalt system and infiltration is not desired.
- b. Where erosion of the native material subgrade has caused accumulation of fine materials and/or surface ponding, this material shall be removed with light equipment and the underlying soils scarified to a minimum depth of 6 inches with a York rake or equivalent and light tractor.
- c. Bring subgrade to line, grade, and elevations indicated. Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction before the placing of the stone subbase.
- d. All bed bottoms are as level as feasible to promote uniform infiltration. For pavements subbases constructed on grade, soil or fabric barriers should be constructed along equal elevation for every 6-12" of grade change to act as internal check dams. This will prevent erosion within the subbase on slope.

3. Porous Media Bed Installation

- a. Subbase refers to materials below pavement surface and above native subgrade. Upon completion of subgrade work, the Engineer shall be notified and shall



inspect at his/her discretion before proceeding with the porous media bed installation.

- b. Sideslope geotextile and porous media bed aggregate shall be placed immediately after approval of subgrade preparation. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of geotextile at no extra cost to the Owner.
- c. Place sideslope geotextile in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile shall overlap a minimum of sixteen inches (16"). Secure geotextile at least four feet (1.2 m) outside of the bed excavation and take any steps necessary to prevent any runoff or sediment from entering the storage bed.
- d. Install filter course aggregate in 8-inch maximum lifts to a MAXIMUM of 95% standard proctor compaction (ASTM D698 / AASHTO T99). Install aggregate to grades indicated on the drawings.
- e. Install choker, gravel, and stone base course aggregate to a MAXIMUM of 95% compaction standard proctor (ASTM D698 / AASHTO T99). Choker should be placed evenly over surface of filter course bed, sufficient to allow placement of pavement, and notify Engineer for approval. Choker base course thickness shall be sufficient to allow for even placement of the porous asphalt but no less than 4-inches (10 cm) in depth.
- f. The density of subbase courses shall be determined by AASHTO T 191 (Sand-Cone Method), AASHTO T 204 (Drive Cylinder Method), or AASHTO T 238 (Nuclear Methods), or other approved methods at the discretion of the supervising engineer.
- g. The infiltration rate of the compacted subbase shall be determined by ASTM D3385 or approved alternate at the discretion of the supervising engineer. The infiltration rate shall be no less 5-30 ft/day or 50% of the hydraulic conductivity (D2434) at 95% standard proctor compaction (refer to section 2.1.A.5).
- h. Compaction of subbase course material shall be done with a method and adequate water to meet the requirements. Rolling and shaping shall continue until the required density is attained. Water shall be uniformly applied over the subbase course materials during compaction in the amount necessary for proper consolidation.
- i. Rolling and shaping patterns shall begin on the lower side and progress to the higher side of the subbase course while lapping the roller passes parallel to the centerline. Rolling and shaping shall continue until each layer conforms to the required grade and cross-section and the surface is smooth and uniform.

- j. Following placement of subbase aggregate, the sideslope geotextile shall be folded back along all bed edges to protect from sediment washout along bed edges. At least a four-foot edge strip shall be used to protect beds from adjacent bare soil. This edge strip shall remain in place until all bare soils contiguous to beds are stabilized and vegetated. In addition, take any other necessary steps to prevent sediment from washing into beds during site development. When the site is fully stabilized, temporary sediment control devices shall be removed.
4. QC/QA requirements for Porous Media Bed Construction.  
QC/QA activities are summarized in Table F-13.

## **B. Porous Asphalt Pavement Installation:**

### **1. Mixing Plant**

The mixing plant, hauling and placing equipment, and construction methods shall be in conformance with NAPA IS 131 and applicable sections of the RIDOT's specification for asphalt mixes. The use of surge bins shall not be permitted.

**Table F-13 QC/QA Requirements for Porous Media Bed Construction.**

<b>Activity</b>	<b>Percent Passing (%)</b>
Contractor to notify Engineer for approval	24 hours in advance of start of work
Contractor to employ soil inspector acceptable to Engineer	NA
Contractor to employ staking and layout control inspector acceptable to Engineer	NA
Contractor to employ site grading inspector acceptable to Engineer	NA
Contractor to employ pavement work inspector acceptable to Engineer	NA
Contractor to notify Engineer for approval	after subgrade preparation, before construction of porous media bed
Contractor to notify Engineer for approval	after choker course placed, before placement of pavement.

### **2. Hauling Equipment**

The open graded mix shall be transported in clean vehicles with tight, smooth dump beds that have been sprayed with a non-petroleum release agent or soap solution to prevent the mixture from adhering to the dump bodies. Mineral filler, fine aggregate, slag dust, etc. shall not be used to dust truck beds. The open graded mix shall be covered during transportation with a suitable material of such size sufficient to protect the mix from the weather and also minimize mix cooling and the prevention of lumps. When necessary, to ensure the delivery of material at the specified temperature, truck bodies shall be insulated, and covers shall be securely fastened. Long hauls, particularly those in excess of 25 miles (40 km), may result in separation of the mix and its rejection.

3. Placing Equipment.

The paver shall be a self-propelled unit with an activated screed or strike-off assembly, capable of being heated if necessary, and capable of spreading and finishing the mixture without segregation for the widths and thicknesses required. In general, track pavers have proved superior for Porous Asphalt placement. The screed shall be adjustable to provide the desired cross-sectional shape. The finished surface shall be of uniform texture and evenness and shall not show any indication of tearing, shoving, or pulling of the mixture. The machine shall, at all times, be in good mechanical condition and shall be operated by competent personnel.

Pavers shall be equipped with the necessary attachments, designed to operate electronically, for controlling the grade of the finished surface.

The adjustments and attachments of the paver will be checked and approved by the Engineer before placement of asphalt material.

Pavers shall be equipped with a sloped plate to produce a tapered edge at longitudinal joints. The sloped plate shall be attached to the paver screed extension.

The sloped plate shall produce a tapered edge having a face slope of 1:3 (vertical: horizontal). The plate shall be so constructed as to accommodate compacted mat thickness from 35 to 100 mm (1 1/4 to 4 inches). The bottom of the sloped plate shall be mounted 10 to 15 mm (3/8 to 1/2 inch) above the existing pavement. The plate shall be interchangeable on either side of the screed.

Pavers shall also be equipped with a joint heater capable of heating the longitudinal edge of the previously placed mat to a surface temperature of 95 °C (200 °F), or higher if necessary, to achieve bonding of the newly placed mat with the previously placed mat. This shall be done without undue breaking or fracturing of aggregate at the interface. The surface temperature shall be measured immediately behind the joint heater. The joint heater shall be equipped with automated controls that shut off the burners when the pavement machine stops and reignite them with the forward movement of the paver. The joint heater shall heat the entire area of the previously placed wedge to the required temperature. Heating shall immediately precede placement of the asphalt material.

4. Rollers.

Rollers shall be in good mechanical condition, operated by competent personnel, capable of reversing without backlash, and operated at speeds slow enough to avoid displacement of the asphalt mixture. The mass (weight) of the rollers shall be sufficient to compact the mixture to the required density without crushing of the aggregate. Rollers shall be equipped with tanks and sprinkling bars for wetting the rolls.

Rollers shall be two-axle tandem rollers with a gross mass (weight) of not less than 7 metric tons (8 tons) and not more than 10 metric tons (12 tons) and shall be capable

of providing a minimum compactive effort of 44 kN/m (250 pounds per inch) of width of the drive roll. All rolls shall be at least 1 m (42 inches) in diameter.

A rubber-tired roller will not be required on the open graded asphalt friction course surface.

5. Conditioning of Existing Surface.

Contact surfaces such as curbing, gutters, and manholes shall be painted with a thin, uniform coat of Type RS-1 emulsified asphalt immediately before the asphalt mixture is placed against them.

6. Temperature Requirements.

The temperature of the asphalt mixture, at the time of discharge from the haul vehicle and at the paver, shall be between 135-163°C (275 to 325°F), within 6 °C (10 °F) of the compaction temperature for the approved mix design.

7. Spreading and Finishing.

The Porous Asphalt shall be placed either in a single application at 4 inches (10 cm) thick or in two lifts. If more than one lift is used, great care must be taken to insure that the porous asphalt layer join completely. This means: keeping the time between layer placements minimal; keeping the first layer clear from dust and moisture, and minimizing traffic on the first layer.

The Contractor shall protect all exposed surfaces that are not to be treated from damage during all phases of the pavement operation.

The asphalt mixture shall be spread and finished with the specified equipment. The mixture shall be struck off in a uniform layer to the full width required and of such depth that each course, when compacted, has the required thickness and conforms to the grade and elevation specified. Pavers shall be used to distribute the mixture over the entire width or over such partial width as practical. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture shall be spread and raked by hand tools.

No material shall be produced so late in the day as to prohibit the completion of spreading and compaction of the mixture during daylight hours, unless night paving has been approved for the project.

No traffic will be permitted on material placed until the material has been thoroughly compacted and has been permitted to cool to below 38 °C (100 °F). The use of water to cool the pavement is not permitted. The Engineer reserves the right to require that all work adjacent to the pavement, such as guardrail, cleanup, and turf establishment, is completed prior to placing the wearing course when this work could cause damage to the pavement. On projects where traffic is to be maintained, the Contractor shall schedule daily pavement operations so that at the end of each working day all travel lanes of the roadway on which work is being performed are paved to the same limits.

Suitable aprons to transition approaches, where required, shall be placed at side road intersections and driveways as directed by the Engineer.

8. Compaction.

Immediately after the asphalt mixture has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. The compaction objective is 16% - 19% in place void content (Corelock).

Breakdown rolling shall occur when the mix temperature is between 135-163°C (275 to 325°F).

Intermediate rolling shall occur when the mix temperature is between 93-135°C (200 to 275°F).

Finish rolling shall occur when the mix temperature is between 66-93°C (150 to 200°F).

The cessation temperature occurs at approximately 79°C (175°F), at which point the mix becomes resistant to compaction. If compaction has not been done at temperatures greater than the cessation temperature, the pavement will not achieve adequate durability.

The surface shall be rolled when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving.

Rollers or oscillating vibratory rollers, ranging from 8-12 tons, shall be used for compaction. The number, mass (weight), and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. Generally, one breakdown roller will be needed for each paver used in the spreading operation.

To prevent adhesion of the mixture to the rolls, rolls shall be kept moist with water or water mixed with very small quantities of detergent or other approved material. Excess liquid will not be permitted.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot or lightly oiled hand tampers, smoothing irons or with mechanical tampers. On depressed areas, either a trench roller or cleated compression strips may be used under the roller to transmit compression to the depressed area.

Other combinations of rollers and/or methods of compacting may be used if approved in writing by the Engineer, provided the compaction requirements are met.

Unless otherwise specified, the longitudinal joints shall be rolled first. Next, the Contractor shall begin rolling at the low side of the pavement and shall proceed

towards the center or high side with lapped rollings parallel to the centerline. The speed of the roller shall be slow and uniform to avoid displacement of the mixture, and the roller should be kept in as continuous operation as practical. Rolling shall continue until all roller marks and ridges have been eliminated. Rollers will not be stopped or parked on the freshly placed mat.

It shall be the responsibility of the Contractor to conduct whatever process control the Contractor deems necessary. Acceptance testing will be conducted by the Engineer using cores provided by the Contractor.

Any mixture that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh hot mixture. The mixture shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of binder shall be removed and replaced. These replacements shall be at the Contractor's expense.

If the Engineer determines that unsatisfactory compaction or surface distortion is being obtained or damage to highway components and/or adjacent property is occurring using vibratory compaction equipment, the Contractor shall immediately cease using this equipment and proceed with the work in accordance with the fifth paragraph of this subsection.

The Contractor assumes full responsibility for the cost of repairing all damages that may occur to roadway or parking lot components and adjacent property if vibratory compaction equipment is used. After final rolling, no vehicular traffic of any kind shall be permitted on the surface until cooling and hardening has taken place, and in no case within the first 48 hours. For small batch jobs, curing can be considered to have occurred after the surface temperature is less than 100 °F (38 °C). Curing time is preferably one week, or until the entire surface temperature cools below 100 °F (38 °C). Provide barriers as necessary at no extra cost to the Owner to prevent vehicular use; remove at the discretion of the Engineer.

9. Joints.

Joints between old and new pavements or between successive day's work shall be made to ensure a thorough and continuous bond between the old and new mixtures. Whenever the spreading process is interrupted long enough for the mixture to attain its initial stability, the paver shall be removed from the mat and a joint constructed.

Butt joints shall be formed by cutting the pavement in a vertical plane at right angles to the centerline, at locations approved by the Engineer. The Engineer will determine locations by using a straightedge at least 4.9 m (16 feet) long. The butt joint shall be thoroughly coated with Type RS-1 emulsified asphalt just prior to depositing the pavement mixture when pavement resumes.

Tapered joints shall be formed by tapering the last 450 to 600 mm (18 to 24 inches) of the course being laid to match the lower surface. Care shall be taken in raking out

and discarding the coarser aggregate at the low end of the taper, and in rolling the taper. The taper area shall be thoroughly coated with Type RS- 1 emulsified asphalt just prior to resuming pavement. As the paver places new mixture on the taper area, an evenly graduated deposit of mixture shall complement the previously made taper. Shovels may be used to add additional mixture if necessary. The joint shall be smoothed with a rake, coarse material discarded, and properly rolled.

Longitudinal joints that have become cold shall be coated with Type RS-1 emulsified asphalt before the adjacent mat is placed. If directed by the Engineer, joints shall be cut back to a clean vertical edge prior to applying the emulsion.

**10. Surface Tolerances.**

The surface will be tested by the Engineer using a straightedge at least 4.9 m (16 feet) in length at selected locations parallel with the centerline. Any variations exceeding 3 mm (1/8 inch) between any two contact points shall be satisfactorily eliminated. A straightedge at least 3 m (10 feet) in length may be used on a vertical curve. The straightedges shall be provided by the Contractor.

Work shall be done expertly throughout, without staining or injury to other work. Transition to adjacent impervious asphalt pavement shall be merged neatly with flush, clean line. Finished pavement shall be even, without pockets, and graded to elevations shown on drawing.

Porous pavement beds shall not be used for equipment or materials storage during construction, and under no circumstances shall vehicles be allowed to deposit soil on paved porous surfaces.

**11. Repair of Damaged Pavement.**

Any existing pavement on or adjacent to the site that has been damaged as a result of construction work shall be repaired to the satisfaction of the Engineer without additional cost to the Owner.

**12. Striping Paint**

- a. Vacuum and clean surface to eliminate loose material and dust.
- b. Paint 4-inch wide parking striping and traffic lane striping in accordance with layouts of plan. Apply paint with mechanical equipment to produce uniform straight edges. Apply in two coats at manufacturer's recommended rates. Provide clear, sharp lines using white traffic paint
- c. Color for Handicapped Markings: Blue

**C. QAQC for Paving Operations:**

1. The full permeability of the pavement surface shall be tested by application of clean water at the rate of at least 5 gpm (23 lpm) over the surface, using a hose or other distribution device. Water used for the test shall be clean, free of suspended solids and deleterious liquids and will be provided at no extra cost to the Owner. All applied

water shall infiltrate directly without large puddle formation or surface runoff, and shall be observed by the Engineer.

2. Testing and Inspection: Employ at Contractor's expense an inspection firm acceptable to the Engineer to perform soil inspection services, staking and layout control, and testing and inspection of site grading and pavement work. Inspection and list of tests shall be reviewed and approved in writing by the Engineer prior to starting construction. All test reports must be signed by a licensed Engineer.
3. Test in-place base and surface course for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable work as directed by the Engineer.
4. Surface Smoothness: Test finished surface for smoothness using a 10-foot straightedge applied parallel with and at right angles to the centerline of the paved area. Surface will not be accepted if gaps or ridges exceed 3/16 of an inch.
5. QC/QA requirements during paving are summarized in Table F-14.

**Table F-14 QC/QA Requirements During Paving.**

<b>Activity</b>	<b>Schedule/Frequency</b>	<b>Tolerance</b>
Inspect truck beds for pooling (draindown)	every truck	NA
Take surface temp. behind joint heater	each pull	6°C (10°F) of compaction temp
Consult with Engineer to determine locations of butt joints	as needed	NA
Test surface smoothness & positive drainage with a 10 ft straightedge	after compaction	4.5 mm (3/16")
Consult with Engineer to mark core locations for QA testing	after compaction	NA
Hose test with at least 5 gpm water	after compaction	immediate infiltration, no puddling

END OF SECTION



## SECTION 02618

### DUCTILE-IRON PIPE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Requirements to furnish, lay, joint, and test ductile-iron pressure pipe, ductile-iron gravity drain pipe, and ductile-iron sewer pipe, fittings (including special castings), and appurtenant materials and equipment indicated on the Drawings and specified in this Section.

##### 1.02 REFERENCES

- A. American Water Works Association (AWWA)/American National Standards Institute (ANSI)
  - 1. C104/A21.4, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
  - 2. C105/A21.5, Polyethylene Encasement for Ductile Iron Pipe Systems
  - 3. C110/A21.10, Ductile-Iron and Gray-Iron Fittings, 3-inch. through 48-inch., for Water and Other Liquids.
  - 4. C111/A21.11, Rubber-Gasket Joints for Ductile-Iron and Pressure Pipe and Fittings.
  - 5. C115/A21.15, Flanged Ductile Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
  - 6. C150/A21.50, Thickness Design of Ductile-Iron Pipe.
  - 7. C151/A21.51, Ductile-Iron Pipe, Centrifugally Cast for Water.
  - 8. C153/A21.53, Ductile-Iron Compact Fittings, 3 inches through 24 inches, and 54 inches through 64 inches for Water Service
  - 9. C600, Installation of Ductile-Iron Water Mains and Their Appurtenances
  - 10. C651, Disinfecting Water Mains
- B. American Society of Testing and Materials (ASTM)
  - 1. A536, Standard Specification for Ductile Iron Castings
  - 2. A716, Standard Specification for Ductile Iron Culvert Pipe
- C. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification.
  - 1. Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, including all addenda, issued by the State of Rhode Island Department of Public Works, (referred to as the Standard Specification).

### 1.03 REQUIREMENTS

- A. Ductile iron pipe used for water mains shall be cement lined Pressure Class 350 push-on joint, size as indicated on the drawings.
- B. Ductile iron pipe used for drain shall be in accordance with Section 701 and Subsection M.04.02.1 of the Rhode Island Standard Specification.
- C. Ductile iron pipe used for sewer shall be ceramic, epoxy lined Pressure Class 350 boltless restrained joint pipe, size as indicated on the drawings.
- D. For sewer pipeline use class as indicated.
- E. Location of restrained joints shall be based on Thrust Restraint Design for Ductile Iron Pipe (Second Edition), published by Ductile Iron Pipe Research Association.

### 1.04 SUBMITTALS

- A. In accordance with SECTION 01300 submit the following:
- B. Shop Drawings
  - 1. Piping layouts in full detail.
  - 2. Location and type of backup block or device to prevent separation.
  - 3. Schedules of all pipe, fittings, special castings, couplings, expansion joints, restrained joints and other appurtenances.
- C. Certificates
  - 1. Sworn certificates of shop tests showing compliance with specified standard.
- D. Manufacturer's Literature
  - 1. Catalog cuts of joints, couplings, harnesses, expansion joints, restrained joints gaskets, fasteners and other accessories.
  - 2. Brochures and technical data of coatings and lining's and proposed method of application.

### 1.05 QUALITY ASSURANCE

- A. Pipe and fittings shall be inspected and tested at the foundry as required by the corresponding standards listed in Article 1.02 of this specification.
- B. Owner reserves right to inspect and/or test by independent service at manufacturer's plant or elsewhere at his own expense.
- C. Owner reserves right to perform visual inspection and hammer test before installation.

## PART 2 PRODUCTS

### 2.01 PIPE

#### A. Ductile-Iron Pipe

1. Designed in accordance with AWWA/ANSI C150/ A21.50.
2. Manufactured in accordance with AWWA/ANSI C151/A21.51.
3. Ductile Iron Pipe to be used for sewer shall be Tyton joint pipe as manufactured by U.S. Pipe or approved equivalent.
4. Ductile Iron Pipe to be used for drain shall be in accordance with Section 701 and Subsection M.04.02.1 of the Rhode Island Standard Specification.
5. Unless otherwise indicated or specified, ductile-iron pipe shall be at least thickness Class 52.
6. Ductile Iron Pipe to be used for water shall be Class 54, zinc coated, and wrapped in V-BIO Enhanced Polywrap, or approved equal. Pipe shall meet the latest BWCA standards and requirements.

#### B. Pipe For Use With Couplings

1. As specified above except that the ends shall be plain (without bells or beads) cast or machined at right angles to the axis.

### 2.02 FITTINGS

#### A. General

1. Push-on or mechanical-joint fittings shall be all-bell fittings unless otherwise indicated or specified.
2. In accordance with AWWA/ANSI C110/A21.10.
  - a. Pipe 24 inches in diameter and less shall be pressure Class 350.
  - b. Pipe 30 inches to 48 inches in diameter shall be at least pressure Class 250.

#### B. Nonstandard Fittings

1. Fittings having nonstandard dimensions and cast especially for this project shall be of acceptable design.
2. Manufactured to meet the requirements of these specifications and shall have the same diameter and thickness as standard fittings, but their laying lengths and types of ends shall be determined by their positions in the pipelines and by the particular piping to which they connect.

### 2.03 ADAPTERS

- A. Where it is necessary to joint pipes of different type, furnish and install the necessary adapters unless solid sleeves are indicated on the drawings or permitted. Adapters shall have ends, conforming to the above specifications for the appropriate type of joint, to receive the adjoining pipe. Adapters joining two classes of pipe may be of the lighter class provided that the annular space in bell-and-spigot type joints will be sufficient for proper jointing.

## 2.04 JOINTS

### A. Push-On and Mechanical

1. In accordance with AWWA/ANSI C111/A21.11.
2. The plain end of push-on pipe shall be factory machined to a true circle and chamfered to facilitate fitting the gasket.
3. Push-on and mechanical-joint pipe and fittings shall be provided with sufficient quantities of accessories conforming to AWWA/ANSI C111/A21.11.

### B. Restrained

1. Restraining glands will be required on all fittings.
2. Pipe, fittings and appurtenances for restrained joints shall be in accordance with AWWA/ANSI C110/A21.10. Only restraining glands which impart multiple wedging action against the pipe increasing its pressure as the pipe pressure increases will be allowed. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A536. Twist off nuts shall be used to insure proper actuating of the restraining device.
3. Mechanical joint restraint shall have a working pressure rating of at least 250 psi.
4. Manufactured by EBAA Iron, Inc., Eastland, Texas, or equal.

### C. Gaskets

1. Gaskets shall be of a composition suitable for exposure to the product which the pipe is intended.

## 2.05 COUPLINGS

### A. Flexible Connections

1. Where flexible connections in the piping are specified or indicated on the drawings, they shall be obtained by the use of sleeve-type couplings, split couplings, or mechanical-joint pipe and/or fittings as herein specified.

### B. Sleeve Type Couplings

1. Pressure rating at least equal to that of the pipeline in which they are to be installed.
2. Provide cast style 441 by Smith Blair, Inc., Texarkana, Texas.; or be acceptable equivalent products.
3. Provided with galvanized-steel bolts and nuts, unless noted otherwise.
4. Provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
5. Provided gaskets with metallic tips for electrical continuity through joints.

### C. Solid Sleeve Couplings

1. Solid sleeve couplings and accessories shall be of a pressure rating at least equal to that of the pipeline in which they are to be installed.
2. Couplings shall be ductile iron with gaskets of a composition suitable for exposure to the liquid within the pipe.

## 2.06 ACCESSORIES

### A. Tapped Connections

1. Tapped connections in pipe and fittings shall be made in such manner as to provide a watertight joint and adequate strength against pullout. The maximum size of taps in pipe or fittings without bosses shall not exceed the listed size in the appropriate table of the Appendix to the above-mentioned ANS A21.51 based on 3 full threads for cast iron and two (2) full threads for ductile iron.
2. Where the size of the connections exceeds that given above for the pipe in question, a boss shall be provided on the pipe barrel, the tap shall be made in the flat part of the intersection of the run and branch of a tee or cross, or the connection shall be made by means of a tapped tee, branch fitting and tapped plug or reducing flange, or tapping tee and tapping valve, all as indicated or permitted by the Engineer.
3. All drilling and tapping of cast-iron pipe shall be done normal to the longitudinal axis of the pipe; fitting shall be drilled and tapped similarly, as appropriate. Drilling and tapping shall be done only by skilled mechanics. Tools shall be adapted to the work and in good condition so as to produce good, clean-cut threads of the correct size, pitch, and taper.

## 2.07 FINISHES

### A. Lining

1. For water mains, inside of pipe and fittings shall be coated with double thickness cement lining and bituminous seal coat conforming to AWWA/ANSI C104/A21.4.
2. Gravity sewer pipe shall be lined with a Ceramic Epoxy material and material shall be Protecto 401<sup>TM</sup> as manufactured by US Pipe or an approved equivalent.

### B. Coating

1. Outside of pipe and fittings shall be coated with the standard bituminous coating conforming to AWWA/ANSI C151/A21.51
2. Outside surfaces of castings to be encased in concrete shall not be coated.
3. Machined surfaces shall be cleaned and coated with a suitable rust-preventative coating at the shop immediately after being machined.

## PART 3 EXECUTION

### 3.01 HANDLING

#### A. Pipe and Fittings

1. Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe, scratching or marring machined surfaces, and abrasion of the pipe coatings.
2. Any fitting showing a crack and any pipe or fitting which has received a severe blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the Work.

3. In any pipe showing a distinct crack and in which it is believed there is no incipient fracture beyond the limits of the visible crack, the cracked portions, if so approved, may be cut off by and at the expense of the Contractor before the pipe is laid so that the pipe used is perfectly sound. The cut shall be made in the sound barrel at a point at least 12 inches from the visible limits of the crack.

### 3.02 CUTTING

#### A. Pipe

1. Except as otherwise approved, all cutting shall be done with a machine having rolling wheel cutters, knives, or saws adapted to the purpose. Hammer and chisel or so-called wheel span cutters shall not be used to cut pipe. All cut ends shall be examined for possible cracks caused by cutting.
2. Cut ends to be used with push-on joints shall be carefully chamfered to prevent cutting the gasket when the pipe is laid or installed.

### 3.03 INSTALLATION

- A. Installation of ductile iron pipe for drains shall be in accordance with Section 701 of the Rhode Island Standard Specification.

#### B. Pipe and Fittings

1. No defective pipe or fittings shall be laid or placed in the piping, and any piece discovered to be defective after having been laid or placed shall be removed and replaced by a sound and satisfactory piece.
2. Each pipe and fitting shall be cleared of all debris, dirt, etc., before being laid and shall be kept clean until accepted in the complete work.
3. Pipe and fittings shall be laid accurately to the lines and grades indicated on the drawings or required. Care shall be taken to ensure a good alignment both horizontally and vertically.
4. Pipe shall have a firm bearing along its entire length.
5. The deflection of alignment at a joint shall not exceed the appropriate permissible deflection as specified in the tabulation titled PIPE DEFLECTION ALLOWANCES.

5.

PIPE DEFLECTION ALLOWANCES

Maximum permissible deflection, in.\*

<u>Size of pipe, in.</u>	<u>push-on joint</u>	<u>Mechanical joint</u>
4	19	31
6	19	27
8	19	20
10	19	20
12	19	20
14	11	13-1/2
16	11	13-1/2
18	11	11
20	11	11
24	11	9
30	11	9
36	11	8
42	7-1/2	7-1/2
48	7-1/2	7-1/2
54	5-1/2	--

\*Maximum permissible deflection for 18 feet. lengths; maximum permissible deflections for other lengths shall be in proportion of such lengths to 18 feet.

6. When mechanical joint, push-on joint or similar pipe is laid, the bell of the pipe shall be cleaned of excess tar or other obstructions and wiped out before the cleaned and prepared spigot of the next pipe is inserted into it. The new pipe shall be shoved firmly into place until properly seated and held securely until the joint has been completed.

C. Castings

1. Castings to be encased in masonry shall be accurately set with the bolt holes, if any, carefully aligned.
2. Immediately prior to being set, castings shall be thoroughly cleaned of all rust, scale and other foreign material.

D. Temporary Plugs

1. At all times when pipe laying is not actually in progress, the open ends of pipe shall be closed by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.

E. Appurtenances

1. Valves, fittings and appurtenances shall be set and jointed as indicated on the drawings.

### 3.04 ASSEMBLING

#### A. Push-On Joints

1. Make up by inserting the gasket into the groove of the bell and applying a thin film of special nontoxic gasket lubricant uniformly over the inner surface of the gasket which will be in contact with the spigot end of the pipe.
2. The chamfered end of the plain pipe shall be inserted into the gasket and then forced past it until it seats against the bottom of the socket.

#### B. Bolted Joints

1. Before the pieces are assembled, rust-preventive coatings shall be removed from machined surfaces.
2. Pipe ends, sockets, sleeves, housings, and gaskets shall be thoroughly cleaned and all burrs and other defects shall be carefully smoothed.

#### C. Mechanical Joints

1. Surfaces against which the gasket will come in contact shall be thoroughly brushed with a wire brush prior to assembly of the joint. The gasket shall be cleaned. The gasket, bell, and spigot shall be lubricated by being washed with soapy water.
2. The gland and gasket, in that order, shall be slipped over the spigot, and the spigot shall be inserted into the bell until it is correctly seated.
3. The gasket shall then be seated evenly in the bell at all points, centering the spigot, and the gland shall be pressed firmly against the gasket.
4. After all bolts have been inserted and the nuts have been made up finger tight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint to the proper tension, preferably by means of a torque wrench.
5. The correct range of torque as indicated by a torque wrench and the length wrench (if not a torque wrench) used by an average man to produce such range of torque, shall not exceed the values specified in the tabulation titled TORQUE RANGE VALUES.

#### TORQUE RANGE VALUES

Nominal pipe size, <u>in.in.</u>	Bolt diameter, <u>ft.-lb.</u>	Range of torque, <u>in.</u>	Length of wrench,
3	5/8	40-60	8
4 thru 24	3/4	60-90	10
30, 36	1	70-100	12
42, 48	1-1/4	90-120	14

If the effective sealing of the joint is not attained at the maximum torque indicated above, the joint shall be disassembled and thoroughly cleaned, then reassembled. Bolts shall not be over stressed to tighten a leaking joint.

#### D. Restrained Joints

1. Install in accordance with manufacturers written instructions.



2. Do not exceed manufacturer's permissible pipe deflection allowance.

E. Sleeve-Type Couplings

1. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8-inches
2. Soapy water may be used as a gasket lubricant.
3. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6-inches from the end, and the middle ring shall be placed on the already laid pipe end until it is properly centered over the joint.
4. The other pipe end shall be inserted into the middle ring and brought to proper position in relation to the pipe already laid.
5. The gaskets and followers shall then be pressed evenly and firmly into the middle ring flares.
6. After the bolts have been inserted and all nuts have been made up finger tight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint, preferably by use of a torque wrench of the appropriate size and torque for the bolts. The correct torque as indicated by a torque wrench shall not exceed the manufacturers recommended values
7. After assembly and inspection and before being backfilled, all exterior surfaces of buried sleeve-type couplings, including the middle and follower rings, bolts, and nuts, shall be thoroughly coated with an approved heavy-bodied bituminous mastic. Care shall be taken and appropriate devices used to ensure that the undersides, as well as the more readily accessible parts, are well coated.

3.05 PIPING SUPPORT

- A. Where necessary, bends, tees, and other fittings in pipelines buried in the ground may be backed up with Class B concrete placed against undisturbed earth where firm support can be obtained. If the soil does not provide firm support, then restraining devices shall be provided.

3.06 CLEANING

- A. Prior to the pressure and leakage tests, thoroughly clean piping of all dirt, dust, oil, grease and other foreign material. This work shall be done with care to avoid damage to linings and coatings.

3.07 TESTING

- A. Except as otherwise directed, pipelines shall be given combined pressure and leakage tests in sections of approved length.
- B. Furnish and install suitable temporary testing plugs or caps; all necessary pressure pumps, pipe connections, meters, gages, relief valves, other necessary equipment; and all labor required.
- C. Subject to approval and provided that the tests are made within a reasonable time considering the progress of the project as a whole, and the need to put the section into service, the Contractor may make the tests when he desires.

- D. However, pipelines to be embedded in concrete shall be tested prior to placing of the concrete and exposed piping shall be tested prior to field painting.
- E. Unless it has already been done, the section of pipe to be tested shall be filled with water of approved quality, and all air shall be expelled from the pipe. If hydrants or blow offs are not available at high points for releasing air the Contractor shall make the necessary excavations and do the necessary backfilling and make the necessary taps. After completion of the tests, if directed by the Engineer, remove corporations and plug said holes.
- F. The section under test shall be maintained full of water for a period of 24 hours prior to the combined pressure and leakage test being applied.
- G. The pressure and leakage test shall consist of first raising the water pressure (based on the elevation of the lowest point of the section under test and corrected to the gage location) to a pressure in pounds per square inch numerically equal to the pressure rating of the pipe but not to exceed 200 psi. Do not apply this pressure to items of equipment known to be incapable of withstanding such pressure.
- H. If the Contractor cannot achieve the specified pressure and maintain it for a period of two hours with no additional pumping, the section shall be considered as having failed to pass the test.
- I. If the section fails to pass the pressure and leakage test, the Contractor shall do everything necessary to locate, uncover, and repair or replace the defective pipe, fitting, or joint, all at his own expense and without extension of time for completion of the work. Additional tests and repairs shall be made until the section passes the specified test and is considered acceptable by the Engineer.
- J. If, in the judgment of the Engineer, it is impracticable to follow the foregoing procedure exactly for any reason, modifications in the procedure may be made as required and approved by the Engineer, but in any event the Contractor shall be fully responsible for the ultimate tightness of the line within the above leakage and pressure requirements.
- K. All testing to be witnessed by the Engineer.

### 3.08 DISINFECTING AND FLUSHING

- A. The Contractor shall disinfect the lines carrying potable water.
- B. Furnish all equipment and materials necessary to do the work of disinfecting, and shall perform the work in accordance with the procedure outlined in the AWWA Standard C651 except as otherwise specified herein.
- C. During the disinfection period, care shall be exercised to prevent contamination of water in existing mains.
- D. The dosage shall be such as to produce a chlorine concentration of not less than 10 PPM (mg/l) after a contact time of not less than 24 hours.

- E. After treatment, the main shall be flushed with clean water until the residual chlorine content does not exceed 0.2 PPM (mg/l).
- F. Before disposing of the water used in disinfecting and flushing water mains thoroughly neutralize it through the application of a reducing agent, as referenced in AWWA C651.
- G. Dispose of the water used in disinfecting and flushing in an approved manner.
- H. Bacteriological sampling and testing shall be done in accordance with AWWA C651 for each main and each branch. Sampling shall be accomplished with sterile bottles treated with sodium thiosulfate, as required by Standard Methods. No hose or fire hydrants shall be used in collection of samples. A corporation stop installed on the main, with a removable copper tube gooseneck assembly, is the recommended method.
- I. Testing shall be done by a laboratory approved by the Engineer, in accordance with Standard Methods, and shall show the absence of coliform organisms. A standard plate count may be required at the option of the Engineer.

END OF SECTION

## SECTION 02720

### CATCH BASINS

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes

1. Requirements to construct, adjust abandon, or rebuild all catch basins as indicated on the drawing and as specified.

##### 1.02 REFERENCES

- ###### A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall obtain and familiarize himself with all requirements referenced by this specification.

1. Materials and construction methods shall conform, insofar as applicable, to the requirements of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, together with all errata addenda additional revisions, and supplemental specifications, (referred to as the Standard Specification).

###### B. American Society for Testing and Materials (ASTM).

1. A48, Specification for Gray Iron Castings.
2. C32, Specification for Sewer and Manhole Brick (Made from Clay or Shale).
3. C139, Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes.
4. C150, Specification for Portland Cement.
5. C207, Specification for Hydrated Lime for Masonry Purposes.
6. C478, Specification for Precast Reinforced Concrete Manhole Sections.

##### 1.03 DESIGN REQUIREMENTS

- ###### A. Catch basins shall conform in shape, size, dimensions, materials, and other respects to the details indicated on the drawings or bound in the specifications or as ordered by the Engineer.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- ###### A. Catch basin walls shall be precast concrete masonry units. The top of the cone (not to exceed 6 inches.) shall be built of brickwork to permit adjustment of the frame to meet the finished surface.

- B. Catch basin sumps shall be one piece precast concrete or concrete masonry units on cast-in-place or precast concrete bases.
- C. The cast-iron frames and grates shall be the standard as indicated on the drawings.
- D. All cast-in-place concrete shall be 4,000 psi and shall conform to the requirements specified under SECTION 03300.

## 2.02 PRECAST CONCRETE MASONRY UNITS

- A. Precast concrete masonry units shall be machine-made solid segments, conforming to ASTM C139 with the following exceptions and additional requirements:
  - 1. Type II cement shall be used except as otherwise permitted.
  - 2. The width of the units shall be as indicated on the drawings.
  - 3. The inside and outside surfaces of the units shall be curved to the necessary radius and so designed that the interior surfaces of the structures shall be cylindrical, except the top batter courses shall be designed to reduce uniformly the inside section of the structure to the required size and shape at the top.
  - 4. Units shall be designed such that only full-length units are required to lay any one course.
  - 5. Acceptance of the units will be on the basis of material tests and inspection of the completed product.

## 2.03 PRECAST CONCRETE SUMPS

- A. Precast concrete sumps shall conform to the ASTM C478, with the following exceptions and additional requirements:
  - 1. The wall section shall be not less than 6-inch thick.
  - 2. Type II cement shall be used except as otherwise permitted.
  - 3. Sumps shall be cured by subjecting them to thoroughly saturated steam at a temperature between 100 and 130 degrees. F. for a period of not less than 12 hours or, when necessary, for such additional time as may be needed to enable the sections to meet the strength requirements.
  - 4. No more than two lift holes may be cast or drilled in each sump.
  - 5. Acceptance of the sumps will be on the basis of material tests and inspection of the completed product.
- B. All holes in sumps used for their handling shall be thoroughly plugged with rubber plugs made specifically for this purpose or with mortar. The mortar shall be one part cement to 1-1/2 parts sand, mixed slightly damp to the touch (just short of "balling"), hammered into the holes until it is dense and an excess of paste appears on the surface, and then finished smooth and flush with the adjoining surfaces.

## 2.04 BRICKS

- A. The brick shall be sound, hard, and uniformly burned brick, regular and uniform in shape and size, of compact texture, and satisfactory to the Engineer. Brick shall

conform to ASTM C32 for Grade SS, hard brick, except that the mean of five tests for absorption shall not exceed 8 percent by weight.

B. Rejected brick shall be immediately removed from the work.

## 2.05 MORTAR FOR BRICKWORK

A. The mortar shall be composed of Portland cement, hydrated lime, and sand, in which the volume of sand shall not exceed three times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 for dense, hard-burned brick to 1:3/4 for softer brick. In general, mortar for Grade SS Brick shall be mixed in the proportions of 1-1/2:4-1/2.

B. Cement shall be Type II Portland cement conforming to the ASTM C150.

C. Hydrated lime shall be Type S conforming to the ASTM C207.

D. The sand shall comply with the specifications for fine aggregate, specified in Section 03300, except that all of the sand shall pass a No. 8 sieve.

## 2.06 MORTAR FOR MASONRY UNITS

A. Mortar shall be composed of one part portland cement and two parts of sand by volume with sufficient water to form a workable mixture. Cement and sand shall be as specified for mortar for brickwork.

## 2.07 CATCH BASIN FRAMES AND GRATES

A. Furnish and install all cast-iron catch basin frames and grates conforming to the details indicated on the drawings and as specified.

B. Castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sand holes, and defects of every nature which would render them unfit for the service for which they are intended. Contact surfaces of grates and frame seats shall be machined to prevent cocking of grates.

C. All castings shall be thoroughly cleaned and subject to a careful hammer inspection.

D. Castings shall be at least Class 25 conforming to the ASTM A48.

E. Unless otherwise specified or indicated on the drawings, castings in paved areas shall be capable of withstanding AASHTO H-20 loading and shall meet the requirements of the municipality in which they are installed.

F. All grates to be pedestrian and bicycle safe.

## 2.08 CURB INLETS

- A. Granite for curb inlets shall have a horizontal bed. The stone shall be sawn or peen hammered on top, and the front and back edges shall be pitched true to line. The back face for a distance of 3-inches down from the top shall have no projection greater than 1 inch. The front face shall be straight split, free from drill holes, and it shall have no projection greater than 1-inch or depression greater than 1/2 inch for a distance of 10-inch down from the top, and for the remaining distance there shall be no depression or projection greater than 1 inch. The ends shall be squared with the top for the depth of the face finish and so cut that the curb inlet can be set with joints of not more than 1/2 inch.
- B. Granite curb inlet shall be 3 ft. minimum in length, plus or minus 1/2 inch, from 17 to 19 inches in depth, 7 inch wide at the top and at least 7 inches wide at the bottom.
- C. A gutter mouth at least 3 inches in depth and at least 2 feet in length shall be cut in the front face of the stone as shown on the plans.
- D. Where curb inlets are used to replace a section of existing curbing, the width of the curb inlet shall be the same as the adjoining existing curbing.

## PART 3 EXECUTION

### 3.01 LAYING BRICKWORK AND GRADING RINGS

- A. Only clean bricks and grading rings shall be used. Bricks shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.
- B. Each brick shall be laid in a full bed and joint of mortar without requiring subsequent grouting, flushing, or filling, and shall be thoroughly bonded as directed.
- C. Each grading ring shall be laid in a full bed of mortar and shall be thoroughly bonded.

### 3.02 PLASTERING AND CURING BRICK MASONRY

- A. Outside faces of brick masonry shall be plastered with mortar from 1/4 in. to 3/8 in thick. If required, the masonry shall be properly moistened prior to application of the mortar. The plaster shall be carefully spread and troweled. After hardening, the plaster shall be carefully checked by tapping for bond and soundness. Unbonded or unsound plaster shall be removed and replaced.
- B. Brick masonry and plaster shall be protected from too rapid drying by the use of burlaps kept moist, or by other acceptable means, and shall be protected from the weather and frost, all as required.

### 3.03 SETTING CASTINGS

- A. Curb inlets and frames shall be set with the tops conforming accurately to the grade of the pavement or finished ground surface or as indicated on the drawings or directed. Circular frames shall be set concentric with the top of the masonry and in a full bed of mortar so that the space between the top of the manhole masonry and the bottom flange of the frame shall be completely filled and made watertight. A thick ring of mortar extending to the outer edge of the masonry shall be placed all around and on the top of the bottom flange. The mortar shall be smoothly finished and have a slight slope to shed water away from the frame.
- B. Grates shall be left in place in the frames on completion of other work at the manholes.

### 3.04 CATCH BASINS ADJUSTED TO GRADE

- A. Existing catch basin tops shall be adjusted to line and grade as indicated on the drawings or as directed by the Engineer.
- B. All catch basins adjusted to grade shall be provided with concrete grading rings of brick as specified for new drain manholes.

### 3.05 REBUILDING OF EXISTING CATCH BASIN

- A. Cut suitable openings in existing structures to make connections to drains as indicated on the drawings and as specified or directed. In doing so, confine the cutting to the smallest amount possible consistent with the work to be done.
- B. After the drains are installed, carefully fit around, close up, and repair the structures watertight, all as acceptable to the Engineer.
- C. Prior to starting work, assembled all tools, materials, and construction equipment required to complete the work in the shortest possible time.

END OF SECTION



## SECTION 02930

### LOAMING AND SEEDING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Requirements for loaming, fertilizing, seeding, and related work in areas disturbed in the process of performing the Work under this contract.

##### 1.02 SUBMITTALS

- A. In accordance with SECTION 01300 submit the following:
  - 1. Submit with seed, certificates confirming seed mixture, purity, germinating value, and crop year identification.
  - 2. Submit test samples of loam.

##### 1.03 DELIVERY, STORAGE AND HANDLING

- A. Fertilizer:
  - 1. Delivered mixed as specified in standard size, unopened containers showing weight, analysis, and name of manufacturer.
  - 2. Store in weather proof place.
- B. Seed:
  - 1. Delivered in original unopened containers with mixture listed.

##### 1.04 REFERENCES

- A. This specification makes reference to the requirements of additional specifications as listed. The Contractor shall familiarize themselves with all requirements reference by this specification.
  - 1. State of Rhode Island Department of Transportation (RIDOT) Standard Specifications, 2022 Edition with latest addenda.

#### PART 2 PRODUCTS

##### 2.01 LOAM

- A. Fertile, natural topsoil, typical of locality, without admixture of subsoil, refuse or other foreign materials, and obtained from well-drained arable site. Mixture of sand, silt and clay particles in approximately equal proportions. Free of stumps, roots, heavy or stiff clay, stones large than 1 inch in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other deleterious matter.
- B. Not less than 5 percent nor more than 20 percent organic matter as determined by loss on ignition of oven-dried samples.

- C. Loam test samples dried to constant weight at temperature of 230 degrees. F., plus or minus nine degrees.
- D. Use loam, having prior vegetative growth that did not contain toxic amounts of either acid or alkaline elements.

## 2.02 LIME, FERTILIZER AND SEED

- A. Ground agricultural limestone containing not less than 85 percent of total carbonates.
- B. Complete fertilizer, at least 50 percent of nitrogen derived from natural organic sources of ureaform and containing following percentages by weight:  
                 Nitrogen 10%                  Phosphorus 10%                  Potash 10%
- C. Turf grass seed, clean, high in germinating value and latest year's crop mixture as follows:

Name	Minimum Proportion by Weight	Percent Purity	Percent Germination
Kentucky bluegrass	20%	87%	85%
Merion Kentucky bluegrass	20%	87%	85%
Red Chewings fescue	45%	98%	85%
Italian rye	15%	98%	90%

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Supply suitable quantities of water, hose, and appurtenances.

### 3.02 LOAM

- A. Spread loam on areas to 6-inch depth after compaction, fine grade and compact.

### 3.03 LIME, FERTILIZER AND SEEDING

- A. Apply lime by mechanical means at rate of 3000 pounds per acre.
- B. Apply fertilizer at rate of 1200 pounds per acre.
- C. Remove weeds or replace loam and reestablish finish grades, if any delays in seeding lawn areas and weeds grow on surface or loam is washed out prior to sowing seed and without additional compensation. Sow seed at rate of 175 pounds per acre on calm day, by mechanical means. "Hydro-Seeding" not permitted unless otherwise permitted or required by the Owner or Owner's Representative. Sow one-half of seed in one direction, and other half at right angles to original direction. Rake seed lightly into loam, to depth of not more than 1/4 inch and compact by means of an acceptable lawn roller weighing 100 to 150 pounds per linear foot of width.

- D. Water lawn areas adequately at time of sowing and daily thereafter, initially with fine spray, and continue throughout maintenance and protection period.
- E. Seed during approximate time periods of April 1 to May 15 and August 15 to October 1, and only when weather and soil conditions are suitable for such work, unless otherwise permitted.

#### 3.04 MAINTENANCE OF SEEDED AREAS

- A. Maintain lawn areas and other seed areas at maximum height of 2-1/2 inches by mowing at least three times. Weed thoroughly once and maintained until time of final acceptance. Reseed and re-fertilize with original mixtures, watering or whatever is necessary to establish over entire area of lawn and other seeded areas a close stand of grasses specified, and reasonably free of weeds and undesirable coarse native grasses.
- B. Begin maintenance immediately after each portion of lawn is seeded and continue for minimum of 45 days.
- C. Repair or replace all seeded areas which, in judgment of Owner or Owner's Representative, have not survived and grown in satisfactory manner, for a period of one year after acceptance.
- D. Seeding replacement, same seed mixture as specified and furnished and installed as specified.

#### 3.05 TEMPORARY COVER CROP

- A. Sow a temporary cover crop of buckwheat, domestic rye grass or other acceptable seed if there is insufficient time in the planting season to complete seeding, fertilizing, and permanent seeding at the option of Contractor or order of Owner or Owner's Representative. Cut and water cover crop as necessary until the beginning of the following planting season, at which time it shall be plowed or harrowed into soil, the areas shall be fertilized and permanent seed crop sown as specified.

END OF SECTION

## **DIVISION 3**

## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Requirements for furnishing and installing forms, reinforcing steel, concrete and expansion and/or construction joints.

##### 1.02 REFERENCES

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

1. A185, Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
2. A615, Specification for deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
3. C31, Practice for Making and Curing Concrete Test Cylinders in the Field.
4. C33, Specification for Concrete Aggregates.
5. C39, Test Method for Compressive Strength of Cylindrical Concrete Specimens.
6. C42, Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
7. C94, Specification for ready Mixed Concrete.
8. C143, Test Method for Slump of Hydraulic Cement Concrete.
9. C150, Specification for Portland Cement.
10. C172, Practice for Sampling Freshly Mixed Concrete.
11. C231, Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
12. C260, Test Method for Air-Entraining Admixtures for Concrete.
13. C494, Specification for Chemical Admixtures for Concrete.
14. C920, Specification for Elastomeric Joint sealants.
15. D994, Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
16. D1056, Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
17. D1751, Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

###### B. American Concrete Institute (ACI):

1. ACI 301, Specification for Structural Concrete for Buildings.
2. ACI 304, Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
3. ACI 305, Recommended Practice for Hot Weather Concreting.
4. ACI 306, Recommended Practice for Cold Weather Concreting.

5. ACI 315, Building Code Requirements for Reinforced Concrete.
6. ACI 347, Guide to Formwork for Concrete.

C. Concrete Reinforcing Steel Institute (CRSI):

1. Manual of Standard Practice.

### 1.03 SUBMITTALS

A. Submit Shop Drawings in accordance with SECTION 01300 for the following:

1. Reinforcing Steel
  - a. Furnish in detail and completeness that all fabrication and placement at the site can be accomplished without the use of contract drawings for reference.
  - b. Include number of pieces, sizes, and grade of reinforcing steel, accessories, and any other information required for fabrication and placement.
  - c. Show joint layout and design
  - d. Check structural and site drawings for anchor bolts, anchors, inserts, conduits, sleeves, and any other items which are required to be embedded in concrete, and make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.
2. Concrete mix designs.
3. Grout manufacturer/design mix (if included in this section)
4. Manufacturer's data for ancillary materials such as joint fillers and sealants, epoxy bonding compound.

### 1.04 QUALITY ASSURANCE

A. Selection of testing laboratory in accordance with SECTION 01410.

B. Sample and Test Concrete as follows:

1. Test Specimens: Make, cure and have tested, a minimum of one set of four test specimens from the concrete of each day's pour and for each fifty cubic yards of concrete cast in accordance with ASTM C172, C31 and C39. One cylinder shall be broken after seven days and three cylinders after twenty-eight days.
2. Slump: A slump test shall be made for each truckload of concrete in accordance with ASTM C143. Slumps greater than design mix limit will be grounds for rejection of the concrete.
3. Air Content: An air content test shall be made from each day's pour of concrete by the pressure method in accordance with ASTM C231. Air contents above or below the limits specified will be grounds for rejection of the concrete.
4. In the event the compressive strength of the cylinders, when tested, is below the specified minimum, the Engineer may require test cores of the hardened structure to be taken by the Testing Laboratory in accordance with ASTM C42. If such test indicates that the core specimen is below the required strength, the concrete in question shall be removed and replaced without cost to the Owner. Any other work damaged as a result of this concrete removal shall be replaced with new materials to the satisfaction of the Engineer at no additional cost to the Owner.

The cost of coring will be deducted from the contract amount. Where the Testing Laboratory has taken core cylinders and the concrete proves to be satisfactory, core holes shall be filled in a manner satisfactory to the Engineer at no additional cost to the Owner.

5. The Contractor shall coordinate the date and location of tests with the Engineer before any concrete work is started.

## 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

### A. Reinforcing steel.

1. Transport to the site, store, and cover in a manner which will ensure that no damage shall occur to it from moisture, dirt, grease, or any other cause that might impair bond to concrete or chip protective epoxy coating.
2. Store on the site at all times, a supply of approved reinforcing steel to ensure that there will be no delay of the work.
3. Identification of steel shall be maintained after bundles are broken.

## PART 2 PRODUCTS

### 2.01 MATERIALS

#### A. Portland Cement.

1. In accordance with ASTM C150, Type II of U.S. manufacture.
2. Only one brand of cement shall be used on the project.

#### B. Aggregates.

1. Fine aggregate, in accordance with ASTM C33, clean and graded from 1/4 inch to fines.
2. Coarse aggregate, in accordance with ASTM C33, clean and graded from 1/4 inch to maximum sizes hereinafter specified.

#### C. Air Entraining Agent.

1. In accordance with ASTM C260.

#### D. Water Reducing Agent.

1. In accordance with ASTM C494 Type A.

#### E. Microsilica Admixture.

1. Packaged in easily dispersing form.

#### F. Water.

1. Clean and potable,
2. Free of impurities detrimental to concrete.

#### G. Reinforcing Bars.

1. New, deformed billet steel bars, in accordance with ASTM A615, Grade 60.

#### H. Welded Wire Fabric

1. In accordance with ASTM A185.

#### I. Accessories.

1. Reinforcement accessories, consisting of spacers, chairs, ties, and similar items shall be provided as required for spacing, assembling, and supporting reinforcement in place.
2. All accessories shall be dielectric coated steel or approved plastic accessories, conforming to the applicable requirements of the CRSI Standards.

#### J. Tie wire.

1. 16 gauge or heavier black annealed wire.

#### K. Form Ties and Spreaders.

1. Standard metal form clamp assemble and plastic cone, of type acting as spreaders and leaving no metal within 1 inch of concrete face.
2. Provide form tie with water stop for all walls to be in contact with earth or liquid.
3. Inner tie rod shall be left in concrete when forms are removed.
4. No wire ties or wood spreaders will be permitted. Use ½" x 1" C.T. plastic cones for sinkages.

#### L. Form Coatings.

1. Non-grain raising and non-staining type that will not leave residual matter on surface of concrete or adversely affect proper bonding of subsequent application of other material applied to concrete surface.
2. "Nox-Crete Form Coating" as manufactured by Nox-Crete Company, or approved equal.
3. Coatings containing mineral oils or the non-drying ingredients will not be permitted.

#### M. Grout.

1. High-strength, non-shrink grout with saltwater resistance.
2. Five Star Special Grout 120 or equivalent.

### 2.02 CONCRETE STRENGTHS AND PROPORTIONS

- A. Cast-in-place concrete shall have the minimum compressive strength at 28 days as indicated on the Drawings.
- B. The exact proportions for the mix, including amounts admixture (if any), and water, shall be determined by the concrete supplier.
- C. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed not he work, but without permitting the materials to segregate or excess free water to collect on the surface.



D. Air-Entrainment: The air content in all concrete shall be maintained at 5 to 7 percent.

## 2.03 PREMOLDED JOINT FILLER

### A. Bituminous Type.

1. In accordance with ASTM D994 or D1751.

### B. Sponge Rubber Type.

1. Neoprene, closed-cell, expanded in accordance with ASTM D1056, Type 2C5, with a compression deflection, 25 percent deflection (limits), 17 to 24 psi (119 to 168 kPa) minimum.

## 2.04 POURABLE JOINT FILLERS

### A. Filler for Nonpotable Water Structures

1. Specific Gravity: Greater than 1.0 for cured, in-place filler.
2. Vertical and Sloped Joints: Furnish gun grade material that will remain as placed in joints and will not run down slope.
3. Suitable for continuous immersion and exposure to liquid being contained in the structure.

## 2.05 JOINT SEALANTS

### A. In slabs.

1. In accordance with ASTM C920 for poured 2-component polyurethane sealant.
2. Sikaflex-2c, as manufactured by Sika Corporation or approved equivalent.

### B. In walls.

1. Type II, Class A, compound conforming to Interim Federal Specification TT-S-00227E (3) (COM-NBS) for Sealing Compound; Elastomeric Type, Multi-Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures).
2. Sikaflex-1a, as manufactured by Sika Corporation or approved equivalent.

## 2.06 EPOXY BONDING COMPOUND

- A. The epoxy bonding compound shall be a three-component, solvent-free, moisture-tolerant, epoxy modified, cementitious product specifically formulated as a bonding agent and anti-corrosion coating. The product shall have suitable contact time, fluidity, and application temperature for this type of application.

## PART 3 EXECUTION

### 3.01 FORMWORK

#### A. Falsework for Forms

1. Build and maintain necessary false work for the forms.

#### B. Construction of Forms

##### 1. General

- a. Construct in accordance with ACI 347.
- b. Construct of sound material, to the correct shape and dimensions, mortar tight, of sufficient strength, and so braced and tied together that the movement of men, equipment, materials, or placing and vibrating the concrete will not throw them out of line or position.

##### 2. Embedded Items

- a. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
- b. Do not embed wood, other than necessary nailing blocks, in concrete.
- c. Extended complete cooperation to suppliers of embedded items in their installation.
- d. Secure information for embedded items from other trades as required.
- e. Securely anchored embedded items in correct location and alignment prior to placing concrete.

##### 3. Openings for Items Passing Through Concrete

- a. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
- b. Coordination work of this nature in order that there will be no unnecessary cutting and patching of concrete.
- c. Cutting and repairing of concrete as a result of failure to provide for such openings shall be paid for by the Contractor at no additional expense to the Owner.

#### C. Removing Forms and False work

1. Forms shall not be removed for at least 72 hours after concrete has been placed.
2. Forms shall not be removed until the concrete has attained sufficient strength to insure stability.

### 3.02 REINFORCING STEEL

#### A. General

1. Place reinforcing steel in accordance with the drawings and approved shop drawings and the applicable requirements of the CRSI, Manual of Practice.
2. Install reinforcement accurately and secure against movement, particularly under the weight of workmen and the placement of concrete.

## B. Reinforcing Steel Supports

1. Support bars on approved plastic or dielectric-coated metal chairs or spacers, accurately placed and securely fastened to forms or steel reinforcement in place.
2. Supply additional bars, whether specifically shown on the drawings or not, where necessary to securely fasten reinforcement in place.
3. Support legs of accessories in forms without embedding in form surface.
4. Spacing of chairs and accessories shall conform to CRSI, Manual of Standard Practice. Accurately space hoops and stirrups and wire to the reinforcement.
5. Permit no loose wood inside forms.
6. Lifting of welded wire fabric into proper position while concrete is being poured rather than supporting fabric on chairs will not be permitted.

## C. Placing and Tying

1. Set in place, space, and rigidly and securely tie or wire with tie wire at all splices and at all crossing points and intersections in the positions shown, or as directed.
2. Rebending of bars on the job to accommodate the job to accommodate existing conditions will not be permitted without the written approval of the Engineer
3. Point ends of wire ties away from forms.

## D. Spacing

1. Minimum center to center distance between parallel bars shall be in accordance with the details on the drawings, or, where not shown, the clear spacing shall be 2 times the bar diameter but in no case less than 1½ inches or less than 1½ times the maximum size aggregate.

## E. Splices

1. Maximum 50% of steel spliced occurring within lap length.
2. Top bars shall be 1.3 times values given in 3.01.D.5.c.
3. Splice lengths.
  - a. #6 bars and smaller: 50-bar diameter
  - b. #7 bars and larger: 60-bar diameter

## F. Concrete Covering

1. In accordance with ACI 315, except where shown otherwise on drawings.

# 3.03 CONCRETE

## A. Mixing of Concrete

1. All concrete shall be ready-mixed concrete, and shall be mixed and delivered in accordance with ASTM C 94. The batch plant of the concrete producer shall be certified for compliance with the standards established by the National Ready-Mixed Concrete Association.
2. In the event concrete is mixed at a central batching plant, the delivery shall be arranged so that intervals between batches are kept to a minimum, and in any event not more than thirty (30) minutes. Trucks shall be in first class condition and kept in constant rotation during delivery.

3. Concrete shall be placed within 90 minutes after cement has been mixed with aggregate or 45 minutes after addition of water and admixtures.
4. No admixtures, except those mentioned in paragraph 2.1 shall be used. Calcium chloride will not be permitted.
5. Truck delivery slips of all concrete delivered to the job shall indicate the quantity and quality of concrete, additives, date and time of batching and delivery, and the location of placement. Delivery slips shall be forwarded to the Engineer at the end of each pour.

B. Cold Weather Concreting.

1. In accordance with ACI 306.
2. Concrete shall not be mixed or placed when the temperature is below 40 degrees F, or when conditions indicate that the temperature will fall below 40 degrees F within 72 hours unless precautions are taken to protect the concrete.
3. Concrete temperature shall be maintained, when deposited, at not less than 60 degrees F. Reinforcement, forms, and ground which concrete will contact must be completely free of frost.
4. Concrete and formwork must be kept at a temperature of not less than 50 degrees F. for not less than 96 hours after placing.
5. Calcium chloride shall not be used.

C. Hot Weather Concreting.

1. In accordance with ACI 305.
2. The maximum temperature of the concrete, when deposited, shall be 85 degrees F. If the weather causes the placing temperature to exceed 85 degrees F., the mix shall be cooled by methods approved by the Engineer.
3. No concrete shall be deposited when the air temperature is greater than 90 degrees F.

D. Conveying and Placing Concrete.

1. In accordance with ACI 304.
2. Notification: Before placing concrete, forms shall be thoroughly inspected. All chips, dirt, etc., shall be removed, all temporary bracing and cleats taken out, all openings for pipes, etc., properly boxed, all forms properly secured in their correct position and made tight, all reinforcement, anchors, and embedded items secured in their proper places. Concrete which may be on the forms or reinforcement, and which is set and dry, shall be cleaned off, and the forms and steel washed off before proceeding. Remove all foreign matter from forms and excavations.
3. Water shall be removed from place of deposit before concrete is placed unless otherwise permitted by the Engineer. Any flow of water into an excavation shall be diverted through proper side drains into a sump, or shall be removed by other approved methods which will avoid washing away the freshly deposited concrete.
4. Soil on which concrete will be poured shall be thoroughly wetted (except in freezing weather).

5. Anchors and Embedded Items: Anchors, bolts, sleeves, inserts, wood blocking, and any other items to be embedded in concrete shall be accurately secured in position before the concrete is placed. Aluminum shall not be embedded in concrete.
6. Handling and Depositing
  - a. Before any concrete is placed, notify all whose work is in any way connected with or influenced by the concrete work, and give them reasonable time to complete all portions of their work that must be completed before concrete is deposited.
  - b. Immediately before concrete is placed, inspect all forms to insure that they are in proper position, sufficiently rigid, thoroughly clean, properly oiled and free from foreign materials, and that all reinforcement is in proper position.
  - c. Concreting, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed.
  - d. Concrete shall be conveyed as rapidly as practicable from the mixer to the place of final deposit by methods that prevent the separation or loss of ingredients. It shall be deposited, as nearly as practicable, in its final position to avoid re-handling or flowing.
  - e. Concrete shall not be dropped freely where reinforcement will cause segregation, nor shall it be dropped freely more than six (6) feet. Concrete shall be deposited to maintain a plastic surface approximately horizontal.
  - f. Concrete that has partially hardened shall not be deposited in the work.
7. Pumping
  - a. Concrete may be placed by pumping if first approved in writing by the Engineer for the location proposed.
  - b. Equipment for pumping shall be of such size and design as to ensure a practically continuous flow of concrete at the delivery end without separation of materials.
  - c. The concrete mix shall be designed to the same requirements as herein before specified, and may be richer in lubricating components in order to allow proper pumping.
  - d. Concrete shall not be pumped through aluminum pipes.
8. Vibrating and Compacting
  - a. All concrete shall be thoroughly consolidated and compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement, embedded items, and into the corners of the forms. All concrete against forms shall be thoroughly spaded. Internal vibrators shall be used under experienced supervision, and shall be kept out of contact with reinforcement and wood forms. Vibrators shall not be used in a manner that forces mortar between individual form members.
  - b. Vibrators shall be flexible electric type or approved compressed air type, adequately powered and capable of transmitting to the concrete not less than 7,000 impulses per minute. Vibration shall be sufficiently intense to cause the concrete to flow or settle readily into place without separation of the ingredients. A sufficient number of vibrators shall be employed so that complete compaction is secured throughout the entire volume of each layer of

concrete. At least one (1) vibrator shall be kept in readiness as a spare for emergency use. Vibrators shall be such that the concrete becomes uniformly plastic with their use.

- c. Vibration shall be close to the forms but shall not be continued at one spot to the extent that large areas of grout are formed or the heavier aggregates are caused to settle. Care shall be taken to not disturb concrete that has its initial set.
- d. Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand as used in the concrete shall first be deposited in the forms, to a depth of at least one (1) inch.
- e. The responsibility for providing fully filled out, smooth, clean, and properly aligned surfaces free from objectionable pockets shall rest entirely with the Contractor.

### 3.04 CONSTRUCTION JOINTS

- A. Construction joints shall be located a maximum of 40 feet apart. If, for any reason, the contractor feels a change is necessary, he shall prepare a placing plan and submit it to the Engineer for approval.
- B. Where a joint is to be made, the surface of the concrete shall be sandblasted or thoroughly picked, thoroughly cleaned, and all laitance removed. In addition to the foregoing, joints shall be thoroughly wetted, but not saturated, and slushed with a coat of grout immediately before the placing of new concrete.
- C. Approved keys shall be used at all joints, unless detailed otherwise.
- D. Forms shall be retightened before placing of concrete is continued. There shall be an interval of at least 48 hours between adjacent pours.
- E. Bonding Concrete at Construction Joints
  - 1. To new concrete construction joints:
    - a. Thoroughly clean and saturate joint with water.
    - b. Cover horizontal wall surfaces as specified in this Section, and immediately place concrete.
    - c. Limit concrete lift placed immediately on top of bonding compound to 12 inches thick.
    - d. Thoroughly vibrate to mix and consolidate bonding compound and concrete together.
- F. Bonding new concrete to old concrete:
  - 1. Mechanically roughen existing concrete surfaces to a clean, rough surface using appropriate mechanical means to remove the existing concrete surface, and provide a minimum roughness profile of 1/4 inch.

2. Saturate surface with water for 24 hours, cover with epoxy bonding compound and place concrete as specified for new concrete.

#### G. Expansion Joints

1. Expansion joints shall be located as shown on contract drawings.
2. The joint shall include a joint filler, a bond breaker, and joint sealant and installed as indicated on contract drawings.

#### H. Joint Sealants.

1. Prepare surface in accordance with manufacturers directions.
2. Apply primer as recommended by sealant manufacturer.
3. Install sealant with the proper tools and methods as directed by the sealant manufacturer.

#### I. Patching

1. Immediately after stripping forms, patch minor defects, form-tie holes, honeycombed areas, etc., before concrete is thoroughly dry.
2. Repair gravel pockets by cutting out to solid surface, form key, and thoroughly wet before placing patching mortar consisting of 1-part cement to 2 parts fine sand; compact into place and neatly finish. Honeycombed areas or gravel pockets which, in the Engineer's opinion are too large and unsatisfactory for mortar patching as described above, shall be cut out to solid surface, keyed, and packed solids with matching concrete to produce firm bond and surface.
3. The Contractor shall do all the cutting as required by himself or other trades. All such work shall be of the minimum size required. No excessive cutting will be permitted, or shall any structural members or reinforcement be cut.
4. The Contractor shall do all patching after work by other trades has been installed, where required, using Portland Cement Mortar 1:2 mix.

#### J. Protection and Curing

1. Protect concrete from injurious action of the elements and defacement of any nature during construction operations.
2. Keep concrete in a thoroughly moist condition from the time it is placed until it has cured, for at least seven (7) days.
3. Carefully protect exposed concrete corners from damage.
4. Allow no slabs to become dry at any time until curing operations are complete. In general, slabs shall be cured with non-staining curing paper, hosing or fog spray; vertical surfaces shall be curing with Burlene or fog spray or an approved curing compound.
5. Protect fresh concrete from drying winds, rain, damage, or spoiling. Curing paper shall be lapped 4 inches minimum at joints and sealed with waterproof tape.

#### K. Concrete Finishes

1. Unexposed Surfaces: All unexposed surfaces shall have any form finish, at the Contractor's option.
2. Wearing Surface Finish: Float the surface by hand using a wooden or magnesium float. Finish with a flexible bristle broom. Permit surface to harden sufficiently

to retain the scoring or ridges. Broom perpendicular to traffic or at right angles to the slope of the slab.

3. Addition of Material: The addition of cement, sand, water, or mortar to slab surfaces while finishing concrete is strictly prohibited.

L. Defective Work

1. The following concrete work shall be considered defective and may be ordered by the Engineer to be removed and replaced at Contractor's expense:
  - a. Incorrectly formed.
  - b. Not plumb or level.
  - c. Not specified strength.
  - d. Containing rock pockets, voids, honeycomb, or cold joints.
  - e. Containing wood or foreign matter.
  - f. Otherwise not in accordance with the intent of the Drawings and Specifications.

END OF SECTION



# APPENDIX A

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TEST PIT LOGS



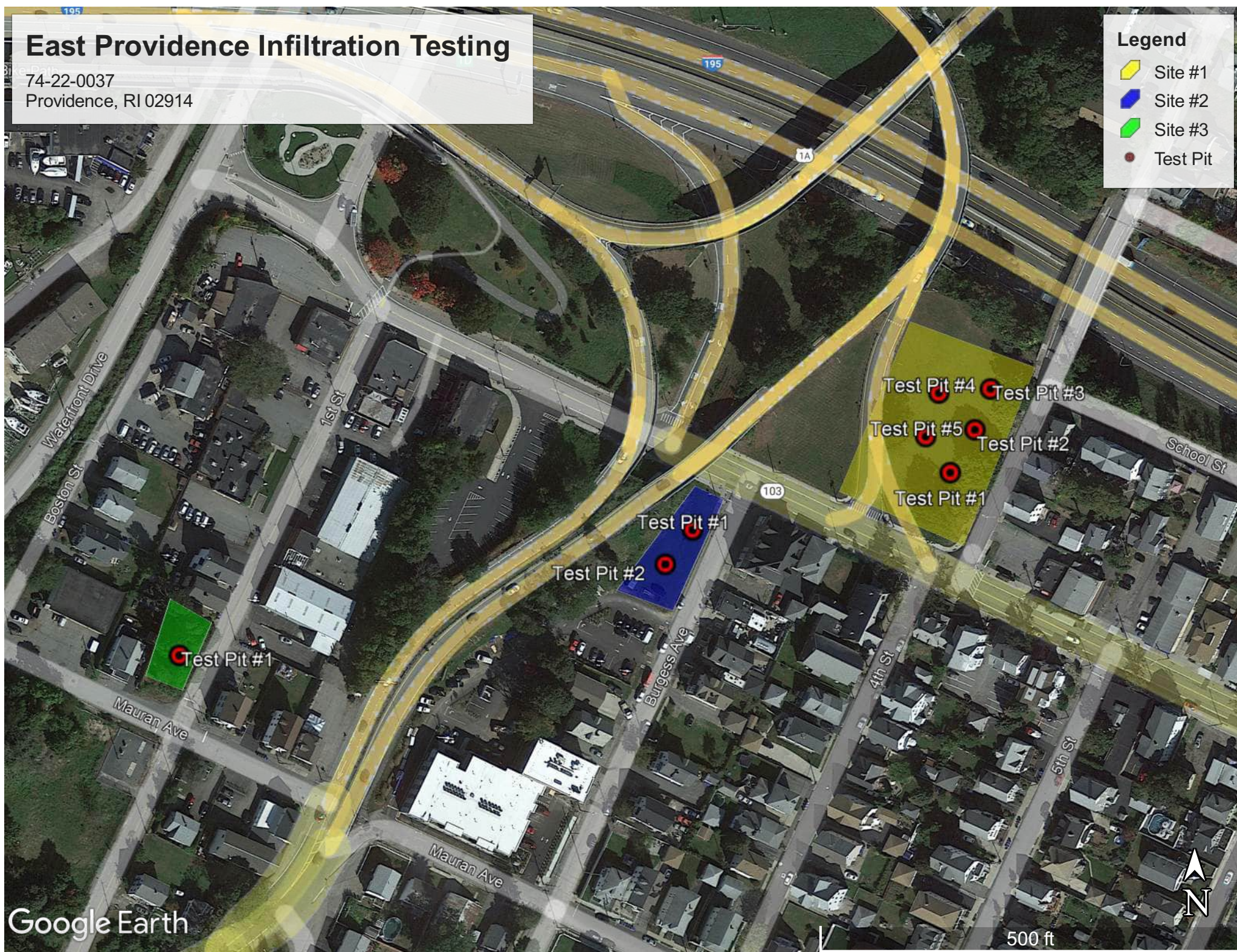
# East Providence Infiltration Testing

74-22-0037

Providence, RI 02914

## Legend

- Site #1
- Site #2
- Site #3
- Test Pit







195 Frances Avenue  
Cranston, Rhode Island 02910  
Phone: 401-467-6454  
Fax: 401-467-2398  
<http://www.Thielsch.com>

**Client Information:**  
Beta Group, Inc.  
701 George Washington Hwy,  
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## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Warren Ave & Burgess Ave, East Providence, RI 02914	Date of Service:	4/12/2022

Test Information			
Test Location:	Site 1 - Test Pit #1	Tested by:	Stefan Stelling
Start Time:	8:41 AM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Olive Brown silt with sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	6.5	6
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
1	0	0	6.5	-	-	6	-	-
2	4	4	6.25	462.9	9.53	5.75	462.9	3.17
3	8	4	6.25	0.0	0.00	5.75	0.0	0.00
4	12	4	6.125	231.5	4.76	5.625	231.5	1.59
5	16	4	6	231.5	4.76	5.5	231.5	1.59
6	20	4	6	0.0	0.00	5.5	0.0	0.00
7	24	4	6	0.0	0.00	5.375	231.5	1.59
8	28	4	5.875	231.5	4.76	5.375	0.0	0.00
9	32	4	5.875	0.0	0.00	5.375	0.0	0.00
10	36	4	5.875	0.0	0.00	5.25	231.5	1.59
11	40	4	5.875	0.0	0.00	5.25	0.0	0.00
12	44	4	5.75	231.5	4.76	5.125	231.5	1.59
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		2.6	
					Avg. Infiltration (in/hr):		1.0	

Comments: Due to highly variable flow rates, Site 1, Test Pit 1 was completed as a falling head test.

Tested By:	Stefan Stelling, E.I.T.	Reviewed By:	Matthew Colman, P.E.
Title:	Staff Engineer	Date:	4/28/2022
		Title:	Senior Engineer
		Date:	4/28/2022



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## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Warren Ave & Burgess Ave, East Providence, RI 02914	Date of Service:	4/12/2022

Test Information			
Test Location:	Site 1 - Test Pit #2	Tested by:	Alex Dewhirst
Start Time:	9:05am	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Brown silt		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	6.5	6.5
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
0	0.0	-	0.25	-	-	0	-	-
1	15.0	15	0.25	0	0.00	0	0	0.00
2	30.0	15	0.25	0	0.00	0	0	0.00
3	45.0	15	0.25	0	0.00	0	0	0.00
4	60.0	15	0.25	0	0.00	0	0	0.00
5	75.0	15	0.25	0	0.00	0	0	0.00
6	90.0	15	0.25	0	0.00	0	0	0.00
7	105.0	15	0.5	25	0.14	0.25	62.5	0.11
8	120.0	15	0.5	0	0.00	0.25	0	0.00
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		< 0.036	
					Avg. Infiltration (in/hr):		< 0.014	

Comments: Measurable flow was not achieved during the field test.

Tested By:	Alex Dewhirst	Reviewed By:	Matthew Colman, P.E.
Title:	Project Manager	Date:	4/28/2022
Title:	Senior Engineer	Date:	4/28/2022



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## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Warren Ave & Burgess Ave, East Providence, RI 02914	Date of Service:	4/12/2022

Test Information			
Test Location:	Site 1 - Test Pit #3	Tested by:	Stefan Stelling
Start Time:	11:12 AM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Light Brown silt with sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	5.5	5.5
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
0	0.0	-	0	-	-	0	-	-
1	2.0	2		0	0.00		0	0.00
2	4.0	2	2	200	8.23	1	250	3.43
3	6.0	2	3.25	125	5.14	1.75	187.5	2.57
4	8.0	2	6	275	11.32	2.75	250	3.43
5	10.0	2	7.5	150	6.17	4	312.5	4.28
6	12.0	2	9	150	6.17	5.5	375	5.14
7	14.0	2	10.5	150	6.17	7.5	500	6.85
8	18.0	4	14	350	7.20	10.5	750	5.14
9	22.0	4	18	400	8.23	16.5	1500	10.28
10	30.0	8	25	700	7.20	19.75	812.5	2.78
11	34.0	4	29.5	450	9.26	21.25	375	2.57
12	38.0	4	33.75	425	8.74	23.25	500	3.43
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		6.2	
					Avg. Infiltration (in/hr):		2.4	

Comments:

Tested By:	Stefan Stelling, E.I.T.	Reviewed By:	Matthew Colman, P.E.
Title:	Staff Engineer	Date:	4/28/2022
Title:	Senior Engineer	Date:	4/28/2022

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer      Date: 4/28/2022	Title: Senior Engineer      Date: 4/28/2022



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## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Warren Ave & Burgess Ave, East Providence, RI 02914	Date of Service:	4/12/2022

Test Information			
Test Location:	Site 1 - Test Pit #4	Tested by:	Stefan Stelling
Start Time:	1:08 PM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Dark Olive Brown silty gravel with sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	5.25	5.25
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
0	0.0	-	0	-	-	0	-	-
1	1.0	1	2.5	250	20.58	2	500	13.70
2	2.0	2	3.5	100	4.12	4	500	6.85
3	4.0	2	8	450	18.52	6.25	562.5	7.71
4	6.0	2	10.5	250	10.29	8.25	500	6.85
5	8.0	2	12.5	200	8.23	10.25	500	6.85
6	10.0	2	13.75	125	5.14	12	437.5	6.00
7	14.0	4	15.75	200	4.12	16.5	1125	7.71
8	18.0	4	16.74	99	2.04	21	1125	7.71
9	22.0	4	17.5	76	1.56	25.75	1187.5	8.14
10	26.0	4	18.5	100	2.06	29.5	937.5	6.42
11	30.0	4	19.5	100	2.06	31	375	2.57
12	34.0	4	21	150	3.09	33.75	687.5	4.71
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		5.4	
					Avg. Infiltration (in/hr):		2.1	

Comments:

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer Date: 4/28/2022	Title: Senior Engineer Date: 4/28/2022



195 Frances Avenue  
Cranston, Rhode Island 02910  
Phone: 401-467-6454  
Fax: 401-467-2398  
<http://www.Thielsch.com>

**Client Information:**  
Beta Group, Inc.  
701 George Washington Hwy,  
Lincoln, RI 02865  
[kaguiar@BETA-Inc.com](mailto:kaguiar@BETA-Inc.com)

## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Warren Ave & Burgess Ave, East Providence, RI 02914	Date of Service:	4/12/2022

Test Information			
Test Location:	Site 1 - Test Pit #4	Tested by:	Stefan Stelling
Start Time:	1:08 PM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Dark Olive Brown silty gravel with sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	5.25	5.25
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
13	38.0	4	24.75	375	7.72	35.25	375	2.57
14	42.0	4	26.5	175	3.60	37.75	625	4.28
15	46.0	4	27.75	125	2.57	38.75	250	1.71
16	50.0	4	29.25	150	3.09	39.75	250	1.71
17	54.0	4	30.75	150	3.09	41	312.5	2.14
18	58.0	4	32.5	175	3.60	42.25	312.5	2.14
19	62.0	4	34	150	3.09	43.25	250	1.71
20	66.0	4	35.25	125	2.57	44.25	250	1.71
21	70.0	4	36.25	100	2.06	45.25	250	1.71
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		5.4	
					Avg. Infiltration (in/hr):		2.1	

Comments:
-----------

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer Date: 4/28/2022	Title: Senior Engineer Date: 4/28/2022



Tested By: Alex Dewhist	Reviewed By: Matthew Colman, P.E.
Title: Project Manager      Date: 4/28/2022	Title: Senior Engineer      Date: 4/28/2022







Thielsch Engineering  
195 Frances Ave  
Cranston, RI 02910  
Telephone: 4014676454


# BORING NUMBER Site 1 TP-1

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/12/22 DATE & TIME COMPLETED 4/12/22 WEATHER 50°F, light rain ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY A Dewhirst CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
1	E		Grass and topsoil			
2	E		(GW-GM) Olive silty gravel with sand			Hydrometer & Sieve
3	E		(ML) Olive Brown silt with sand			Hydrometer & Sieve
4						
5						
6	E		(SM) Light Olive Brown silty sand			Hydrometer & Sieve
7						
8						

Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 4 ft.  8 ft. VOLUME (±) = 9 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037



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# BORING NUMBER Site 1 TP-2

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/12/22 DATE & TIME COMPLETED 4/12/22 WEATHER 52°F, light rain ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY A Dewhirst CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
	E		Grass and topsoil			
1	E		(SM) Brown silty sand			Hydrometer & Sieve
2	E		(ML) Brown silt			
3						Hydrometer & Sieve
4						
5						
6						
6.5	E		(SM) Light Brown silty sand			Hydrometer & Sieve
7						
8						

Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 5 ft.  7 ft. VOLUME (±) = 10 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037



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# BORING NUMBER Site 1 TP-3

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/12/22 DATE & TIME COMPLETED 4/12/22 WEATHER 54°F, light rain ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY A Dewhirst CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
	E		Grass and topsoil			
1						
	E		(ML) Light Brown silt with sand			
2						
3						
4						
5						
6						
	E		(SP-SM) Light Brown poorly graded sand with silt			
7						
8						

Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 4.5 ft.  6.5 ft. VOLUME (±) = 9 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037



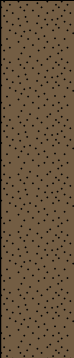


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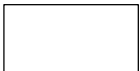
# BORING NUMBER Site 1 TP-4

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/12/22 DATE & TIME COMPLETED 4/12/22 WEATHER 56°F, overcast ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY A Dewhirst CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
	E		Grass and Topsoil			
0.5						
	E		(GW-GM) Dark Olive Brown silty gravel with sand			Hydrometer & Sieve
1						
2						
3						
4						Hydrometer & Sieve
5						
5.0						
	E		(SP) Olive Brown poorly graded sand			Hydrometer & Sieve
6						
7						
8						
8.0						

Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 5 ft.  8 ft. VOLUME (±) = 12 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037



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# BORING NUMBER Site 1 TP-5

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/12/22 DATE & TIME COMPLETED 4/12/22 WEATHER 60°F, sunny ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY A Dewhirst CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
	E		Grass and Topsoil			
1	E		(SW-SM) Olive silty sand with gravel			
2						
3						
4						Hydrometer & Sieve
5	E		(ML) Olive Brown sandy silt			Hydrometer & Sieve
6						
7						
8						

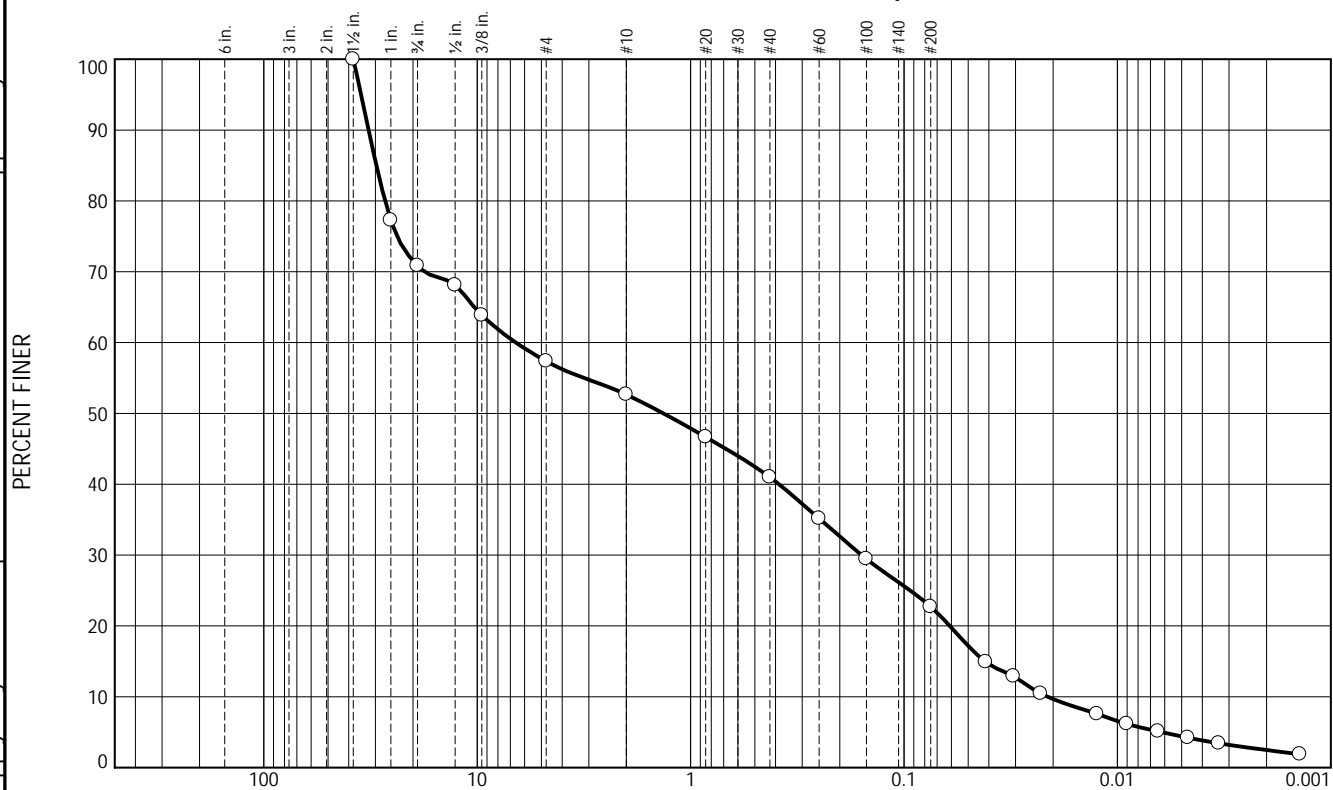
Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 5 ft.  7 ft. VOLUME (±) = 10 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	29.2	13.4	4.7	11.7	18.3	20.2	2.5

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	77.3		
0.75"	70.8		
0.5"	68.1		
0.375"	63.8		
#4	57.4		
#10	52.7		
#20	46.7		
#40	41.0		
#60	35.2		
#100	29.5		
#200	22.7		
0.0414 mm.	14.9		
0.0307 mm.	12.9		
0.0229 mm.	10.5		
0.0125 mm.	7.6		
0.0090 mm.	6.2		
0.0064 mm.	5.1		
0.0047 mm.	4.2		
0.0033 mm.	3.4		
0.0014 mm.	1.9		

\* (no specification provided)

Soil Description  
Olive silty gravel with sand

PL= NP      Atterberg Limits      LL= NV      PI= NP

Coefficients  
D<sub>90</sub>= 32.2645      D<sub>85</sub>= 29.6799      D<sub>60</sub>= 6.5879  
D<sub>50</sub>= 1.3409      D<sub>30</sub>= 0.1579      D<sub>15</sub>= 0.0418  
D<sub>10</sub>= 0.0213      C<sub>u</sub>= 309.88      C<sub>c</sub>= 0.18

Classification  
USCS= GM      AASHTO= A-1-b

Remarks

Source of Sample: Test Pit      Depth: 1-2.5'  
Sample Number: Site 1 TP-1

Date: 04.21.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

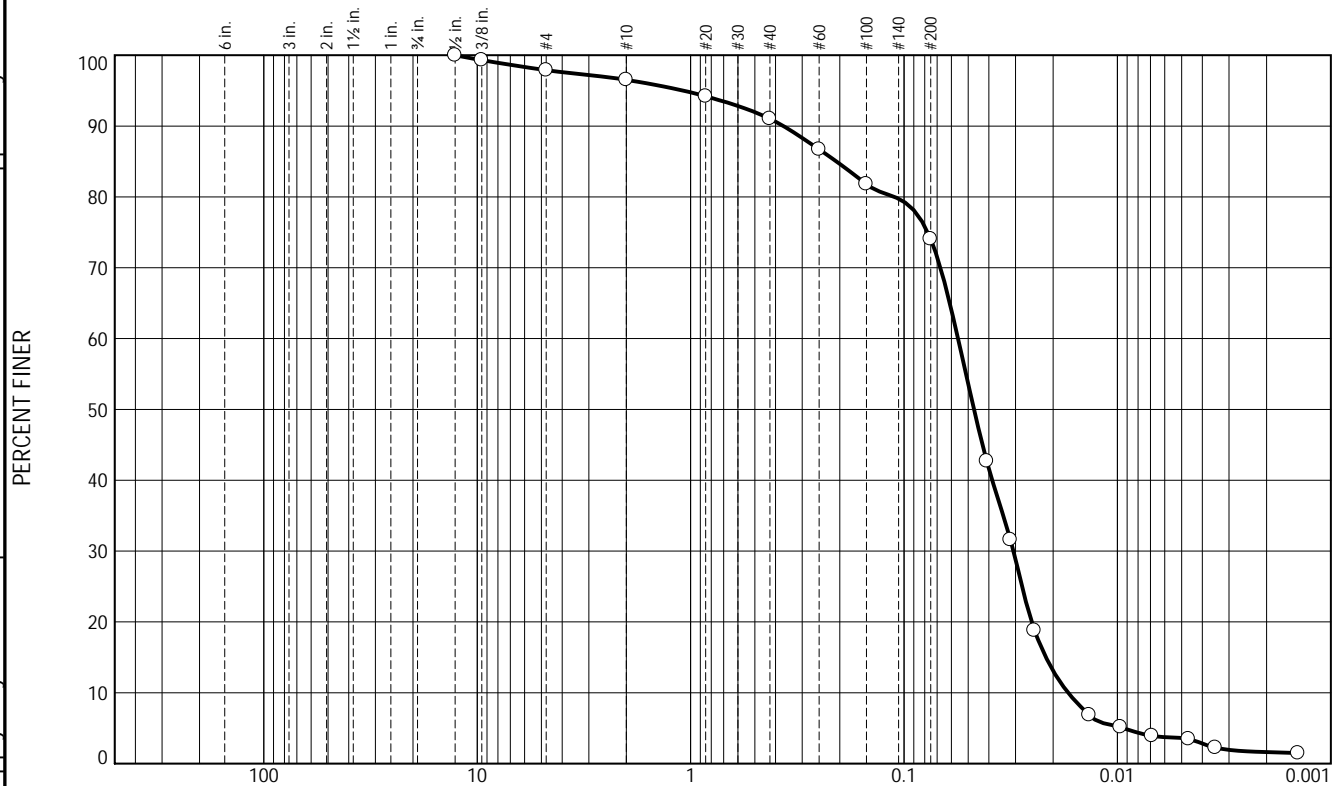
Figure 22-S-1283

Tested By: SL / FR / SL

Checked By:

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	1.4	5.5	16.9	72.5	1.6

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.5"	100.0		
0.375"	99.3		
#4	97.9		
#10	96.5		
#20	94.2		
#40	91.0		
#60	86.7		
#100	81.8		
#200	74.1		
0.0409 mm.	42.7		
0.0317 mm.	31.6		
0.0245 mm.	18.8		
0.0136 mm.	6.8		
0.0097 mm.	5.1		
0.0069 mm.	3.9		
0.0046 mm.	3.5		
0.0035 mm.	2.2		
0.0014 mm.	1.5		

\* (no specification provided)

Soil Description		
Olive Brown silt with sand		
Atterberg Limits		
PL= NP	LL= NV	PI= NP
Coefficients		
D <sub>90</sub> = 0.3676	D <sub>85</sub> = 0.2073	D <sub>60</sub> = 0.0558
D <sub>50</sub> = 0.0470	D <sub>30</sub> = 0.0307	D <sub>15</sub> = 0.0216
D <sub>10</sub> = 0.0170	C <sub>u</sub> = 3.28	C <sub>c</sub> = 0.99
Classification		
USCS= ML	AASHTO=	A-4(0)
Remarks		
Sample visually classified as non-plastic.		

Source of Sample: Test Pit      Depth: 3-4'  
Sample Number: Site 1 TP-1

Date: 04.22.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

Figure 22-S-1284

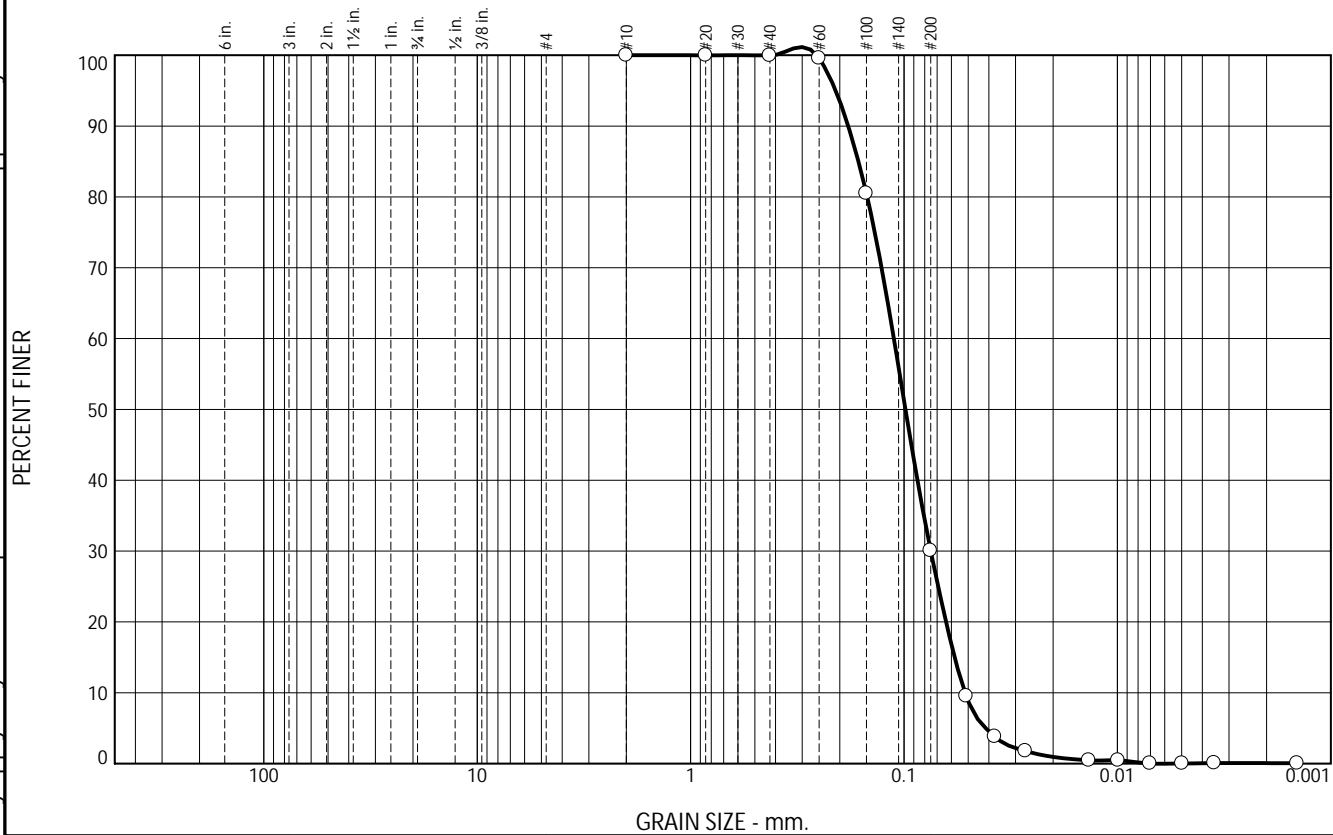
Tested By: SL / AV / SL

Checked By: 



These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	69.8	30.0	0.1

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	99.9		
#60	99.6		
#100	80.5		
#200	30.1		
0.0510 mm.	9.5		
0.0376 mm.	3.8		
0.0269 mm.	1.8		
0.0136 mm.	0.5		
0.0099 mm.	0.5		
0.0070 mm.	0.0		
0.0050 mm.	0.0		
0.0035 mm.	0.1		
0.0014 mm.	0.0		

\* (no specification provided)

Soil Description  
Light Olive Brown silty sand

Atterberg Limits  
PL= NP      LL= NV      PI= NP  
Coefficients  
D<sub>90</sub>= 0.1826      D<sub>85</sub>= 0.1635      D<sub>60</sub>= 0.1116  
D<sub>50</sub>= 0.0984      D<sub>30</sub>= 0.0749      D<sub>15</sub>= 0.0579  
D<sub>10</sub>= 0.0517      C<sub>u</sub>= 2.16      C<sub>c</sub>= 0.97

Classification  
USCS= SM      AASHTO= A-2-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit      Depth: 6-8'  
Sample Number: Site 1 TP-1

Date: 04.22.22

Thielsch Engineering Inc.

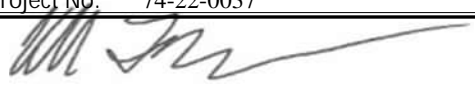
Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

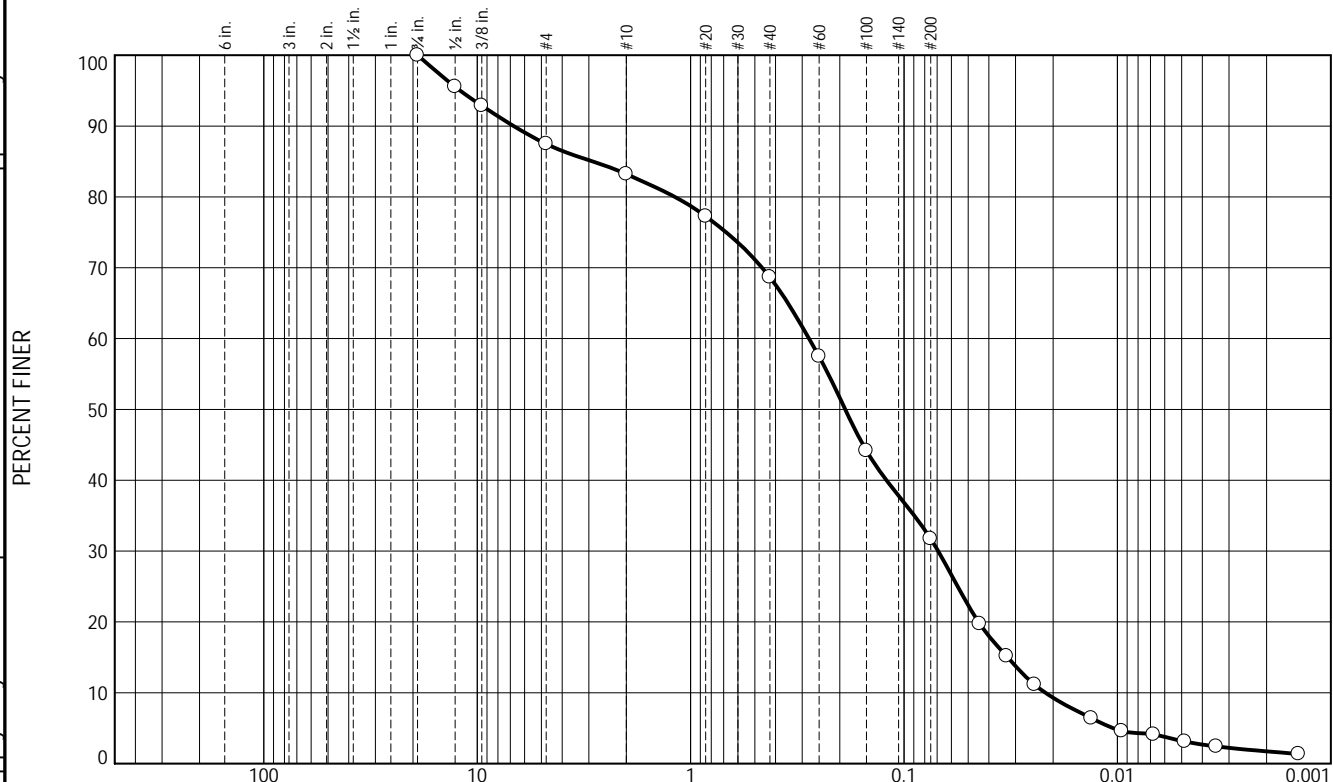
Figure 22-S-1285

Tested By: SL / AV / SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	12.5	4.3	14.5	37.0	30.0	1.7

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75"	100.0		
0.5"	95.5		
0.375"	92.9		
#4	87.5		
#10	83.2		
#20	77.3		
#40	68.7		
#60	57.5		
#100	44.2		
#200	31.7		
0.0442 mm.	19.7		
0.0330 mm.	15.2		
0.0244 mm.	11.1		
0.0132 mm.	6.4		
0.0095 mm.	4.6		
0.0068 mm.	4.1		
0.0048 mm.	3.1		
0.0034 mm.	2.4		
0.0014 mm.	1.3		

\* (no specification provided)

Soil Description  
Brown silty sand

Atterberg Limits  
PL= NP    LL= NV    PI= NP

Coefficients  
D<sub>90</sub>= 6.7425    D<sub>85</sub>= 2.8742    D<sub>60</sub>= 0.2786  
D<sub>50</sub>= 0.1887    D<sub>30</sub>= 0.0692    D<sub>15</sub>= 0.0327  
D<sub>10</sub>= 0.0218    C<sub>u</sub>= 12.81    C<sub>c</sub>= 0.79

Classification  
USCS= SM    AASHTO= A-2-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit    Depth: 1-2'  
Sample Number: Site 1 TP-2

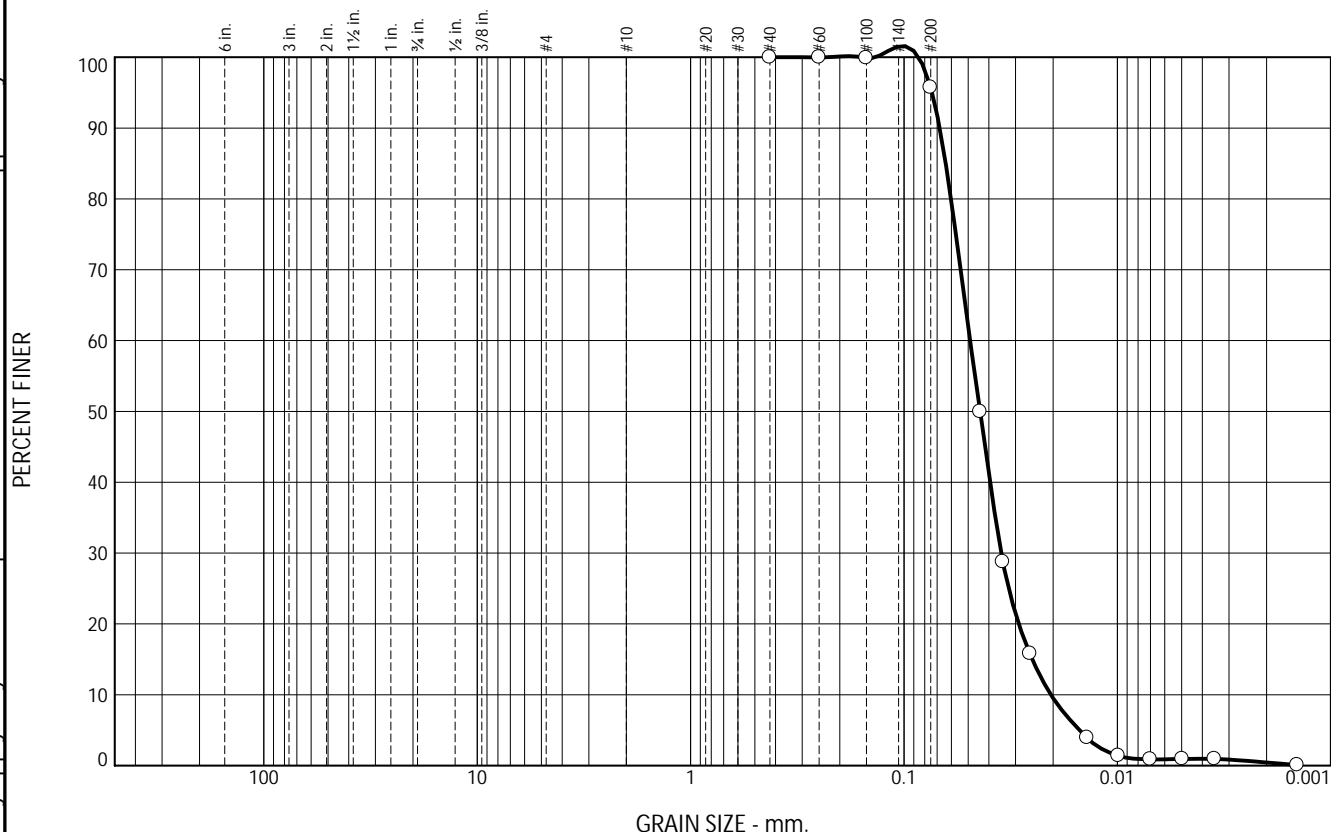
Date: 04.21.22

Thielsch Engineering Inc.  Cranston, RI	Client: Beta Group
	Project: East Providence Infiltration Testing East Providence, RI
	Project No: 74-22-0037
	Figure 22-S-1286

Tested By: SF / FR / SL    Checked By:

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	4.3	95.3	0.4

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#40	100.0		
#60	100.0		
#100	99.9		
#200	95.7		
0.0440 mm.	50.0		
0.0344 mm.	28.8		
0.0257 mm.	15.8		
0.0139 mm.	3.9		
0.0099 mm.	1.4		
0.0070 mm.	0.9		
0.0050 mm.	0.9		
0.0035 mm.	0.9		
0.0014 mm.	0.1		

\* (no specification provided)

Soil Description		
Brown silt		
Atterberg Limits		
PL= NP	LL= NV	PI= NP
Coefficients		
D <sub>90</sub> = 0.0680	D <sub>85</sub> = 0.0638	D <sub>60</sub> = 0.0490
D <sub>50</sub> = 0.0440	D <sub>30</sub> = 0.0351	D <sub>15</sub> = 0.0250
D <sub>10</sub> = 0.0205	C <sub>u</sub> = 2.39	C <sub>c</sub> = 1.22
Classification		
USCS= ML	AASHTO=	A-4(0)
Remarks		
Sample visually classified as non-plastic.		

Source of Sample: Test Pit      Depth: 3-4'  
Sample Number: Site 1 TP-2

Date: 04.21.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

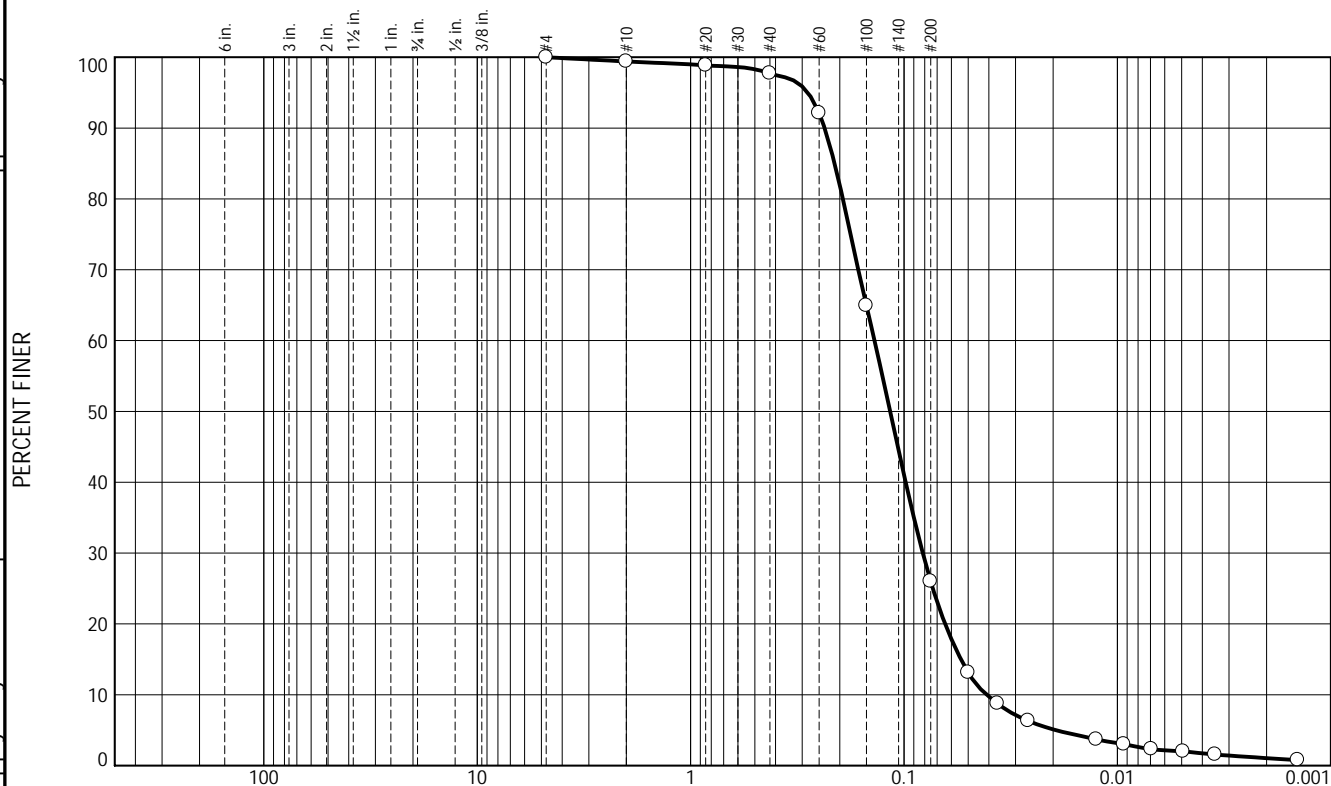
Figure 22-S-1287

Tested By: SF / FR / SL

Checked By:

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	1.7	71.7	24.9	1.1

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.4		
#20	98.8		
#40	97.7		
#60	92.1		
#100	64.9		
#200	26.0		
0.0500 mm.	13.1		
0.0364 mm.	8.8		
0.0262 mm.	6.3		
0.0126 mm.	3.7		
0.0093 mm.	3.0		
0.0069 mm.	2.3		
0.0049 mm.	2.0		
0.0035 mm.	1.6		
0.0014 mm.	0.8		

\* (no specification provided)

Soil Description  
Light Brown silty sand

PL= NP      Atterberg Limits      LL= NV      PI= NP  
Coefficients  
D<sub>90</sub>= 0.2355      D<sub>85</sub>= 0.2116      D<sub>60</sub>= 0.1374  
D<sub>50</sub>= 0.1162      D<sub>30</sub>= 0.0817      D<sub>15</sub>= 0.0541  
D<sub>10</sub>= 0.0410      C<sub>u</sub>= 3.35      C<sub>c</sub>= 1.18

Classification  
USCS= SM      AASHTO= A-2-4(0)

Remarks

Source of Sample: Test Pit      Depth: 6-8'  
Sample Number: Site 1 TP-2

Date: 04.21.22

Thielsch Engineering Inc.

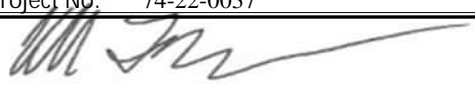
Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

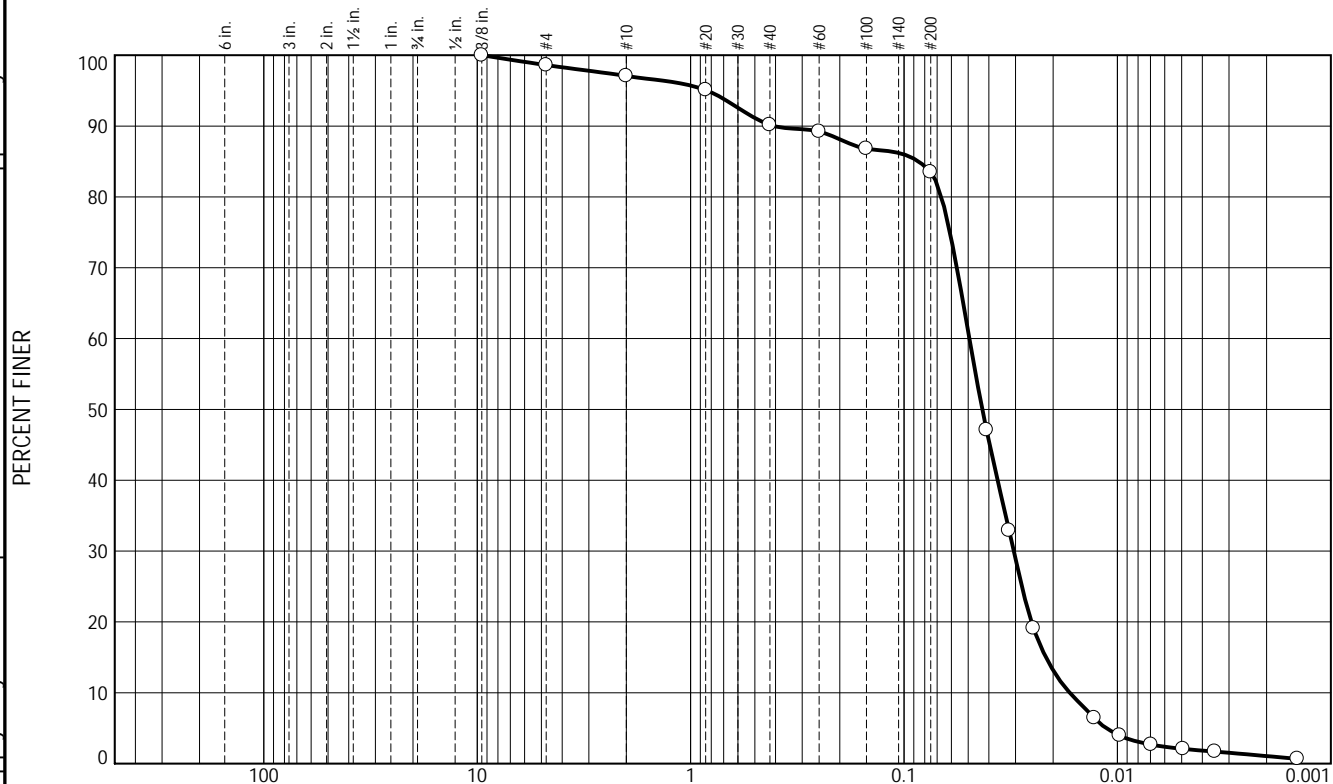
Figure 22-S-1288

Tested By: SL / FR / SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	1.5	6.9	6.7	82.4	1.1

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.375"	100.0		
#4	98.6		
#10	97.1		
#20	95.1		
#40	90.2		
#60	89.2		
#100	86.8		
#200	83.5		
0.0411 mm.	47.1		
0.0322 mm.	32.9		
0.0247 mm.	19.1		
0.0128 mm.	6.4		
0.0098 mm.	4.0		
0.0069 mm.	2.7		
0.0049 mm.	2.1		
0.0035 mm.	1.7		
0.0014 mm.	0.7		

\* (no specification provided)

Soil Description  
Light Brown silt with sand

Atterberg Limits  
PL= NP      LL= NV      PI= NP  
Coefficients  
D<sub>90</sub>= 0.4058      D<sub>85</sub>= 0.0856      D<sub>60</sub>= 0.0494  
D<sub>50</sub>= 0.0430      D<sub>30</sub>= 0.0306      D<sub>15</sub>= 0.0216  
D<sub>10</sub>= 0.0167      C<sub>u</sub>= 2.95      C<sub>c</sub>= 1.13

Classification  
USCS= ML      AASHTO= A-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit      Depth: 3-4'  
Sample Number: Site 1 TP-3

Date: 04.21.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

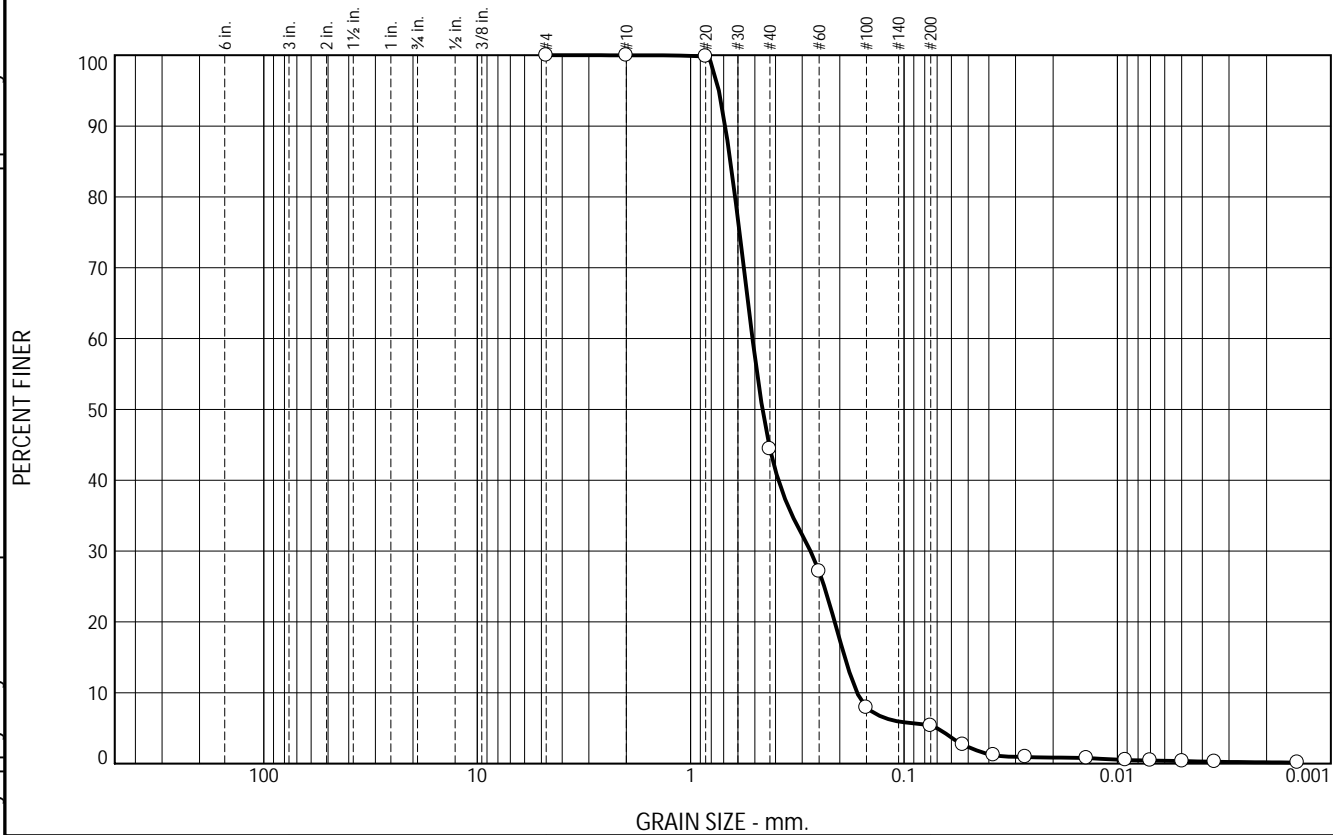
Figure 22-S-1289

Tested By: SL / FR / SL

Checked By:

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	55.6	39.1	5.1	0.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.8		
#40	44.4		
#60	27.1		
#100	7.9		
#200	5.3		
0.0530 mm.	2.7		
0.0381 mm.	1.2		
0.0270 mm.	0.9		
0.0140 mm.	0.8		
0.0092 mm.	0.5		
0.0070 mm.	0.4		
0.0050 mm.	0.3		
0.0035 mm.	0.3		
0.0014 mm.	0.1		

\* (no specification provided)

Soil Description  
Light Brown poorly graded sand with silt

PL= NP      Atterberg Limits      LL= NV      PI= NP

Coefficients  
D<sub>90</sub>= 0.6882      D<sub>85</sub>= 0.6508      D<sub>60</sub>= 0.5127  
D<sub>50</sub>= 0.4605      D<sub>30</sub>= 0.2744      D<sub>15</sub>= 0.1895  
D<sub>10</sub>= 0.1659      C<sub>u</sub>= 3.09      C<sub>c</sub>= 0.89

Classification  
USCS= SP-SM      AASHTO= A-1-b

Remarks

Source of Sample: Test Pit      Depth: 6.5-8'  
Sample Number: Site 1 TP-3

Date: 04.21.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

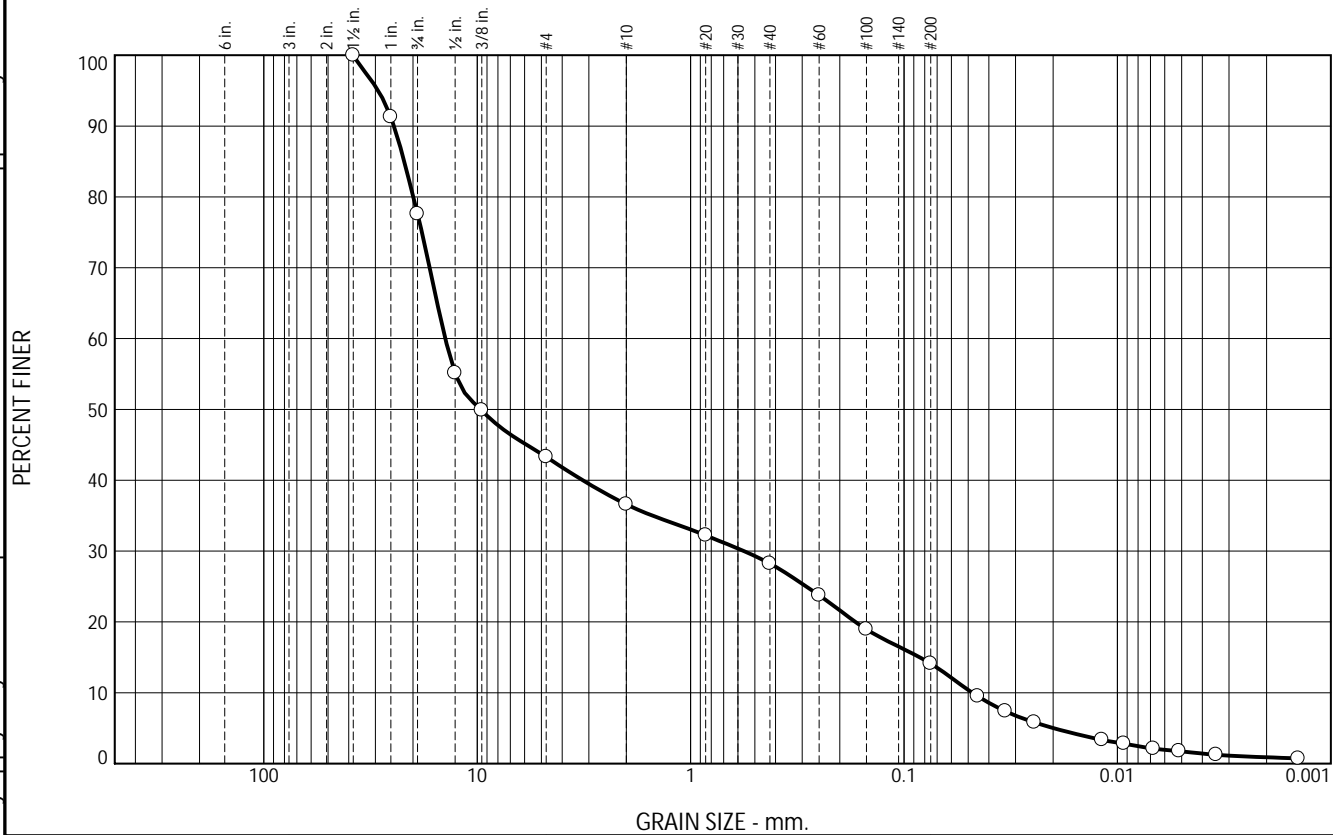
Figure 22-S-1290

Tested By: SL / FR / SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	22.4	34.3	6.7	8.4	14.1	13.2	0.9

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	91.3		
0.75"	77.6		
0.5"	55.1		
0.375"	49.9		
#4	43.3		
#10	36.6		
#20	32.2		
#40	28.2		
#60	23.8		
#100	19.0		
#200	14.1		
0.0451 mm.	9.5		
0.0335 mm.	7.4		
0.0245 mm.	5.8		
0.0118 mm.	3.3		
0.0093 mm.	2.8		
0.0068 mm.	2.1		
0.0051 mm.	1.8		
0.0034 mm.	1.2		
0.0014 mm.	0.7		

\* (no specification provided)

Soil Description  
Dark Olive Brown silty gravel with sand

Atterberg Limits  
PL= NP LL= NV PI= NP

Coefficients  
D<sub>90</sub>= 24.5307 D<sub>85</sub>= 21.9764 D<sub>60</sub>= 14.1184  
D<sub>50</sub>= 9.6199 D<sub>30</sub>= 0.5625 D<sub>15</sub>= 0.0843  
D<sub>10</sub>= 0.0479 C<sub>u</sub>= 294.88 C<sub>c</sub>= 0.47

Classification  
USCS= GM AASHTO= A-1-a

Remarks

Source of Sample: Test Pit Depth: 0.5-1  
Sample Number: Site 1 TP-4

Date: 04.22.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

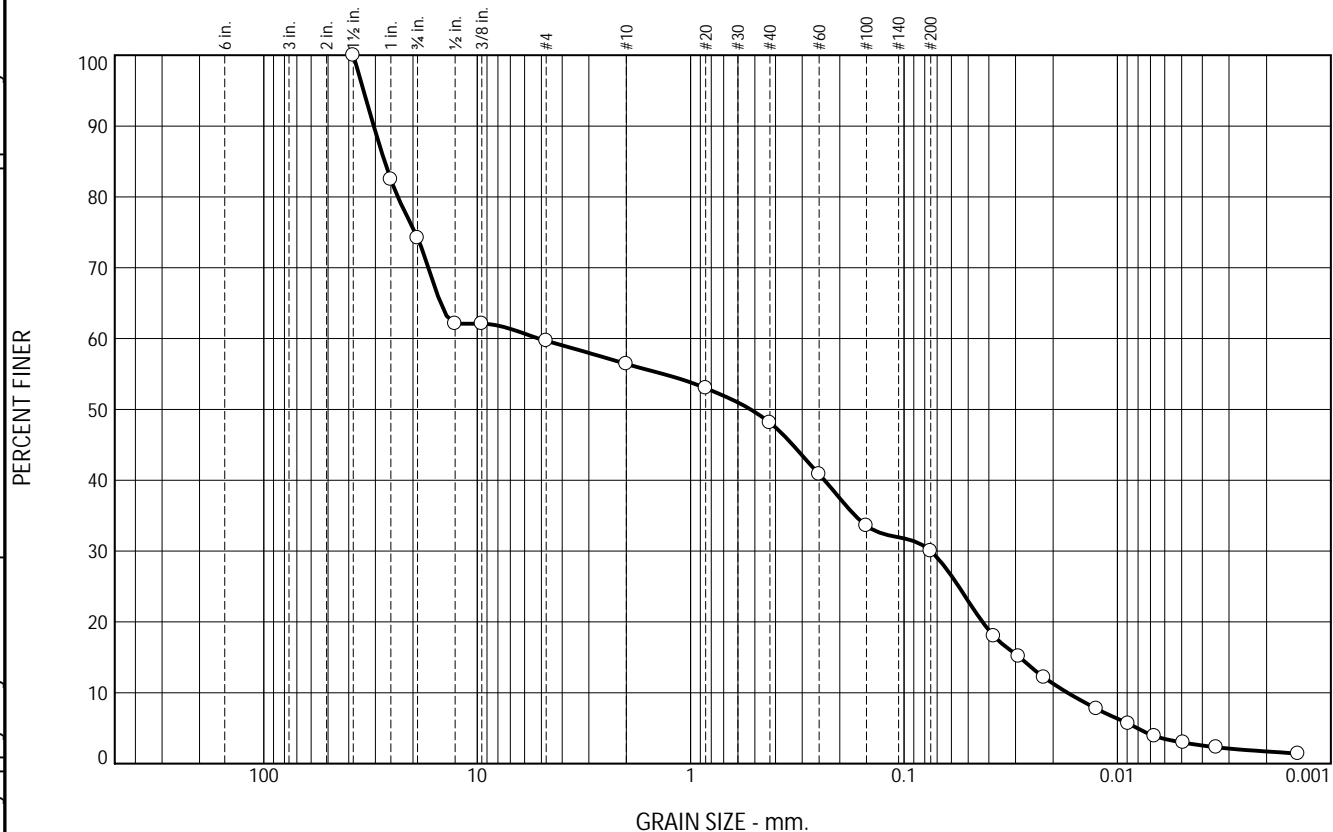
Figure 22-S-1291

Tested By: SL / AV / SL

Checked By:

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	25.8	14.5	3.3	8.3	18.1	28.3	1.7

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	82.5		
0.75"	74.2		
0.5"	62.1		
0.375"	62.1		
#4	59.7		
#10	56.4		
#20	53.0		
#40	48.1		
#60	40.8		
#100	33.6		
#200	30.0		
0.0375 mm.	18.0		
0.0291 mm.	15.1		
0.0221 mm.	12.2		
0.0125 mm.	7.7		
0.0089 mm.	5.7		
0.0067 mm.	3.9		
0.0049 mm.	3.0		
0.0034 mm.	2.3		
0.0014 mm.	1.4		

\* (no specification provided)

Soil Description  
Dark Olive Brown silty gravel with sand

Atterberg Limits  
PL= NP LL= NV PI= NP

Coefficients  
D<sub>90</sub>= 30.5173 D<sub>85</sub>= 27.1473 D<sub>60</sub>= 5.1461  
D<sub>50</sub>= 0.5236 D<sub>30</sub>= 0.0750 D<sub>15</sub>= 0.0287  
D<sub>10</sub>= 0.0171 C<sub>u</sub>= 300.77 C<sub>c</sub>= 0.06

Classification  
USCS= GM AASHTO= A-2-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit Depth: 3-4'  
Sample Number: Site 1 TP-4

Date: 04.22.22

Thielsch Engineering Inc.

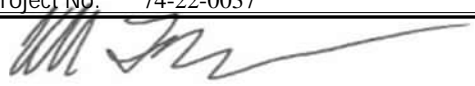
Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

Figure 22-S-1292

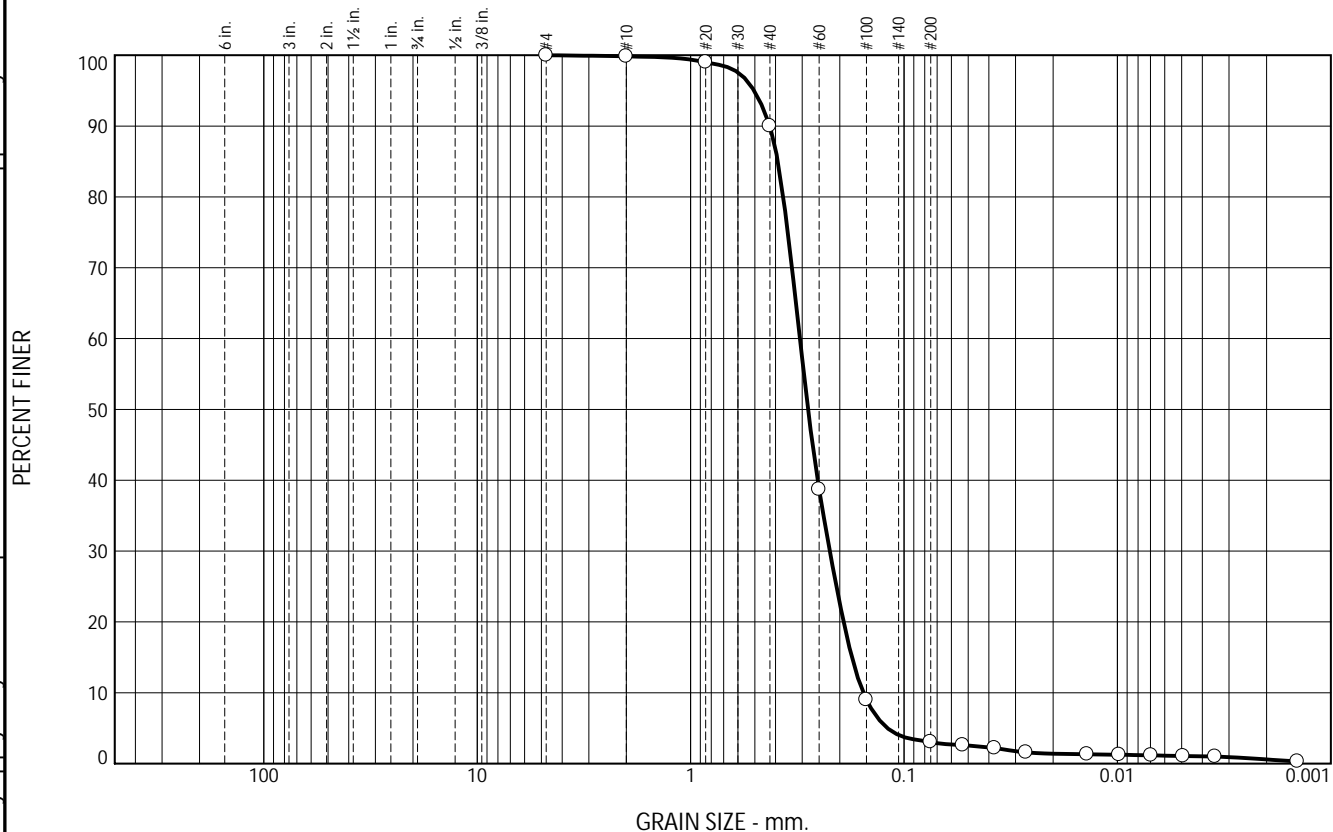
Tested By: SL / AV / SL

Checked By: 



These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	9.8	87.0	2.4	0.6

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.0		
#40	90.0		
#60	38.7		
#100	9.0		
#200	3.0		
0.0530 mm.	2.6		
0.0377 mm.	2.2		
0.0268 mm.	1.6		
0.0139 mm.	1.3		
0.0098 mm.	1.2		
0.0070 mm.	1.2		
0.0049 mm.	1.1		
0.0035 mm.	1.0		
0.0014 mm.	0.3		

\* (no specification provided)

Soil Description  
Olive Brown poorly graded sand

PL= NP      Atterberg Limits      LL= NV      PI= NP  
Coefficients  
D<sub>90</sub>= 0.4250      D<sub>85</sub>= 0.3902      D<sub>60</sub>= 0.3073  
D<sub>50</sub>= 0.2815      D<sub>30</sub>= 0.2228      D<sub>15</sub>= 0.1754  
D<sub>10</sub>= 0.1554      C<sub>u</sub>= 1.98      C<sub>c</sub>= 1.04

Classification  
USCS= SP      AASHTO= A-3  
Remarks

Source of Sample: Test Pit      Depth: 5-8'  
Sample Number: Site 1 TP-4

Date: 04.22.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

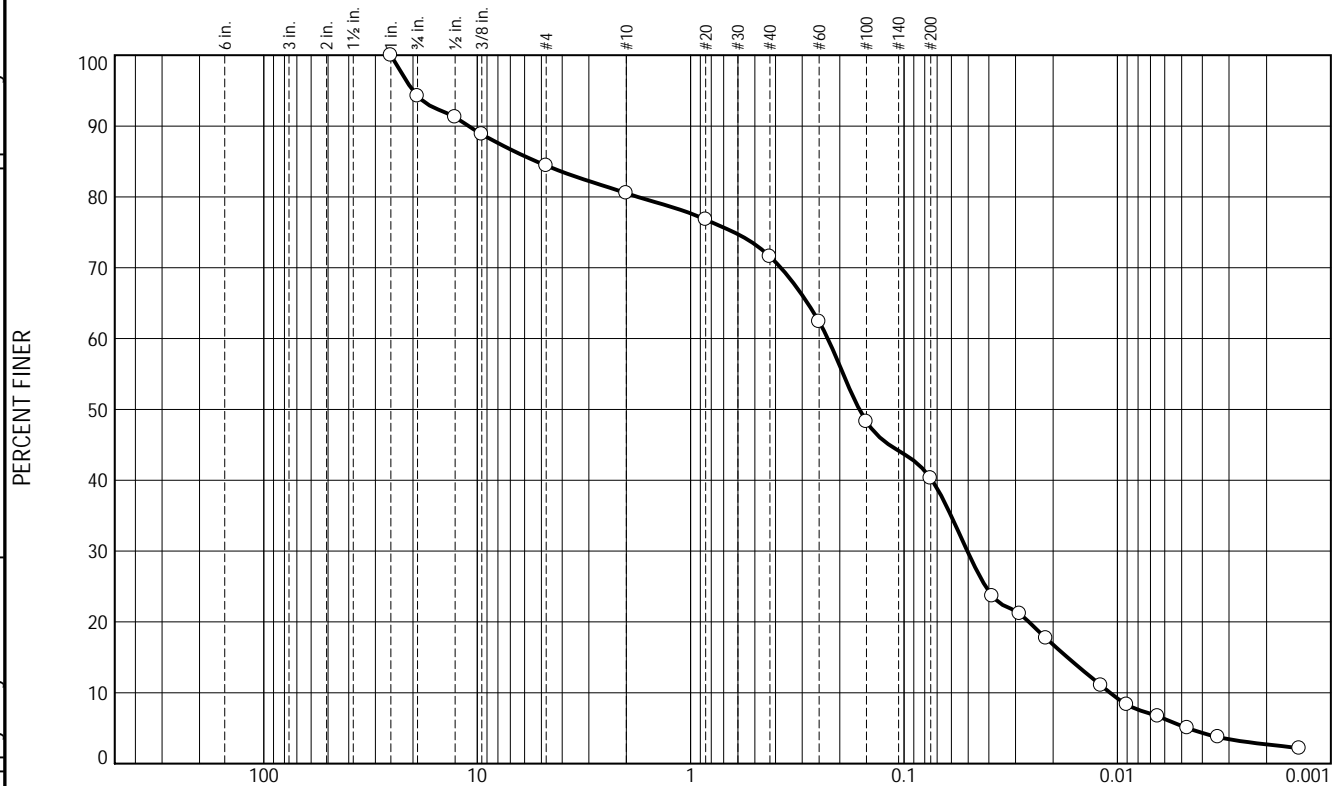
Figure 22-S-1293

Tested By: SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.8	9.8	3.9	8.9	31.3	37.6	2.7

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	94.2		
1/2"	91.2		
3/8"	88.8		
#4	84.4		
#10	80.5		
#20	76.8		
#40	71.6		
#60	62.4		
#100	48.3		
#200	40.3		
0.0387 mm.	23.6		
0.0287 mm.	21.2		
0.0216 mm.	17.7		
0.0119 mm.	11.0		
0.0090 mm.	8.3		
0.0065 mm.	6.7		
0.0047 mm.	5.0		
0.0034 mm.	3.7		
0.0014 mm.	2.2		

\* (no specification provided)

Soil Description  
Olive silty sand with gravel

PL= NP      Atterberg Limits      LL= NV      PI= NP

Coefficients  
D<sub>90</sub>= 10.9723      D<sub>85</sub>= 5.2764      D<sub>60</sub>= 0.2276  
D<sub>50</sub>= 0.1620      D<sub>30</sub>= 0.0505      D<sub>15</sub>= 0.0171  
D<sub>10</sub>= 0.0108      C<sub>u</sub>= 21.04      C<sub>c</sub>= 1.04

Classification  
USCS= SM      AASHTO= A-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit      Depth: 3-4.5'  
Sample Number: Site 1 TP-5

Date: 04.25.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

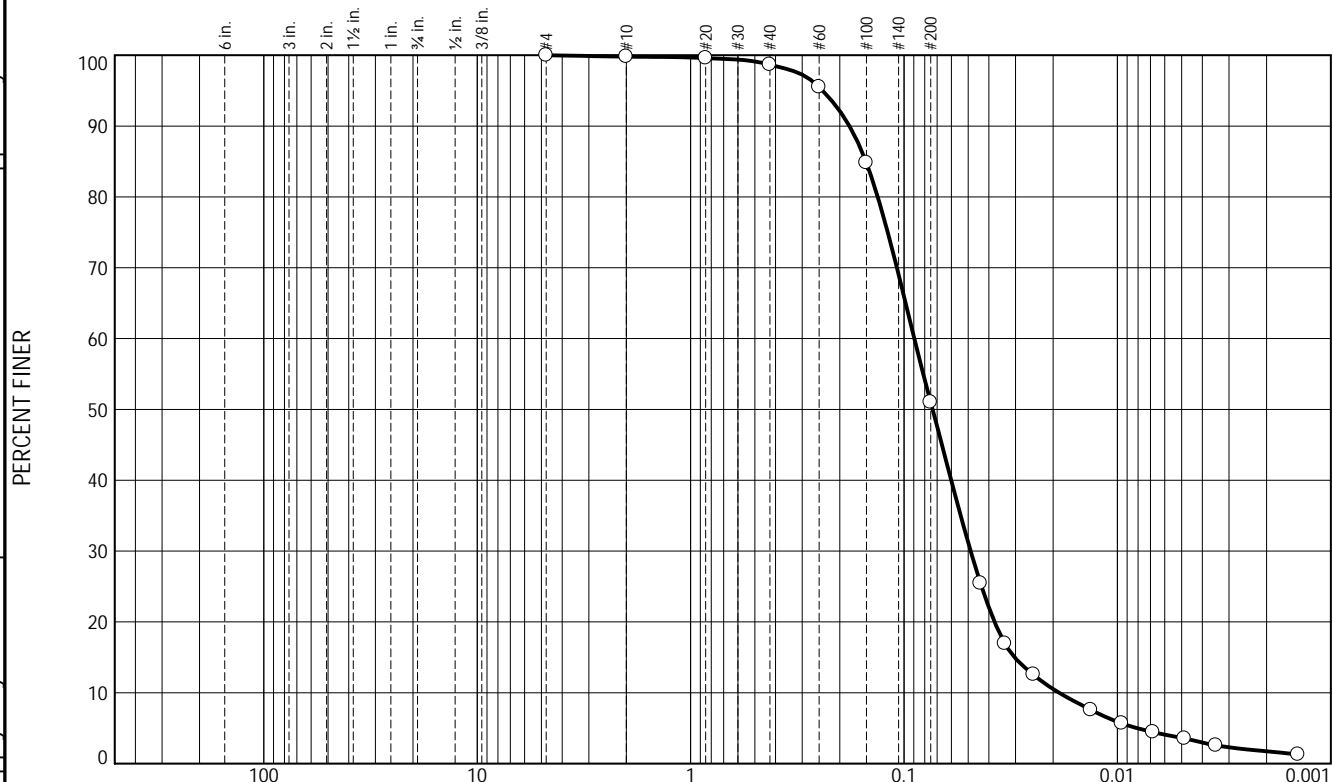
Figure 22-S-1295

Tested By: SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.1	47.7	49.3	1.7

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.6		
#40	98.7		
#60	95.5		
#100	84.8		
#200	51.0		
0.0438 mm.	25.5		
0.0337 mm.	16.9		
0.0247 mm.	12.6		
0.0133 mm.	7.6		
0.0095 mm.	5.7		
0.0068 mm.	4.4		
0.0048 mm.	3.5		
0.0035 mm.	2.6		
0.0014 mm.	1.3		

\* (no specification provided)

Soil Description  
Olive Brown sandy silt

Atterberg Limits  
PL= NP      LL= NV      PI= NP

Coefficients  
D<sub>90</sub>= 0.1801      D<sub>85</sub>= 0.1508      D<sub>60</sub>= 0.0895  
D<sub>50</sub>= 0.0735      D<sub>30</sub>= 0.0487      D<sub>15</sub>= 0.0304  
D<sub>10</sub>= 0.0188      C<sub>u</sub>= 4.77      C<sub>c</sub>= 1.41

Classification  
USCS= ML      AASHTO= A-4(0)

Remarks  
Sample visually classified as non-plastic.

Source of Sample: Test Pit      Depth: 4.5-8'  
Sample Number: Site 1 TP-5

Date: 04.22.22

Thielsch Engineering Inc.  Cranston, RI	Client: Beta Group
	Project: East Providence Infiltration Testing East Providence, RI
Project No: 74-22-0037	Figure 22-S-1294

Tested By: SL      Checked By:



195 Frances Avenue  
Cranston, Rhode Island 02910  
Phone: 401-467-6454  
Fax: 401-467-2398  
<http://www.Thielsch.com>

**Client Information:**  
Beta Group, Inc.  
701 George Washington Hwy,  
Lincoln, RI 02865  
[kaguiar@BETA-Inc.com](mailto:kaguiar@BETA-Inc.com)

## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Burgess Ave, East Providence, RI 02914	Date of Service:	4/13/2022

Test Information			
Test Location:	Site 2 - Test Pit #1	Tested by:	Stefan Stelling
Start Time:	8:38 AM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Olive silty sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	6	6
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
0	0.0	-	0	-	-	0	-	-
1	2.0	2	2	200	8.23	2	500	6.85
2	4.0	2	5	300	12.35	3.5	375	5.14
3	6.0	2	8	300	12.35	5	375	5.14
4	8.0	2	11	300	12.35	6	250	3.43
5	10.0	2	15	400	16.46	7.75	437.5	6.00
6	12.0	2	18	300	12.35	9	312.5	4.28
7	14.0	4	21	300	6.17	11	500	3.43
8	18.0	4	26.5	550	11.32	17	1500	10.28
9	22.0	4	30	350	7.20	22.25	1312.5	8.99
10	26.0	4	33.5	350	7.20	27	1187.5	8.14
11	30.0	4	37.5	400	8.23	30.5	875	6.00
12	34.0	4	40.5	300	6.17	34	875	6.00
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		8.5	
					Avg. Infiltration (in/hr):		3.3	

Comments:

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer Date: 4/28/2022	Title: Senior Engineer Date: 4/28/2022

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer      Date: 4/28/2022	Title: Senior Engineer      Date: 4/28/2022



195 Frances Avenue  
Cranston, Rhode Island 02910  
Phone: 401-467-6454  
Fax: 401-467-2398  
<http://www.Thielsch.com>

**Client Information:**  
Beta Group, Inc.  
701 George Washington Hwy,  
Lincoln, RI 02865  
[kaguiar@BETA-Inc.com](mailto:kaguiar@BETA-Inc.com)

## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Burgess Ave, East Providence, RI 02914	Date of Service:	4/13/2022

Test Information			
Test Location:	Site 2 - Test Pit #2	Tested by:	Stefan Stelling
Start Time:	9:38 AM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Olive Brown silty sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	5.5	5.5
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
0	0.0	-	0	-	-	0	-	-
1	2.0	2	3.75	375	15.43	3.5	875	11.99
2	4.0	2	8.75	500	20.58	10	1625	22.27
3	6.0	2	14.25	550	22.63	13.25	812.5	11.14
4	8.0	2	19	475	19.55	18.5	1312.5	17.99
5	10.0	2	22.5	350	14.40	20.25	437.5	6.00
6	12.0	2	25.5	300	12.35	22.5	562.5	7.71
7	14.0	2	27.5	200	8.23	25.5	750	10.28
8	16.0	2	28.5	100	4.12	27.5	500	6.85
9	18.0	2	30	150	6.17	29.5	500	6.85
10	20.0	4	31.5	150	3.09	31	375	2.57
11	24.0	4	32.5	100	2.06	33	500	3.43
12	28.0	4	33.5	100	2.06	36	750	5.14
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		8.6	
					Avg. Infiltration (in/hr):		3.4	

Comments:

Tested By:	Stefan Stelling, E.I.T.	Reviewed By:	Matthew Colman, P.E.
Title:	Staff Engineer	Date:	4/28/2022
Title:	Senior Engineer	Date:	4/28/2022



195 Frances Avenue  
Cranston, Rhode Island 02910  
Phone: 401-467-6454  
Fax: 401-467-2398  
<http://www.Thielsch.com>

**Client Information:**  
Beta Group, Inc.  
701 George Washington Hwy,  
Lincoln, RI 02865  
[kaguiar@BETA-Inc.com](mailto:kaguiar@BETA-Inc.com)

## Double Ring Infiltrometer Test Report

Project:	East Providence Infiltration Testing	TEI Project No.:	74-22-0037
Project Address:	Burgess Ave, East Providence, RI 02914	Date of Service:	4/13/2022

Test Information			
Test Location:	Site 2 - Test Pit #2	Tested by:	Stefan Stelling
Start Time:	9:38 AM	Temp of Water (°F):	58
pH:	6.50	Depth Below Ground Surface:	~4-ft
Soil Description:	Olive Brown silty sand		

Test Setup		
Information	Inner Ring	Annular Space
Area (sq cm):	729	2189
Depth Driven (in):	4	4
Water Depth (in):	5.5	5.5
Mariotte Tube (cc/div):	100	250

Infiltrometer Test Data (ASTM D3385)								
Test No.	Elapsed Time (min)	Time Increment (min)	Inner Ring			Annular Space		
			Reading (div)	Volume (cc)	Rate (cm/hr)	Reading (div)	Volume (cc)	Rate (cm/hr)
13	32.0	4	36	250	5.14	39	750	5.14
14	36.0	4	37.5	150	3.09	42.5	875	6.00
15	44.0	8	42	450	4.63	47	1125	3.85
16	52.0	8	44	200	2.06	50.25	812.5	2.78
17	60.0	8	51	700	7.20	56	1437.5	4.93
18	68.0	8	58	700	7.20	59	750	2.57
19	76.0	8	61.5	350	3.60	61.5	625	2.14
20	80.0	4	65.5	400	8.23	63.5	500	3.43
Avg. Infiltration values based on inner ring readings					Avg. Infiltration (cm/hr):		8.6	
					Avg. Infiltration (in/hr):		3.4	

Comments:
-----------

Tested By: Stefan Stelling, E.I.T.	Reviewed By: Matthew Colman, P.E.
Title: Staff Engineer Date: 4/28/2022	Title: Senior Engineer Date: 4/28/2022






Thielsch Engineering  
195 Frances Ave  
Cranston, RI 02910  
Telephone: 4014676454


# BORING NUMBER Site 2 TP-1

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/13/22 DATE & TIME COMPLETED 4/13/22 WEATHER 62°F, sunny ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY S Stelling CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
1	E		Grass and topsoil			
2	E		(SM) Brown silty sand			Hydrometer & Sieve
3						
4	E		(SM) Olive silty sand			Hydrometer & Sieve
5						
6						
7						
8						

Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 5 ft.  VOLUME (±) = 13 YD <sup>3</sup>	AZIMUTH:  	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS:		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037





Thielsch Engineering  
195 Frances Ave  
Cranston, RI 02910  
Telephone: 4014676454

# BORING NUMBER Site 2 TP-2

PAGE 1 OF 1

CLIENT BETA Group, Inc. PROJECT NAME East Providence Infiltration Testing  
PROJECT NUMBER 74-22-0037 LOCATION Warren & Burgess Avenue, East Providence RI COORDINATES \_\_\_\_\_  
DATE & TIME STARTED 4/13/22 DATE & TIME COMPLETED 4/13/22 WEATHER 62°F, sunny ELEVATION (FT) \_\_\_\_\_  
DRILLING CONTRACTOR East Providence DPW EQUIPMENT \_\_\_\_\_ REACH (FT) \_\_\_\_\_ CAPACITY (YD<sup>3</sup>) \_\_\_\_\_  
DRILLER L. Couto LOGGED BY S Stelling CHECKED BY M Colman

DEPTH (ft)	EXCAVATION EFFORT	GRAPHIC LOG	MATERIAL DESCRIPTION	STRATUM DESCRIPTION	BOULDER COUNT (qty./class)	SUBMITTED GEOTECHNICAL LABORATORY TESTING
0						
1	E		Grass and topsoil			
2	E		(SM) Olive Brown silty sand			Hydrometer & Sieve
3						
4						
5						
6						
7	E		(SM) Light Brown silty sand			Hydrometer & Sieve
8						

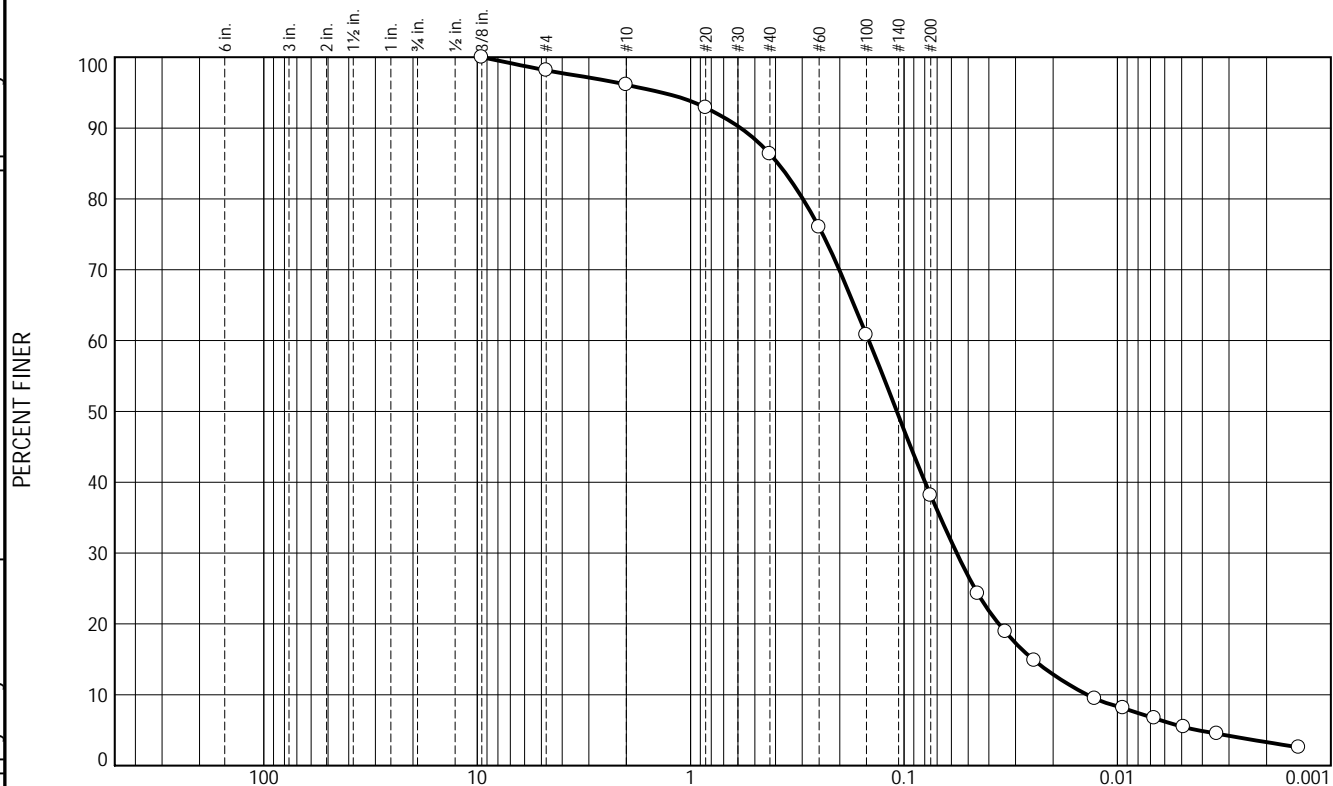
Bottom of borehole at 8.0 feet.

TEST PIT PLAN: 5 ft.  8 ft. VOLUME (±) = 12 YD <sup>3</sup>	AZIMUTH:	EXCAVATION EFFORT: E EASY M MODERATE D DIFFICULT	BOULDER SIZE RANGE DESIGNATION: DIAMETER (IN) SYMBOL 6 TO 16 A 16 TO 36 B > 36 C	COHESIVE SOILS: PLASTICITY CLASSIFICATION THREAD'S DIAMETER NON-PLASTIC SILT NONE SLIGHT CLAYEY SILT 1/4" LOW SILT & CLAY 1/8" MEDIUM CLAY & SILT 1/16" HIGH Silty CLAY 1/32" VERY HIGH CLAY 1/64"	BURMISTER CLASSIFICATION: TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50% PERCENT BY WEIGHT
GROUND WATER LEVELS: ▽ AT TIME OF DRILLING --- ▽ AT END OF DRILLING --- ▽ AFTER DRILLING ---			REMARKS: 1. Section of Gravel/Crushed Stone observed on two sides from 1' - 2.5'. After consulting BETA Group representative, layer deemed an outlier and not included		

TEST PIT LOG | EAST PROVIDENCE INFILTRATION TESTING | 74-22-0037

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	2.0	9.8	48.2	34.8	3.3

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	98.1		
#10	96.1		
#20	92.9		
#40	86.3		
#60	76.0		
#100	60.8		
#200	38.1		
0.0451 mm.	24.3		
0.0335 mm.	18.9		
0.0245 mm.	14.8		
0.0128 mm.	9.5		
0.0094 mm.	8.1		
0.0067 mm.	6.7		
0.0049 mm.	5.4		
0.0034 mm.	4.5		
0.0014 mm.	2.6		

\* (no specification provided)

## Soil Description

Brown silty sand

## Atterberg Limits

PL= NP LL= NV PI= NP

## Coefficients

D<sub>90</sub>= 0.5824 D<sub>85</sub>= 0.3893 D<sub>60</sub>= 0.1462  
D<sub>50</sub>= 0.1081 D<sub>30</sub>= 0.0566 D<sub>15</sub>= 0.0249  
D<sub>10</sub>= 0.0138 C<sub>u</sub>= 10.55 C<sub>c</sub>= 1.58

## Classification

USCS= SM AASHTO= A-4(0)

## Remarks

Sample visually classified as non-plastic.

Source of Sample: Test Pit Depth: 1-4'  
Sample Number: Site 2 TP-1

Date: 04.25.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

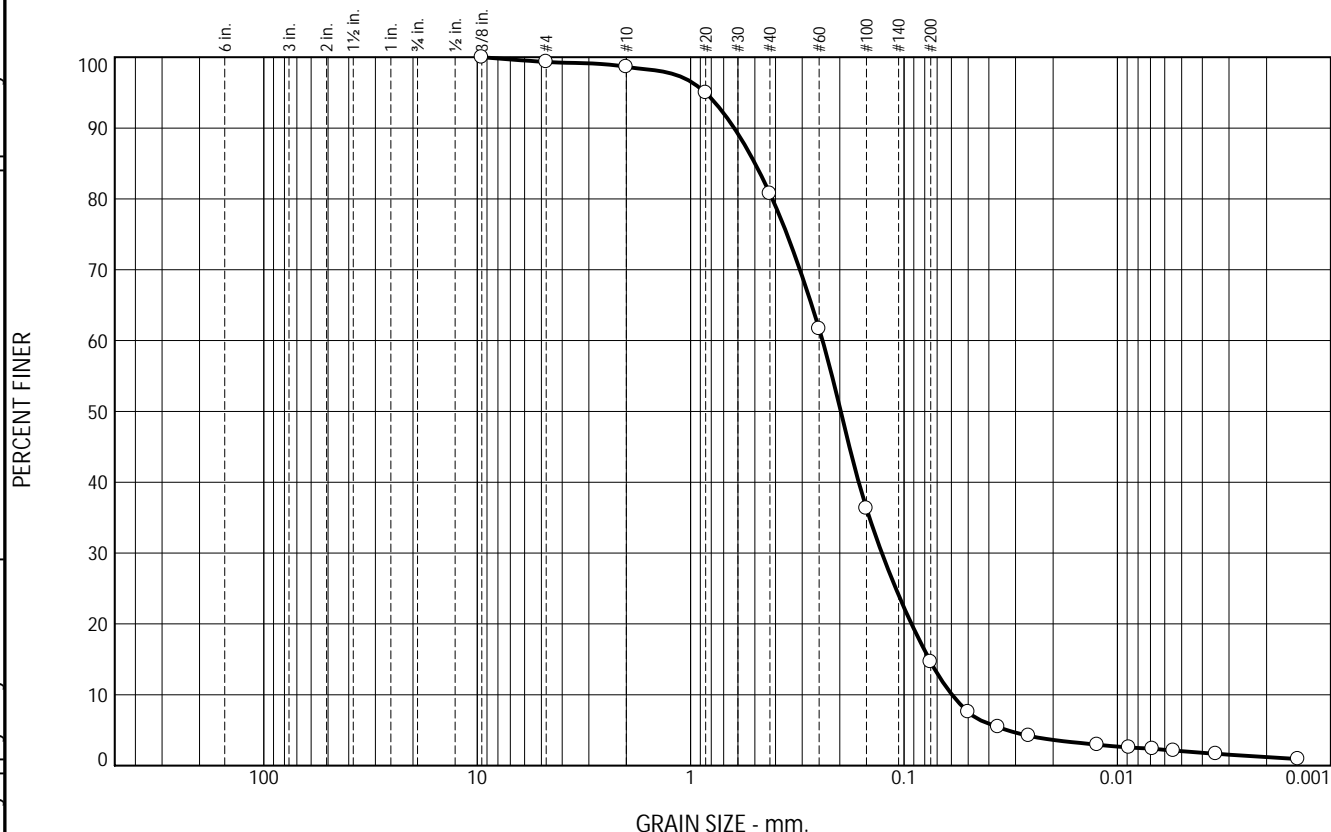
Figure 22-S-1296

Tested By: SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	0.7	17.9	66.1	13.4	1.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	99.3		
#10	98.6		
#20	95.0		
#40	80.7		
#60	61.7		
#100	36.3		
#200	14.6		
0.0500 mm.	7.5		
0.0363 mm.	5.5		
0.0260 mm.	4.2		
0.0124 mm.	2.9		
0.0088 mm.	2.6		
0.0069 mm.	2.4		
0.0055 mm.	2.1		
0.0035 mm.	1.7		
0.0014 mm.	0.9		

\* (no specification provided)

Soil Description		
Olive silty sand		
<u>Atterberg Limits</u>		
PL= NP	LL= NV	PI= NP
<u>Coefficients</u>		
D <sub>90</sub> = 0.6245	D <sub>85</sub> = 0.4989	D <sub>60</sub> = 0.2408
D <sub>50</sub> = 0.1979	D <sub>30</sub> = 0.1270	D <sub>15</sub> = 0.0761
D <sub>10</sub> = 0.0596	C <sub>u</sub> = 4.04	C <sub>c</sub> = 1.12
<u>Classification</u>		
USCS= SM	AASHTO=	A-2-4(0)
<u>Remarks</u>		

Source of Sample: Test Pit      Depth: 4-8'  
Sample Number: Site 2 TP-1

Date: 04.22.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

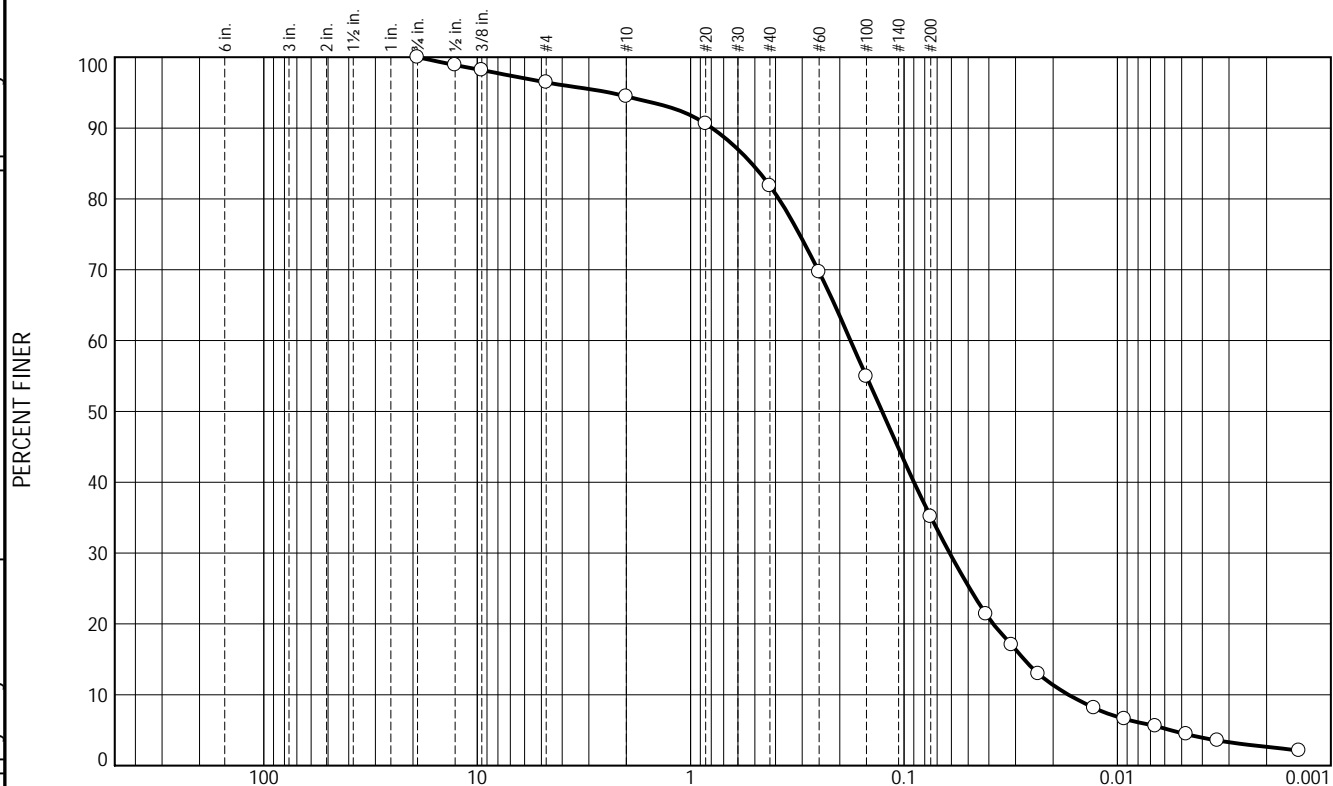
Figure 22-S-1297

Tested By: SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.6	1.9	12.7	46.7	32.5	2.6

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	98.9		
3/8"	98.2		
#4	96.4		
#10	94.5		
#20	90.6		
#40	81.8		
#60	69.7		
#100	54.9		
#200	35.1		
0.0413 mm.	21.4		
0.0313 mm.	17.0		
0.0235 mm.	12.9		
0.0129 mm.	8.1		
0.0093 mm.	6.6		
0.0066 mm.	5.6		
0.0047 mm.	4.4		
0.0034 mm.	3.5		
0.0014 mm.	2.1		

\* (no specification provided)

Soil Description		
Olive Brown silty sand		
Atterberg Limits		
PL= NP	LL= NV	PI= NP
Coefficients		
D <sub>90</sub> = 0.7940	D <sub>85</sub> = 0.5170	D <sub>60</sub> = 0.1781
D <sub>50</sub> = 0.1266	D <sub>30</sub> = 0.0611	D <sub>15</sub> = 0.0274
D <sub>10</sub> = 0.0169	C <sub>u</sub> = 10.51	C <sub>c</sub> = 1.24
Classification		
USCS= SM	AASHTO=	A-2-4(0)
Remarks		
Sample visually classified as non-plastic.		

Source of Sample: Test Pit      Depth: 1-7'  
Sample Number: Site 2 TP-2

Date: 04.27.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

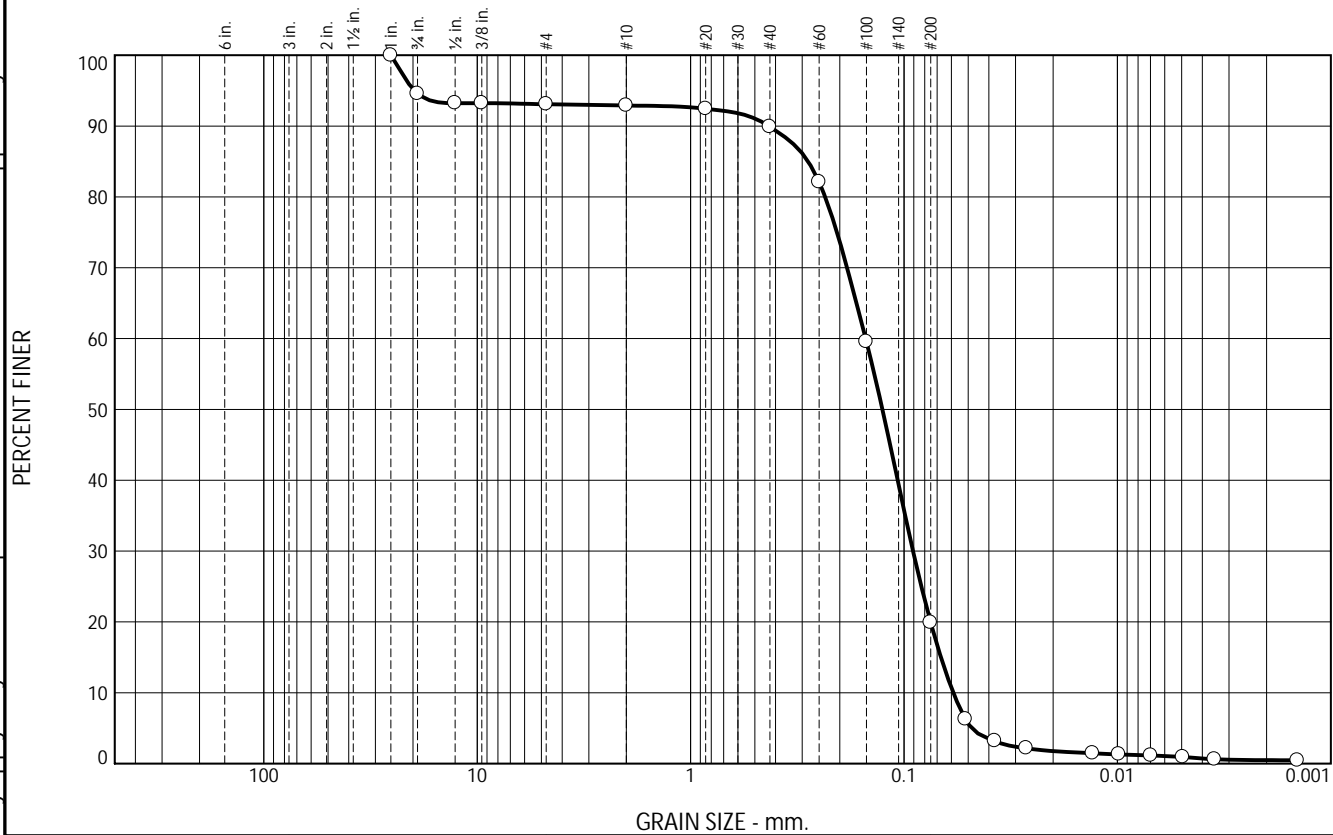
Figure 22-S-1298

Tested By: SL

Checked By: 

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicative of apparently identical samples.

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.4	1.5	0.2	3.0	70.0	19.4	0.5

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	94.6		
1/2"	93.2		
3/8"	93.2		
#4	93.1		
#10	92.9		
#20	92.4		
#40	89.9		
#60	82.1		
#100	59.6		
#200	19.9		
0.0515 mm.	6.3		
0.0375 mm.	3.2		
0.0267 mm.	2.2		
0.0131 mm.	1.5		
0.0098 mm.	1.3		
0.0070 mm.	1.1		
0.0049 mm.	0.9		
0.0035 mm.	0.6		
0.0014 mm.	0.5		

\* (no specification provided)

Soil Description  
Light Brown silty sand

Atterberg Limits  
PL= NP      LL= NV      PI= NP  
Coefficients  
D<sub>90</sub>= 0.4301      D<sub>85</sub>= 0.2813      D<sub>60</sub>= 0.1513  
D<sub>50</sub>= 0.1262      D<sub>30</sub>= 0.0907      D<sub>15</sub>= 0.0671  
D<sub>10</sub>= 0.0588      C<sub>u</sub>= 2.57      C<sub>c</sub>= 0.92

Classification  
USCS= SM      AASHTO= A-2-4(0)

Remarks

Source of Sample: Test Pit      Depth: 7-8'  
Sample Number: Site 2 TP-2

Date: 04.27.22

Thielsch Engineering Inc.

Cranston, RI

Client: Beta Group  
Project: East Providence Infiltration Testing  
East Providence, RI

Project No: 74-22-0037

Figure 22-S-1299

Tested By: SL

Checked By: 

# APPENDIX B

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DAVIS-BACON PREVAILING WAGES

"General Decision Number: RI 20230001 06/30/2023

Superseded General Decision Number: RI 20220001

State: Rhode Island

Construction Types: Building, Heavy (Heavy and Marine) and Highway

Counties: Rhode Island Statewide.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) HEAVY, HIGHWAY AND MARINE CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none"><li>. Executive Order 14026 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.</li></ul>
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none"><li>. Executive Order 13658 generally applies to the contract.</li><li>. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.</li></ul>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	02/03/2023
3	03/17/2023
4	04/14/2023
5	05/12/2023
6	06/02/2023
7	06/16/2023
8	06/30/2023

ASBE0006-006 06/01/2022

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (Includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....	\$ 38.30	25.55

ASBE0006-008 09/01/2021

	Rates	Fringes
Asbestos Worker/Insulator Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.	\$ 45.00	32.89

BOIL0029-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 45.87	29.02



BRR0003-001 06/01/2022

	Rates	Fringes
Bricklayer, Stonemason, Pointer, Caulker & Cleaner.....	\$ 46.86	29.14

BRR0003-002 09/01/2022

	Rates	Fringes
Marble Setter, Terrazzo Worker & Tile Setter.....	\$ 46.54	30.34

BRR0003-003 09/01/2022

	Rates	Fringes
Marble, Tile & Terrazzo Finisher.....	\$ 38.78	29.61

\* CARP0330-001 06/05/2023

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 42.78	30.00
Diver Tender.....	\$ 43.78	30.00
DIVER.....	\$ 55.93	30.00
Piledriver.....	\$ 41.53	29.35
WELDER.....	\$ 43.78	30.00

FOOTNOTES:

When not diving or tending the diver, the diver and diver tender shall receive the piledriver rate. Diver tenders shall receive \$1.00 per hour above the pile driver rate when tending the diver.

Work on free-standing stacks, concrete silos & public utility electrical power houses, which are over 35 ft. in height when constructed: \$.50 per hour additional.

Work on exterior concrete shear wall gang forms, 45 ft. or more above ground elevation or on setback: \$.50 per hour additional.

The designated piledriver, known as the ""monkey"": \$1.00 per hour additional.

CARP1121-002 01/02/2023

	Rates	Fringes
MI LLWRIGHT. ....	\$ 41.54	30.73
-----		
ELEC0099-002 06/01/2023		

	Rates	Fringes
ELECTRICIAN. ....	\$ 48.61	50.44%
Teledata System Installer. ....	\$ 36.46	11.59%+15.31

FOOTNOTES:

Work of a hazardous nature, or where the work height is 30 ft. or more from the floor, except when working OSHA-approved lifts: 20% per hour additional.

Work in tunnels below ground level in combined sewer outfall: 20% per hour additional.

-----  
ELEV0039-001 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC. ....	\$ 59.36	37.335+a+b

FOOTNOTES:

a. PAID HOLIDAYS: New Years Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

b. Employer contributes 8% basic hourly rate for 5 years or more of service of 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

-----  
\* ENGI0057-001 06/01/2023

	Rates	Fringes
Operating Engineer: (power plants, sewer treatment plants, pumping stations, tunnels, caissons, piers, docks, bridges, wind turbines, subterranean & other marine and heavy construction work)		
GROUP 1. ....	\$ 45.55	29.45
GROUP 2. ....	\$ 43.55	29.45
GROUP 3. ....	\$ 39.17	29.45

GROUP 4.....	\$ 36.32	29.45
GROUP 5.....	\$ 42.60	29.45
GROUP 6.....	\$ 33.40	29.45
GROUP 7.....	\$ 27.40	29.45
GROUP 8.....	\$ 39.25	29.45
GROUP 9.....	\$ 43.17	29.45

a. BOOM LENGTHS, INCLUDING JIBS:

150 feet and over + \$ 2.00  
180 feet and over + \$ 3.00  
210 feet and over + \$ 4.00  
240 feet and over + \$ 5.00  
270 feet and over + \$ 7.00  
300 feet and over + \$ 8.00  
350 feet and over + \$ 9.00  
400 feet and over + \$10.00

a. PAID HOLIDAYS:

New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. FOOTNOTES:

Hazmat work: \$2.00 per hour additional.  
Tunnel /Shaft work: \$5.00 per hour additional.

## POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks

GROUP 2: Digging machine, Ross Carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, graders, front end loader (3 yds. and over), vibratory hammer & vacuum truck, roadheaders, forklifts, economobile type equipment, tunnel boring machines, concrete pump and on site concrete plants.

GROUP 3: Oilers on cranes.

GROUP 4: Oiler on crawler backhoe.

GROUP 5: Bulldozer, bobcats, skid steer loader, tractor, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile-powered sweeper (3-yd. capacity), 8-ft. sweeper minimum 65 HP).

GROUP 6: Well-point installation crew.

GROUP 7: Utility Engineers and Signal Persons

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator and light plant, gas and electric driven pump and air compressor.

GROUP 9: Boat & tug operator.

-----  
ENGI 0057-002 05/01/2022

	Rates	Fringes
Power Equipment Operator (highway construction projects; water and sewerline projects which are incidental to highway construction projects; and bridge projects that do not span water)		
GROUP 1.....	\$ 36.70	29.25+a
GROUP 2.....	\$ 31.40	29.25+a
GROUP 3.....	\$ 25.40	29.25+a
GROUP 4.....	\$ 31.98	29.25+a
GROUP 5.....	\$ 35.68	29.25+a
GROUP 6.....	\$ 35.30	29.25+a
GROUP 7.....	\$ 30.95	29.25+a
GROUP 8.....	\$ 32.33	29.25+a
GROUP 9.....	\$ 34.28	29.25+a

a. FOOTNOTE: a. Any employee who works three days in the week in which a holiday falls shall be paid for the holiday.

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day.

#### POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Digging machine, crane, piledriver, lighter, locomotive, derrick, hoist, boom truck, John Henry's, directional drilling machine, cold planer, reclaimer, paver, spreader, grader, front end loader (3 yds. and over), vacuum truck, test boring machine operator, veemere saw, water blaster, hydro-demolition robot, forklift, economobile, Ross Carrier, concrete pump operator and boats

GROUP 2: Well point installation crew

GROUP 3: Utility engineers and signal persons

GROUP 4: Oiler on cranes

GROUP 5: Combination loader backhoe, front end loader (less

than 3 yds.), forklift, bulldozers & scrapers and boats

GROUP 6: Roller, skid steer loaders, street sweeper

GROUP 7: Gas and electric drive heater, concrete mixer, light plant, welding machine, pump & compressor

GROUP 8: Stone crusher

GROUP 9: Mechanic & welder

-----  
\* ENI 0057-003 06/01/2023

#### BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 44.82	29.90
GROUP 2.....	\$ 42.82	29.90
GROUP 3.....	\$ 42.60	29.90
GROUP 4.....	\$ 38.60	29.90
GROUP 5.....	\$ 35.75	29.90
GROUP 6.....	\$ 41.90	29.90
GROUP 7.....	\$ 41.47	29.90
GROUP 8.....	\$ 38.79	29.90

#### a. BOOM LENGTHS, INCLUDING JIBS:

150 ft. and over: + \$ 2.00  
180 ft. and over: + \$ 3.00  
210 ft. and over: + \$ 4.00  
240 ft. and over: + \$ 5.00  
270 ft. and over: + \$ 7.00  
300 ft. and over: + \$ 8.00  
350 ft. and over: + \$ 9.00  
400 ft. and over: + \$10.00

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. FOOTNOTE: Hazmat work: \$2.00 per hour additional.  
Tunnel /Shaft work: \$5.00 per hour additional.

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks.

GROUP 2: Digging machine, Ross carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, front end loader (3 yds. and over), vibratory hammer and vacuum truck

GROUP 3: Telehandler equipment, forklift, concrete pump & on-site concrete plant

GROUP 4: Fireman & oiler on cranes

GROUP 5: Oiler on crawler backhoe

GROUP 6: Bulldozer, skid steer loaders, bobcats, tractor, grader, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile powered sweeper (3 yds. capacity), 8-ft. sweeper (minimum 65 hp)

GROUP 7: Well point installation crew

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator for light plant, gas and electric driven pump & air compressor

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IRON0037-001 03/16/2023

	Rates	Fringes
IRONWORKER. ....	\$ 39.50	32.08

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LAB00271-001 11/27/2022

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1. ....	\$ 35.50	26.85
GROUP 2. ....	\$ 35.75	26.85
GROUP 3. ....	\$ 36.25	26.85
GROUP 4. ....	\$ 36.50	26.85
GROUP 5. ....	\$ 37.50	26.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborer, Carpenter Tender, Mason Tender, Cement Finisher Tender, Scaffold Erector, Wrecking Laborer, Asbestos Removal [Non-Mechanical Systems]

GROUP 2: Asphalt Raker, Adzemen, Pipe Trench Bracer, Demolition Burner, Chain Saw Operator, Fence & Guard Rail Erector, Setter of Metal Forms for Roadways, Mortar Mixer, Pipelayer, Riprap & Dry Stonewall Builder, Highway Stone Spreader, Pneumatic Tool Operator, Wagon Drill Operator, Tree

Trimmer, Barco-Type Jumping Tamper, Mechanical Grinder Operator

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

GROUP 4: Air Track Operator, Hydraulic & Similar Self-Powered Drill, Block Paver, Rammer, Curb Setter, Powderman & Blaster

GROUP 5: Toxic Waste Remover

#### LABORERS CLASSIFICATIONS

GROUP 1: Laborer, Carpenter Tender, Mason Tender, Cement Finisher Tender, Scaffold Erector, Wrecking Laborer, Asbestos Removal [Non-Mechanical Systems]

GROUP 2: Asphalt Raker, Adzemen, Pipe Trench Bracer, Demolition Burner, Chain Saw Operator, Fence & Guard Rail Erector, Setter of Metal Forms for Roadways, Mortar Mixer, Pipelayer, Riprap & Dry Stonewall Builder, Highway Stone Spreader, Pneumatic Tool Operator, Wagon Drill Operator, Tree Trimmer, Barco-Type Jumping Tamper, Mechanical Grinder Operator

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

GROUP 4: Air Track Operator, Hydraulic & Similar Self-Powered Drill, Block Paver, Rammer, Curb Setter, Powderman & Blaster

GROUP 5: Toxic Waste Remover

-----  
LAB00271-002 11/27/2022

#### HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 55.40	24.15
Group 2.....	\$ 52.93	24.15
Group 3.....	\$ 42.45	24.15
FREE AIR		
Group 1.....	\$ 44.05	24.15
Free Air		
Group 1.....	\$ 46.00	24.15
FREE AIR		
Group 2.....	\$ 43.05	24.15
Free Air		
Group 2.....	\$ 45.00	24.15
FREE AIR		
Group 3.....	\$ 40.50	24.15
Free Air		

Group 3.....	\$ 42.45	24.15
LABORER		
Group 1.....	\$ 35.50	24.85
Group 2.....	\$ 35.75	24.85
Group 3.....	\$ 36.50	24.85
Group 4.....	\$ 29.00	24.85
Group 5.....	\$ 37.50	24.85
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 41.50	24.15
Top Man & Laborer.....	\$ 35.60	24.15
TEST BORING		
Driller.....	\$ 41.95	24.15
Laborer.....	\$ 41.95	24.15
LABORER CLASSIFICATIONS		

GROUP 1: Laborer; Carpenter tender; Cement finisher tender; Wrecking laborer; Asbestos removers [non-mechanical systems]; Plant laborer; Driller in quarries

GROUP 2: Adzperson; Asphalt raker; Barcotype jumping tamper; Chain saw operators; Concrete and power buggy operator; Concrete saw operator; Demolition burner; Fence and guard rail erector; Highway stone spreader; Laser beam operator; Mechanical grinder operator; Mason tender; Mortar mixer; Pneumatic tool operator; Riprap and dry stonewall builder; Scaffold erector; Setter of metal forms for roadways; Wagon drill operator; Wood chipper operator; Pipelayer; Pipe trench bracer

GROUP 3: Air track drill operator; Hydraulic and similar powered drills; Brick paver; Block paver; Rammer and curb setter; Powderperson and blaster

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

#### LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake person, track person, miner, grout person, lock tender, gauge tender, miner: motor person & all others in compressed air

GROUP 2: Change house attendant, powder watchperson, top person on iron

GROUP 3: Hazardous waste work within the ""HOT"" zone

#### LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person,



form mover & stripper (wood & steel), shaft laborer, laborer topside, outside motorperson, miner, conveyor operator, miner welder, heading motorperson, erecting operator, mucking machine operator, nozzle person, rodperson, safety miner, shaft & tunnel, steel & rodperson, mole nipper, concrete worker, form erector (wood, steel and all accessories), cement finisher (this type of work only), top signal person, bottom person (when heading is 50' from shaft), burner, shield operator and TBM operator

GROUP 2: Change house attendant, powder watchperson

GROUP 3: Hazardous waste work within the ""HOT"" zone

#### LABORER CLASSIFICATIONS

GROUP 1: Laborer; Carpenter tender; Cement finisher tender; Wrecking laborer; Asbestos removers [non-mechanical systems]; Plant laborer; Driller in quarries

GROUP 2: Adzeperson; Asphalt raker; Barcotype jumping tamper; Chain saw operators; Concrete and power buggy operator; Concrete saw operator; Demolition burner; Fence and guard rail erector; Highway stone spreader; Laser beam operator; Mechanical grinder operator; Mason tender; Mortar mixer; Pneumatic tool operator; Riprap and dry stonewall builder; Scaffold erector; Setter of metal forms for roadways; Wagon drill operator; Wood chipper operator; Pipelayer; Pipe trench bracer

GROUP 3: Air track drill operator; Hydraulic and similar powered drills; Brick paver; Block paver; Rammer and curb setter; Powderperson and blaster

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

#### LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake person, track person, miner, grout person, lock tender, gauge tender, miner: motor person & all others in compressed air

GROUP 2: Change house attendant, powder watchperson, top person on iron

GROUP 3: Hazardous waste work within the ""HOT"" zone

#### LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person, form mover & stripper (wood & steel), shaft laborer, laborer topside, outside motorperson, miner, conveyor operator, miner welder, heading motorperson, erecting operator, mucking machine operator, nozzle person, rodperson, safety miner, shaft & tunnel, steel & rodperson, mole nipper, concrete worker, form erector (wood, steel and all accessories), cement finisher (this type of work only), top signal person, bottom person (when heading is 50' from shaft), burner, shield operator and TBM operator

GROUP 2: Change house attendant, powder watchperson

GROUP 3: Hazardous waste work within the ""HOT"" zone

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 PAIN0011-005 06/01/2023

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 37.62	22.85
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 39.62	22.85
Spray, Sand & Water Blasting.....	\$ 40.62	22.85
Taper.....	\$ 38.37	22.85
Wall Coverer.....	\$ 38.12	22.85

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 PAIN0011-006 06/01/2022

	Rates	Fringes
GLAZIER.....	\$ 40.78	23.40

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

-----  
 PAIN0011-011 06/01/2023

	Rates	Fringes
Painter (Bridge Work).....	\$ 56.25	23.45

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 PAIN0035-008 06/01/2011

	Rates	Fringes
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Sign Painter.....	\$ 24.79	13.72
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PLAS0040-001 06/03/2019

BUILDING CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 36.00	27.15

FOOTNOTE: Cement Mason: Work on free swinging scaffolds under  
3 planks width and which is 20 or more feet above ground  
and any offset structure: \$.30 per hour additional.

-----  
PLAS0040-002 07/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.85	22.20

-----  
PLAS0040-003 07/01/2019

	Rates	Fringes
PLASTERER.....	\$ 37.55	27.50

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PLUM0051-002 02/27/2023

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 48.89	31.75

-----  
R00F0033-004 06/01/2023

	Rates	Fringes
ROOFER.....	\$ 42.95	30.00

-----  
SFRI 0669-001 04/01/2023

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.55	32.27

-----  
SHEE0017-002 12/01/2020

	Rates	Fringes
Sheet Metal Worker.....	\$ 38.58	36.73

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HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 28.46	32.10+A+B+C
GROUP 2.....	\$ 28.61	\$ 32.10+A+B+C
GROUP 3.....	\$ 28.66	\$ 32.10+A+B+C
GROUP 4.....	\$ 28.71	\$ 32.10+A+B+C
GROUP 5.....	\$ 28.81	\$ 32.10+A+B+C
GROUP 6.....	\$ 29.21	\$ 32.10+A+B+C
GROUP 7.....	\$ 29.41	\$ 32.10+A+B+C
GROUP 8.....	\$ 28.91	\$ 32.10+A+B+C
GROUP 9.....	\$ 29.16	\$ 32.10+A+B+C
GROUP 10.....	\$ 28.96	\$ 32.10+A+B+C

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, plus Presidents' Day, Columbus Day, Veteran's Day & V-J Day, providing the employee has worked at least one day in the calendar week in which the holiday falls.

B. Employee who has been on the payroll for 1 year or more but less than 5 years and has worked 150 Days during the last year of employment shall receive 1 week's paid vacation; 5 to 10 years - 2 weeks' paid vacation; 10 or more years - 3 week's paid vacation.

C. Employees on the seniority list shall be paid a one hundred dollar (\$100.00) bonus for every four hundred (400) hours worked, up to a maximum of five hundred dollars (\$500.00)

All drivers working on a defined hazard material job site shall be paid a premium of \$2.00 per hour over applicable rate.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pick-up trucks, station wagons, & panel trucks

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

GROUP 7: Trailers when used on a double hook up (pulling 2 trailers)

GROUP 8: Special earth-moving equipment, under 35 tons

GROUP 9: Special earth-moving equipment, 35 tons or over

GROUP 10: Tractor trailer

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate

(weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U. S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"



# APPENDIX C

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RIDOT PHYSICAL ALTERATION PERMIT APPLICATION (PAPA) – ACCEPTANCE LETTERS



Department of Transportation  
Division of Highway and Bridge Maintenance  
360 Lincoln Avenue  
Warwick, RI 02888

July 19, 2023

Erik Skadberg  
145 Taunton Avenue  
East Providence RI 02914

Subject: Physical Alteration Permit Application No. **21-85**  
Location: Warren Ave @ Potter St East Providence RI 02914

Dear Erik Skadberg:

In reference to the subject Physical Alteration Permit Application (PAPA) Number 21-85 for the proposed work in East Providence, the application package received on July 19, 2023 has been reviewed and found to meet our design requirements. The Physical Alteration Permit authorizing construction of the work within or impacting the State Highway Right-of-Way will be issued upon receipt and acceptance of the following:

- Original Insurance Certificate (Section 4.8 Insurance Requirements of the Department's Rules and Regulations for PAPA)
- Original bond in the amount of \$800,000.00 for the proposed work within or impacting the State Highway Right-of-Way (Section 4.7 Bond Requirements of the Department's Rules and Regulations for PAPA)
- Additional Final Requirements:

If the municipality is utilizing an outside contractor to conduct this work, RIDOT would also accept the inclusion of our Department as an additional obligee on any performance bond and as an additional insured on any insurance policy related to this project in lieu of the above stated original insurance certificate and original bond. A copy of all documents including RIDOT as the additional obligee or additional insurance shall be submitted to this office before the permit can be issued.

Proof of hired services of an independent testing and inspection firm approved by the Department as required under Section 4.9 of the PAPA regulations since the estimate exceeds \$25,000.

Please note that if all these documents are not received within three (3) years of the date of this letter, the permit application will expire and no longer be valid, requiring re-submission of the application. Please be advised that pursuant to Section 4.6 Part A of the Department's Rules and Regulations regarding Physical Alteration Permits (PAPA Manual), the collection of a new application fee with a re-submittal is required.

If you have any questions, please contact Arlene Nelson at (401) 734-4842.

**THIS LETTER SHALL NOT BE CONSTRUED AS A PHYSICAL ALTERATION PERMIT AUTHORIZING CONSTRUCTION WITHIN OR IMPACTING THE STATE HIGHWAY RIGHT-OF-WAY. A PERMIT WILL NOT BE GRANTED UNTIL ALL OF THE DOCUMENTATION REQUESTED ABOVE HAS BEEN RECEIVED AND ACCEPTED.**

Sincerely,

*Matthew J. Ouellette*

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Matthew J. Ouellette, P.E.  
State Highway Maintenance Operations Engineer

For additional information, please see the PAPA Manual at this URL:  
[http://www.dot.ri.gov/documents/doingbusiness/permits/PAPA\\_Manual.pdf](http://www.dot.ri.gov/documents/doingbusiness/permits/PAPA_Manual.pdf)



Department of Transportation  
Division of Highway and Bridge Maintenance  
360 Lincoln Avenue  
Warwick, RI 02888

July 21, 2023

Erik Skadberg  
145 Taunton Avenue  
East Providence RI 02914

Subject: Physical Alteration Permit Application No. **23-64**  
Location: Burgess Street at Warren Avenue East Providence RI 02914

Dear Erik Skadberg:

In reference to the subject Physical Alteration Permit Application (PAPA) Number 23-64 for the proposed work in East Providence, the application package received on July 21, 2023 has been reviewed and found to meet our design requirements. The Physical Alteration Permit authorizing construction of the work within or impacting the State Highway Right-of-Way will be issued upon receipt and acceptance of the following:

- Original Insurance Certificate (Section 4.8 Insurance Requirements of the Department's Rules and Regulations for PAPA)
- Original bond in the amount of \$300,000 for the proposed work within or impacting the State Highway Right-of-Way (Section 4.7 Bond Requirements of the Department's Rules and Regulations for PAPA)
- Additional Final Requirements:

If the municipality is utilizing an outside contractor to conduct this work, RIDOT would also accept the inclusion of our Department as an additional obligee on any performance bond and as an additional insured on any insurance policy related to this project in lieu of the above stated original insurance certificate and original bond. A copy of all documents including RIDOT as the additional obligee or additional insurance shall be submitted to this office before the permit can be issued.

Proof of hired services of an independent testing and inspection firm approved by the Department as required under Section 4.9 of the PAPA regulations since the estimate exceeds \$25,000.

Please note that if all these documents are not received within three (3) years of the date of this letter, the permit application will expire and no longer be valid, requiring re-submission of the application. Please be advised that pursuant to Section 4.6 Part A of the Department's Rules and Regulations regarding Physical Alteration Permits (PAPA Manual), the collection of a new application fee with a re-submittal is required.

If you have any questions, please contact Arlene Nelson at (401) 734-4842.

**THIS LETTER SHALL NOT BE CONSTRUED AS A PHYSICAL ALTERATION PERMIT AUTHORIZING CONSTRUCTION WITHIN OR IMPACTING THE STATE HIGHWAY RIGHT-OF-WAY. A PERMIT WILL NOT BE GRANTED UNTIL ALL OF THE DOCUMENTATION REQUESTED ABOVE HAS BEEN RECEIVED AND ACCEPTED.**

Sincerely,

*Matthew J. Ouellette*

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Matthew J. Ouellette, P.E.  
State Highway Maintenance Operations Engineer

For additional information, please see the PAPA Manual at this URL:  
[http://www.dot.ri.gov/documents/doingbusiness/permits/PAPA\\_Manual.pdf](http://www.dot.ri.gov/documents/doingbusiness/permits/PAPA_Manual.pdf)

# APPENDIX D

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RIDOT APPLICATION FOR UTILITY PERMIT



Department of Transportation  
Division of Highway and Bridge Maintenance  
360 Lincoln Avenue  
Warwick, RI 02888

## APPLICATION FOR UTILITY PERMIT

APPLICANT: \_\_\_\_\_ DATE: \_\_\_\_\_

UTILITY COMPANY SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

The applicant requests permission to: \_\_\_\_\_

Location: \_\_\_\_\_ City/Town: \_\_\_\_\_

Utility Type: ☐ Water ☐ Sewer ☐ Electric ☐ Gas ☐ Telecom ☐ Other: \_\_\_\_\_

NOTE I: The applicant agrees to comply with all conditions stated on this permit application, and furthermore to pay any and all cost associated with the issuance of said permit, if granted. All work performed under the permit shall be in accordance with the latest edition of the [Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction](#) and the [Rhode Island Standard Details](#).

NOTE II: Accompanying this application shall be **a set of plans** and a **Transportation Management Plan (TMP)**. The plan set shall show all work to be contemplated under this application. The proposed work plan shall show specific locations and dimensions so they can be easily located and investigated. The traffic control plan included in the TMP shall be in accordance with the most recent edition of the [Manual on Uniform Traffic Control Devices](#). **Any requests for night work or extended work hours must be accompanied by a written approval from the local municipality.**

NOTE III: Upon affixing signature to this application, the applicant agrees, as a condition governing the issuance of a permit, that the Department of Transportation, the Director, his agents and employees be held harmless from any and all claims and actions what so ever arising from the exercising of said permit.

NOTE IV: This application shall be countersigned by the owner (Utility Company or the city/town who owns the line) to confirm the following:

1. The utility company is aware of and authorizes the contractor to work on their utility facilities.
2. It insures the Department that the utility company will own that utility connection upon completion. That is, if the connection fails at some time in the future, the utility company will be responsible for the work to repair their facility, the roadway, and all other impacted areas within the State Right-of-Way (ROW) as needed to facilitate the repair.
3. It insures the Department that the utility company and/or the hired contractor will take responsibility for the restoration of the roadway as outlined in the utility permit for a period of no less than five (5) years from the completion of the work including the repair, replacement and/or maintenance of the roadway during this period.

**See Page 2 for required Contact Information.**

*Revised 12/20/22*



Department of Transportation  
Division of Highway and Bridge Maintenance  
360 Lincoln Avenue  
Warwick, RI 02888

### CONTACT INFORMATION

---

APPLICANT: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

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UTILITY OWNER: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

---

#### CONTRACTOR

PERFORMING WORK: \_\_\_\_\_

Contact Person: \_\_\_\_\_

*(If other than the Applicant)*

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

---

### **Emergency Contact Information**

**THE PARTY PERFORMING THE WORK MUST SUPPLY THE DEPARTMENT WITH  
THREE (3) EMERGENCY CONTACTS.**

**CONTACT PERSON:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

**CONTACT PERSON:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

**CONTACT PERSON:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

*See Page 3 for require permit conditions*



### **On-going Maintenance Conditions**

The grantee shall maintain the surface of the roadway over said substructures and other areas where work has been performed as long as the Department deems necessary, but at no time shall this period of time be less than five (5) years from the completion of work.

### **Conditions Relating to Overhead Structures, Including Poles, Towers, Wire, etc.**

- On all freeways, any overhead structures relocated and/or installed shall be placed in conformance with AASHTO's publication, "A policy on the Accommodation of Utilities on Freeway Rights-of-Way", issued February 15, 1969, or amendments thereto.
- On state highways other than freeways, overhead structures shall be relocated and/or installed in conformance with P.P.M. 30-4 or amendments thereto of the Federal Highway Administration, unless as otherwise ordered by the Department.
- All aspects of said installation and/or relocation shall be in conformance with the standards set forth in the "National Electrical Code" and the "National Electrical Safety Code".
- In connection with the installation and/or relocation of the facilities covered by this permit, no trees shall be cut or trimmed except as provided herein.

### **General Conditions**

The word "Department" as used herein shall imply the Department of Transportation, State of Rhode Island. The word "Engineer" as used herein shall mean the Department Engineer or the authorized agent of the Department. The word "Grantee" as used herein shall mean the person or persons, corporation or municipality to whom this permit is granted or their legal representatives.

During the progress of work, all structures under and above ground shall be properly protected from damage or injury. It shall be the duty of the grantee to make certain that the security of the traveling public is safeguarded and its rights are not unreasonably curtailed. No detours may be engaged on any project without obtaining special permission from the Department and local authorities. The work area shall be protected at all times to avoid the possibility of accident. Said work area shall be marked with "Construction Approach Warning Signs", lights, flasher beacons or other warning devices as prescribed by the Department or the Engineer. The work performed under permit shall be planned and carried out so that the drainage system of the highway is effective at all times.

### **Conditions Relating to Maintenance of Traffic**

The permittee shall maintain any road affected by its work open to traffic and keep such road in a condition that shall safely and adequately accommodate such traffic. The permittee shall furnish, erect and maintain all traffic control including barricades, warning signs, delineators, flaggers, and traffic- persons in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways". The permittee shall submit for approval a traffic control plan for all utility work which would have an effect on the roadway. If it is determined that the contractor is not in conformance with the MUTCD, the Department or their designee will order a suspension of work until the work area is brought into conformance with MUTCD. All traffic control protection will be maintained until the proposed work has been completed.

# APPENDIX E

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SOIL EROSION AND SEDIMENT CONTROL PLANS (SESCP)

# DRAFT Soil Erosion and Sediment Control Plan (to be effective 1/1/17)

**For:**

**Potter Street at Warren Avenue Parking Lot**

**East Providence, RI 02906**

**Owner:**

City of East Providence

Erik Skadberg, P.E.

145 Taunton Avenue

East Providence, RI 02914

401-435-7703

eskadberg@eastprovidenceri.gov

**Operator:**

*TO BE DETERMINED UPON  
CONTRACT AWARD*

Company Name

Name

Address

City, State, Zip Code

Telephone Number

Email Address

**Estimated Project  
Dates:**

Start Date: July 2023

Completion Date: May 2024

**SESC Plan  
Prepared By:**

BETA Group, Inc.

Jared Linhares, P.E.

701 George Washington Highway

Lincoln, RI 02865

401-333-2382

JLlinhares@BETA-Inc.com

P.E. Reg. #13145

**SESC Plan  
Preparation Date:**

May 2023

**SESC Plan  
Revision Date:**

## OPERATOR CERTIFICATION

*Upon contract award, the OPERATOR must sign this certification statement before construction may begin.*

*I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I am aware that it is the responsibility of the owner/operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.*

---

Operator Signature:

Date

Contractor Representative: Name

Contractor Title: Title

Contractor Company Name: Company Name (if applicable)

Address: Mailing Address

Phone Number: Phone Number

Email Address: Email

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## INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for the City of East Providence for the Potter Street at Warren Avenue Parking Lot Project. In accordance with the RIDEM Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity (RIPDES Construction General Permit ("CGP")), projects that disturb one (1) or more acres require the preparation of a SESC Plan. This SESC Plan provides guidance for complying with the terms and conditions of the RIPDES Construction General Permit and Minimum Standard 10 of the RI Stormwater Design and Installation Standards Manual. In addition, this SESC Plan is also consistent with Part D of the *RI SESC Handbook* entitled "Soil Erosion and Sediment Control Plans". This document does not negate or eliminate the need to understand and adhere to all applicable RIPDES regulations.

The purpose of erosion, runoff, and sedimentation control measures is to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This SESC Plan has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site plan and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and stormwater runoff at the site. Since construction is a dynamic process with changing site conditions, it is the operator's responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require the operator to revise and amend the SESC Plan during construction to address varying site and/or weather conditions, such as by adding or realigning erosion or sediment controls to ensure the SESC Plan remains compliant with the RIPDES Construction General Permit. Records of these changes must be added to the amendment log attached to the SESC Plan, and to the site plans as "red-lined" drawings. Please Note: **Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.**

It is the responsibility of the site owner and the site operator to maintain the SESC Plan at the site, including all attachments, amendments and inspection records, and to make all records available for inspection by RIDEM during and after construction. (RIPDES CGP - Part III.G)

The site owner, the site operator, and the designated site inspector are required to review the SESC Plan and sign the Party Certification pages (Section 8). The primary contractor (if different) and all subcontractors (if applicable) involved in earthwork or exterior construction activities are also required to review the SESC Plan and sign the certification pages before construction begins.

Any questions regarding the SESC Plan, control measures, inspection requirements, or any other facet of this document may be addressed to the RIDEM Office of Water Resources, at 401-222-4700 or via email: [water@dem.ri.gov](mailto:water@dem.ri.gov).

## ADDITIONAL RESOURCES

Rhode Island Department of Environmental Management  
Office of Water Resources  
235 Promenade Street  
Providence, RI 02908-5767  
phone: 401-222-4700  
email: [water@dem.ri.gov](mailto:water@dem.ri.gov)

RIDEM *RI Stormwater Design and Installation Standards Manual* (RISDISM) (as amended)  
<http://www.dem.ri.gov/pubs/regs/regs/water/swmanual15.pdf>

*RI Soil Erosion and Sediment Control Handbook* <http://www.dem.ri.gov/soilerosion2014final.pdf>  
RIDEM 2013 RIPDES Construction General Permit  
<http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdf>  
Rhode Island Department of Transportation  
*Standard Specifications for Road and Bridge Design and Other Specifications* and *Standard Details*  
<http://www.dot.ri.gov/business/bluebook.php>

RIDEM Office of Water Resources Coordinated Stormwater Permitting website  
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/coordinated-stormwater-permitting.php>  
RIDEM RIPDES Stormwater website  
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/>  
RIDEM Water Quality website (for 303(d) and TMDL listings)  
<http://www.dem.ri.gov/programs/water/quality/>

RIDEM Rhode Island Natural Heritage Program <mailto:plan@dem.ri.gov>

RIDEM Geographic Data Viewer – Environmental Resource Map  
<http://www.dem.ri.gov/maps/>

Natural Resources Conservation Service - Rhode Island Soil Survey Program  
<http://www.ri.nrcs.usda.gov/technical/soils.html>

**Note:**

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

EPA NPDES – Stormwater Discharges from Construction Activities webpage:  
<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Discharges-From-Construction-Activities.cfm>

EPA Construction Site Stormwater Runoff Control BMP Menu  
<http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control>



## SECTION 1: SITE DESCRIPTION

### 1.1 Project/Site Information

Project/Site Name:

- Potter Street at Warren Avenue Parking Lot
- The scope of work includes installing a porous pavement parking lot including new bituminous curb, lighting, granite block barriers, 6' chain link fence, and removal of replacement of the cement concrete driveway.

Project Street/Location:

- Potter Street at Warren Avenue, East Providence, RI 02906
- Refer to Attachment A – General Location Map

*Provide construction site estimates of the total area of the site and the total area of the site that is expected to undergo soil disturbance.*

The following are estimates of the construction site area:

- Total Project Area 0.8 acres
- Total Project Area to be Disturbed 0.6 acres

### 1.3 Natural Heritage Area Information

RIPDES CGP - Part III.H

*Each project authorized under the RIPDES Construction General Permit must determine if the site is within or directly discharges to a Natural Heritage Area (NHA). DEM Natural Heritage Areas include known occurrences of state and federal rare, threatened and endangered species. Review RIDEM NHA maps to determine if there are natural heritage areas on or near the construction site that may be impacted during construction. (See also the RIDEM Notice of Intent instructions which can be found at the following link: <http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/pdf/maptutor.pdf>)*

Are there any Natural Heritage Areas being disturbed by the construction activity or will discharges be directed to the Natural Heritage Area as a result of the construction activity?

☐ Yes ☒ No

If yes, describe or refer to documentation which determines the likelihood of an impact on this area and the steps that will be taken to address any impacts.

- Not Applicable

### 1.4 Historic Preservation/Cultural Resources

*The National Historic Preservation Act, and any state, local, and tribal historic preservation laws apply to construction activities. As with endangered species, some permits may specifically require you to assess the potential impact of your stormwater discharges on historic properties. However, whether or not this is stated as a condition for permit coverage, the National Historic Preservation Act and any applicable state or tribal laws apply to you. Contact the Rhode Island Historic Preservation Officer (<http://www.preservation.ri.gov/>) or your Tribal Historic Preservation Officer ([http://grants.cr.nps.gov/THPO\\_Review/index.cfm](http://grants.cr.nps.gov/THPO_Review/index.cfm)) for more information.*

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Are there any historic properties, historic cemeteries or cultural resources on or near the construction site?

☐ Yes      ☒ No

Describe how this determination was made and summarize state or tribal review comments:

- A historic property search on [www.preservation.ri.gov](http://www.preservation.ri.gov) was performed.

If yes, describe or refer to documentation which determines the likelihood of an impact on this historic property, historic cemetery or cultural resource and the steps taken to address that impact including any conditions or mitigation measures that were approved by other parties.

- Not Applicable

## SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL

### RIPDES Construction General Permit – Part III.J.1

The purpose of erosion controls is to prevent sediment from being detached and moved by wind or the action of raindrop, sheet, rill, gully, and channel erosion. Properly installed and maintained erosion controls are the primary defense against sediment pollution.

Runoff controls are used to slow the velocity of concentrated water flows. By intercepting and diverting stormwater runoff to a stabilized outlet or treatment practice or by converting concentrated flows to sheet flow erosion and sedimentation are reduced.

Sediment controls are the last line of defense against moving sediment. The purpose is to prevent sediment from leaving the construction site and entering environmentally sensitive areas.

This section describes the set of control measures that will be installed before and during the construction project to avoid, mitigate, and reduce impacts associated with construction activity. Specific control measures and their applicability are contained in Section Four: Erosion Control Measures, Section Five: Runoff Control Measures, and Section Six: Sediment Control Measures of the *RI SESC Handbook*. The *RI SESC Handbook* can be found at the following address:

<http://www.dem.ri.gov/soilerosion2014final.pdf>

### **2.1 Avoid and Protect Sensitive Areas and Natural Features**

#### *Per RI Stormwater Design and Installation Standards Manual 3.3.7.1:*

Areas of existing and remaining vegetation and areas that are to be protected as identified in the Section 1.6 of the SESC Plan must be clearly identified on the SESC Site Plans for each Phase of Construction. Prior to any land disturbance activities commencing on the site, the Contractor shall physically mark limits of disturbance (LOD) on the site and any areas to be protected within the site, so that workers can clearly identify the areas to be protected.

*Constraints are identified to ensure a comprehensive understanding of the project and surrounding areas. The first goal in the low impact development (LID) site planning and design process is to avoid disturbance of natural features. This includes identification and preservation of natural areas that can be used in the protection of water resources. It is important to understand that minimizing the hydrologic alteration of a site is just as important as stormwater treatment for resource protection. Therefore, describe all site features and sensitive resources that exist at the site such as, view barriers,, steep slopes (>15%)that if disturbed will require additional erosion controls, areas with the potential to receive run-on from off-site areas, wetlands, surface waters, and their riparian buffers, specimen trees, natural vegetation, forest areas, stream crossings, historic properties, historic cemeteries or cultural resources that are to be preserved. **This includes those site features that should be avoided within the designated limits of disturbance.** These areas are often identified on a constraints map or in a separate constraints report. For additional discussion on this topic refer to Appendix F. Site Constraint Map of the *RI SESC Handbook*.*

#### **Note:**

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

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*Describe and illustrate on SESC Site Plans Sensitive Areas and Natural Features and how each will be protected during construction activity. Examples of areas to be protected include vegetated buffers, forests, stands of trees on the perimeter and within the site, large diameter trees, areas designated for infiltration (QPAs), bioretention, rain gardens, and OWTS leachfields. Protection for stands of trees and individual trees to be preserved must be specified and such protection must comply with the RI SESC Handbook and extend to the drip line.*

*Describe and illustrate on SESC Site Plans based on Constraints Map, the areas that will be disturbed with each phase of construction and the control measures (signs, fences, etc.) that will be used to protect those areas that should not be disturbed. **This includes marking for limits of disturbance at the perimeter and areas within the limits of disturbance.** Acceptable measures include but are not limited to construction fencing (plastic mesh, snow fence, chain link fence etc.) appropriate for the site, boundary markers using construction tape, flagged stakes, etc. for low density use, sediment barriers such as silt fence, compost socks with flagging where also required for sediment control, and signage. The narrative portion of the plan and SESC Site Plans must highlight measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPAs) and infiltration practices to protect infiltration capacity.*

The following measures will be taken to minimize disturbed areas and protect natural features and soil:

- Paved areas to be excavated will be sawcut, when necessary, prior to excavation, and the sawcut lines shall serve as defined limits of disturbance within the paved areas;
- Sedimentation & erosion control measures, where installed, shall serve as the limit of disturbance in those locations;
- The limit of disturbance in all other locations without either sawcuts or sedimentation & erosion control measures shall be delineated with clearly marked and highly visible indicators and/or barriers (stakes, flagging, snow fence or other measures as appropriate) for the duration of the work;
- Long-term material stockpiles will be placed in defined locations within the project area, and shall be protected as described herein and as shown in the construction details;
- The design has been developed to minimize disturbance to existing vegetation to the maximum extent possible;
- Vegetation (trees, shrubs, etc.) within and/or in close proximity to work areas will be protected from damage during construction, unless specifically designated for removal or limited trimming/limbing.

Feature Requiring Protection	Construction Phase #	Method of Protection	Sheet #
Seekonk River	1	Compost Filter Sock, Catch Basin Sediment Control Device	Sheet 6

## 2.2 Minimize Area of Disturbance

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.2:*

Will >5 acres be disturbed in order to complete this project?

☐ Yes ☒ No

*If yes, phasing must be utilized at this site.*

Will <5 acres be disturbed or will disturbance activities be completed within a six (6) month window?

☒ Yes ☐ No

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*If yes, phasing is not required as long as all other performance criteria will be met and phasing is not necessary to protect sensitive or highly vulnerable areas.*

Phasing is not required for the project.

Based on the answers to the above questions will phasing be required for this project?

☐ Yes      ☒ No

*If No, provide substantive reasons why this was determined to be infeasible.*

The project will not disturb greater than 5 acres; therefore, no phasing is required.

#### PHASING PLAN

*For each phase of the construction project, provide site estimates of the total area of the project phase, and the total area of the project phase that is expected to undergo soil disturbance.*

The following are estimates of each phase of the construction project:

*(Copy and paste this section for projects with multiple phases)*

Phase No. or Identifier	1
Total Area of Phase	0.8 acres
Area to be Disturbed	0.6 acres

Description of Construction Sequencing for Phase 1

*Proper sequencing of construction activities is essential to maximize the effectiveness of erosion, runoff, and sediment control measures. Construction sequencing of construction activities for each phase must address the following elements:*

- 1. Installation of control measures identifying limits of disturbance and areas internal to the site that require protection before start of land disturbance.*
- 2. Installation of all erosion, runoff, and sediment controls and temporary pollution prevention measures that are required to be in place and functional before any earthwork begins. This shall be done in accordance with the RI SESC Handbook and/or the RI Department of Transportation Standard Specifications for Road and Bridge Construction (as amended). Upon acceptable completion of site preparation and installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, site construction activities may commence.*
- 3. The phasing plan shall address the use of phasing to manage and limit increases in runoff rates and volumes during construction. Designated phases and timing of construction should also address the impacts to important or sensitive habitats.*
- 4. Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.*
- 5. Routine inspection and maintenance and/or modification of erosion, runoff, and sediment controls and temporary pollution prevention measures while earthwork is ongoing is required.*

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6. *Final site stabilization of any disturbed areas after earthwork has been completed and removal of temporary erosion, runoff, and sediment controls and temporary pollution prevention measures.*
7. *Activation of post-construction stormwater treatment conveyances and practices.*

**Phase 1A – BEFORE EARTHWORK**

- ☒ Installation of construction period erosion controls (compost filter sock, construction access, & catch basin sediment control devices).
- ☒ Installation of tree/vegetation protection measures and trimming, limbing or removal of designated trees.
- ☒ Sawcutting of all proposed pavement excavations.

Estimated Duration: One (1) month (dates T.B.D.)

**Phase 1B – DURING EARTHWORK**

- ☒ Stormwater management and water system installations & stabilization prior to completion of other site improvements.
- ☒ Disturbed areas to be impervious (paved or concrete) will be cut or filled, graded, compacted, and stabilized with at least one course of bituminous concrete asphalt (in the case of parking areas and driveways) or concrete (in the case of walkways/sidewalks) within three (3) weeks of the initiation of work in that area.
- ☒ Disturbed areas to be pervious (grassed) will be stabilized with temporary seeding or erosion blanket no later than fourteen (14) days after completion of work in that area.
- ☒ Maintenance (cleaning and/or replacement) of catch basin sediment control devices.
- ☒ Water application on exposed erodible soils for dust control, as needed.

Estimated Duration: Six (6) months (dates T.B.D.)

**Phase 1C – FINAL STABILIZATION**

- ☒ Preparation and final seeding of grassed areas.
- ☒ Installation of proposed landscaping plantings (if applicable).
- ☒ Removal of catch basin sediment control devices.
- ☒ Removal of perimeter sedimentation and erosion controls (compost filter sock).

Estimated Duration: One (1) month (dates T.B.D.)

**2.3 Minimize the Disturbance of Steep Slopes**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.3:*

Are steep slopes (>15%) present within the proposed project area?

☐ Yes      ☒ No

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## **2.4 Preserve Topsoil**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.4:*

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation, promote soil stabilization, and increase stormwater infiltration rates in the post-construction phase of the project.

Will existing topsoil be preserved at the site?

☒ Yes      ☐ No

*If Yes, describe how topsoil will be preserved at the site by describing the techniques that will be implemented to achieve appropriate depths of topsoil (4 inch minimum) and identify the locations where topsoil will be restored on SESC Site Plans.*

The site operator shall strip topsoil in proposed project limit of disturbance areas. Topsoil shall be stockpiled in the location specified on the SESC plan. Stockpile areas shall be surrounded by compost filter sock or approved erosion control measures to prevent migration of soils during rain events. Upon project completion, the site operation shall redistribute topsoil over disturbed areas ensuring at minimum a 4" layer is provided over all disturbed areas. Additional material shall be brought on site should the need arise. Final topsoil areas have been shown on the site plans as landscape areas. Topsoil should be screened and free of weeds, sticks, and stones over ¾" in size and otherwise complying with section M.18.01 of the RIDOT Standard Specifications for Road and Bridge Construction. Contractor shall follow recommendations provided by the landscape plans and the Engineer.

Soil compaction must be minimized by maintaining limits of disturbance throughout construction. In instances where site soils are compacted the site owner and operator must restore infiltration capacity of the compacted soils by tilling or scarifying compacted soils and amending soils as necessary to ensure a minimum depth of topsoil is available in these areas. In areas where infiltrating stormwater treatment practices are located compacted soils must be amended such that they will comply the design infiltration rates established in the *RI Stormwater Design and Installation Standards Manual*.

*Identify the methods that will be used to restore and amend topsoil at the site. Include references to plan notes and SESC Site Plan sheet numbers where this information is made available for the site operator.*

In areas where over compaction has compromised the natural infiltration rate of onsite soils, the contractor shall scarify or till these areas to restore them to their natural state. Areas prone to over compaction are paths proposed to be used by construction equipment and construction equipment storage areas. Construction equipment storage areas are shown on the SESC Plan.

## **2.5 Stabilize Soils**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.5:*

Upon completion and acceptance of site preparation and initial installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, the operator shall initiate appropriate temporary or permanent stabilization practices during all phases of construction on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased.

Any disturbed areas that will not have active construction activity occurring within 14 days must be stabilized using the control measures depicted in the SESC Site Plans, in accordance with the *RI SESC Handbook*, and per manufacturer product specifications.

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Only areas that can be reasonably expected to have active construction work being performed within 14 days of disturbance will be cleared/grubbed at any one time. It is NOT acceptable to clear and grub the entire construction site if portions will not be active within the 14-day time frame. Proper phasing of clearing and grubbing activities shall include temporary stabilization techniques for areas cleared and grubbed that will not be active within the 14-day time frame.

All disturbed soils exposed prior to October 15 of any calendar year shall be seeded by that date if vegetative measures are the intended soil stabilization method. Any such areas that do not have adequate vegetative stabilization, as determined by the site operator or designated inspector, by November 15, must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15 through April 15, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

*Describe controls (i.e., temporary seeding with native vegetation, hydroseeding, mulching, application of rolled erosion control products, etc.) including design specifications and details that will be implemented to stabilize exposed soils where construction activities have temporarily or permanently ceased.*

Temporary Vegetative Control Measures

- Hydroseeding, temporary seeding and mulch will be used as needed.

Temporary Non-Vegetative Control Measures

- Controls that may be utilized include street sweeping, water for dust control and mulching.

Permanent Vegetative Control Measures

- Following construction, the site will be restored with paving, loam and seed, and plantings to match existing conditions.

Permanent Non-Vegetative Control Measures

- Following construction, the site will be restored with paving, loam and seed, and plantings to match existing conditions.

**2.6 Protect Storm Drain Outlets**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.7:*

Temporary or permanent outlet protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction in discharge velocities, and through the promotion of infiltration. Outlets often have high velocity, high volume flows, and require strong materials that will withstand the forces of stormwater. Storm drain outlet control measures also offer a last line of protection against sediment entering environmentally sensitive areas.

All stormwater outlets that may discharge sediment-laden stormwater flow from the construction site must be protected using the control practices depicted on the approved plan set and in accordance with the *RI SESC Handbook*.

*Describe controls, including design specifications and details, which will be implemented to protect outlets discharging stormwater from the project.*

See below for controls to be implemented to protect outlets discharging stormwater from the project.



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Will temporary or permanent point source discharges be generated at the site as the result of construction of sediment traps or basins, diversions, and conveyance channels?

☐ Yes      ☒ No

*If No, discuss rationale for not including these elements in the SESC Plan.*

There are no temporary or permanent point source discharges generated at the site.

**2.7      Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.8:*

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online.

*Examples of temporary control measures that can be used to protect permanent stormwater control measures include: establishing temporary sediment barriers around infiltrating practices, ensuring proper material staging areas and equipment routing (i.e. do not allow construction equipment to compact areas where infiltrating practices will be installed), and by conducting final cleaning of structural long term practices after construction is completed.*

*List and describe all post-construction stormwater treatment practices that will be installed during the construction process. Next, outline how these measures will be protected during the construction phase of the project to ensure that they will function appropriately once they are brought online.*

Will long-term stormwater treatment practices be installed at the site?

☒ Yes      ☐ No

*If Yes, describe the specific long-term stormwater treatment practices that will require protection from sedimentation and compaction. In addition, specifically reference SESC Site Plan Sheet Numbers which identify the location of these practices and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.*

Protection During Construction Phase – Avoiding over-compaction of underlying soils during construction is critical to the proper function of the porous pavement parking lot. The areas will be delineated with a highly visible barrier and appropriate signage to alert equipment operators not to drive over the soils or to stockpile materials on the dry swale locations.

Long term stormwater treatment practices, that will use infiltration, will be staked off throughout the construction phases. No construction vehicles shall enter these staked areas to avoid sedimentation and compaction.

**2.8      Divert or Manage Run-on from Up-gradient Areas**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.10:*

Is stormwater from off-site areas anticipated to flow onto the project area or onto areas where soils will be disturbed?

☐ Yes      ☒ No

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*If Yes, describe the specific runoff control measures (i.e., check dams, water bars, diversions, perimeter dikes, lined waterways, vegetated waterways, temporary line channels, sediment barriers, pipe slope drains, etc.) that will be utilized at the site including references to the SESC Site Plan Sheet Numbers, design specifications and details. See the RI SESC Handbook, Section Five: Runoff Control Measures for additional guidance.*

- Not Applicable

Pre-Construction and Construction sub-watershed maps are included for each phase in this SESC Plan submittal.

Structural control measures will be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow that is expected to impact exposed soils for the purpose of minimizing erosion, runoff, and the discharge of pollutants from the site.

Control measures shall be installed as depicted on the approved plan set and in accordance with the RI SESC Handbook or the RI Department of Transportation Standard Specifications for Road and Bridge Construction. <b>Run-on and Run-off Management</b>				
Construction Phase #	On-site or Off-site Run-on?	Control measure	Identified on Sheet #	Detail(s) is/are on Sheet #
1	On-site	Compost Filter Sock	Sheet 8	Sheet 6

## 2.9 Retain Sediment Onsite through Structural and Non-Structural Practices

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.12:*

*Once the erosion control measures and the run-on diversions are identified and located on the plans, the next step to site planning is sediment control and sediment management. Sediment barriers, inlet protection, construction entrances, stockpile containment, temporary sediment traps, and temporary sediment basins must be integrated into the SESC Plan if applicable. Refer to the RI SESC Handbook Section Six: Sediment Control Measures for additional guidance.*

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.9:*

**SEDIMENT BARRIERS** must be installed along the perimeter areas of the site that will receive stormwater from disturbed areas. This also may include the use of sediment barriers along the contour of disturbed slopes to maintain sheet flow and minimize rill and gully erosion during construction. Installation and maintenance of sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the *RI SESC Handbook*.

Will sediment barriers be utilized at the toe of slopes and other downgradient areas subject to stormwater impacts and erosion during construction?

☒ Yes      ☐ No

*If Yes, Describe the rationale for selecting control measures to serve as sediment barriers at the toe of slopes and other down gradient areas subject to stormwater impacts during construction. Describe the specific sediment barriers that will be used at the site in the table provided.*

- Sediment barriers will be used to protect stormwater from discharging onto adjacent properties, sensitive areas and proposed BMPs.

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- The structural soil & erosion control BMP's shall include compost filter sock along the downgradient limits of work, as depicted on the plans. Based on the hydrology of the project area (as defined in the watershed analysis), it is not anticipated that there will be additional uncontrolled runoff entering and flowing through the site from off-site locations.
- The Contractor shall provide any alternative structural practices that will be used on this project, if it is determined that any are required during construction.

*Describe rationale for whether or sediment barriers are required at regular intervals along slopes in order to minimize the creation of concentrated flow paths (i.e. rilling, gully erosion) and to encourage sheet flow. Keep in mind that sediment barriers can be placed at the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. The description of the selected control measures must focus on sediment barrier spacing as a function of slope length and steepness. Refer to the RI SESC Handbook, Section Six: Sediment Control Measure, Straw Wattles, Compost Tubes, and Fiber Rolls Control Measure for additional information on acceptable spacing distances.*

Will sediment barriers be utilized along the contour of slopes to maintain sheet flow and minimize rill and gully erosion during construction?

☒ Yes      ☐ No

*If Yes, list the specific sediment barriers that will be used at the site in the table provided. Describe the rationale for the locations and spacing frequency selected by the designer based on slope length and steepness. For additional guidance refer to the RI SESC Handbook or sediment barrier manufacturer's specifications.*

SEDIMENT BARRIERS			
Construction Phase #	Sediment Barrier Type	Sediment Barrier is Labeled on Sheet #	Detail is on Sheet #
1	Compost Filter Sock	Sheet 8	Sheet 6

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.6:*

**INLET PROTECTION** will be utilized to prevent soil and debris from entering storm drain inlets. These measures are usually temporary and are implemented before a site is disturbed. ALL stormwater inlets &/or catch basins that are operational during construction and have the potential to receive sediment-laden stormwater flow from the construction site must be protected using control measures outlined in the *RI SESC Handbook*.

For more information on inlet protection refer to the *RI SESC Handbook*, Inlet Protection control measure.

#### **Maintenance**

The operator must clean, or remove and replace the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or as performance is compromised. Accumulated sediment adjacent to the inlet protection measures should be removed by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

*Describe controls, including design specifications and details, which will be implemented to protect all inlets receiving stormwater from the project during the entire duration of the project. For more information on inlet protection refer to the RI SESC Handbook Inlet Protection control measure.*

Do inlets exist adjacent to or within the project area that require temporary protection?

☒ Yes      ☐ No

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*If Yes, describe the method(s) of inlet protection, including maintenance requirements and complete the table provided.*

The following lists the proposed storm drain inlet types selected from Section Six of the *RI SESC Handbook*. Each row is unique for each phase and inlet protection type.

INLET PROTECTION			
Construction Phase #	Inlet Protection Type	Inlet Protection is labeled on Sheet #	Detail(s) is/are on Sheet #
1	Catch Basin Sediment Control Device	Sheet 8	Sheet 6

**CONSTRUCTION ENTRANCES** will be used in conjunction with the stabilization of construction roads to reduce the amount of sediment tracking off the project. This project has avoided placing construction entrances on poorly drained soils where possible. Where poorly drained soils could not be eliminated, the detail includes subsurface drainage.

Any construction site access point must employ the control measures on the approved SESC site plans and in accordance with the *RI SESC Handbook*. Construction entrances shall be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles. All construction access roads shall be constructed prior to any roadway accepting construction traffic.

The site owner and operator must:

1. Restrict vehicle use to properly designated exit points.
2. Use properly designed and constructed construction entrances at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit.
3. When and where necessary, use additional controls to remove sediment from vehicle tires prior to exit (i.e. wheel washing racks, rumble strips, and rattle plates).
4. Where sediment has been tracked out from the construction site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the track out occurs. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Will construction entrances be utilized at the proposed construction site?

☒ Yes      ☐ No

*If Yes, indicate location(s) of vehicle entrance(s) and exit(s), and stabilization practices used to prevent sediment from being tracked off-site in the table provided. See also RI SESC Handbook, Section Six, Construction Entrances Measure.*

CONSTRUCTION ENTRANCE			
Construction Phase #	Soil Type at the Entrance	Entrance is located on Sheet #	Detail is on Sheet #
1	12" Min. of 2" Crushed Stone	Sheet 8	Sheet 6

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**STOCKPILE CONTAINMENT** will be used onsite to minimize or eliminate the discharge of soil, topsoil, base material or rubble, from entering drainage systems or surface waters. All stockpiles must be located within the limit of disturbance, protected from run-on with the use of temporary sediment barriers and provided with cover or stabilization to avoid contact with precipitation and wind where and when practical.

Stock pile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters.

For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

1. Locate piles within the designated limits of disturbance.
2. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
3. Where practicable, provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize sediment discharge.
4. **NEVER** hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.
5. To the maximum extent practicable, contain and securely protect from wind.

*Describe materials expected to be stockpiled or stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater and to eliminate the discharge of stockpiled material from entering drainage systems and surface waters. Refer to the RI SESC Handbook, Stockpile and Staging Area Management Control Measure for additional guidance. Complete the table provided.*

STOCKPILE CONTAINMENT				
Construction Phase #	Run-on measures necessary? (yes/no)	Stabilization or Cover Type	Stockpile Containment Measure	Sheet #
1	No	Top and sub-soil piles should be covered or vegetated.	12" Dia. Compost Filter Sock/Staked Haybale	Sheet 6

- All stockpiled materials shall be protected from stormwater run-on by placing poly sheeting under the stockpile and a berm of compost filter sock around the stockpile.
- All stockpiled materials shall have a tarpaulin or similar cover to prevent wind erosion.
- The following materials or substances will potentially be present on-site during construction:
  - Road base materials (Gravel borrow)
  - Landscaping materials (Loam, mulch, bio-filtration media)
  - Crushed stone

#### CONSTRUCTED SEDIMENT STRUCTURES

*If each common drainage location receives water from an area with less than one (1) acre disturbed at a time, this section can be deleted and no sediment traps or basins are required. However, it is important to remember that there is still a requirement to retain sediment on-site. Therefore, if it is in the best professional judgment of the designer, that there is a condition or circumstance which may require structural controls (per Section 3.3.7.13 of the RI Stormwater Design and Installation Standards Manual), this section can be used.*

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**TEMPORARY SEDIMENT TRAPS** will be utilized onsite. There will be no disturbed drainage areas greater than one acre that will be exposed for longer than six months. Design and sizing calculations in accordance with the *RI SESC Handbook*, Section Six are found in N/A of this SESC Plan. A summary of the calculations are provided below:

*For Disturbed Areas 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time, a temporary sediment trap must be provided where attainable and where the sediment trap is only intended to be used for a period of six (6) months or less. For longer term projects with a common drainage location that serves between one (1) and five (5) acres disturbed at one time, a temporary sediment basin must be provided where attainable. Temporary sediment trapping practices must be designed in accordance with the RI SESC Handbook and must be sized to have a total storage volume capable of storing one (1) inch of runoff from the contributing area or one hundred and thirty four (134) cubic yards per acre of drainage area. A minimum of fifty percent (50%) of the total volume shall be storage below the outlet (wet storage). See RISDISM 3.3.7.12 for requirements and RI SESC Handbook, Section Six: Temporary Sediment Traps Measure for design details.*

Are temporary sediment traps required at the site?

☐ Yes      ☒ No

*If No, discuss rationale.*

The total disturbance is less than one acre.

**TEMPORARY SEDIMENT BASIN(S)** will be utilized onsite. Every effort must be made to prevent erosion and control it near the source.

*If the following criterion does not apply to your proposed construction project, then this section may be eliminated from the plan.*

*For Disturbed Areas of 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time for longer than six (6) months.*

*For Disturbed Areas > 5 Acres – Those areas with a common drainage location that serves an area with greater than five (5) acres disturbed at one time, a temporary (or permanent) sediment basin must be provided where attainable until final stabilization of the site is complete. Temporary sediment basins must be designed in accordance with the RI SESC Handbook. The volume of wet storage shall be at least twice the sediment storage volume and shall have a minimum depth of two (2) feet. Sediment storage volume must accommodate a minimum of one year of predicted sediment load as calculated using the sediment volume formula in the RI SESC Handbook. In addition to sediment storage volume and wet storage volume, the sediment basin shall provide adequate residence storage volume to provide a minimum 10 hours residence time for a ten (10) -year frequency, twenty four (24) hour duration, Type III distribution storm. To the maximum extent practicable, outlet structures must be utilized that withdraw water from the surface of temporary sedimentation basins for the purpose of minimizing the discharge of pollutants. Exceptions may include periods of extended cold weather, where alternative outlets are required during frozen periods. If such a device is infeasible for portions of or the entire construction period justification must be made in the SESC Plan. Describe the reasons sediment basins are required for this project. They may include physical conditions, land ownership, construction operations etc. For design details see RI SESC Handbook Section Six: Temporary Sediment Basins Measure.*

Are temporary sediment basins required at the site?

☐ Yes      ☒ No

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*If No, discuss rationale.*

The total disturbance is less than one acre.

**2.10 Properly Design Constructed Stormwater Conveyance Channels**

*Conveyances are required to be designed for inlets to temporary sediment basins. The construction site planner must use best professional judgment to determine if additional conveyance design is required for run-on control or in any other location where velocity control is required.*

Are temporary stormwater conveyance practices required in order to properly manage runoff within the proposed construction project?

☐ Yes      ☒ No

*If No, discuss rationale for not including conveyance measures in the SESC Plan.*

It is not anticipated that any temporary stormwater conveyance practices will be needed to manage the runoff within the proposed construction project area. The majority of runoff will continue to sheet flow and be collected by the existing catch basin on site, which ultimately discharges through an existing outfall to the Seekonk River.

**2.11 Erosion, Runoff, and Sediment Control Measure List**

*Complete the following table for each Phase of construction where Erosion, Runoff, and Sediment Control Measures are located. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.*

**It is expected that this table and corresponding Inspection Reports will be amended as needed throughout the construction project as control measures are added or modified.**

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Phase No. 1		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Perimeter	Compost Filter Sock	<p>Inspection should be made after each storm event and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the filter sock if sediment accumulates to at least ½ of the original height of the barrier becomes filled with sediment.</p> <p>Compost filter sock should be inspected regularly, and sediment shall be cleared often to prevent buildup or damages.</p>
All Catch Basins	Inlet Projection: Catch Basin Insert	<p>Inlet protection devices shall remain installed below the grates until the contributing area is stabilized. Sediment shall be removed from the silt sack when the sediment has accumulated to half (½) of the depth of the silt sack. The sediment that is removed shall be disposed in an approved area.</p>
Construction Entrances	Stone Stabilized Construction Access	<p>Site entrances shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces.</p> <p>Provide periodic top dressing with additional stone or additional length as conditions demand.</p> <p>Roads adjacent to entrance shall be clean at the end of each day.</p> <p>If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.</p>
Site Wide	Stockpiles	<p>Inspections should be made weekly during the rainy season and bi-monthly during the non-rainy season.</p> <p>Perimeter controls shall be replaced as required based on periodic inspection.</p>
Street Sweeping/Water for Dust Control	Not Applicable	<p>Weekly or as required by site conditions. RAWP states dust suppression techniques shall be employed at all times during soil disturbance.</p>



## SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.14:*

The purpose of construction activity pollution prevention is to prevent day to day construction activities from causing pollution.

This section describes the key pollution prevention measures that must be implemented to avoid and reduce the discharge of pollutants in stormwater. Example control measures include the proper management of waste, material handling and storage, and equipment/vehicle fueling/washing/maintenance operations.

Where applicable, include *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction* (as amended) specifications.

### 3.1 Existing Data of Known Discharges from Site

*Per RIPDES Construction General Permit – Part III.I:*

*List and provide existing data (if available) on the quality of any known discharges from the site. Examples include discharges from existing stormwater collection systems, discharges from industrial areas of the site, etc.*

Are there known discharges from the project area?

☒ Yes ☐ No

Describe how this determination was made:

- Project survey and observations made during site visits.

If yes, list discharges and locations:

- The site contains an existing catch basin which conveys flow from the site to the RIDOT stormwater system within Warren Avenue. The system ultimately discharges through (2) 36" brick outfalls to the Seekonk River.

Is there existing data on the quality of the known discharges?

☐ Yes ☒ No

If yes, provide data:

- Not Applicable

### 3.2 Prohibited Discharges

*Per RI SESC Handbook – Part D*

The following discharges are prohibited at the construction site:

- Contaminated groundwater, unless specifically authorized by the DEM. These types of discharges may only be authorized under a separate DEM RIPDES permit.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.

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- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- Soaps or solvents used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

All types of waste generated at the site shall be disposed of in a manner consistent with State Law and/or regulations.

Will any of the above listed prohibited discharges be generated at the site?

☒ Yes      ☐ No

*If Yes, provide a list of those that will be generated at the site and provide a discussion of how they will be managed, including references to the specific SESC Site Plans where such control measures are specified.*

- The Contractor shall designate the locations, if any, of concrete washout areas and amend this document accordingly. Under no circumstances will concrete washout areas be located where the discharge from same will create a nuisance or hazard (i.e., excavated areas, roadways, private property, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any concrete washout areas which are found to create a nuisance or hazard. All concrete washouts shall be discharged to a facility that will contain all liquid and concrete waste generated by the washout operations. The concrete washout facility shall adhere to the requirements of the revised Rhode Island Soil Erosion and Sediment Control Handbook.
- All other discharges will be prohibited from the site.

### **3.3 Proper Waste Disposal**

#### *Per RI SESC Handbook – Part D*

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- All waste containers shall be covered to avoid contact with wind and precipitation.
- Waste collection shall be scheduled frequently enough to prevent containers from overfilling.
- All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

Is waste disposal a significant element of the proposed project?

☒ Yes      ☐ No

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*If Yes, identify potential building materials and other construction wastes and document how these wastes will be properly managed and disposed of at the construction site (i.e., trash disposal, sanitary wastes, recycling, and proper material handling). Include references to the specific SESC Site Plans where such control measures are specified.*

- **Waste Materials** - All construction-generated waste materials will be collected and stored in a securely lidded metal dumpster which shall meet all local City and any State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as needed, and the trash will be hauled off site. No construction waste materials will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer, and the individual who manages the day-to-day site operations will be responsible for ensuring that these procedures are followed.
- **Hazardous Waste** - Hazardous waste materials, if encountered, will be disposed of in the manner specified by local or State regulation or by the manufacturer. Site personnel will be instructed in these practices and the individual, who manages day-to-day site operations, will be responsible for seeing that these practices are followed.
- **Sanitary Waste** - All sanitary waste will be collected from the portable units a minimum of once a week by a licensed sanitary waste management contractor, as required by local regulation.

### 3.4 Spill Prevention and Control

*Per RI SESC Handbook – Part D*

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

Are spill prevention and control measures required for this particular project?

☒ Yes

☐ No

*If Yes, describe all areas where potential spills can occur, and their accompanying drainage points, and describe the spill prevention and control plan to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control. Provide the method of establishing and making highly visible the location(s) for the storage of spill prevention equipment. Refer to the RI SESC Handbook, Spill Prevention and Control Plan for guidance.*

Spill prevention and control measures will be provided during construction of the project. It is not anticipated that chemicals and/or hazardous waste materials will be stored on site. However, if spills occur during construction activities, the contractor will implement the following spill prevention/ mitigation measures.

- A spill can potentially occur anywhere within the project sites.
- The following good housekeeping practices will be followed onsite during the construction project:
  - An effort will be made to store on-site only enough products and materials required to perform the anticipated work.
  - All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.

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- Products will be kept in their original containers with the original manufacturer's label.
  - Substances will not be mixed with one another unless recommended by the manufacturer.
  - Whenever possible, all of a product will be used up before disposing of the container.
  - Manufacturers' recommendations for proper use and disposal will be followed.
  - The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
- These practices shall be used to reduce the risks associated with hazardous materials:
  - Products will be kept in original containers unless they are not re-sealable.
  - Original labels and material safety data will be retained; they contain important product information.
  - If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.
- In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices shall be followed for spill prevention and cleanup:
  - Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
  - Materials and equipment necessary for spill cleanup will be kept in a storage area onsite. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
  - All spills will be cleaned up immediately after discovery.
  - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
  - Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.
  - The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
  - The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. The individual will each become responsible for a particular stage of prevention and cleanup. The names of responsible spill personnel will be posted in the office trailer onsite.

### **3.5 Control of Allowable Non-Stormwater Discharges**

*Per RIPDES Construction General Permit – Part III.J.2.e:*

*Discharges not comprised of stormwater are allowed under the RIPDES Construction General Permit but are limited to the following: discharges which result from the washdown of vehicles where no detergents are used; external building wash-down where no detergents are used; the use of water to control dust; firefighting activities; fire hydrant flushing; natural springs; uncontaminated groundwater; lawn watering; potable water sources including waterline flushing; irrigation drainage; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; and foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials has occurred. If any of these discharges may reasonably be expected to be present and to be mixed with stormwater discharges, they must be specifically listed here.*

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Are there allowable non-Stormwater discharges present on or near the project area?

☒ Yes      ☐ No

*If yes, list the sources of allowable non-Stormwater discharge(s) associated with construction activity. For each of the allowable non-stormwater discharge(s) identified, describe the controls and measures that will be implemented at those locations to minimize pollutant contamination of these discharges and to separate them from temporary discharges of stormwater during construction.*

List of allowable non-stormwater discharge(s) and the associated control measure(s):

- Water to control dust – no control measure required.
- Water from Concrete Washout – Concrete Washout Area provided by the Contractor as needed.

*If any existing or proposed discharges consist of contaminated groundwater, such discharges are not authorized under the RIPDES Construction General Permit. These discharges must be permitted separately by seeking coverage to treat and discharge under a separate RIPDES individual permit or under the RIPDES Remediation General Permit. Contact the RIDEM Office of Water Resources RIPDES Permitting Program at 401-222-4700 for application requirements and additional information.*

Are there any known or proposed contaminated discharges, including anticipated contaminated dewatering operations, planned on or near the project area?

☐ Yes      ☒ No

If yes, list the discharge types and the RIPDES individual permit number(s) or RIPDES Remediation General Permit Authorization number(s) associated with these discharges.

- Discharge Type and RIPDES Individual Permit number : Not Applicable
- Discharge Type and RIPDES Remediation General Permit Authorization number: Not Applicable

### **3.6 Control Dewatering Practices**

#### *Per RI SESC Handbook – Part D*

Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate control measures.

Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

At a minimum the following discharge requirements must be met for dewatering activities:

1. Do not discharge visible floating solids or foam.
2. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
3. At all points where dewatering water is discharged, utilize velocity dissipation devices.
4. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.

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5. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
6. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection.)

Is it at all likely that the site operator will need to implement construction dewatering in order to complete the proposed project?

☒ Yes

☐ No

*If Yes, describe all areas where construction dewatering may be required and the proposed control measures that will be used to treat and manage dewatering fluids including all proposed discharge points. Proposed control measures must comply with the RI SESC Handbook. Include references to all relevant SESC Site Plans.*

- Uncontaminated groundwater pumped out of construction excavations will be routed to and through adequately sized dewatering basins to remove (to the maximum extent possible) sediments contained within the groundwater. The locations and sizes of dewatering basins shall be as needed to receive and treat groundwater when it is encountered during construction, as determined by the Contractor. Under no circumstances will dewatering basins be located where the discharge from same will create a nuisance or hazard (i.e. excavated areas, roadways, private property, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any dewatering basins which are found to create a nuisance or hazard.

### **3.7 Establish Proper Building Material Staging Areas**

*Per RI SESC Handbook – Part D*

All construction materials that have the potential to contaminate stormwater must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. Designated areas shall be approved by the site owner/engineer. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in the discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

*Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. Include references to all relevant SESC Site Plans.*

- See Section 3.4 for procedures related to storage of materials to minimize exposure of the same to stormwater.
- The following materials or substances will potentially be present on-site during construction:
  - Fertilizers
  - Petroleum Based Products (Gasoline, Diesel Fuel, Motor Oil)
  - Cleaning Solvents
  - Bituminous Concrete Asphalt
  - Cement Concrete
  - Detergents
  - Wood
  - Liquid Asphalt/Tar

### 3.8 Minimize Dust

#### *Per RI SESC Handbook – Part D*

Dust control procedures and practices shall be used to suppress dust on a construction site during the construction process, as applicable. Precipitation, temperature, humidity, wind velocity and direction will determine amount and frequency of applications. However, the best method of controlling dust is to prevent dust production. This can best be accomplished by limiting the amount of bare soil exposed at one time. Dust Control measures outlined in the *RI SESC Handbook* shall be followed. Other dust control methods include watering, chemical application, surface roughening, wind barriers, walls, and covers.

*Describe dust control practices that will be used to suppress dust and limit its generation (i.e. applying water, limiting the amount of bare soil exposed at one time etc.).*

- Water for dust control will be applied prior to or during high wind conditions (forecasted or actual wind conditions of 20 mph or greater) to all areas of exposed erodible soil. Water shall be spray-applied to avoid ponding or erosion, either by truck (in roadway areas) or manually (in off-road areas).
- In addition, the Contractor shall limit the amount of bare soil exposed at one time.

### 3.9 Designate Washout Areas

#### *Per RI SESC Handbook – Part D*

At no time shall any material (concrete, paint, chemicals) be washed into storm drains, open ditches, streets, streams, wetlands, or any environmentally sensitive area. The site operator must ensure that construction waste is properly disposed of, to avoid exposure to precipitation, at the end of each working day.

Will washout areas be required for the proposed project?

☒ Yes

☐ No

*If Yes, describe location(s) and control measures that will be used to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, washout areas for concrete mixers, paint, stucco, etc. The recommended location(s) of washout areas should be identified, or at a minimum the locations where these washout areas should not be sited should be called out.*

- The Contractor shall designate the locations, if any, of concrete washout areas and amend this document accordingly. Under no circumstances will concrete washout areas be located where the discharge from same will create a nuisance or hazard (i.e., excavated areas, roadways, private property, wetland resource areas, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any concrete washout areas which are found to create a nuisance or hazard.

### 3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

#### *Per RI SESC Handbook – Part D*

Vehicle fueling shall not take place within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Designated areas shall be depicted on the SESC Site Plans, or shall be approved by the site owner.

Vehicle maintenance and washing shall occur off-site, or in designated areas depicted on the SESC Site Plans or approved of by the site owner. Maintenance or washing areas shall not be within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Maintenance areas shall be clearly designated, and barriers shall be used around the perimeter of the maintenance area to prevent stormwater contamination.



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Construction vehicles shall be inspected frequently for leaks. Repairs shall take place immediately. Disposal of all used oil, antifreeze, solvents and other automotive-related chemicals shall be according to applicable regulations; at no time shall any material be washed down the storm drain or in to any environmentally sensitive area.

*Describe equipment/vehicle fueling and maintenance practices that will be implemented to prevent pollutants from mixing with stormwater (e.g., secondary containment, drip pans, spill kits, etc.) Provide recommended location(s) of fueling/maintenance areas, or, at minimum, locations where fueling/maintenance should be avoided.*

- All onsite vehicles shall be monitored for leaks, and shall receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
- The Contractor shall determine locations, if any, for vehicle fueling and maintenance activities, provided that said locations are more than fifty (50) feet from any storm drainage inlet structure and outside of any known resource or buffer area.

### **3.11 Chemical Treatment for Erosion and Sediment Control**

#### *Per RI SESC Handbook – Appendix J*

Chemical stabilizers, polymers, and flocculants are readily available on the market and can be easily applied to construction sites for the purposes of enhancing the control of erosion, runoff, and sedimentation. The following guidelines should be adhered to for construction sites that plan to use treatment chemicals as part of their overall erosion, runoff, and sedimentation control strategy.

The U.S. Environmental Protection Agency has conducted research into the relative toxicity of chemicals commonly used for the treatment of construction stormwater discharges. The research conducted by the EPA focused on different formulations of chitosan, a cationic compound, and both cationic and anionic polyacrylamide (PAM). In summary, the studies found significant toxicity resulting from the use of chitosan and cationic PAM in laboratory conditions, and significantly less toxicity associated with using anionic PAM. EPA's research has led to the conclusion that the use of treatment chemicals for erosion, runoff, and sedimentation control requires proper operator training and appropriate usage to avoid risk to aquatic species. In the case of cationic treatment chemicals additional safeguards may be necessary.

#### **Application/Installation Minimum Requirements**

If a site operator plans to use polymers, flocculants, or other treatment chemicals during construction the SESC plan must address the following:

1. Treatment chemicals shall not be applied directly to or within 100 feet of any surface water body, wetland, or storm drain inlet.
2. Use conventional erosion, runoff, and sedimentation controls prior to and after the application of treatment chemicals. Use conventional erosion, runoff, and sedimentation controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g. temporary sediment basin, temporary sediment trap or sediment barrier) prior to discharge.
3. Sites shall be stabilized as soon as possible using conventional measures to minimize the need to use chemical treatment.



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4. Select appropriate treatment chemicals. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or treatment area. **Soil testing is essential. Using the wrong form of chemical treatment will result in some form of performance failure and unnecessary environmental risk.**
5. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets), or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., storing chemicals in covered areas or having a spill kit available on site).
6. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

Will chemical stabilizers, polymers, flocculants or other treatment chemicals be utilized on the proposed construction project?

☐ Yes

☒ No

*If Yes, create a Treatment Chemical Application Plan and describe how the owner or SESC Plan preparer/designer intends to educate the designated operator prior to the application of such treatment chemicals.*

*Treatment Chemical Application Plan Required Elements*

*Insert information listed below:*

1. *List Manufacturer's name and product name for each treatment chemical proposed for use at the site.*
2. *Attach a copy of applicable Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for each proposed treatment chemical.*
3. *Provide the results of third party toxicity testing of the materials proposed for use at the site.*
4. *Provide a certification from the site owner and operator that all proposed treatment chemicals are the same as those used in the toxicity tests and will not be altered in any way.*
5. *Provide an explanation as to why conventional erosion, runoff, and sediment control measures, alone or in combination, will not be sufficient to prevent turbidity impacts and sedimentation in downstream receptors.*
6. *Provide a plan prepared in consultation with the chemical treatment manufacturer(s) or authorized manufacturer's representative which includes the following:*
  - a. *Identification of the areas of the site where treatment chemicals will be applied and the name, location, and distance to all downstream receptors that have the potential to be impacted from the discharges from the treatment areas.*
  - b. *List the expected start and end dates or specific phases of the project during which each treatment chemical will be applied.*
  - c. *Provide test results for representative soils from the site, and any recommendations from the manufacturer based on the soil tests, indicating the type of treatment chemical and the recommended application rate.*
  - d. *List the frequency, method, and rates of application which are designed to ensure that treatment chemical concentrations will not exceed 50% of the IC25 or NOEC toxicity values, whichever is less, for each treatment chemical proposed.*

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- e. *Provide the frequency of inspection and maintenance of the treatment chemical application system.*
  - f. *List the method proposed for the collection, removal, and disposal or stabilization of settled particles to prevent re-suspension.*
  - g. *Describe the training that will be provided to all persons who will handle and use treatment chemicals at the construction site. Training must include appropriate, product-specific training and proper dosing requirements for each product.*
- It is not anticipated that a treatment chemical application will be required to control erosion, runoff, and sedimentation.
  - The Contractor shall provide a treatment chemical application plan for review and approval, if it is determined that treatment chemicals are required during construction.

**Treatment Chemical SESC Plan Weekly Inspection Report Documentation Requirements**

1. Document the type and quantity of treatment chemicals applied.
2. List the date, duration of discharge, and estimated discharge rate.
3. Provide an estimate of the volume of water treated.
4. Provide an estimate of the concentration of treatment chemicals in the discharge, with supporting calculations.

**3.12 Construction Activity Pollution Prevention Control Measure List**

*Complete the following table for each Phase of construction where Pollution Prevention Control Measures will be implemented. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.*

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It is expected that this table will be amended as needed throughout the construction project.

Phase No. #		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Construction Entrances	Stone Stabilized Construction Access	<p>Site entrances shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces.</p> <p>Provide periodic top dressing with additional stone or additional length as conditions demand.</p> <p>Roads adjacent to entrance shall be clean at the end of each day.</p> <p>If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.</p>
Roads	Public roads within the construction site shall be clean at the end of each day	Street Sweep if construction site sediment is visible
Site Wide	Pick-up & proper handling and disposal of construction trash and debris	All loose trash and debris must be disposed of properly at the end of each working day
To Be Determined by Contractor as Needed		

## SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE

### 4.1 Installation

*Per RI SESC Handbook – Part D:*

Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater control measures must be installed in accordance with good judgment, including applicable design and manufacturer specifications. Installation techniques and maintenance requirements may be found in manufacturer specifications and/or the *RI SESC Handbook*.

*Include references to SESC Site Plans where installation requirements are located.*

The erosion control details and installation locations are depicted on the Site Preparation Plan and Construction Detail sheets of the plan set. The Contractor shall amend this section if there are any departures from the specifications or a previous section in this document.

### 4.2 Monitoring Weather Conditions

*Per RI SESC Handbook – Part D:*

Anticipating Weather Events - Care will be taken to the best of the operator's ability to avoid disturbing large areas prior to anticipated precipitation events. Weather forecasts must be routinely checked, and in the case of an expected precipitation event of over 0.25-inches over a 24-hour period, it is highly recommended that all control measures should be evaluated and maintained as necessary, prior to the weather event. In the case of an extreme weather forecast (greater than one-inch of rain over a 24-hour period), additional erosion/sediment controls may need to be installed.

Storm Event Monitoring For Inspections - At a minimum, storm events must be monitored and tracked in order to determine when post-storm event inspections must be conducted. Inspections must be conducted and documented at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt.

*In order for an operator to successfully satisfy this requirement list the weather gauge station that will be utilized to monitor weather conditions on the construction site. See [www.wunderground.com](http://www.wunderground.com) or [www.weather.gov](http://www.weather.gov) for available stations.*

The weather gauge station and website that will be utilized to monitor weather conditions on the construction site is as follows:

- There is a weather gauge station in East Providence (KRIPROVI24) that may be used to monitor weather conditions. The station can be found on:

[www.wunderground.com](http://www.wunderground.com)

### 4.3 Inspections

*Per RI SESC Handbook – Part D:*

Minimum Frequency - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt:

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- a. All areas that have been cleared, graded, or excavated and where permanent stabilization has not been achieved;
- b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention control measures) installed at the site;
- c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;
- d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;
- e. All points of discharge from the site;
- f. All locations where temporary soil stabilization measures have been implemented;
- g. All locations where vehicles enter or exit the site.

Reductions in Inspection Frequency - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in an inspection report.

Qualified Personnel – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are “qualified” to do so. A “qualified person” is a person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector’s name, signature, and contact information.

General Notes

- A separate inspection report will be prepared for each inspection.
- The Inspection Reference Number shall be a combination of the RIPDES Construction General Permit No - consecutively numbered inspections. ex/ Inspection reference number for the 4<sup>th</sup> inspection of a project would be: RIR10####-4
- Each report will be signed and dated by the Inspector and must be kept onsite.
- Each report will be signed and dated by the Site Operator.
- The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

**Failure to make and provide documentation of inspections and corrective actions under this part constitutes a violation of your permit and enforcement actions under 46-12 of R.I. General Laws may result.**

#### **4.4 Maintenance**

*Per RI SESC Handbook – Part D:*

Maintenance procedures for erosion and sedimentation controls and stormwater management structures/facilities are described on the SESC Site Plans and in the *RI SESC Handbook*.

Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Erosion, runoff, sedimentation, and pollution prevention control measures must be maintained throughout the course of the project.

**Note: It is recommended that the site operator designates a full-time, on-site contact person responsible for working with the site owner to resolve SESC Plan-related issues.**

#### **4.5 Corrective Actions**

*Per RI SESC Handbook – Part D:*

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall note it on the inspection report and shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of any of the control measures instituted at the site is required.

In accordance with the *RI SESC Handbook*, the site operator shall initiate work to fix the problem immediately after its discovery, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the control measures and making it operational as soon as practicable after the 7-day timeframe. Such documentation of these maintenance procedures and timeframes should be described in the inspection report in which the issue was first documented. If these actions result in changes to any of the control measures outlined in the SESC Plan, site owners and operators must also modify the SESC Plan accordingly within seven (7) calendar days of completing this work.

## SECTION 5: AMENDMENTS

*Per RIPDES Construction General Permit – Part III.F:*

This SESC Plan is intended to be a working document. It is expected that amendments will be required throughout the active construction phase of the project. **Even if practices are installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site for the entire duration of the project.**

The SESC Plan shall be amended within seven (7) days whenever there is a change in design, construction, operation, maintenance or other procedure which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives (i.e. the selected control measures are not effective in controlling erosion or sedimentation).

In addition, the SESC Plan shall be amended to identify any new operator that will implement a component of the SESC Plan.

All revisions must be recorded in the Record of Amendments Log Sheet, which is contained in Attachment G of this SESC Plan, and dated red-lined drawings and/or a detailed written description must be appended to the SESC Plan. Inspection Forms must be revised to reflect all amendments. Update the Revision Date and the Version # in the footer of the Report to reflect amendments made.

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and operator. Any amendments to control measures that involve the practice of engineering must be reviewed, signed, and stamped by a Professional Engineer registered in the State of RI.

The amended SESC plan must be kept on file at the site while construction is ongoing and any modifications must be documented.

Attach a copy of the Amendment Log.

See Attachment G: Amendment Log

## SECTION 6: RECORDKEEPING

### RIPDES Construction General Permit – Parts III.D, III.G, III.J.3.b.iii, & V.O

It is the site owner and site operator's responsibility to have the following documents available at the construction site and immediately available for RIDEM review upon request:

- A copy of the fully signed and dated SESC Plan, which includes:
  - A copy of the General Location Map  
INCLUDED AS ATTACHMENT A
  - A copy of all SESC Site Plans  
INCLUDED AS ATTACHMENT B
  - A copy of the RIPDES Construction General Permit *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*  
INCLUDED AS ATTACHMENT C
  - A copy of any regulatory permits (RIDEM Freshwater Wetlands Permit, CRMC Assent, RIDEM Water Quality Certification, RIDEM Groundwater Discharge Permit, RIDEM RIPDES Construction General Permit authorization letter, etc.)  
INCLUDED AS ATTACHMENT D
  - The signed and certified NOI form or permit application form *(if required as part of the application, see RIPDES Construction General Permit for applicability)*  
INCLUDED AS ATTACHMENT E
  - Completed Inspection Reports w/Completed Corrective Action Logs  
INCLUDED AS ATTACHMENT F
  - SESC Plan Amendment Log  
INCLUDED AS ATTACHMENT G



## SECTION 7: PARTY CERTIFICATIONS

### RIPDES Construction General Permit – Part V.G

All parties working at the project site are required to comply with the Soil Erosion and Sediment Control Plan (SESC Plan including SESC Site Plans) for any work that is performed on-site. The site owner, site operator, contractors and sub-contractors are encouraged to advise all employees working on this project of the requirements of the SESC Plan. A copy of the SESC Plan is available for your review at the following location: **Potter Street at Warren Ave Job Site**, or may be obtained by contacting the site owner or site operator.

The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

***I acknowledge that I have read and understand the terms and conditions of the Soil Erosion and Sediment Control (SESC) Plan for the above designated project and agree to follow the control measures described in the SESC Plan and SESC Site Plans.***

Site Owner:

City of East Providence  
Erik Skadberg, P.E., City Engineer  
145 Taunton Avenue  
East Providence, RI 02914  
401-435-7703, eskadberg@eastprovidenceri.gov

\_\_\_\_\_  
signature/date

Site Operator:

Insert Company or Organization Name  
Insert Name & Title  
Insert Address  
Insert City, State, Zip Code  
Insert Telephone Number, Insert Fax/Email

\_\_\_\_\_  
signature/date

Designated Site Inspector:

Insert Company or Organization Name  
Insert Name & Title  
Insert Address  
Insert City, State, Zip Code  
Insert Telephone Number, Insert Fax/Email

\_\_\_\_\_  
signature/date

SubContractor SESC Plan Contact:

BETA Group, Inc.  
Jared Linhares, PE, Project Manager  
701 George Washington Highway  
Lincoln, RI 02865  
401-333-2382, JLinhares@BETA-Inc.com

\_\_\_\_\_  
signature/date

## LIST OF ATTACHMENTS

**Attachment A - General Location Map**

**Attachment B - SESC Site Plans**

**Attachment C - Copy of RIPDES Construction General Permit and Authorization to Discharge** *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*

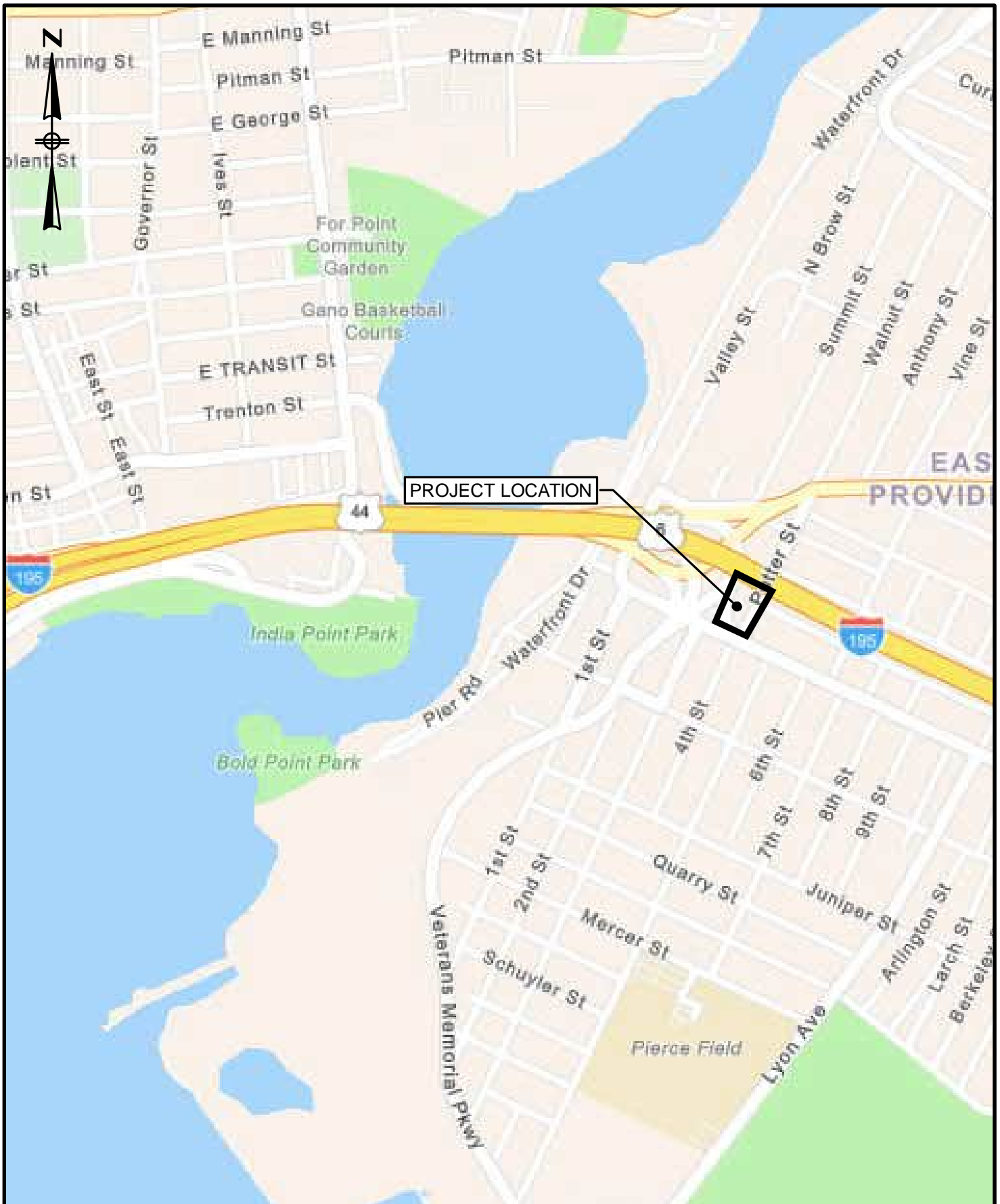
**Attachment D - Copy of Other Regulatory Permits**

**Attachment E - Copy of RIPDES NOI** *(if required as part of application, see RIPDES Construction General Permit for applicability)*

**Attachment F - Inspection Reports w/ Corrective Action Log**

**Attachment G - SESC Plan Amendment Log**

## **Attachment A - General Location Map**



## **Attachment B – SESC Plan Site Maps**

The RIDEM-approved set of project construction plans shall serve as the SESCO site maps, and are not included herein. Please refer to the RIDEM-approved plan set, which shall be kept on-site at all times for the duration of the project.

## **Attachment C - Copy of RIPDES Construction General Permit**

The RIPDES Construction General Permit may be accessed, viewed and printed from the RIDEM web site, at the following address:

<http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/pdfs/cgp092620.pdf>

A hard copy of the RIPDES CGP is not included herein.

## **Attachment D - Copy of Regulatory Permits**

## **Attachment E - Copy of RIPDES NOI**



## **Attachment F - Inspection Reports and Corrective Action Log**

This appendix contains copies of all project stormwater inspection reports and corrective action logs performed in accordance with Section 5 – Maintenance and Inspection of this SESCO. Reports are presented in chronological order from most recent to oldest.



# SESC Plan Inspection Report Instructions

For all projects subject to the requirements of the *RI Stormwater Design and Installation Standards Manual* or the *RIPDES Construction General Permit* the site owner and operator are required to develop and comply with a site specific Soil Erosion and Sediment Control Plan (SESC Plan) in order to remain in compliance with applicable regulations.

This inspection report template has been provided by RIDEM for use by the site operator and designated inspector to document the adequacy and condition of erosion, runoff, sediment, and pollution prevention control measures specified for use on the construction site. It should be customized for your specific site conditions and consistent with the SESC Plan developed for your site.

## ***Using the Inspection Report***

This inspection report is designed to be customized according to the control measures and conditions at the site. On a copy of the applicable SESC Site Plans, number or label all stormwater control measures and areas of the site that will be inspected. Include all control measures (temporary traps, basins, inlet protection measures, etc.) and areas that will be inspected. Also, identify all point source discharges/outfalls, and the priority natural resource areas (i.e. streams, wetlands, mature trees, etc). List each control measure or area to be inspected separately in the site-specific control measure section of the inspection report.

Complete any items that will remain constant, such as the project information and control measure locations and descriptions. Then, print out multiple copies of this customized inspection report to use during the inspections.

When conducting the inspection, walk the site by following the SESC Site Plans and numbered control measure locations for inspection. Also note whether the overall site issues have been addressed. Customize this list according to the conditions at the site.

## ***Minimum Monitoring and Reporting Requirements***

Your site must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff. Read Section 4.2 of your SESC Plan for more information regarding the importance of monitoring weather conditions.

## ***General Notes***

- A separate inspection report will be prepared for each inspection.

- The Inspection Reference Number shall be a combination of the RIPDES Permit Authorization Number - consecutively numbered inspections. For example: Inspection reference number for the 4<sup>th</sup> inspection of a project would be: RIR101000-4
- Each report will be signed and dated by the inspector and forwarded to the site operator within 24 hours of the inspection.
- Each report will be signed and dated by the site operator upon his/her receipt and after completion of all required corrective actions.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

### **Corrective Actions**

If the SESC Plan Inspection determines that corrective actions are necessary to install or repair control measures, the resultant actions taken must be documented by the site operator. The actions must be recorded in the Corrective Action Log attached to each SESC Plan inspection form. If the site operator disagrees with the corrective action recommendations, it must be documented, with justifiable reasons, in the Corrective Action Log, as well. **Required timeframes for corrective actions are established by regulation and are discussed in Section 4.5 of your SESC Plan.**

### **Amendments**

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and site operator. The revision must be recorded in the Record of Amendments Log Sheet within the SESC Plan, and dated red-line drawings and/or a detailed written description of the revision must be appended to the SESC Plan. Inspection forms must be revised to reflect all amendments. Update the *Revision Date* and the *Version #* in the footer of the report to reflect amendments made.

The SESC Plan shall be amended whenever there is a change in design, construction, operation, maintenance or other procedure, which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives.

***\*\*\*Remember that the regulations are performance-oriented.  
Even if all control measures are installed on a site according to the  
SESC Plan, the site is only in compliance when  
erosion, runoff, sedimentation, and pollution  
are effectively controlled. \*\*\****

**SESC Plan Inspection Report**

Project Information			
Name			
Location			
DEM Permit No.			
Site Owner	Name	Phone	Email
Site Operator	Name	Phone	Email
Inspection Information			
Inspector Name	Name	Phone	Email
Inspection Date		Start/End Time	
Inspection Type <input type="checkbox"/> Weekly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event <input type="checkbox"/> Other			
Weather Information			
Last Rain Event Date:                      Duration (hrs):                      Approximate Rainfall (in):			
Rain Gauge Location & Source:			
Weather at time of this inspection:			

**Check statement that applies then sign and date below:**

☐ I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have determined that maintenance and corrective actions are not required at this time.

☐ I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have made the determination that the site requires corrective actions. The required corrective actions are noted within this inspection report.

Inspector:	Print Name	Signature	Date
The Site Operator acknowledges by his/her signature, the receipt of this SESC Plan inspection report and its findings. He/she acknowledges that all recommended corrective actions must be completed and documentation of all such corrective actions must be made in this inspection report per applicable regulations.			
Operator:	Print Name	Signature	Date

**PROJECT:****INSPECTION DATE:****Site-specific Control Measures**

Number the structural and non-structural stormwater control measures identified in the SESC Plan and on the SESC Site Plans and list them below (add as necessary). Bring a copy of this inspection form and any applicable SESC Site Plans with you during your inspections. This list will assist you to inspect all control measures at your site.

FILL THIS TABLE USING THE SESC PLAN TABLES 2.11 & 3.12.

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
1	Example 1: Eastern Parcel – Slope No. 4 Adjacent to I-95.  Straw Wattles	Straw Wattle. Section Six, Sediment Control Measures, Straw Wattles, Compost Tubes and Fiber Rolls - <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2	Example 2: Western Parcel – Green Street Construction Entrance	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances – <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3	Example 3:  Hospital Main Footings – Excavation Area – SESC Site Plan Sheet No. 3.	Pump Intake Protection Using Stone Filled Sump with Standpipe. Section Six: Sediment Control Measures, Pump Intake Protection, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4	Example 4:  Bridge Abutment Construction Southbound Bridge Abutment, Bridge No. 244 – SESC Site Plan Sheet No. 18.	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations. Section Three: Pollution Prevention and Good Housekeeping, Concrete Washouts, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5	INSERT TEXT	INSERT TEXT	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6	<b>Attention Operator:</b>	<b>You must modify this inspection form as the project progresses, control measure locations change, and amendments to the SESC Plan are instituted in the field.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7			<input type="checkbox"/> Yes <input type="checkbox"/> No		
8			<input type="checkbox"/> Yes <input type="checkbox"/> No		

**PROJECT:****INSPECTION DATE:**

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
9			<input type="checkbox"/> Yes <input type="checkbox"/> No		
10			<input type="checkbox"/> Yes <input type="checkbox"/> No		
11			<input type="checkbox"/> Yes <input type="checkbox"/> No		
12			<input type="checkbox"/> Yes <input type="checkbox"/> No		
13			<input type="checkbox"/> Yes <input type="checkbox"/> No		
14			<input type="checkbox"/> Yes <input type="checkbox"/> No		
15			<input type="checkbox"/> Yes <input type="checkbox"/> No		
16			<input type="checkbox"/> Yes <input type="checkbox"/> No		
17			<input type="checkbox"/> Yes <input type="checkbox"/> No		
18			<input type="checkbox"/> Yes <input type="checkbox"/> No		
19			<input type="checkbox"/> Yes <input type="checkbox"/> No		
20			<input type="checkbox"/> Yes <input type="checkbox"/> No		
21			<input type="checkbox"/> Yes <input type="checkbox"/> No		
22			<input type="checkbox"/> Yes <input type="checkbox"/> No		
23			<input type="checkbox"/> Yes <input type="checkbox"/> No		
24			<input type="checkbox"/> Yes <input type="checkbox"/> No		

**PROJECT:**

**INSPECTION DATE:**

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
25			<input type="checkbox"/> Yes <input type="checkbox"/> No		
26			<input type="checkbox"/> Yes <input type="checkbox"/> No		
27			<input type="checkbox"/> Yes <input type="checkbox"/> No		
28			<input type="checkbox"/> Yes <input type="checkbox"/> No		
29			<input type="checkbox"/> Yes <input type="checkbox"/> No		
30			<input type="checkbox"/> Yes <input type="checkbox"/> No		

(add more as necessary)

**General Site Issues**

Below are some general site issues that should be assessed during inspections. Please **customize** this list as needed for conditions at the site.

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
1	Have all control measures been installed as specified in the RISESC Handbook and prior to any earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
2	Are appropriate limits of disturbance (LOD) established?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
3	Are controls that limit runoff from exposed soils by diverting, retaining, or detaining flows (such as check dams, sediment basins, etc.) in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
4	Are all temporary conveyance practices installed correctly and functioning as designed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
5	Has maintenance been performed as required to ensure continued proper function of all temporary conveyances practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
6	Were all exposed soils seeded by October 15 <sup>th</sup> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
7	Have soils been stabilized where earth disturbance activities have permanently or temporarily ceased on any portion of the site and will not resume for more than 14 days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
8	In instances where adequate vegetative stabilization was not established by November 15 <sup>th</sup> , have non-vegetative erosion control measures must be employed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
9	If work is to continue from October 15 <sup>th</sup> through April 15 <sup>th</sup> , are steps taken to ensure that only the day's work area will be exposed and all erodible soil is stabilized within 5 working days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
10	Have inlet protection measures (such as fabric drop inlet protection, curb drop inlet protection, etc.) been properly installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
11	Has the operator cleaned and maintained inlet protection measures when needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
12	Has the operator removed accumulated sediment adjacent to inlet protection measures within 24 hours of detection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		



	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
13	Has the operator properly installed outlet protection (such as riprap, turf mats, etc.) at all temporary and permanent discharge points?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
14	Are all outlet protection measures functioning properly in order to reduce discharge velocity, promote infiltration, and eliminate scour?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
15	Have all discharge points been inspected to ensure the prevention of scouring and channel erosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
16	Have sediment controls been installed along perimeter areas that will receive stormwater from earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
17	Is the operator maintaining sediment controls in accordance with the requirements in the <i>RI SESC Handbook</i> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
18	Have temporary sediment barriers been installed around permanent infiltration areas (such as bioretention areas, infiltration basins, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
19	Have staging areas and equipment routing been implemented to avoid compaction where permanent infiltration areas will be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
20	Are surface outlet structures (such as skimmers, siphons, etc.) installed for each temporary sediment basin? [Exception: frozen conditions]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
21	Have all temporary sediment basins or traps been inspected and maintained as required to ensure proper function?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
22	Does the project include the use of polymers, flocculants, or other chemicals to control erosion, sedimentation, or runoff from the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
23	Are all chemicals being managed in accordance with Appendix J of the <i>RI SESC Handbook</i> and current best management practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
24	Has the site operator taken steps to <b>prohibit</b> the following pollutant discharges on the site?			
a	Contaminated groundwater.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
b	Wastewater from washout of concrete; unless properly contained, managed, and disposed of.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
c	Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction products.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
d	Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
e	Soaps or solvents used in vehicle and equipment washing.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
f	Toxic or hazardous substances from a spill or other release.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
25	Is the operator using properly constructed entrances/exits to the site so sediment removal occurs prior to vehicles exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
26	If needed, are additional controls (such as rumble strips, rattle plates, etc.) in place to remove sediment from tires prior to exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
27	Is sediment track-out being removed by the end of the same workday in which it occurs (via sweeping, shoveling, or vacuuming)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
28	Are all wastes generated at the site being managed and properly disposed of by the end of each workday?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
29	Are all chemicals and hazardous waste materials stored properly in covered areas and surrounded by containment control systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
30	Has the operator established highly visible locations for the storage of spill prevention and control equipment on the construction site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
31	Are allowable non-stormwater discharges being managed properly with adequate controls?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
32	Is the site operator properly managing groundwater or stormwater that is removed from excavations, trenches, or similar points of accumulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
33	Are proper procedures and controls in place for the storage of materials that may discharge pollutants if exposed to stormwater?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are stockpiles located within the limits of disturbance?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

**PROJECT:****INSPECTION DATE:**

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
	Are stockpiles being protected from contact with stormwater using a temporary sediment barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Where needed, has cover or appropriate temporary vegetative or structural stabilization been utilized for stockpiles?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Is the operator effectively managing the generation of dust through the use of water, chemicals, or minimization of exposed soil?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are designated washout areas (such as wheel washing stations, washout for concrete, paint, stucco, etc.) clearly marked on the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are vehicle fueling and maintenance areas properly located to prevent pollutants from impacting stormwater and sensitive receptors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	(Other)			

(add more as necessary)

**PROJECT:**

**INSPECTION DATE:**

---

**General Field Comments:**

**PROJECT:**

**INSPECTION DATE:**

**Photos:**

(Associated photos – each photo should be dated and have a unique identification # and written description indicating where it is located within the project area. If a close up photo is required, it should be preceded with a photo including both the detail area and some type of visible fixed reference point. Photos should be annotated with Station numbers and other identifying information where needed.)

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

(add more as necessary)

**PROJECT:** \_\_\_\_\_ **INSPECTION DATE:** \_\_\_\_\_

INSPECTION DATE:

## Corrective Action Log

## TO BE FILLED OUT BY SITE OPERATOR

*Describe repair, replacement, and maintenance of control measures, actions taken, date completed, and note the person that completed the work.*

	Location/Station	Corrective Action	Date Completed	Person Responsible
Operator Signature:			Date:	

## **Attachment G - Amendment Log**

This appendix contains the log of all amendments made to the original SESCO during the construction phase of this project, in accordance with Section 6 – Amendments of this SESCO.

**PROJECT:**

---

---

## Amendment Log

---

### TO BE FILLED OUT BY SITE OPERATOR

*Describe amendment(s) to be made to the SESC Plan, the date, and the person/title making the amendment. ALL amendments must be approved by the Site Owner.*

#	Date	Description of Amendment	Amended by: Person/Title	Site Owner Must Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Add more lines/pages as necessary



# DRAFT Soil Erosion and Sediment Control Plan (to be effective 1/1/17)

**For:**

**Burgess Street at Warren Avenue Parking Lot**

**East Providence, RI 02906**

**Owner:**

City of East Providence

Erik Skadberg, P.E.

145 Taunton Avenue

East Providence, RI 02914

401-435-7703

eskadberg@eastprovidenceri.gov

**Operator:**

*TO BE DETERMINED UPON  
CONTRACT AWARD*

Company Name

Name

Address

City, State, Zip Code

Telephone Number

Email Address

**Estimated Project  
Dates:**

Start Date: July 2023

Completion Date: May 2024

**SESC Plan  
Prepared By:**

BETA Group, Inc.

Jared Linhares, P.E.

701 George Washington Highway

Lincoln, RI 02865

401-333-2382

JLinhares@beta-inc.com

P.E. Reg. #13145

**SESC Plan  
Preparation Date:**

May 2023

**SESC Plan  
Revision Date:**

## OPERATOR CERTIFICATION

*Upon contract award, the OPERATOR must sign this certification statement before construction may begin.*

*I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I am aware that it is the responsibility of the owner/operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.*

---

Operator Signature:

Date

Contractor Representative: Name

Contractor Title: Title

Contractor Company Name: Company Name (if applicable)

Address: Mailing Address

Phone Number: Phone Number

Email Address: Email

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Burgess Street at Warren Avenue Parking Lot

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Upon final completion of this template, “right-click” anywhere in the Table of Contents, select “Update Field”, and then “Update entire table”. Page numbers will automatically be synced with the changed document.*

## INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for the City of East Providence for the Burgess Street at Warren Avenue Parking Lot Project. In accordance with the RIDEM Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity (RIPDES Construction General Permit ("CGP")), projects that disturb one (1) or more acres require the preparation of a SESC Plan. This SESC Plan provides guidance for complying with the terms and conditions of the RIPDES Construction General Permit and Minimum Standard 10 of the RI Stormwater Design and Installation Standards Manual. In addition, this SESC Plan is also consistent with Part D of the *RI SESC Handbook* entitled "Soil Erosion and Sediment Control Plans". This document does not negate or eliminate the need to understand and adhere to all applicable RIPDES regulations.

The purpose of erosion, runoff, and sedimentation control measures is to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This SESC Plan has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site plan and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and stormwater runoff at the site. Since construction is a dynamic process with changing site conditions, it is the operator's responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require the operator to revise and amend the SESC Plan during construction to address varying site and/or weather conditions, such as by adding or realigning erosion or sediment controls to ensure the SESC Plan remains compliant with the RIPDES Construction General Permit. Records of these changes must be added to the amendment log attached to the SESC Plan, and to the site plans as "red-lined" drawings. Please Note: **Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.**

It is the responsibility of the site owner and the site operator to maintain the SESC Plan at the site, including all attachments, amendments and inspection records, and to make all records available for inspection by RIDEM during and after construction. (RIPDES CGP - Part III.G)

The site owner, the site operator, and the designated site inspector are required to review the SESC Plan and sign the Party Certification pages (Section 8). The primary contractor (if different) and all subcontractors (if applicable) involved in earthwork or exterior construction activities are also required to review the SESC Plan and sign the certification pages before construction begins.

Any questions regarding the SESC Plan, control measures, inspection requirements, or any other facet of this document may be addressed to the RIDEM Office of Water Resources, at 401-222-4700 or via email: [water@dem.ri.gov](mailto:water@dem.ri.gov).

## ADDITIONAL RESOURCES

Rhode Island Department of Environmental Management  
Office of Water Resources  
235 Promenade Street  
Providence, RI 02908-5767  
phone: 401-222-4700  
email: [water@dem.ri.gov](mailto:water@dem.ri.gov)

RIDEM *RI Stormwater Design and Installation Standards Manual* (RISDISM) (as amended)  
<http://www.dem.ri.gov/pubs/regs/regs/water/swmanual15.pdf>

*RI Soil Erosion and Sediment Control Handbook* <http://www.dem.ri.gov/soilerosion2014final.pdf>  
RIDEM 2013 RIPDES Construction General Permit  
<http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdf>  
Rhode Island Department of Transportation  
*Standard Specifications for Road and Bridge Design and Other Specifications* and *Standard Details*  
<http://www.dot.ri.gov/business/bluebook.php>

RIDEM Office of Water Resources Coordinated Stormwater Permitting website  
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/coordinated-stormwater-permitting.php>  
RIDEM RIPDES Stormwater website  
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/>  
RIDEM Water Quality website (for 303(d) and TMDL listings)  
<http://www.dem.ri.gov/programs/water/quality/>

RIDEM Rhode Island Natural Heritage Program <mailto:plan@dem.ri.gov>

RIDEM Geographic Data Viewer – Environmental Resource Map  
<http://www.dem.ri.gov/maps/>

Natural Resources Conservation Service - Rhode Island Soil Survey Program  
<http://www.ri.nrcs.usda.gov/technical/soils.html>

**Note:**

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

EPA NPDES – Stormwater Discharges from Construction Activities webpage:  
<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Discharges-From-Construction-Activities.cfm>

EPA Construction Site Stormwater Runoff Control BMP Menu  
<http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control>

## SECTION 1: SITE DESCRIPTION

### 1.1 Project/Site Information

Project/Site Name:

- Burgess Street at Warren Avenue Parking Lot
- The scope of work includes installing a porous pavement parking lot including new bituminous berm, and removal/ replacement of a concrete access driveway.

Project Street/Location:

- Burgess Street at Warren Avenue, East Providence, RI 02906
- Refer to Attachment A – General Location Map

*Provide construction site estimates of the total area of the site and the total area of the site that is expected to undergo soil disturbance.*

The following are estimates of the construction site area:

- Total Project Area 0.19 acres
- Total Project Area to be Disturbed 0.19 acres

### 1.3 Natural Heritage Area Information

RIPDES CGP - Part III.H

*Each project authorized under the RIPDES Construction General Permit must determine if the site is within or directly discharges to a Natural Heritage Area (NHA). DEM Natural Heritage Areas include known occurrences of state and federal rare, threatened and endangered species. Review RIDEM NHA maps to determine if there are natural heritage areas on or near the construction site that may be impacted during construction. (See also the RIDEM Notice of Intent instructions which can be found at the following link: <http://www.dem.ri.gov/programs/benviron/water/permits/swcoord/pdf/maptutor.pdf>)*

Are there any Natural Heritage Areas being disturbed by the construction activity or will discharges be directed to the Natural Heritage Area as a result of the construction activity?

☐ Yes ☒ No

If yes, describe or refer to documentation which determines the likelihood of an impact on this area and the steps that will be taken to address any impacts.

- Not Applicable

### 1.4 Historic Preservation/Cultural Resources

*The National Historic Preservation Act, and any state, local, and tribal historic preservation laws apply to construction activities. As with endangered species, some permits may specifically require you to assess the potential impact of your stormwater discharges on historic properties. However, whether or not this is stated as a condition for permit coverage, the National Historic Preservation Act and any applicable state or tribal laws apply to you. Contact the Rhode Island Historic Preservation Officer (<http://www.preservation.ri.gov/>) or your Tribal Historic Preservation Officer ([http://grants.cr.nps.gov/THPO\\_Review/index.cfm](http://grants.cr.nps.gov/THPO_Review/index.cfm)) for more information.*

Soil Erosion and Sediment Control Plan  
Burgess Street at Warren Avenue Parking Lot

Are there any historic properties, historic cemeteries or cultural resources on or near the construction site?

☐ Yes      ☒ No

Describe how this determination was made and summarize state or tribal review comments:

- A historic property search on [www.preservation.ri.gov](http://www.preservation.ri.gov) was performed.

If yes, describe or refer to documentation which determines the likelihood of an impact on this historic property, historic cemetery or cultural resource and the steps taken to address that impact including any conditions or mitigation measures that were approved by other parties.

- Not Applicable



## SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL

### RIPDES Construction General Permit – Part III.J.1

The purpose of erosion controls is to prevent sediment from being detached and moved by wind or the action of raindrop, sheet, rill, gully, and channel erosion. Properly installed and maintained erosion controls are the primary defense against sediment pollution.

Runoff controls are used to slow the velocity of concentrated water flows. By intercepting and diverting stormwater runoff to a stabilized outlet or treatment practice or by converting concentrated flows to sheet flow erosion and sedimentation are reduced.

Sediment controls are the last line of defense against moving sediment. The purpose is to prevent sediment from leaving the construction site and entering environmentally sensitive areas.

This section describes the set of control measures that will be installed before and during the construction project to avoid, mitigate, and reduce impacts associated with construction activity. Specific control measures and their applicability are contained in Section Four: Erosion Control Measures, Section Five: Runoff Control Measures, and Section Six: Sediment Control Measures of the *RI SESC Handbook*. The *RI SESC Handbook* can be found at the following address:

<http://www.dem.ri.gov/soilerosion2014final.pdf>

### **2.1     Avoid and Protect Sensitive Areas and Natural Features**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.1:*

Areas of existing and remaining vegetation and areas that are to be protected as identified in the Section 1.6 of the SESC Plan must be clearly identified on the SESC Site Plans for each Phase of Construction. Prior to any land disturbance activities commencing on the site, the Contractor shall physically mark limits of disturbance (LOD) on the site and any areas to be protected within the site, so that workers can clearly identify the areas to be protected.

*Constraints are identified to ensure a comprehensive understanding of the project and surrounding areas. The first goal in the low impact development (LID) site planning and design process is to avoid disturbance of natural features. This includes identification and preservation of natural areas that can be used in the protection of water resources. It is important to understand that minimizing the hydrologic alteration of a site is just as important as stormwater treatment for resource protection. Therefore, describe all site features and sensitive resources that exist at the site such as, view barriers,, steep slopes (>15%)that if disturbed will require additional erosion controls, areas with the potential to receive run-on from off-site areas, wetlands, surface waters, and their riparian buffers, specimen trees, natural vegetation, forest areas, stream crossings, historic properties, historic cemeteries or cultural resources that are to be preserved. **This includes those site features that should be avoided within the designated limits of disturbance.** These areas are often identified on a constraints map or in a separate constraints report. For additional discussion on this topic refer to Appendix F. Site Constraint Map of the *RI SESC Handbook*.*

#### **Note:**

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

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*Describe and illustrate on SESC Site Plans Sensitive Areas and Natural Features and how each will be protected during construction activity. Examples of areas to be protected include vegetated buffers, forests, stands of trees on the perimeter and within the site, large diameter trees, areas designated for infiltration (QPAs), bioretention, rain gardens, and OWTS leachfields. Protection for stands of trees and individual trees to be preserved must be specified and such protection must comply with the RI SESC Handbook and extend to the drip line.*

*Describe and illustrate on SESC Site Plans based on Constraints Map, the areas that will be disturbed with each phase of construction and the control measures (signs, fences, etc.) that will be used to protect those areas that should not be disturbed. **This includes marking for limits of disturbance at the perimeter and areas within the limits of disturbance.** Acceptable measures include but are not limited to construction fencing (plastic mesh, snow fence, chain link fence etc.) appropriate for the site, boundary markers using construction tape, flagged stakes, etc. for low density use, sediment barriers such as silt fence, compost socks with flagging where also required for sediment control, and signage. The narrative portion of the plan and SESC Site Plans must highlight measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPAs) and infiltration practices to protect infiltration capacity.*

The following measures will be taken to minimize disturbed areas and protect natural features and soil:

- Paved areas to be excavated will be sawcut, when necessary, prior to excavation, and the sawcut lines shall serve as defined limits of disturbance within the paved areas;
- Sedimentation & erosion control measures, where installed, shall serve as the limit of disturbance in those locations;
- The limit of disturbance in all other locations without either sawcuts or sedimentation & erosion control measures shall be delineated with clearly marked and highly visible indicators and/or barriers (stakes, flagging, snow fence or other measures as appropriate) for the duration of the work;
- Long-term material stockpiles will be placed in defined locations within the project area, and shall be protected as described herein and as shown in the construction details;
- The design has been developed to minimize disturbance to existing vegetation to the maximum extent possible;
- Vegetation (trees, shrubs, etc.) within and/or in close proximity to work areas will be protected from damage during construction, unless specifically designated for removal or limited trimming/limbing.

Feature Requiring Protection	Construction Phase #	Method of Protection	Sheet #
Seekonk River	1	Compost Filter Sock, Catch Basin Sediment Control Device	Sheet 6

## 2.2 Minimize Area of Disturbance

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.2:*

Will >5 acres be disturbed in order to complete this project?

☐ Yes ☒ No

*If yes, phasing must be utilized at this site.*

Will <5 acres be disturbed or will disturbance activities be completed within a six (6) month window?

☒ Yes ☐ No

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*If yes, phasing is not required as long as all other performance criteria will be met and phasing is not necessary to protect sensitive or highly vulnerable areas.*

Phasing is not required for the project.

Based on the answers to the above questions will phasing be required for this project?

☐ Yes      ☒ No

*If No, provide substantive reasons why this was determined to be infeasible.*

The project will not disturb greater than 5 acres; therefore, no phasing is required.

#### PHASING PLAN

*For each phase of the construction project, provide site estimates of the total area of the project phase, and the total area of the project phase that is expected to undergo soil disturbance.*

The following are estimates of each phase of the construction project:

*(Copy and paste this section for projects with multiple phases)*

Phase No. or Identifier	1
Total Area of Phase	0.19 acres
Area to be Disturbed	0.19 acres

Description of Construction Sequencing for Phase 1

*Proper sequencing of construction activities is essential to maximize the effectiveness of erosion, runoff, and sediment control measures. Construction sequencing of construction activities for each phase must address the following elements:*

- 1. Installation of control measures identifying limits of disturbance and areas internal to the site that require protection before start of land disturbance.*
- 2. Installation of all erosion, runoff, and sediment controls and temporary pollution prevention measures that are required to be in place and functional before any earthwork begins. This shall be done in accordance with the RI SESC Handbook and/or the RI Department of Transportation Standard Specifications for Road and Bridge Construction (as amended). Upon acceptable completion of site preparation and installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, site construction activities may commence.*
- 3. The phasing plan shall address the use of phasing to manage and limit increases in runoff rates and volumes during construction. Designated phases and timing of construction should also address the impacts to important or sensitive habitats.*
- 4. Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.*
- 5. Routine inspection and maintenance and/or modification of erosion, runoff, and sediment controls and temporary pollution prevention measures while earthwork is ongoing is required.*

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6. *Final site stabilization of any disturbed areas after earthwork has been completed and removal of temporary erosion, runoff, and sediment controls and temporary pollution prevention measures.*
7. *Activation of post-construction stormwater treatment conveyances and practices.*

**Phase 1A – BEFORE EARTHWORK**

- ☒ Installation of construction period erosion controls (compost filter sock, construction access, & catch basin sediment control devices).
- ☒ Installation of tree/vegetation protection measures and trimming, limbing or removal of designated trees.
- ☒ Sawcutting of all proposed pavement excavations.

Estimated Duration: One (1) month (dates T.B.D.)

**Phase 1B – DURING EARTHWORK**

- ☒ Stormwater management and water system installations & stabilization prior to completion of other site improvements.
- ☒ Disturbed areas to be impervious (paved or concrete) will be cut or filled, graded, compacted, and stabilized with at least one course of bituminous concrete asphalt (in the case of parking areas and driveways) or concrete (in the case of walkways/sidewalks) within three (3) weeks of the initiation of work in that area.
- ☒ Disturbed areas to be pervious (grassed) will be stabilized with temporary seeding or erosion blanket no later than fourteen (14) days after completion of work in that area.
- ☒ Maintenance (cleaning and/or replacement) of catch basin sediment control devices.
- ☒ Water application on exposed erodible soils for dust control, as needed.

Estimated Duration: Six (6) months (dates T.B.D.)

**Phase 1C – FINAL STABILIZATION**

- ☒ Preparation and final seeding of grassed areas.
- ☒ Installation of proposed landscaping plantings (if applicable).
- ☒ Removal of catch basin sediment control devices.
- ☒ Removal of perimeter sedimentation and erosion controls (compost filter sock).

Estimated Duration: One (1) month (dates T.B.D.)

**2.3 Minimize the Disturbance of Steep Slopes**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.3:*

Are steep slopes (>15%) present within the proposed project area?

☐ Yes      ☒ No

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## 2.4 Preserve Topsoil

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.4:*

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation, promote soil stabilization, and increase stormwater infiltration rates in the post-construction phase of the project.

Will existing topsoil be preserved at the site?

☒ Yes      ☐ No

*If Yes, describe how topsoil will be preserved at the site by describing the techniques that will be implemented to achieve appropriate depths of topsoil (4 inch minimum) and identify the locations where topsoil will be restored on SESC Site Plans.*

The site operator shall strip topsoil in proposed project limit of disturbance areas. Topsoil shall be stockpiled in the location specified on the SESC plan. Stockpile areas shall be surrounded by compost filter sock or approved erosion control measures to prevent migration of soils during rain events. Upon project completion, the site operation shall redistribute topsoil over disturbed areas ensuring at minimum a 4" layer is provided over all disturbed areas. Additional material shall be brought on site should the need arise. Final topsoil areas have been shown on the site plans as landscape areas. Topsoil should be screened and free of weeds, sticks, and stones over ¾" in size and otherwise complying with section M.18.01 of the RIDOT Standard Specifications for Road and Bridge Construction. Contractor shall follow recommendations provided by the landscape plans and the Engineer.

Soil compaction must be minimized by maintaining limits of disturbance throughout construction. In instances where site soils are compacted the site owner and operator must restore infiltration capacity of the compacted soils by tilling or scarifying compacted soils and amending soils as necessary to ensure a minimum depth of topsoil is available in these areas. In areas where infiltrating stormwater treatment practices are located compacted soils must be amended such that they will comply the design infiltration rates established in the *RI Stormwater Design and Installation Standards Manual*.

*Identify the methods that will be used to restore and amend topsoil at the site. Include references to plan notes and SESC Site Plan sheet numbers where this information is made available for the site operator.*

In areas where over compaction has compromised the natural infiltration rate of onsite soils, the contractor shall scarify or till these areas to restore them to their natural state. Areas prone to over compaction are paths proposed to be used by construction equipment and construction equipment storage areas. Construction equipment storage areas are shown on the SESC Plan.

## 2.5 Stabilize Soils

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.5:*

Upon completion and acceptance of site preparation and initial installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, the operator shall initiate appropriate temporary or permanent stabilization practices during all phases of construction on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased.

Any disturbed areas that will not have active construction activity occurring within 14 days must be stabilized using the control measures depicted in the SESC Site Plans, in accordance with the *RI SESC Handbook*, and per manufacturer product specifications.

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Only areas that can be reasonably expected to have active construction work being performed within 14 days of disturbance will be cleared/grubbed at any one time. It is NOT acceptable to clear and grub the entire construction site if portions will not be active within the 14-day time frame. Proper phasing of clearing and grubbing activities shall include temporary stabilization techniques for areas cleared and grubbed that will not be active within the 14-day time frame.

All disturbed soils exposed prior to October 15 of any calendar year shall be seeded by that date if vegetative measures are the intended soil stabilization method. Any such areas that do not have adequate vegetative stabilization, as determined by the site operator or designated inspector, by November 15, must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15 through April 15, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

*Describe controls (i.e., temporary seeding with native vegetation, hydroseeding, mulching, application of rolled erosion control products, etc.) including design specifications and details that will be implemented to stabilize exposed soils where construction activities have temporarily or permanently ceased.*

Temporary Vegetative Control Measures

- Hydroseeding, temporary seeding and mulch will be used as needed.

Temporary Non-Vegetative Control Measures

- Controls that may be utilized include street sweeping, water for dust control and mulching.

Permanent Vegetative Control Measures

- Following construction, the site will be restored with paving, loam and seed, and plantings to match existing conditions.

Permanent Non-Vegetative Control Measures

- Following construction, the site will be restored with paving, loam and seed, and plantings to match existing conditions.

**2.6 Protect Storm Drain Outlets**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.7:*

Temporary or permanent outlet protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction in discharge velocities, and through the promotion of infiltration. Outlets often have high velocity, high volume flows, and require strong materials that will withstand the forces of stormwater. Storm drain outlet control measures also offer a last line of protection against sediment entering environmentally sensitive areas.

All stormwater outlets that may discharge sediment-laden stormwater flow from the construction site must be protected using the control practices depicted on the approved plan set and in accordance with the *RI SESC Handbook*.

*Describe controls, including design specifications and details, which will be implemented to protect outlets discharging stormwater from the project.*

See below for controls to be implemented to protect outlets discharging stormwater from the project.

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Will temporary or permanent point source discharges be generated at the site as the result of construction of sediment traps or basins, diversions, and conveyance channels?

☐ Yes      ☒ No

*If No, discuss rationale for not including these elements in the SESC Plan.*

There are no temporary or permanent point source discharges generated at the site.

**2.7      Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.8:*

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online.

*Examples of temporary control measures that can be used to protect permanent stormwater control measures include: establishing temporary sediment barriers around infiltrating practices, ensuring proper material staging areas and equipment routing (i.e. do not allow construction equipment to compact areas where infiltrating practices will be installed), and by conducting final cleaning of structural long term practices after construction is completed.*

*List and describe all post-construction stormwater treatment practices that will be installed during the construction process. Next, outline how these measures will be protected during the construction phase of the project to ensure that they will function appropriately once they are brought online.*

Will long-term stormwater treatment practices be installed at the site?

☒ Yes      ☐ No

*If Yes, describe the specific long-term stormwater treatment practices that will require protection from sedimentation and compaction. In addition, specifically reference SESC Site Plan Sheet Numbers which identify the location of these practices and the corresponding control measures that will be utilized for their protection including any associated specifications required for their installation and maintenance.*

Protection During Construction Phase – Avoiding over-compaction of underlying soils during construction is critical to the proper function of the porous pavement parking lot. The areas will be delineated with a highly visible barrier and appropriate signage to alert equipment operators not to drive over the soils or to stockpile materials on the dry swale locations.

Long term stormwater treatment practices, that will use infiltration, will be staked off throughout the construction phases. No construction vehicles shall enter these staked areas to avoid sedimentation and compaction.

**2.8      Divert or Manage Run-on from Up-gradient Areas**

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.10:*

Is stormwater from off-site areas anticipated to flow onto the project area or onto areas where soils will be disturbed?

☐ Yes      ☒ No



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*If Yes, describe the specific runoff control measures (i.e., check dams, water bars, diversions, perimeter dikes, lined waterways, vegetated waterways, temporary line channels, sediment barriers, pipe slope drains, etc.) that will be utilized at the site including references to the SESC Site Plan Sheet Numbers, design specifications and details. See the RI SESC Handbook, Section Five: Runoff Control Measures for additional guidance.*

- Not Applicable

Pre-Construction and Construction sub-watershed maps are included for each phase in this SESC Plan submittal.

Structural control measures will be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow that is expected to impact exposed soils for the purpose of minimizing erosion, runoff, and the discharge of pollutants from the site.

Control measures shall be installed as depicted on the approved plan set and in accordance with the RI SESC Handbook or the RI Department of Transportation Standard Specifications for Road and Bridge Construction. <b>Run-on and Run-off Management</b>				
Construction Phase #	On-site or Off-site Run-on?	Control measure	Identified on Sheet #	Detail(s) is/are on Sheet #
1	On-site	Compost Filter Sock	Sheet 8	Sheet 6

## 2.9 Retain Sediment Onsite through Structural and Non-Structural Practices

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.12:*

*Once the erosion control measures and the run-on diversions are identified and located on the plans, the next step to site planning is sediment control and sediment management. Sediment barriers, inlet protection, construction entrances, stockpile containment, temporary sediment traps, and temporary sediment basins must be integrated into the SESC Plan if applicable. Refer to the RI SESC Handbook Section Six: Sediment Control Measures for additional guidance.*

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.9:*

**SEDIMENT BARRIERS** must be installed along the perimeter areas of the site that will receive stormwater from disturbed areas. This also may include the use of sediment barriers along the contour of disturbed slopes to maintain sheet flow and minimize rill and gully erosion during construction. Installation and maintenance of sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the *RI SESC Handbook*.

Will sediment barriers be utilized at the toe of slopes and other downgradient areas subject to stormwater impacts and erosion during construction?

☒ Yes      ☐ No

*If Yes, Describe the rationale for selecting control measures to serve as sediment barriers at the toe of slopes and other down gradient areas subject to stormwater impacts during construction. Describe the specific sediment barriers that will be used at the site in the table provided.*

- Sediment barriers will be used to protect stormwater from discharging onto adjacent properties, sensitive areas and proposed BMPs.



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- The structural soil & erosion control BMP's shall include compost filter sock along the downgradient limits of work, as depicted on the plans. Based on the hydrology of the project area (as defined in the watershed analysis), it is not anticipated that there will be additional uncontrolled runoff entering and flowing through the site from off-site locations.
- The Contractor shall provide any alternative structural practices that will be used on this project, if it is determined that any are required during construction.

*Describe rationale for whether or sediment barriers are required at regular intervals along slopes in order to minimize the creation of concentrated flow paths (i.e. rilling, gully erosion) and to encourage sheet flow. Keep in mind that sediment barriers can be placed at the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow. The description of the selected control measures must focus on sediment barrier spacing as a function of slope length and steepness. Refer to the RI SESC Handbook, Section Six: Sediment Control Measure, Straw Wattles, Compost Tubes, and Fiber Rolls Control Measure for additional information on acceptable spacing distances.*

Will sediment barriers be utilized along the contour of slopes to maintain sheet flow and minimize rill and gully erosion during construction?

☒ Yes      ☐ No

*If Yes, list the specific sediment barriers that will be used at the site in the table provided. Describe the rationale for the locations and spacing frequency selected by the designer based on slope length and steepness. For additional guidance refer to the RI SESC Handbook or sediment barrier manufacturer's specifications.*

SEDIMENT BARRIERS			
Construction Phase #	Sediment Barrier Type	Sediment Barrier is Labeled on Sheet #	Detail is on Sheet #
1	Compost Filter Sock	Sheet 8	Sheet 6

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.6:*

**INLET PROTECTION** will be utilized to prevent soil and debris from entering storm drain inlets. These measures are usually temporary and are implemented before a site is disturbed. ALL stormwater inlets &/or catch basins that are operational during construction and have the potential to receive sediment-laden stormwater flow from the construction site must be protected using control measures outlined in the *RI SESC Handbook*.

For more information on inlet protection refer to the *RI SESC Handbook*, Inlet Protection control measure.

#### **Maintenance**

The operator must clean, or remove and replace the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or as performance is compromised. Accumulated sediment adjacent to the inlet protection measures should be removed by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

*Describe controls, including design specifications and details, which will be implemented to protect all inlets receiving stormwater from the project during the entire duration of the project. For more information on inlet protection refer to the RI SESC Handbook Inlet Protection control measure.*

Do inlets exist adjacent to or within the project area that require temporary protection?

☒ Yes      ☐ No

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*If Yes, describe the method(s) of inlet protection, including maintenance requirements and complete the table provided.*

The following lists the proposed storm drain inlet types selected from Section Six of the *RI SESC Handbook*. Each row is unique for each phase and inlet protection type.

INLET PROTECTION			
Construction Phase #	Inlet Protection Type	Inlet Protection is labeled on Sheet #	Detail(s) is/are on Sheet #
1	Catch Basin Sediment Control Device	Sheet 8	Sheet 6

**CONSTRUCTION ENTRANCES** will be used in conjunction with the stabilization of construction roads to reduce the amount of sediment tracking off the project. This project has avoided placing construction entrances on poorly drained soils where possible. Where poorly drained soils could not be eliminated, the detail includes subsurface drainage.

Any construction site access point must employ the control measures on the approved SESC site plans and in accordance with the *RI SESC Handbook*. Construction entrances shall be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles. All construction access roads shall be constructed prior to any roadway accepting construction traffic.

The site owner and operator must:

1. Restrict vehicle use to properly designated exit points.
2. Use properly designed and constructed construction entrances at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit.
3. When and where necessary, use additional controls to remove sediment from vehicle tires prior to exit (i.e. wheel washing racks, rumble strips, and rattle plates).
4. Where sediment has been tracked out from the construction site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the track out occurs. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Will construction entrances be utilized at the proposed construction site?

☒ Yes      ☐ No

*If Yes, indicate location(s) of vehicle entrance(s) and exit(s), and stabilization practices used to prevent sediment from being tracked off-site in the table provided. See also RI SESC Handbook, Section Six, Construction Entrances Measure.*

CONSTRUCTION ENTRANCE			
Construction Phase #	Soil Type at the Entrance	Entrance is located on Sheet #	Detail is on Sheet #
1	12" Min. of 2" Crushed Stone	Sheet 8	Sheet 6

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**STOCKPILE CONTAINMENT** will be used onsite to minimize or eliminate the discharge of soil, topsoil, base material or rubble, from entering drainage systems or surface waters. All stockpiles must be located within the limit of disturbance, protected from run-on with the use of temporary sediment barriers and provided with cover or stabilization to avoid contact with precipitation and wind where and when practical.

Stock pile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters.

For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

1. Locate piles within the designated limits of disturbance.
2. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
3. Where practicable, provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize sediment discharge.
4. **NEVER** hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.
5. To the maximum extent practicable, contain and securely protect from wind.

*Describe materials expected to be stockpiled or stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater and to eliminate the discharge of stockpiled material from entering drainage systems and surface waters. Refer to the RI SESC Handbook, Stockpile and Staging Area Management Control Measure for additional guidance. Complete the table provided.*

STOCKPILE CONTAINMENT				
Construction Phase #	Run-on measures necessary? (yes/no)	Stabilization or Cover Type	Stockpile Containment Measure	Sheet #
1	No	Top and sub-soil piles should be covered or vegetated.	12" Dia. Compost Filter Sock	Sheet 6

- All stockpiled materials shall be protected from stormwater run-on by placing poly sheeting under the stockpile and a berm of compost filter sock around the stockpile.
- All stockpiled materials shall have a tarpaulin or similar cover to prevent wind erosion.
- The following materials or substances will potentially be present on-site during construction:
  - Road base materials (Gravel borrow)
  - Landscaping materials (Loam, mulch, bio-filtration media)
  - Crushed stone

#### CONSTRUCTED SEDIMENT STRUCTURES

*If each common drainage location receives water from an area with less than one (1) acre disturbed at a time, this section can be deleted and no sediment traps or basins are required. However, it is important to remember that there is still a requirement to retain sediment on-site. Therefore, if it is in the best professional judgment of the designer, that there is a condition or circumstance which may require structural controls (per Section 3.3.7.13 of the RI Stormwater Design and Installation Standards Manual), this section can be used.*

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**TEMPORARY SEDIMENT TRAPS** will be utilized onsite. There will be no disturbed drainage areas greater than one acre that will be exposed for longer than six months. Design and sizing calculations in accordance with the *RI SESC Handbook*, Section Six are found in N/A of this SESC Plan. A summary of the calculations are provided below:

*For Disturbed Areas 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time, a temporary sediment trap must be provided where attainable and where the sediment trap is only intended to be used for a period of six (6) months or less. For longer term projects with a common drainage location that serves between one (1) and five (5) acres disturbed at one time, a temporary sediment basin must be provided where attainable. Temporary sediment trapping practices must be designed in accordance with the RI SESC Handbook and must be sized to have a total storage volume capable of storing one (1) inch of runoff from the contributing area or one hundred and thirty four (134) cubic yards per acre of drainage area. A minimum of fifty percent (50%) of the total volume shall be storage below the outlet (wet storage). See RISDISM 3.3.7.12 for requirements and RI SESC Handbook, Section Six: Temporary Sediment Traps Measure for design details.*

Are temporary sediment traps required at the site?

☐ Yes      ☒ No

*If No, discuss rationale.*

The total disturbance is less than one acre.

**TEMPORARY SEDIMENT BASIN(S)** will be utilized onsite. Every effort must be made to prevent erosion and control it near the source.

*If the following criterion does not apply to your proposed construction project, then this section may be eliminated from the plan.*

*For Disturbed Areas of 1 to 5 Acres – Those areas with a common drainage location that serves an area between one (1) and five (5) acres disturbed at one time for longer than six (6) months.*

*For Disturbed Areas > 5 Acres – Those areas with a common drainage location that serves an area with greater than five (5) acres disturbed at one time, a temporary (or permanent) sediment basin must be provided where attainable until final stabilization of the site is complete. Temporary sediment basins must be designed in accordance with the RI SESC Handbook. The volume of wet storage shall be at least twice the sediment storage volume and shall have a minimum depth of two (2) feet. Sediment storage volume must accommodate a minimum of one year of predicted sediment load as calculated using the sediment volume formula in the RI SESC Handbook. In addition to sediment storage volume and wet storage volume, the sediment basin shall provide adequate residence storage volume to provide a minimum 10 hours residence time for a ten (10) -year frequency, twenty four (24) hour duration, Type III distribution storm. To the maximum extent practicable, outlet structures must be utilized that withdraw water from the surface of temporary sedimentation basins for the purpose of minimizing the discharge of pollutants. Exceptions may include periods of extended cold weather, where alternative outlets are required during frozen periods. If such a device is infeasible for portions of or the entire construction period justification must be made in the SESC Plan. Describe the reasons sediment basins are required for this project. They may include physical conditions, land ownership, construction operations etc. For design details see RI SESC Handbook Section Six: Temporary Sediment Basins Measure.*

Are temporary sediment basins required at the site?

☐ Yes      ☒ No

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*If No, discuss rationale.*

The total disturbance is less than one acre.

**2.10 Properly Design Constructed Stormwater Conveyance Channels**

*Conveyances are required to be designed for inlets to temporary sediment basins. The construction site planner must use best professional judgment to determine if additional conveyance design is required for run-on control or in any other location where velocity control is required.*

Are temporary stormwater conveyance practices required in order to properly manage runoff within the proposed construction project?

☐ Yes      ☒ No

*If No, discuss rationale for not including conveyance measures in the SESC Plan.*

It is not anticipated that any temporary stormwater conveyance practices will be needed to manage the runoff within the proposed construction project area. The majority of runoff will continue to sheet flow and be collected by the existing catch basin on site, which ultimately discharges through an existing outfall to the Seekonk River.

**2.11 Erosion, Runoff, and Sediment Control Measure List**

*Complete the following table for each Phase of construction where Erosion, Runoff, and Sediment Control Measures are located. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.*

**It is expected that this table and corresponding Inspection Reports will be amended as needed throughout the construction project as control measures are added or modified.**

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Phase No. 1		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Perimeter	Compost Filter Sock	<p>Inspection should be made after each storm event and repair or replacement should be made promptly as needed.</p> <p>Cleanout of accumulated sediment behind the filter sock if sediment accumulates to at least ½ of the original height of the barrier becomes filled with sediment.</p> <p>Compost filter sock should be inspected regularly, and sediment shall be cleared often to prevent buildup or damages.</p>
All Catch Basins	Inlet Projection: Catch Basin Insert	<p>Inlet protection devices shall remain installed below the grates until the contributing area is stabilized. Sediment shall be removed from the silt sack when the sediment has accumulated to half (½) of the depth of the silt sack. The sediment that is removed shall be disposed in an approved area.</p>
Construction Entrances	Stone Stabilized Construction Access	<p>Site entrances shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces.</p> <p>Provide periodic top dressing with additional stone or additional length as conditions demand.</p> <p>Roads adjacent to entrance shall be clean at the end of each day.</p> <p>If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.</p>
Site Wide	Stockpiles	<p>Inspections should be made weekly during the rainy season and bi-monthly during the non-rainy season.</p> <p>Perimeter controls shall be replaced as required based on periodic inspection.</p>
Street Sweeping/Water for Dust Control	Not Applicable	<p>Weekly or as required by site conditions. RAWP states dust suppression techniques shall be employed at all times during soil disturbance.</p>

## SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

*Per RI Stormwater Design and Installation Standards Manual 3.3.7.14:*

The purpose of construction activity pollution prevention is to prevent day to day construction activities from causing pollution.

This section describes the key pollution prevention measures that must be implemented to avoid and reduce the discharge of pollutants in stormwater. Example control measures include the proper management of waste, material handling and storage, and equipment/vehicle fueling/washing/maintenance operations.

Where applicable, include *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction* (as amended) specifications.

### 3.1 Existing Data of Known Discharges from Site

*Per RIPDES Construction General Permit – Part III.I:*

*List and provide existing data (if available) on the quality of any known discharges from the site. Examples include discharges from existing stormwater collection systems, discharges from industrial areas of the site, etc.*

Are there known discharges from the project area?

☒ Yes ☐ No

Describe how this determination was made:

- Project survey and observations made during site visits.

If yes, list discharges and locations:

- Adjacent to the site there is an existing catch basin which conveys flow from the site to the RIDOT stormwater system within Warren Avenue. The system ultimately discharges through (2) 36" brick outfalls to the Seekonk River.

Is there existing data on the quality of the known discharges?

☐ Yes ☒ No

If yes, provide data:

- Not Applicable

### 3.2 Prohibited Discharges

*Per RI SESC Handbook – Part D*

The following discharges are prohibited at the construction site:

- Contaminated groundwater, unless specifically authorized by the DEM. These types of discharges may only be authorized under a separate DEM RIPDES permit.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.

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- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- Soaps or solvents used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

All types of waste generated at the site shall be disposed of in a manner consistent with State Law and/or regulations.

Will any of the above listed prohibited discharges be generated at the site?

☒ Yes      ☐ No

*If Yes, provide a list of those that will be generated at the site and provide a discussion of how they will be managed, including references to the specific SESC Site Plans where such control measures are specified.*

- The Contractor shall designate the locations, if any, of concrete washout areas and amend this document accordingly. Under no circumstances will concrete washout areas be located where the discharge from same will create a nuisance or hazard (i.e., excavated areas, roadways, private property, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any concrete washout areas which are found to create a nuisance or hazard. All concrete washouts shall be discharged to a facility that will contain all liquid and concrete waste generated by the washout operations. The concrete washout facility shall adhere to the requirements of the revised Rhode Island Soil Erosion and Sediment Control Handbook.
- All other discharges will be prohibited from the site.

### **3.3 Proper Waste Disposal**

#### *Per RI SESC Handbook – Part D*

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- All waste containers shall be covered to avoid contact with wind and precipitation.
- Waste collection shall be scheduled frequently enough to prevent containers from overfilling.
- All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

Is waste disposal a significant element of the proposed project?

☒ Yes      ☐ No



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*If Yes, identify potential building materials and other construction wastes and document how these wastes will be properly managed and disposed of at the construction site (i.e., trash disposal, sanitary wastes, recycling, and proper material handling). Include references to the specific SESC Site Plans where such control measures are specified.*

- **Waste Materials** - All construction-generated waste materials will be collected and stored in a securely lidded metal dumpster which shall meet all local City and any State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as needed, and the trash will be hauled off site. No construction waste materials will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer, and the individual who manages the day-to-day site operations will be responsible for ensuring that these procedures are followed.
- **Hazardous Waste** - Hazardous waste materials, if encountered, will be disposed of in the manner specified by local or State regulation or by the manufacturer. Site personnel will be instructed in these practices and the individual, who manages day-to-day site operations, will be responsible for seeing that these practices are followed.
- **Sanitary Waste** - All sanitary waste will be collected from the portable units a minimum of once a week by a licensed sanitary waste management contractor, as required by local regulation.

### 3.4 Spill Prevention and Control

#### *Per RI SESC Handbook – Part D*

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

Are spill prevention and control measures required for this particular project?

☒ Yes                      ☐ No

*If Yes, describe all areas where potential spills can occur, and their accompanying drainage points, and describe the spill prevention and control plan to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control. Provide the method of establishing and making highly visible the location(s) for the storage of spill prevention equipment. Refer to the RI SESC Handbook, Spill Prevention and Control Plan for guidance.*

Spill prevention and control measures will be provided during construction of the project. It is not anticipated that chemicals and/or hazardous waste materials will be stored on site. However, if spills occur during construction activities, the contractor will implement the following spill prevention/ mitigation measures.

- A spill can potentially occur anywhere within the project sites.
- The following good housekeeping practices will be followed onsite during the construction project:
  - An effort will be made to store on-site only enough products and materials required to perform the anticipated work.
  - All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.

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- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
- These practices shall be used to reduce the risks associated with hazardous materials:
  - Products will be kept in original containers unless they are not re-sealable.
  - Original labels and material safety data will be retained; they contain important product information.
  - If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.
- In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices shall be followed for spill prevention and cleanup:
  - Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
  - Materials and equipment necessary for spill cleanup will be kept in a storage area onsite. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
  - All spills will be cleaned up immediately after discovery.
  - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
  - Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.
  - The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
  - The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. The individual will each become responsible for a particular stage of prevention and cleanup. The names of responsible spill personnel will be posted in the office trailer onsite.

### **3.5 Control of Allowable Non-Stormwater Discharges**

*Per RIPDES Construction General Permit – Part III.J.2.e:*

*Discharges not comprised of stormwater are allowed under the RIPDES Construction General Permit but are limited to the following: discharges which result from the washdown of vehicles where no detergents are used; external building wash-down where no detergents are used; the use of water to control dust; firefighting activities; fire hydrant flushing; natural springs; uncontaminated groundwater; lawn watering; potable water sources including waterline flushing; irrigation drainage; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; and foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials has occurred. If any of these discharges may reasonably be expected to be present and to be mixed with stormwater discharges, they must be specifically listed here.*

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Are there allowable non-Stormwater discharges present on or near the project area?

☒ Yes      ☐ No

*If yes, list the sources of allowable non-Stormwater discharge(s) associated with construction activity. For each of the allowable non-stormwater discharge(s) identified, describe the controls and measures that will be implemented at those locations to minimize pollutant contamination of these discharges and to separate them from temporary discharges of stormwater during construction.*

List of allowable non-stormwater discharge(s) and the associated control measure(s):

- Water to control dust – no control measure required.
- Water from Concrete Washout – See Concrete Washout Area Detail in the Plan Set.

*If any existing or proposed discharges consist of contaminated groundwater, such discharges are not authorized under the RIPDES Construction General Permit. These discharges must be permitted separately by seeking coverage to treat and discharge under a separate RIPDES individual permit or under the RIPDES Remediation General Permit. Contact the RIDEM Office of Water Resources RIPDES Permitting Program at 401-222-4700 for application requirements and additional information.*

Are there any known or proposed contaminated discharges, including anticipated contaminated dewatering operations, planned on or near the project area?

☐ Yes      ☒ No

If yes, list the discharge types and the RIPDES individual permit number(s) or RIPDES Remediation General Permit Authorization number(s) associated with these discharges.

- Discharge Type and RIPDES Individual Permit number : Not Applicable
- Discharge Type and RIPDES Remediation General Permit Authorization number: Not Applicable

### **3.6 Control Dewatering Practices**

#### *Per RI SESC Handbook – Part D*

Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate control measures.

Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

At a minimum the following discharge requirements must be met for dewatering activities:

1. Do not discharge visible floating solids or foam.
2. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
3. At all points where dewatering water is discharged, utilize velocity dissipation devices.
4. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.

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5. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
6. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection.)

Is it at all likely that the site operator will need to implement construction dewatering in order to complete the proposed project?

☒ Yes

☐ No

*If Yes, describe all areas where construction dewatering may be required and the proposed control measures that will be used to treat and manage dewatering fluids including all proposed discharge points. Proposed control measures must comply with the RI SESC Handbook. Include references to all relevant SESC Site Plans.*

- Uncontaminated groundwater pumped out of construction excavations will be routed to and through adequately sized dewatering basins to remove (to the maximum extent possible) sediments contained within the groundwater. The locations and sizes of dewatering basins shall be as needed to receive and treat groundwater when it is encountered during construction, as determined by the Contractor. Under no circumstances will dewatering basins be located where the discharge from same will create a nuisance or hazard (i.e. excavated areas, roadways, private property, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any dewatering basins which are found to create a nuisance or hazard.

### **3.7 Establish Proper Building Material Staging Areas**

*Per RI SESC Handbook – Part D*

All construction materials that have the potential to contaminate stormwater must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. Designated areas shall be approved by the site owner/engineer. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in the discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

*Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. Include references to all relevant SESC Site Plans.*

- See Section 3.4 for procedures related to storage of materials to minimize exposure of the same to stormwater.
- The following materials or substances will potentially be present on-site during construction:
  - Fertilizers
  - Petroleum Based Products (Gasoline, Diesel Fuel, Motor Oil)
  - Cleaning Solvents
  - Bituminous Concrete Asphalt
  - Cement Concrete
  - Detergents
  - Wood
  - Liquid Asphalt/Tar

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### 3.8 Minimize Dust

*Per RI SESC Handbook – Part D*

Dust control procedures and practices shall be used to suppress dust on a construction site during the construction process, as applicable. Precipitation, temperature, humidity, wind velocity and direction will determine amount and frequency of applications. However, the best method of controlling dust is to prevent dust production. This can best be accomplished by limiting the amount of bare soil exposed at one time. Dust Control measures outlined in the *RI SESC Handbook* shall be followed. Other dust control methods include watering, chemical application, surface roughening, wind barriers, walls, and covers.

*Describe dust control practices that will be used to suppress dust and limit its generation (i.e. applying water, limiting the amount of bare soil exposed at one time etc.).*

- Water for dust control will be applied prior to or during high wind conditions (forecasted or actual wind conditions of 20 mph or greater) to all areas of exposed erodible soil. Water shall be spray-applied to avoid ponding or erosion, either by truck (in roadway areas) or manually (in off-road areas).
- In addition, the Contractor shall limit the amount of bare soil exposed at one time.

### 3.9 Designate Washout Areas

*Per RI SESC Handbook – Part D*

At no time shall any material (concrete, paint, chemicals) be washed into storm drains, open ditches, streets, streams, wetlands, or any environmentally sensitive area. The site operator must ensure that construction waste is properly disposed of, to avoid exposure to precipitation, at the end of each working day.

Will washout areas be required for the proposed project?

☒ Yes

☐ No

*If Yes, describe location(s) and control measures that will be used to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, washout areas for concrete mixers, paint, stucco, etc. The recommended location(s) of washout areas should be identified, or at a minimum the locations where these washout areas should not be sited should be called out.*

- The Contractor shall designate the locations, if any, of concrete washout areas and amend this document accordingly. Under no circumstances will concrete washout areas be located where the discharge from same will create a nuisance or hazard (i.e., excavated areas, roadways, private property, wetland resource areas, etc.); furthermore, the Contractor shall immediately adjust the location or configuration of any concrete washout areas which are found to create a nuisance or hazard.

### 3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

*Per RI SESC Handbook – Part D*

Vehicle fueling shall not take place within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Designated areas shall be depicted on the SESC Site Plans, or shall be approved by the site owner.

Vehicle maintenance and washing shall occur off-site, or in designated areas depicted on the SESC Site Plans or approved of by the site owner. Maintenance or washing areas shall not be within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Maintenance areas shall be clearly designated, and barriers shall be used around the perimeter of the maintenance area to prevent stormwater contamination.

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Construction vehicles shall be inspected frequently for leaks. Repairs shall take place immediately. Disposal of all used oil, antifreeze, solvents and other automotive-related chemicals shall be according to applicable regulations; at no time shall any material be washed down the storm drain or in to any environmentally sensitive area.

*Describe equipment/vehicle fueling and maintenance practices that will be implemented to prevent pollutants from mixing with stormwater (e.g., secondary containment, drip pans, spill kits, etc.) Provide recommended location(s) of fueling/maintenance areas, or, at minimum, locations where fueling/maintenance should be avoided.*

- All onsite vehicles shall be monitored for leaks, and shall receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
- The Contractor shall determine locations, if any, for vehicle fueling and maintenance activities, provided that said locations are more than fifty (50) feet from any storm drainage inlet structure and outside of any known resource or buffer area.

### **3.11 Chemical Treatment for Erosion and Sediment Control**

#### *Per RI SESC Handbook – Appendix J*

Chemical stabilizers, polymers, and flocculants are readily available on the market and can be easily applied to construction sites for the purposes of enhancing the control of erosion, runoff, and sedimentation. The following guidelines should be adhered to for construction sites that plan to use treatment chemicals as part of their overall erosion, runoff, and sedimentation control strategy.

The U.S. Environmental Protection Agency has conducted research into the relative toxicity of chemicals commonly used for the treatment of construction stormwater discharges. The research conducted by the EPA focused on different formulations of chitosan, a cationic compound, and both cationic and anionic polyacrylamide (PAM). In summary, the studies found significant toxicity resulting from the use of chitosan and cationic PAM in laboratory conditions, and significantly less toxicity associated with using anionic PAM. EPA's research has led to the conclusion that the use of treatment chemicals for erosion, runoff, and sedimentation control requires proper operator training and appropriate usage to avoid risk to aquatic species. In the case of cationic treatment chemicals additional safeguards may be necessary.

#### **Application/Installation Minimum Requirements**

If a site operator plans to use polymers, flocculants, or other treatment chemicals during construction the SESC plan must address the following:

1. Treatment chemicals shall not be applied directly to or within 100 feet of any surface water body, wetland, or storm drain inlet.
2. Use conventional erosion, runoff, and sedimentation controls prior to and after the application of treatment chemicals. Use conventional erosion, runoff, and sedimentation controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g. temporary sediment basin, temporary sediment trap or sediment barrier) prior to discharge.
3. Sites shall be stabilized as soon as possible using conventional measures to minimize the need to use chemical treatment.



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4. Select appropriate treatment chemicals. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or treatment area. **Soil testing is essential. Using the wrong form of chemical treatment will result in some form of performance failure and unnecessary environmental risk.**
5. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets), or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., storing chemicals in covered areas or having a spill kit available on site).
6. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

Will chemical stabilizers, polymers, flocculants or other treatment chemicals be utilized on the proposed construction project?

☐ Yes

☒ No

*If Yes, create a Treatment Chemical Application Plan and describe how the owner or SESC Plan preparer/designer intends to educate the designated operator prior to the application of such treatment chemicals.*

*Treatment Chemical Application Plan Required Elements*

*Insert information listed below:*

1. *List Manufacturer's name and product name for each treatment chemical proposed for use at the site.*
2. *Attach a copy of applicable Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for each proposed treatment chemical.*
3. *Provide the results of third party toxicity testing of the materials proposed for use at the site.*
4. *Provide a certification from the site owner and operator that all proposed treatment chemicals are the same as those used in the toxicity tests and will not be altered in any way.*
5. *Provide an explanation as to why conventional erosion, runoff, and sediment control measures, alone or in combination, will not be sufficient to prevent turbidity impacts and sedimentation in downstream receptors.*
6. *Provide a plan prepared in consultation with the chemical treatment manufacturer(s) or authorized manufacturer's representative which includes the following:*
  - a. *Identification of the areas of the site where treatment chemicals will be applied and the name, location, and distance to all downstream receptors that have the potential to be impacted from the discharges from the treatment areas.*
  - b. *List the expected start and end dates or specific phases of the project during which each treatment chemical will be applied.*
  - c. *Provide test results for representative soils from the site, and any recommendations from the manufacturer based on the soil tests, indicating the type of treatment chemical and the recommended application rate.*
  - d. *List the frequency, method, and rates of application which are designed to ensure that treatment chemical concentrations will not exceed 50% of the IC25 or NOEC toxicity values, whichever is less, for each treatment chemical proposed.*

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- e. *Provide the frequency of inspection and maintenance of the treatment chemical application system.*
  - f. *List the method proposed for the collection, removal, and disposal or stabilization of settled particles to prevent re-suspension.*
  - g. *Describe the training that will be provided to all persons who will handle and use treatment chemicals at the construction site. Training must include appropriate, product-specific training and proper dosing requirements for each product.*
- It is not anticipated that a treatment chemical application will be required to control erosion, runoff, and sedimentation.
  - The Contractor shall provide a treatment chemical application plan for review and approval, if it is determined that treatment chemicals are required during construction.

**Treatment Chemical SESC Plan Weekly Inspection Report Documentation Requirements**

1. Document the type and quantity of treatment chemicals applied.
2. List the date, duration of discharge, and estimated discharge rate.
3. Provide an estimate of the volume of water treated.
4. Provide an estimate of the concentration of treatment chemicals in the discharge, with supporting calculations.

**3.12 Construction Activity Pollution Prevention Control Measure List**

*Complete the following table for each Phase of construction where Pollution Prevention Control Measures will be implemented. This table is to be used as part of the SESC Plan Inspection Report – please fill out accordingly.*



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It is expected that this table will be amended as needed throughout the construction project.

Phase No. #		
Location/Station	Control Measure Description/Reference	Maintenance Requirement
Construction Entrances	Stone Stabilized Construction Access	<p>Site entrances shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces.</p> <p>Provide periodic top dressing with additional stone or additional length as conditions demand.</p> <p>Roads adjacent to entrance shall be clean at the end of each day.</p> <p>If maintenance alone is not enough to prevent excessive track out, increase length of entrance, modify construction access road surface, or install washrack or mudrack.</p>
Roads	Public roads within the construction site shall be clean at the end of each day	Street Sweep if construction site sediment is visible
Site Wide	Pick-up & proper handling and disposal of construction trash and debris	All loose trash and debris must be disposed of properly at the end of each working day
To Be Determined by Contractor as Needed		

## SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE

### 4.1 Installation

*Per RI SESC Handbook – Part D:*

Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater control measures must be installed in accordance with good judgment, including applicable design and manufacturer specifications. Installation techniques and maintenance requirements may be found in manufacturer specifications and/or the *RI SESC Handbook*.

*Include references to SESC Site Plans where installation requirements are located.*

The erosion control details and installation locations are depicted on the Site Preparation Plan and Construction Detail sheets of the plan set. The Contractor shall amend this section if there are any departures from the specifications or a previous section in this document.

### 4.2 Monitoring Weather Conditions

*Per RI SESC Handbook – Part D:*

Anticipating Weather Events - Care will be taken to the best of the operator's ability to avoid disturbing large areas prior to anticipated precipitation events. Weather forecasts must be routinely checked, and in the case of an expected precipitation event of over 0.25-inches over a 24-hour period, it is highly recommended that all control measures should be evaluated and maintained as necessary, prior to the weather event. In the case of an extreme weather forecast (greater than one-inch of rain over a 24-hour period), additional erosion/sediment controls may need to be installed.

Storm Event Monitoring For Inspections - At a minimum, storm events must be monitored and tracked in order to determine when post-storm event inspections must be conducted. Inspections must be conducted and documented at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt.

*In order for an operator to successfully satisfy this requirement list the weather gauge station that will be utilized to monitor weather conditions on the construction site. See [www.wunderground.com](http://www.wunderground.com) or [www.weather.gov](http://www.weather.gov) for available stations.*

The weather gauge station and website that will be utilized to monitor weather conditions on the construction site is as follows:

- There is a weather gauge station in East Providence (KRIPROVI24) that may be used to monitor weather conditions. The station can be found on:

[www.wunderground.com](http://www.wunderground.com)

### 4.3 Inspections

*Per RI SESC Handbook – Part D:*

Minimum Frequency - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt:

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- a. All areas that have been cleared, graded, or excavated and where permanent stabilization has not been achieved;
- b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention control measures) installed at the site;
- c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;
- d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;
- e. All points of discharge from the site;
- f. All locations where temporary soil stabilization measures have been implemented;
- g. All locations where vehicles enter or exit the site.

Reductions in Inspection Frequency - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in an inspection report.

Qualified Personnel – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are “qualified” to do so. A “qualified person” is a person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector’s name, signature, and contact information.

General Notes

- A separate inspection report will be prepared for each inspection.
- The Inspection Reference Number shall be a combination of the RIPDES Construction General Permit No - consecutively numbered inspections. ex/ Inspection reference number for the 4<sup>th</sup> inspection of a project would be: RIR10####-4
- Each report will be signed and dated by the Inspector and must be kept onsite.
- Each report will be signed and dated by the Site Operator.
- The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

**Failure to make and provide documentation of inspections and corrective actions under this part constitutes a violation of your permit and enforcement actions under 46-12 of R.I. General Laws may result.**

#### **4.4 Maintenance**

*Per RI SESC Handbook – Part D:*

Maintenance procedures for erosion and sedimentation controls and stormwater management structures/facilities are described on the SESC Site Plans and in the *RI SESC Handbook*.

Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Erosion, runoff, sedimentation, and pollution prevention control measures must be maintained throughout the course of the project.

**Note: It is recommended that the site operator designates a full-time, on-site contact person responsible for working with the site owner to resolve SESC Plan-related issues.**

#### **4.5 Corrective Actions**

*Per RI SESC Handbook – Part D:*

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall note it on the inspection report and shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of any of the control measures instituted at the site is required.

In accordance with the *RI SESC Handbook*, the site operator shall initiate work to fix the problem immediately after its discovery, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the control measures and making it operational as soon as practicable after the 7-day timeframe. Such documentation of these maintenance procedures and timeframes should be described in the inspection report in which the issue was first documented. If these actions result in changes to any of the control measures outlined in the SESC Plan, site owners and operators must also modify the SESC Plan accordingly within seven (7) calendar days of completing this work.

## SECTION 5: AMENDMENTS

### *Per RIPDES Construction General Permit – Part III.F:*

This SESC Plan is intended to be a working document. It is expected that amendments will be required throughout the active construction phase of the project. **Even if practices are installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site for the entire duration of the project.**

The SESC Plan shall be amended within seven (7) days whenever there is a change in design, construction, operation, maintenance or other procedure which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives (i.e. the selected control measures are not effective in controlling erosion or sedimentation).

In addition, the SESC Plan shall be amended to identify any new operator that will implement a component of the SESC Plan.

All revisions must be recorded in the Record of Amendments Log Sheet, which is contained in Attachment G of this SESC Plan, and dated red-lined drawings and/or a detailed written description must be appended to the SESC Plan. Inspection Forms must be revised to reflect all amendments. Update the Revision Date and the Version # in the footer of the Report to reflect amendments made.

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and operator. Any amendments to control measures that involve the practice of engineering must be reviewed, signed, and stamped by a Professional Engineer registered in the State of RI.

The amended SESC plan must be kept on file at the site while construction is ongoing and any modifications must be documented.

Attach a copy of the Amendment Log.

See Attachment G: Amendment Log

## SECTION 6: RECORDKEEPING

### RIPDES Construction General Permit – Parts III.D, III.G, III.J.3.b.iii, & V.O

It is the site owner and site operator's responsibility to have the following documents available at the construction site and immediately available for RIDEM review upon request:

- A copy of the fully signed and dated SESC Plan, which includes:
  - A copy of the General Location Map  
INCLUDED AS ATTACHMENT A
  - A copy of all SESC Site Plans  
INCLUDED AS ATTACHMENT B
  - A copy of the RIPDES Construction General Permit *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*  
INCLUDED AS ATTACHMENT C
  - A copy of any regulatory permits (RIDEM Freshwater Wetlands Permit, CRMC Assent, RIDEM Water Quality Certification, RIDEM Groundwater Discharge Permit, RIDEM RIPDES Construction General Permit authorization letter, etc.)  
INCLUDED AS ATTACHMENT D
  - The signed and certified NOI form or permit application form *(if required as part of the application, see RIPDES Construction General Permit for applicability)*  
INCLUDED AS ATTACHMENT E
  - Completed Inspection Reports w/Completed Corrective Action Logs  
INCLUDED AS ATTACHMENT F
  - SESC Plan Amendment Log  
INCLUDED AS ATTACHMENT G

## SECTION 7: PARTY CERTIFICATIONS

### RIPDES Construction General Permit – Part V.G

All parties working at the project site are required to comply with the Soil Erosion and Sediment Control Plan (SESC Plan including SESC Site Plans) for any work that is performed on-site. The site owner, site operator, contractors and sub-contractors are encouraged to advise all employees working on this project of the requirements of the SESC Plan. A copy of the SESC Plan is available for your review at the following location: Burgess Street at Warren Ave Job Site, or may be obtained by contacting the site owner or site operator.

The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

***I acknowledge that I have read and understand the terms and conditions of the Soil Erosion and Sediment Control (SESC) Plan for the above designated project and agree to follow the control measures described in the SESC Plan and SESC Site Plans.***

Site Owner:

City of East Providence  
Erik Skadberg, P.E., City Engineer  
145 Taunton Avenue  
East Providence, RI 02914  
401-435-7703, eskadberg@eastprovidenceri.gov

\_\_\_\_\_  
signature/date

Site Operator:

Insert Company or Organization Name  
Insert Name & Title  
Insert Address  
Insert City, State, Zip Code  
Insert Telephone Number, Insert Fax/Email

\_\_\_\_\_  
signature/date

Designated Site Inspector:

Insert Company or Organization Name  
Insert Name & Title  
Insert Address  
Insert City, State, Zip Code  
Insert Telephone Number, Insert Fax/Email

\_\_\_\_\_  
signature/date

SubContractor SESC Plan Contact:

BETA Group, Inc.  
Jared Linhares, PE, Project Manager  
701 George Washington Highway  
Lincoln, RI 02865  
401-333-2382, JLinhares@BETA-Inc.com

\_\_\_\_\_  
signature/date

## LIST OF ATTACHMENTS

**Attachment A - General Location Map**

**Attachment B - SESC Site Plans**

**Attachment C - Copy of RIPDES Construction General Permit and Authorization to Discharge** *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*

**Attachment D - Copy of Other Regulatory Permits**

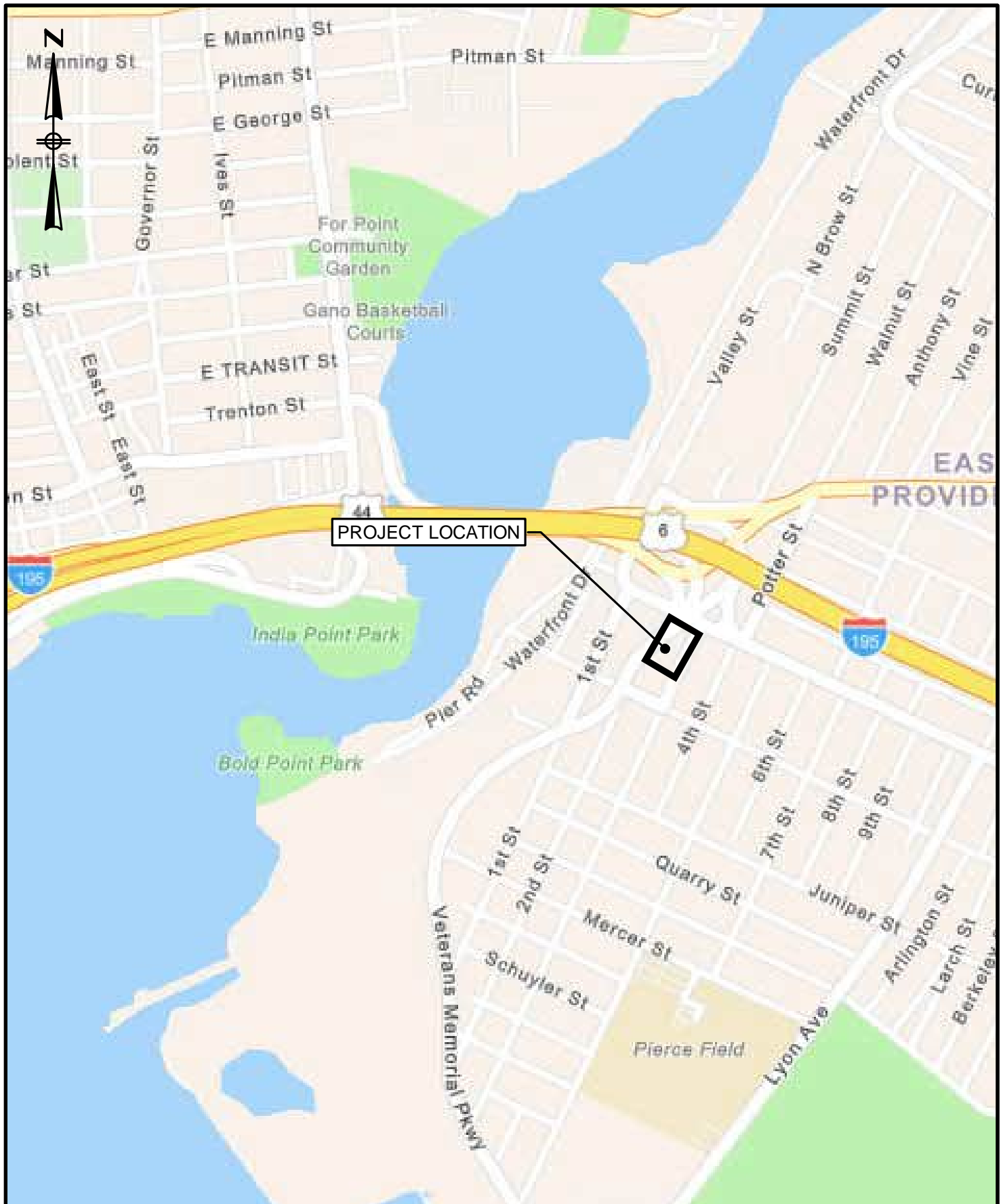
**Attachment E - Copy of RIPDES NOI** *(if required as part of application, see RIPDES Construction General Permit for applicability)*

**Attachment F - Inspection Reports w/ Corrective Action Log**

**Attachment G - SESC Plan Amendment Log**



## **Attachment A - General Location Map**



## **Attachment B – SESC Plan Site Maps**

The set of project construction plans shall serve as the SESCO site maps, and are not included herein. Please refer to the plan set, which shall be kept on-site at all times for the duration of the project.

## **Attachment C - Copy of RIPDES Construction General Permit**

The RIPDES Construction General Permit may be accessed, viewed and printed from the RIDEM web site, at the following address:

<http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/pdfs/cgp092620.pdf>

A hard copy of the RIPDES CGP is not included herein.

## **Attachment D - Copy of Regulatory Permits**

## **Attachment E - Copy of RIPDES NOI**

## **Attachment F - Inspection Reports and Corrective Action Log**

This appendix contains copies of all project stormwater inspection reports and corrective action logs performed in accordance with Section 5 – Maintenance and Inspection of this SESCO. Reports are presented in chronological order from most recent to oldest.



# SESC Plan Inspection Report Instructions

For all projects subject to the requirements of the *RI Stormwater Design and Installation Standards Manual* or the *RIPDES Construction General Permit* the site owner and operator are required to develop and comply with a site specific Soil Erosion and Sediment Control Plan (SESC Plan) in order to remain in compliance with applicable regulations.

This inspection report template has been provided by RIDEM for use by the site operator and designated inspector to document the adequacy and condition of erosion, runoff, sediment, and pollution prevention control measures specified for use on the construction site. It should be customized for your specific site conditions and consistent with the SESC Plan developed for your site.

## ***Using the Inspection Report***

This inspection report is designed to be customized according to the control measures and conditions at the site. On a copy of the applicable SESC Site Plans, number or label all stormwater control measures and areas of the site that will be inspected. Include all control measures (temporary traps, basins, inlet protection measures, etc.) and areas that will be inspected. Also, identify all point source discharges/outfalls, and the priority natural resource areas (i.e. streams, wetlands, mature trees, etc). List each control measure or area to be inspected separately in the site-specific control measure section of the inspection report.

Complete any items that will remain constant, such as the project information and control measure locations and descriptions. Then, print out multiple copies of this customized inspection report to use during the inspections.

When conducting the inspection, walk the site by following the SESC Site Plans and numbered control measure locations for inspection. Also note whether the overall site issues have been addressed. Customize this list according to the conditions at the site.

## ***Minimum Monitoring and Reporting Requirements***

Your site must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff. Read Section 4.2 of your SESC Plan for more information regarding the importance of monitoring weather conditions.

## ***General Notes***

- A separate inspection report will be prepared for each inspection.



- The Inspection Reference Number shall be a combination of the RIPDES Permit Authorization Number - consecutively numbered inspections. For example: Inspection reference number for the 4<sup>th</sup> inspection of a project would be: RIR101000-4
- Each report will be signed and dated by the inspector and forwarded to the site operator within 24 hours of the inspection.
- Each report will be signed and dated by the site operator upon his/her receipt and after completion of all required corrective actions.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

### **Corrective Actions**

If the SESC Plan Inspection determines that corrective actions are necessary to install or repair control measures, the resultant actions taken must be documented by the site operator. The actions must be recorded in the Corrective Action Log attached to each SESC Plan inspection form. If the site operator disagrees with the corrective action recommendations, it must be documented, with justifiable reasons, in the Corrective Action Log, as well. **Required timeframes for corrective actions are established by regulation and are discussed in Section 4.5 of your SESC Plan.**

### **Amendments**

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and site operator. The revision must be recorded in the Record of Amendments Log Sheet within the SESC Plan, and dated red-line drawings and/or a detailed written description of the revision must be appended to the SESC Plan. Inspection forms must be revised to reflect all amendments. Update the *Revision Date* and the *Version #* in the footer of the report to reflect amendments made.

The SESC Plan shall be amended whenever there is a change in design, construction, operation, maintenance or other procedure, which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives.

***\*\*\*Remember that the regulations are performance-oriented.  
Even if all control measures are installed on a site according to the  
SESC Plan, the site is only in compliance when  
erosion, runoff, sedimentation, and pollution  
are effectively controlled. \*\*\****

**SESC Plan Inspection Report**

Project Information			
Name			
Location			
DEM Permit No.			
Site Owner	Name	Phone	Email
Site Operator	Name	Phone	Email
Inspection Information			
Inspector Name	Name	Phone	Email
Inspection Date		Start/End Time	
Inspection Type <input type="checkbox"/> Weekly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event <input type="checkbox"/> Other			
Weather Information			
Last Rain Event Date:                      Duration (hrs):                      Approximate Rainfall (in):			
Rain Gauge Location & Source:			
Weather at time of this inspection:			

**Check statement that applies then sign and date below:**

☐ I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have determined that maintenance and corrective actions are not required at this time.

☐ I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have made the determination that the site requires corrective actions. The required corrective actions are noted within this inspection report.

Inspector:	Print Name	Signature	Date
The Site Operator acknowledges by his/her signature, the receipt of this SESC Plan inspection report and its findings. He/she acknowledges that all recommended corrective actions must be completed and documentation of all such corrective actions must be made in this inspection report per applicable regulations.			
Operator:	Print Name	Signature	Date

**Site-specific Control Measures**

Number the structural and non-structural stormwater control measures identified in the SESC Plan and on the SESC Site Plans and list them below (add as necessary). Bring a copy of this inspection form and any applicable SESC Site Plans with you during your inspections. This list will assist you to inspect all control measures at your site.

FILL THIS TABLE USING THE SESC PLAN TABLES 2.11 & 3.12.

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
1	Example 1: Eastern Parcel – Slope No. 4 Adjacent to I-95.  Straw Wattles	Straw Wattle. Section Six, Sediment Control Measures, Straw Wattles, Compost Tubes and Fiber Rolls - <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2	Example 2: Western Parcel – Green Street Construction Entrance	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances – <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3	Example 3:  Hospital Main Footings – Excavation Area – SESC Site Plan Sheet No. 3.	Pump Intake Protection Using Stone Filled Sump with Standpipe. Section Six: Sediment Control Measures, Pump Intake Protection, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4	Example 4:  Bridge Abutment Construction Southbound Bridge Abutment, Bridge No. 244 – SESC Site Plan Sheet No. 18.	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations. Section Three: Pollution Prevention and Good Housekeeping, Concrete Washouts, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5	INSERT TEXT	INSERT TEXT	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6	<b>Attention Operator:</b>	<b>You must modify this inspection form as the project progresses, control measure locations change, and amendments to the SESC Plan are instituted in the field.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7			<input type="checkbox"/> Yes <input type="checkbox"/> No		
8			<input type="checkbox"/> Yes <input type="checkbox"/> No		

**PROJECT:****INSPECTION DATE:**

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
9			<input type="checkbox"/> Yes <input type="checkbox"/> No		
10			<input type="checkbox"/> Yes <input type="checkbox"/> No		
11			<input type="checkbox"/> Yes <input type="checkbox"/> No		
12			<input type="checkbox"/> Yes <input type="checkbox"/> No		
13			<input type="checkbox"/> Yes <input type="checkbox"/> No		
14			<input type="checkbox"/> Yes <input type="checkbox"/> No		
15			<input type="checkbox"/> Yes <input type="checkbox"/> No		
16			<input type="checkbox"/> Yes <input type="checkbox"/> No		
17			<input type="checkbox"/> Yes <input type="checkbox"/> No		
18			<input type="checkbox"/> Yes <input type="checkbox"/> No		
19			<input type="checkbox"/> Yes <input type="checkbox"/> No		
20			<input type="checkbox"/> Yes <input type="checkbox"/> No		
21			<input type="checkbox"/> Yes <input type="checkbox"/> No		
22			<input type="checkbox"/> Yes <input type="checkbox"/> No		
23			<input type="checkbox"/> Yes <input type="checkbox"/> No		
24			<input type="checkbox"/> Yes <input type="checkbox"/> No		

**PROJECT:**

**INSPECTION DATE:**

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
25			<input type="checkbox"/> Yes <input type="checkbox"/> No		
26			<input type="checkbox"/> Yes <input type="checkbox"/> No		
27			<input type="checkbox"/> Yes <input type="checkbox"/> No		
28			<input type="checkbox"/> Yes <input type="checkbox"/> No		
29			<input type="checkbox"/> Yes <input type="checkbox"/> No		
30			<input type="checkbox"/> Yes <input type="checkbox"/> No		

(add more as necessary)

**General Site Issues**

Below are some general site issues that should be assessed during inspections. Please **customize** this list as needed for conditions at the site.

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
1	Have all control measures been installed as specified in the RISESC Handbook and prior to any earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
2	Are appropriate limits of disturbance (LOD) established?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
3	Are controls that limit runoff from exposed soils by diverting, retaining, or detaining flows (such as check dams, sediment basins, etc.) in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
4	Are all temporary conveyance practices installed correctly and functioning as designed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
5	Has maintenance been performed as required to ensure continued proper function of all temporary conveyances practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
6	Were all exposed soils seeded by October 15 <sup>th</sup> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
7	Have soils been stabilized where earth disturbance activities have permanently or temporarily ceased on any portion of the site and will not resume for more than 14 days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
8	In instances where adequate vegetative stabilization was not established by November 15 <sup>th</sup> , have non-vegetative erosion control measures must be employed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
9	If work is to continue from October 15 <sup>th</sup> through April 15 <sup>th</sup> , are steps taken to ensure that only the day's work area will be exposed and all erodible soil is stabilized within 5 working days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
10	Have inlet protection measures (such as fabric drop inlet protection, curb drop inlet protection, etc.) been properly installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
11	Has the operator cleaned and maintained inlet protection measures when needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
12	Has the operator removed accumulated sediment adjacent to inlet protection measures within 24 hours of detection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
13	Has the operator properly installed outlet protection (such as riprap, turf mats, etc.) at all temporary and permanent discharge points?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
14	Are all outlet protection measures functioning properly in order to reduce discharge velocity, promote infiltration, and eliminate scour?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
15	Have all discharge points been inspected to ensure the prevention of scouring and channel erosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
16	Have sediment controls been installed along perimeter areas that will receive stormwater from earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
17	Is the operator maintaining sediment controls in accordance with the requirements in the <i>RI SESC Handbook</i> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
18	Have temporary sediment barriers been installed around permanent infiltration areas (such as bioretention areas, infiltration basins, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
19	Have staging areas and equipment routing been implemented to avoid compaction where permanent infiltration areas will be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
20	Are surface outlet structures (such as skimmers, siphons, etc.) installed for each temporary sediment basin? [Exception: frozen conditions]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
21	Have all temporary sediment basins or traps been inspected and maintained as required to ensure proper function?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
22	Does the project include the use of polymers, flocculants, or other chemicals to control erosion, sedimentation, or runoff from the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
23	Are all chemicals being managed in accordance with Appendix J of the <i>RI SESC Handbook</i> and current best management practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
24	Has the site operator taken steps to <b>prohibit</b> the following pollutant discharges on the site?			
a	Contaminated groundwater.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
b	Wastewater from washout of concrete; unless properly contained, managed, and disposed of.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
c	Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction products.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
d	Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
e	Soaps or solvents used in vehicle and equipment washing.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
f	Toxic or hazardous substances from a spill or other release.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
25	Is the operator using properly constructed entrances/exits to the site so sediment removal occurs prior to vehicles exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
26	If needed, are additional controls (such as rumble strips, rattle plates, etc.) in place to remove sediment from tires prior to exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
27	Is sediment track-out being removed by the end of the same workday in which it occurs (via sweeping, shoveling, or vacuuming)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
28	Are all wastes generated at the site being managed and properly disposed of by the end of each workday?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
29	Are all chemicals and hazardous waste materials stored properly in covered areas and surrounded by containment control systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
30	Has the operator established highly visible locations for the storage of spill prevention and control equipment on the construction site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
31	Are allowable non-stormwater discharges being managed properly with adequate controls?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
32	Is the site operator properly managing groundwater or stormwater that is removed from excavations, trenches, or similar points of accumulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
33	Are proper procedures and controls in place for the storage of materials that may discharge pollutants if exposed to stormwater?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are stockpiles located within the limits of disturbance?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		



**PROJECT:****INSPECTION DATE:**

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
	Are stockpiles being protected from contact with stormwater using a temporary sediment barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Where needed, has cover or appropriate temporary vegetative or structural stabilization been utilized for stockpiles?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Is the operator effectively managing the generation of dust through the use of water, chemicals, or minimization of exposed soil?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are designated washout areas (such as wheel washing stations, washout for concrete, paint, stucco, etc.) clearly marked on the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are vehicle fueling and maintenance areas properly located to prevent pollutants from impacting stormwater and sensitive receptors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	(Other)			

(add more as necessary)

**PROJECT:**

**INSPECTION DATE:**

---

**General Field Comments:**

**PROJECT:**

**INSPECTION DATE:**

**Photos:**

(Associated photos – each photo should be dated and have a unique identification # and written description indicating where it is located within the project area. If a close up photo is required, it should be preceded with a photo including both the detail area and some type of visible fixed reference point. Photos should be annotated with Station numbers and other identifying information where needed.)

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

Photo #:	Station:
(insert Photo here)	Description:

(add more as necessary)

**PROJECT:** \_\_\_\_\_ **INSPECTION DATE:** \_\_\_\_\_

INSPECTION DATE:

## Corrective Action Log

## TO BE FILLED OUT BY SITE OPERATOR

*Describe repair, replacement, and maintenance of control measures, actions taken, date completed, and note the person that completed the work.*

	Location/Station	Corrective Action	Date Completed	Person Responsible
Operator Signature:			Date:	

## **Attachment G - Amendment Log**

This appendix contains the log of all amendments made to the original SESCO during the construction phase of this project, in accordance with Section 6 – Amendments of this SESCO.

**PROJECT:**

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## Amendment Log

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### TO BE FILLED OUT BY SITE OPERATOR

*Describe amendment(s) to be made to the SESC Plan, the date, and the person/title making the amendment. ALL amendments must be approved by the Site Owner.*

#	Date	Description of Amendment	Amended by: Person/Title	Site Owner Must Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Add more lines/pages as necessary