CITY OF EAST PROVIDENCE
RFP 21/22 – 05

MULTI-USE ATHLETIC FIELD AND PARKING LOT
AT
RIVERSIDE MIDDLE SCHOOL

February 2022

PROPOSED MULTI-USE ATHLETIC FIELD AND PARKING LOT
RIVERSIDE MIDDLE SCHOOL

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TECHNICAL SPECIFICATIONS

THE CITY OF EAST PROVIDENCE RI

EQUAL EMPLOYMENT OPPORTUNITY

CERTIFICATE OF COMPLIANCE

The undersigned contractor agrees and certifies that is in compliance with applicable requirements of Federal Executive Order #11246 as amended, State of Rhode Island General Law 28-5.10, and other regulations as issued by the Rhode Island Department of Administration, as set forth below, or will take steps to comply with such requirements prior to acceptance of any contract from the City of East Providence, Rhode Island.

A. The contractor will not discriminate against any employee or applicant for employment because of race, age, handicap, color, religion, sex, national origin or veteran status. The contractor will take affirmative action to ensure that applicants for employment and employees are treated equitably, without regard to their race, color, religion, sex, pregnancy, sexual orientation, gender information, gender identity, expressions, age (40 or older), national origin, veteran status, disability, or any other basis protected by State and Federal Law.
B. The Contractor, in all solicitations or advertisements for employees, placed by or on behalf of the contractor, shall state that all qualified applicants will receive consideration for employment without regard to their race, color, religion, sex, pregnancy, sexual orientation, gender information, gender identity, expressions, age (40 or older), national origin, veteran status, disability, or any other basis protected by State and Federal Law.
C. The contractor agrees to obtain Compliance Certifications from proposed subcontractors prior to the award of subcontractors exceeding $10,000.

NOTICE TO ALL CONTRACTORS

If it should be determined by the City of East Providence Affirmative Action / EEO Officer that any contractor doing business with the City of East Providence is guilty of non-compliance with the provisions of this document, said contractor will be given two written warnings. If the said contractor does not comply immediately after the second written notice, then the City of East Providence Affirmative Action / EEO Officer will notify the Mayor of East Providence who shall have the authority to have the contract revoked and all contractual obligations of the City dealing with the contract in question will be null and void.

Signature required prior to award to successful bidder. Failure shall be cause for rejections of bid.

Signature & Title

Print Name

Company Date

CERTIFICATION OF NONSEGREGATED FACILITIES

By the Submission of this bid, the bidder, offeror, applicant or subcontractor certifies that she/he does maintain or provide for his/her employees any segregated facility at any of his/her establishments and that she/he does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. She/he certifies further that she/he will not maintain or provide for employees any segregated facilities at any of his/her control, where segregated facilities are maintained. The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is a violation of the Equal Employment Clause of this contract. As used in the certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, transportation, (parking lots, drinking fountains, recreation or entertainment areas) and housing facilities provided for employees which are segregated upon the basis of race, color, religion, sex, pregnancy, sexual orientation, gender information, gender identity, expressions, age (40 or older), national origin, veteran status, disability, or any other basis protected by State and Federal Law or are in fact segregated on the basis of race, color, religion or otherwise. She/he further agrees that (except where proposed subcontractors have obtained identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000.00 which are not exempt from the provisions of the Equal Opportunity Clause; and that she/he will retain such certifications in his/her files; and that she/he will forward the following notice to such proposed subcontractors (except where proposed subcontractors have submitted identical certifications for specific time periods)

NOTICE TO PROSPECTIVE SUBCONTRACTORS OR REQUIREMENTS FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding $10,000.00 which is not exempt from the provisions of the Equal Opportunity Clause. The certification may be submitted either for each subcontractor or for all subcontracts during a period (i.e. quarterly, semi -annually, or annually.)

_____

(Company)

By: _____

_____

_____
(Title)

_____
(Date)

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 or 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

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: _____

STANDARD INSTRUCTIONS TO BIDDERS (SHORT FORM)
REQUEST FOR PROPOSALS

THESE INSTRUCTIONS ARE STANDARD FOR ALL REQUEST FOR PROPOSALS ISSUED BY THE PURCHASING DIVISION AND MAY BE DELETED, OR MODIFIED BY INDICATING SUCH CHANGE/S BY "SPECIAL INSTRUCTIONS TO BIDDERS."

1.0 RECEIPT AND OPENING OF PROPOSALS:

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/her 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/her 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 QUALIFICATIONS 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 Proposals cover sheet, the Contractor shall furnish a Surety 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.

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 Mayor, or by person or persons designated by him/her, that the bidders designated substitute is equal to the bid standard; otherwise, his/her 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 EQUAL EMPLOYMENT OPPORTUNITY

Any firm or Contractor providing services to or doing business with the City shall adhere to the City's Affirmative Action Plan for Equal Employment Opportunity. Said plan is on file with the City's Affirmative Action Officer.

14.1 In the event that the Bid exceeds $10,000.00, the successful bidder only must submit the following:

East Providence Affirmative Action Program Form

Preliminary Statement of Work Force Needs

Certification of Equal Employment Compliance

Certification of Non-segregated Facilities

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".

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 ($100,000.00) 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.

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

► **Go to *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.

2 Business name/disregarded entity name, if different from above

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.)

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)

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.

Social security number

			–			–				

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.*

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[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] 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*. 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* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *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* 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[1]
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[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
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[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
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

[1] 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.

[2] Circle the minor's name and furnish the minor's SSN.

[3] 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.

[4] 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.* 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* or report them at *www.ftc.gov/complaint.* You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *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
DEPARTMENT OF PUBLIC WORKS

REQUEST FOR PROPOSALS
RFP21/22-05
PROPOSED MULTI-USE ATHLETIC FIELD AND PARKING LOT
RIVERSIDE MIDDLE SCHOOL

I. INTRODUCTION

DelleFemine Field is a very popular recreation field, especially in the fall with football, soccer and baseball. The adjacent neighborhood has for years accommodated the overflow parking from the extensive use. The overflow parking is becoming a safety issue due to the limited neighborhood roadway widths where emergency vehicles are having problems accessing the fields.

The proposed project includes the construction of a multi-use athletic field and associated parking located to the south of the existing school. The total project area is approximately 3.8 acres. The new field will replace the existing under-sized field with a full sized field which can be shared between the school and the adjacent DelleFemine Field. The parking lot will have multiple users. The middle school will have access to the parking lot, but more importantly, the users of DelleFemine Field will be required to park there. This will alleviate the overflow parking conditions in the adjacent neighborhood and improve emergency access to the field. The total impervious area is approximately 3,500 square feet.

The proposed field will be a natural grass field and will utilize a new well for irrigation. The well will allow for water conservation by not using potable water and will better balance the water table as this area does have a seasonal high water table.

The cross section of the proposed parking lot will consist of four-inches of hot-mix porous pavement and a base and sub-base consisting of varying layers of porous material. The base and sub-base will include 8-inches of choker course, 21-inches of filter course/bank-run gravel and 3-inches of pea gravel above the existing sandy soils. The only impervious areas will be the walking paths. The proposed design minimizes stormwater runoff by minimizing impervious surfaces.

II. SITE DESCRIPTION

The project site is located at the Riverside Middle School with an address of 179 Forbes Street in the Riverside section of East Providence, RI. More specifically, Map 511, Block 2, Parcel 2. The property consists of approximately 38.9 acres. The property contains an existing middle school, built in 1966, limited playing fields, driveways, parking areas and wooded areas. The middle school property is located north of the Riverside Recreation Field, otherwise known as DelleFemine Field. Other abutting uses include the City's compost facility and former landfill to the east, residential

development to the south and west, and the Exxon/Mobil property located to the north of Forbes Street.

III. OBJECTIVE

The objective of the City is to provide an additional multi-use athletic field to the City's youth and provide a parking lot that will reduce the number of cars parking within the existing residential neighborhood.

IV. SCOPE OF WORK

The project shall be bid as a lump sum and shall meet the minimum requirements shown on the plans and as described within the specifications. The work required to meet the City's objective shall consist, of but not necessarily be limited to, the following activities:

A. **DESIGN PHASE:** Required services shall include, but not limited to:

1. Prepare the design for the irrigation system including well, pump, controls, control/pump shed, layout, electrical and any and all other appurtenances to provide a turn-key irrigation system and obtain local plumbing and electrical permits.

2. Prepare the design for the footings for the scoreboard and football goal posts including stamped engineered plans by a Rhode Island Professional Engineer that can be submitted for a building permit.

B. **CONSTRUCTION PHASE:** Required services shall include, but not limited to:

1. Preparation of all necessary shop drawings, samples, and submittals to conform with approved design elements.

2. The Contractor shall implement the erosion and sediment plans and any dewatering that may be required.

3. Provide all necessary labor, supplies, materials, equipment, and services required for the complete installation and construction in accordance with the approved plans and specifications. It emphasizes that this project be done on a turnkey basis, with all features ready for use upon completion.

4. Construction meetings will be held weekly with the owner/owner's representative.

5. Contractor shall provide all certifications and testing (compaction, sieve analysis, etc.,) results to the Owner for review and approval.

6. The City shall produce the final as-built to assure the construction meets the plans and specifications.

V. SUBMISSION OF PROPOSAL

Four (4) sealed copies of technical proposals shall be submitted to the Controller's Office, Attn: Purchasing Agent, Room 103, City Hall, 145 Taunton Avenue, East Providence, RI 02914-4505 by

2 PM on March 29, 2022. Responses to this solicitation should, at a minimum, include the following:

- A company brochure including address, city, state, phone and fax numbers, e-mail and web page address.
- Provide a signed statement that your firm is not currently on the Government Contractor Debarred List prohibiting any contractual relationship using federal funds.
- A description of the company's background in working with projects of similar scope describing previous collaboration experience on relevant projects.
- A description of the background experience and involvement of personnel who will be assigned to the project.
- References
- Any other information deemed to be pertinent in assisting the City in adequately reviewing the firm's capabilities and qualifications with respect to the proposed project.
- Bonding capability for a $750,000.00 project.
- A Cost Proposal is to be submitted along with a schedule, which will identify the proposed cost structure for reimbursement, lump sum, as well as all applicable breakdowns of anticipated man hours per task, multipliers, and/or milestones for percentage payments, etc. that are appropriate for each phase of the scope of work. The City reserves the right to award the entire contract or any portion thereof to the most qualified bidder, as judged solely by the City. The City also reserves the right to delete elements of each phase should it be deemed in the City's best interest to do so.

VI. PROJECT TIMETABLE

Solicitation of Proposals:	February 18, 2022
Pre-proposal meeting:	March 9, 2022 (City Hall, 2 PM)
Latest date for Request for Info	March 18, 2022 (2PM)
Submission of Proposals:	March 29, 2022 (2PM)
Contract Award:	April 29, 2022
Contract Completion	July 29, 2022

VII. SELECTION PROCESS AND CRITERIA

Proposals will be reviewed by City staff from the Department of Public Works. This is a Request for Proposal, as such responses will be evaluated on the basis of the relative merits of the proposal, in addition to associated fees. The City reserves the right to schedule interviews following the submission of the proposals. The selected firm shall be chosen based on its qualifications, strength of its proposal, and associated fees. The following criteria will be used to evaluate the responses:

1. Company Qualifications and Experience

Specialized experience is required in a series of work areas. Proposals must clearly demonstrate full knowledge, understanding, and experience in the methods, techniques and guidelines required for the performance of the required work. All elements within this factor are of equal importance.

The BIDDER must demonstrate experience in site construction and paving and/or similar scopes of work within Massachusetts and Rhode Island.

The BIDDER must demonstrate expertise in the field of site design and the processes involved in obtaining all required permits and approvals.

2. Personnel Qualifications and Availability

Specialized experience is required of the project personnel proposed to undertake the work assignments. Proposal must clearly demonstrate the capability, academic background, training, certifications and experience of the proposed personnel. The availability of the proposed staff is also of critical importance and must be demonstrated. Specific project experience relevant to this scope of work must be demonstrated, as well as specific company experience.

3. Performance Record of Firm

A list of references of at least three (3) recent contracting officers on projects of a similar magnitude and complexity; references must include telephone number and affiliation.

4. Project Understanding and Approach

The BIDDER must demonstrate a comprehension of the role and function of this project in meeting the objectives of the CITY.

In addition to the understanding of the scope and approach, the BIDDER must demonstrate the following which will be considered in the selection:

1. Knowledge of current issues and state of the art in the relevant technical areas.

2. Experience demonstrated on similar projects.

3. Working knowledge of the geographic area as evidenced by prior work experience in the region.

4. A demonstrated expertise and ability for rapid turn-around and flexibility on short-term projects.

5. The capability to effectively direct multiple simultaneous work assignments.

6. An ability to integrate and utilize interdisciplinary study teams effectively on assignments requiring a variety of skills and expertise from in-house resources.

7. The ability to provide the necessary skills and expertise from in-house resources.

8. Methods for assuring product quality, cost control, delivery schedule and project oversight. A narrative description of the BIDDER'S quality control plan must be included.

9. Proven ability to work with municipal, state and federal government agencies and complete projects in a timely fashion and within the prescribed budget.

VIII. GENERAL CONDITIONS

A. The City reserves the right to reject any and all proposals, to waive any informality, to request interviews of contractors prior to award and to select and negotiate the contractor's services in the best interest of the City.

B. The City reserves the right to accept all or part of any proposal and to negotiate a contract for services and cost with the selected Contractor.

C. The Contractor shall provide all necessary personnel, sub-contractors, materials and equipment to perform and complete all work under this proposal.

D. All original documents and drawings shall become the property of the City after completion of the consultant's work.

E. The Contractor shall be prepared to commence work immediately upon execution of a contract with the City.

Any questions should be directed to Daniel Borges, Director of Public Works (401) 435-7701 dborges@eastprovidenceri.gov, or Erik Skadberg, City Engineer, City of East Providence, Rhode Island at (401) 435-7703 extension 1, eskadberg@eastprovidenceri.gov.

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").

This Contract is for a project identified as "Multi-use Athletic Field and Parking Lot at Riverside Middle School" (the "Project").

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, 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 Project as identified thereon as such, plus the following: Addendum No ? 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 person 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 and payment bonds for the Project, if any, 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 Contact 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 herein, 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 scale 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 any required surety bonds and insurance;

(C) The provision and furnishing, and prompt payment thereof, 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 _five hundred_ Dollars ($_500____) 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 unexcusably 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 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 this Article 8 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 once monthly, the Contractor may submit a Payment Request for the period ending the 31st day of the preceding 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.

(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 Work, the 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, materialmen, 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, materialmen, 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 unexcusably 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 (H), 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 and 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 _120____ consecutive days of notification

of each assignment. If the Contractor fails to complete the work as set forth in this Paragraph (K), the Contractor shall pay the City the sum of _five hundred__ Dollars ($_500____) 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 unexcusably 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 on the 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 if it 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 RESPONSIBILTIIES 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 Article 4 Paragraph (E), which are by reference hereby incorporated in this Paragraph (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 Paragraph (D) 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 will 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 sire. 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 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.

(C)

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 the 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 Paragraph (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 therof, the Contractor shall strictly comply with the requirements of Paragraph (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 anticipated, 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 Paragraph (F) 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 Paragraph (A)

above. If the Contractor fails to make such claim as required in this Paragraph (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 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.

(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;

(B) Any change in the Contract Price resulting from a Change Order shall be determine 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 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 Paragraph (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, inspection 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 Article 22 Paragraph (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 Article 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 Paragraph (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 contemplated, 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 Paragraph (A) of this Article. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Paragraph (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.

(A) 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 right 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 ever 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 Paragraph (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 Paragraph (A) of this Article and the provision of Paragraph (A) shall apply.

ARTICLE 23
INSURANCE

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

(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 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 & hired motor vehicles
Broad form coverage for property damage (including explosion, collapse & underground)

(C) The insurance required by Paragraph (B) above 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:
(i) $1,000,000- Each Occurrence
(ii) $1,000,000- Annual Aggregate

b.) Property Damage:
(i) $1,000,000- Each Occurrence
(ii) $1,000,000- Annual Aggregate

c.) Products & Complete 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:
(i) $1,000,000- Each Occurrence

b.) Property Damage:
(i) $1,000,000- Each Occurrence
(ii) $1,000,000- Annual Aggregate

(4) Personal Injury, with Employment Exclusion deleted:
a.) $1,000,000- Annual Aggregate

(5) Comprehensive Automobile Liability:
a.) Bodily Injury:
(i) $500,000- Each Person
(ii) $1,000,000- Each Occurrence

b.) Property Damage:
(i) $1,000,000- Each Occurrence

c.) Special Hazards:
(i) $1,000,000- Each Occurrence

(6) Property Insurance:

The Contractor shall purchase and maintain property insurance upon the entire Work at the site to 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 (C) (5) (c) of this Article.

(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 therefrom.

(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 work called for in this Contract.

ARTICLE 28
APPLICABLE LAW

The law is hereby agreed to be the Law of the State where the Project is situated.

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
145 Taunton Avenue
East Providence, RI 02914

By: _____
(Signature)

_____
(Printed Name and Title)
Roberto DaSilva
Mayor

_____
(Date of Execution)

CONTRACTOR

_____
_____
_____

By: _____
(Signature)

_____
(Printed Name and Title)

_____
(Date of Execution)

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street
Providence, Rhode Island 02908

December 6, 2021

City of East Providence
Roberto L. DaSilva, Mayor
145 Taunton Avenue
East Providence, RI 02914

Re: Wetlands Application No. 20-0245 & RIPDES No. RIR102179 in reference to the property and proposed project located:

At 179 Forbes Street, the Riverside Middle School, and approximately 1700 feet northeast of the intersection of Forbes Street and Willett Avenue, near Utility Pole Nos 20 and 21, Assessor's Plat 511-2, Lot 2, East Providence, RI.

Dear Mayor DaSilva:

Kindly be advised that the Department of Environmental Management's ("DEM") Freshwater Wetlands Program, ("Program") has completed its review of your proposed construction of a soccer field and associated parking lot with pervious asphalt pavement and associated filter sub-base, rail fence, walkways, well for irrigation, grubbing and clearing, soil disturbance, excavation, and grading as illustrated and detailed on site plans submitted with your application. The site plans referenced by this letter and on file with this Program were received on November 10, 2021.

Our inspection reveals that freshwater wetlands regulated by the DEM are present on or in close proximity to the subject property. Review of your proposed project, however, reveals that this project does not represent an alteration to these freshwater wetlands. It is our determination therefore that a permit for this project pursuant to the Freshwater Wetland Act (R.I. Gen. Laws § 2-1-18 et seq.) or the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, 250-RICR-150-15-1, is not required. This Determination **is specific to the proposed site alterations illustrated and detailed on site plans on file with this Program and is further predicated on the following:**

1. Adequate measures are employed during and after site alterations to control soil erosion and to prevent any sediment from such erosion being deposited in any freshwater wetlands. You should consult the Rhode Island Soil Erosion and Sediment Control Handbook for appropriate methods to control erosion and prevent sediment from leaving your project site.

2. This determination does not authorize you to modify your project in such a way as to result in the following:

    a. An increase in the rate and/or volume of surface water runoff flowing into, or draining or diverting from these wetlands; or

    b. A diversion of groundwater into or away from these wetlands; or

c. A modification to the quality of water reaching these wetlands, which could change their natural character.

3. This Program has made specific revisions to the reviewed site plans. These revisions are clearly marked in red on the reviewed plans. Specifically, Sheet 1 from the April 13, 2021 submittal, which depicts the entire property boundary as required by the Rules, has been attached to the plan set. The sheets have been re-numbered sequentially.

4. The long-term operation and maintenance plan shall be strictly followed. The long-term O & M Plan shall be that entitled "City of East Providence, Construction of New Soccer Field and Gravel Parking Lot at Riverside Middle School, Stormwater Operation & Maintenance Plan Overview; Application No. 20-0245. RIPDES Permit # RIR040030, April 2021, Revised November 2021", dated received 11/10/2021.

Please note that this Determination is specific to this proposed project as illustrated on the reviewed site plans, is valid for four (4) years from the date of this letter and does not remove your obligation to obtain any local, state or federal approvals or permits required by ordinance or law.

Kindly be advised that this determination is not equivalent to a determination of the type or extent of freshwater wetlands on the subject property. Should you wish to obtain such verification, you may submit an application in accordance with 250-RICR-150-15-1.

The Program has also reviewed this project in accordance with the standards of the 2020 RIPDES General Permit for Stormwater Discharge Associated with Construction Activity ("CGP"). This determination includes your final authorization to discharge stormwater associated with construction activity under the CGP. For future references and inquiry, your permit authorization number is RIPDES No. RIR102179.

You must notify this Program in writing of the anticipated start date, and of your contractor's contact information, by submitting the Notice of Start of Construction Form prior to commencement of any permitted site alterations or construction activity. You must also notify this Program in writing upon completion of the project, including submittal of the Notice of Termination Form. The Start of Construction Form and the Notice of Termination can be found on the webpage: dem.ri.gov/stormwaterconstruction

Both the owner and the contractor retained to undertake the construction activity are required to comply with all terms and conditions of the CGP. This includes maintaining the Soil Erosion and Sediment Control (SESC) Plan, performing the required inspections and maintenance of the selected Best Management Practices (BMPs), and retaining inspection records. Further information on the requirements of the CGP are available at: http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/pdfs/cgp092620.pdf.

Please be aware that the DEM's Rules and Regulations Governing the Establishment of Various Fees, 250-RICR-30-00-1, require that RIPDES CGP permit holders pay an Annual Fee of $100.00. An invoice will be sent to the owner on record in May/June of each year if the construction was still active as of December 31st of the previous year. The owner will be responsible for the Annual Fee until the construction activity has been completed, the site has been properly stabilized, and a completed Notice of Termination (NOT) has been received by the RIPDES Program. A copy of the NOT can be found attached to the CGP on the web page referenced above.

You are responsible for the proper installation, operation, maintenance, and stability of any mitigative features, facilities, and systems of treatment and control which are installed or used in compliance with this permit to prevent harm to adjacent wetlands until such time that you document that this responsibility has

been assumed by another person or organization. You are also responsible for ensuring that your project complies at all times with the RIPDES CGP.

In authorizing the proposed alterations, the DEM assumes no responsibility for damages resulting from faulty design or construction.

Any modification to your project that would result in an alteration to freshwater wetlands or allowing your project to result in an alteration to freshwater wetlands, requires a permit from this Program. Unauthorized alterations to freshwater wetlands are subject to enforcement action.

Enclosed please find one (1) copy of your site plans stamped REVIEWED by this Program. Please contact Jessica Lord of this Office (telephone: 401-222-6820, ext. 2777416) should you have any questions.

Sincerely,

Nancy L. Freeman

Nancy L. Freeman, Principal Environmental Scientist
Freshwater Wetlands Program
Office of Water Resources
NLF/JAL/jal

Enclosure: Reviewed Site Plan

ec: Neal Personeus, DEM Stormwater Program
Erik Skadberg, P.E., Deputy Director Public Works, City Engineering
Scott Rabideau, Wetland Biologist, Natural Resource Services, Inc.

PROPOSED MULTI-USE ATHLETIC FIELD AND PARKING LOT
RIVERSIDE MIDDLE SCHOOL
SUMMARY OF WORK
SECTION 01010

SECTION 01010

SUMMARY OF WORK

PART 1.00 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The work under this Contract includes, but is not limited to the following:

1. Contractor shall perform design, permit and construction services to provide the City a turn-key natural grass athletic field and pervious pavement parking lot including but not limited to the following:
   - Install/replace and maintain straw waddle for duration of construction activities
   - Install construction entrance
   - Strip, screen and stockpile top soil for re-use on athletic field
   - Strip, screen and stockpile approximately 2 feet in the area of the pervious pavement parking lot, backfill with specified material
   - Mix existing stockpiled loam with sand obtained from the stockpile of material at the Forbes St landfill (adjacent to this site) to meet spec Section 02810.
   - Set all grades and perform rough grading, utility installation, etc.
   - The contractor shall develop a design/permit/build for the irrigation system which will at a minimum consist of an onsite well capable of pumping at a minimum 72 gpm at 90 psi, into the system, control shed, pump, controls, etc in accordance with spec Section 02640.
   - Install electric conduit and pull boxes for future field lighting.
   - Provide design/build services for the goal post foundations as well as the re-used scoreboard including supports (steel I-beams) and concrete foundation.
   - Contractor’s electrician shall wire the scoreboard for use and shall test the scoreboard. Any non-working lights shall be replaced by the City and shall not be part of this contract.
   - Fine grade and rake field and prepare for seeding.
   - Install grass seed in accordance with spec Section 02810 and 02821.
   - Install porous pavement including access drive in accordance with spec Section 02610.

- Install wooden guardrails
  Install 6-foot high chain link fence
- Install sports netting back stop system

- Vacuum new parking lot and stripe parking lot.
- Install walking path approximately 480 feet of 10-foot wide hot mix asphalt from Meadowcrest Drive to existing walking path. All damaged hot mix asphalt paths will be repaved and shall be included in the cost of this contract.

2. The contractor shall apply for and obtain all local building permits and electrical permits. The assessed permit fee shall be for the State ADA fee which is $1/$1000. Local permit fees will be waived. The contractor is responsible for all permits issued by National Grid Electric and their associated fees as well as obtain a utility permit from RIDOT and pay associated fee if applicable for municipal projects.

3. The contractor shall be responsible for the design (plans to be stamped by a RI Professional Engineer) of the scoreboard supports and the foundations for the scoreboard and goal posts.

4. Contractor shall be responsible for the design and installation of the irrigation system including the drilling of the well, pumps, control shed, controllers, heads, wiring, etc. such that the City has a turn key irrigation system capable of providing one-inch of water per week to the field in 8-10 hours of watering per week.

5. Contractor shall be responsible for digging for all electrical conduit and equipment, backfilling with approved material, loam and seed. Digging shall minimize disturbance of driveways, etc.

6. Contractor shall be responsible for all temporary construction fencing to keep the public safe from the work area.

7. Contractor shall install erosion control measures where appropriate.

8. Provide and maintain a safe pedestrian walking path in the general area of the existing walking path if applicable.

9. Perform miscellaneous work and clean up as required to complete the project as listed in these contract documents.

10. Attend weekly project status meetings with City Officials to discuss schedule and quantities.

B. Clean up of the area after construction is considered part of the work covered under the lump sum cost. Unsatisfactory clean up shall be grounds for withholding payment, as directed by the City.

C. Related Requirements Specified Elsewhere:

1. Temporary Facilities and Controls - Section 01500.

D. Contractor's Duties:

1. Except as specifically noted, provide and pay for:

a. Labor (Davis-Bacon wages), materials and equipment

b. Tools, construction equipment and machinery

c. Transportation, supervision and temporary construction

d. Water, heat and utilities required for construction

e. Other facilities and services necessary for proper execution and completion of work

2. CITY is exempt from sales taxes on products permanently incorporated in work.

a. Perform all administrative functions required by law in conjunction with use of the CITY's tax exempt blanket certificate.

b. Pay legally assessed penalties for improper use of exemption certificate.

3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at any time of receipt of bids:

a. National Grid Permits (RICRMC and RIDEM Permits Excluded)

b. Government Fees (local fees will be waived)

c. Licenses

4. Give required notices and provide the CITY with the DIGSAFE number for work under this contract.

5. Comply with Local, State and Federal codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.

6. CONTRACTOR shall be responsible for compliance with all pertinent OSHA regulations.

7. Promptly submit written notice to CITY of observed variance of CONTRACT DOCUMENTS from legal requirements. It is not the CONTRACTOR's responsibility to make certain that drawings and specifications comply with codes and regulations.

   a. Appropriate Modifications to Contract Documents will adjust changes.

   b. CONTRACTOR shall assume responsibility for notifying CITY concerning work known to be contrary to such requirements.

8. Enforce strict discipline and good order among employees. Do not employ on work:

   a. Unfit persons

   b. Persons not skilled in assigned task.

9. No valve or other control on the City’s water system shall be operated for any purpose by the CONTRACTOR. The Water Utility Division (435-7741) will operate all valves, hydrants, blow-offs and curb stops.

10. CONTRACTOR shall lay out all the contract work and be responsible for the accuracy of all lines, grades and measurements. The Contractor shall guarantee no ponding or puddling within the completed work zones.

11. CONTRACTOR is responsible for notifying DIGSAFE (1-888-DIG-SAFE) in accordance with State law prior to commencing any earthwork activities.

12. CONTRACTOR shall be prepared to attend a pre-construction meeting within ten (10) days after date of Notice to Proceed. The agenda of the pre-construction meeting shall include but not be limited to:

   a. Presentation of project construction schedule and work sequencing

   b. Project coordination and designation of responsible personnel

   c. Use of subcontractors

   d. Emergency telephone numbers

   e. Procedures and processing of field decisions, submittals, change orders, applications for payment

f. Construction facilities, controls and equipment storage

g. Safety and traffic issues

h. Place, date and time for regular progress meetings.

13. CONTRACTOR shall be prepared to attend regular scheduled progress meetings. Progress meetings shall be held on weekly basis or as discussed and agreed upon at the pre-construction meeting. The agenda for the progress meetings shall include but not be limited to:

a. Review of work progress since previous meeting

b. Field observations, problems, conflicts

c. Work progress in relation to schedule. Revision of schedule if required

d. Review of quantities for completed work

e. Proposed changes to work, if any

f. Other issues.

1.02 - CONTRACT

A. Construct work under lump sum contract.

B. CONTRACTOR is to begin work within ten (10) days after the date of the NOTICE TO PROCEED and shall complete the work by September 2, 2022. The CITY has the right to extend this schedule as a result of ongoing utility work.

c. The time for completion noted above has been developed on the assumption that work will be completed prior to school beginning on September 6, 2022

1.03 - CONSTRUCTION SCHEDULE AND SEQUENCE OF WORK

A. The CONTRACTOR shall submit to the CITY for approval a detailed work sequence and schedule for the completion of all work associated with this contract. Approval of the work sequence and schedule is required prior to the start of any work associated with this contract. The proposed sequence and schedule must consider and address the safe pedestrian and vehicle passage through the project and vehicle and pedestrian access to the abutting properties and side streets. The CITY reserves the right to adjust the sequence and schedule at any time at no cost to the CITY.

B. Construction by the CONTRACTOR shall be limited to the hours of

7:00 AM to 4:00 PM Monday through Friday. Work after 4:00 PM will only be allowed with prior approval by the Director of Public Works. No work shall take place on Saturdays, Sundays or on the following holidays:

1. Memorial Day (Monday, May 30, 2022)
2. Independence Day (Monday July 4, 2022)
3. Victory Day (Monday, August 8, 2022)
4. Labor Day (Monday, September 5, 2022)
5. Columbus Day (Monday, October 10, 2022)
6. Election Day (Tuesday November 8, 2022)
7. Veterans Day (Friday November 11, 2022)
8. Thanksgiving Day (Thursday, November 24, 2022)

C. CONTRACTOR shall be aware of any CITY, civic or church/funeral events. If a designated street is within the area of an event, work must be scheduled around the event so as not to impede vehicular or pedestrian traffic.

1.04 - CONTRACTOR USE OF PREMISES

A. Confine operations at site to areas permitted by:

1. Law
2. Ordinances
3. Permits
4. Contract Documents

B. Do not unreasonably encumber site with materials or equipment.

C. Assume full responsibility for protection and safekeeping of products stored on premises.

D. Move any stored products which interfere with operations of CITY and other Contractors.

E. Obtain and pay for use of additional storage or work areas needed for operations.

F. Remove all surplus material, temporary structures, and debris resulting from the work and put the site in a neat, orderly condition before final payment.

G. Assume full responsibility to maintain roadway safe for vehicular and pedestrian traffic during construction.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1.00 - GENERAL

1.01 PAYMENT GENERAL

A. Payment of the price set forth in the proposal is deemed to be full compensation for all mobilization and demobilization, materials, labor, tools, equipment and incidentals necessary to perform the work.

B. It is the intention of these specifications and associated contract drawings to call attention to certain project features. Any related miscellaneous or incidental work not specified but obviously necessary to adequately complete the work, shall be included within the LUMP SUM Price.

1.02 LUMP SUM

A. Payment

Payment will be based on percent complete. The lump sum price is based upon the Contactor constructing the Athletic Field and Parking Lot in accordance with the plans, specifications and Section 01010 Summary of Work.

1.03 WORK BEYOND SCOPE OF CONTRACT

A. Measurement and Payment

1. Necessary work outside the scope of this contract shall be undertaken only after submittal and approval of a change order request. Payment for work completed as part of any change order shall conform to the following.

- **LABOR** including foreman, not including superintendent, to include all insurance and fringe benefits such as social security, pension, unemployment, etc.

- **COST OF MATERIALS** entering permanently into the work. All invoices must be submitted to the City.

- **THE RENTAL COSTS** of all construction plant and equipment used in performing this work. Blue Book rates will be used.

- **POWER AND CONSUMABLE SUPPLIES** for the operation of power equipment.

1.04 APPLICATION FOR PAYMENT

A. CONTRACTOR shall submit an Application for Payment for completed work in accordance with Article 8, Payments to Contractor, on a monthly basis.

B. Application for Payment may be submitted using standard AIA Document G702, or other agreed upon format.

C. Application for Payment shall include an itemized breakdown of work completed in tabular form with the following information: Description of Work, Total Cost, Quantity for Payment this Application, Quantity Previously Paid, Quantity to Date, Amount this Application, Amount Previous Application, Amount Paid to Date, Percent Complete.

D. Each Application for Payment shall be accompanied by a Work Summary Sheet detailing quantities installed at each location for the application period.

E. Certified weekly payroll documents shall be included with the payment request.

END OF SECTION

SECTION 01300

SUBMITTALS AND SUBSTITUTIONS

PART 1.00 – GENERAL

1.00 DESCRIPTION

A. Work Included:

1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by the manufacturer's name and catalog number or by the reference to recognized industry standards.

2. To ensure that the specified quality product is furnished and installed in accordance with the design intent, procedures have been established for advance submittal design data and for its review and approval or rejection by the CITY.

B. Related Work Described Elsewhere:

1. Contractual requirements for submittals – General Conditions and Supplementary Conditions.

2. Individual submittals required – Pertinent Sections of these Specifications.

1.02 PRODUCT HANDLING

Make all submittals of schedules, shop drawings, samples, requests for substitutions and other items in strict accordance with the provisions of this Section of these Specifications.

1.03 SHOP DRAWINGS

A. The CONTRACTOR shall furnish four copies of manufacturer's shop drawings, specific design data as required in the detailed Specifications, and technical literature covering all equipment and fabricated materials that are proposed to be furnished under this Contract in sufficient detail to indicate full compliance with the Specifications. Shop drawings shall indicate the method of installing, the exact layout dimensions of the equipment or materials, including the locations, size and details of valves, pipe connections, etc.

B. When submitted for the CITY's review, shop drawings shall bear the CONTRACTOR's certification that he has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

C. The CITY shall promptly review all shop drawings. The CITY's approval of any shop drawing shall not release the CONTRACTOR from responsibility for deviations from the Contract Documents. The approval of any shop drawings which substantially deviates from the requirements of the Contract documents shall be evidenced by Change Order.

D. The CONTRACTOR shall check and verify all field measurements and shall be responsible for the prompt submission of all shop and working drawings so that there shall be no delay in the work.

E. Regardless of corrections made in or approval given to such drawings by the CITY, the CONTRACTOR shall nevertheless be responsible for the accuracy of such drawings and for their conformity to the plans and specifications, unless the CONTRACTOR notifies the CITY in writing of any deviations at the time he furnishes the drawings.

F. Approval by the CITY of any deviation in material, workmanship or equipment proposed subsequent to approval of the shop drawings or design data, shall be requested in writing by the CONTRACTOR.

G. Portions of the work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the CITY. A copy of each approved shop drawing and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the CITY.

1.04 MANUFACTURER'S CERTIFICATIONS

A. For pipe, cement, steel reinforcement, paint and similar materials which are normally tested in the shop by the manufacturer, furnish the CITY certified records of physical, chemical and other pertinent tests and/or certified statements from the manufacturer that the materials have been manufactured and tested in conformity with the specifications. Where such a small quantity of material is required to make physical tests or chemical analyses impractical, a certificate analysis of similar materials which were concurrently produced, may at the discretion of the CITY, be considered as the basis for the acceptance of such materials.

B. Each manufacturer's certificate shall be endorsed or accomplished by the CONTRACTOR's certificate that the material certified by the manufacturer will be the material incorporated into the work.

1.05 SAMPLES

A. The Contractor shall furnish for approval, all samples required or as directed by the CITY. The work shall be in accordance with approved samples.

B. Unless specifically directed by the CITY, all samples shall be the precise article proposed to be furnished.

1.06 SUBSTITUTIONS

A. Whenever a material, article or piece of equipment is identified on the drawings or Specifications by reference to brand name or catalog number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article or piece of equipment of equal number, and if, in the opinion of the CITY, such material, article or piece of equipment is of equal substance and function to that specified, the CITY may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the Contract price and by Contract Documents shall be appropriately modified by the Change Oder. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the Project will result.

B. An Item shall be considered equal to the Item named or described if:

1. It is at least equal in quality, durability, appearance, strength and design.

2. It will perform at least equally the specific function imposed by the general design for the work being contracted for or the material being purchased.

3. It conforms substantially, even with deviations, to the detailed requirements for the Item in the Specifications.

The name and identification of all materials other than one specifically named shall be submitted to the CITY in writing for approval, prior to purchase, use or fabrication of such Items. Subject to the provisions of any applicable laws, approval shall be at the sole discretion of the CITY,

shall be in writing to be effective, and the decision of the City shall be final. The CITY may require tests of all materials so submitted to establish quality standards at the CONTRACTOR's expense.

C. All directions, Specifications and recommendations by manufacturers for installation, handling, storing, adjustment and operation of their equipment shall be complied with; responsibility for proper performance shall continue to rest with the CONTRACTOR.

D. For the use of material other than on specified, the CONTRACTOR shall assume the cost of, and responsibility for, satisfactoryily accomplishing all changes (including engineering costs or redesign by the CITY) in the work as shown. If no manufacturer is named, the CONTRACTOR shall submit the product intended to use for approval by the CITY.

E. Except as otherwise provided for by provisions of any applicable laws, the CONTRACTOR shall not have any right of appeal from the decision of the CITY condemning any materials submitted if the CONTRACTOR fails to obtain approval for substitution under this article. Any additional cost incurred by an approved substitution shall be at the CONTRACTOR's expense.

F. Availability of specified Items. The CONTRACTOR shall:

1. Verify prior to bidding that all specified Items will be available in time for the installation during orderly and timely progress of the work.

2. In the event specified Item or Items will not be available, so notify the City prior to receipt of bids.

1.07 IDENTIFICATION OF SUBMITTALS

A. Completely identify each submittal and resubmittal by showing at least the following information.

1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.

2. Name of project as it appears on each of these Specifications.

3. Drawing number and Specifications Section number to which the submittal applies.

B. Grouping of Submittals:

Unless otherwise specifically permitted by the CITY, make all submittals in groups containing all associated items; The City may reject partial submittals as not complying with the provisions of the Contract Documents.

1.08 TIMING OF SUBMITTLAS

A. General:

Make all submittals far enough in advance of schedule dates of installation to provide required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.

B. Delays:

Costs of delays occasioned by tardiness of submittals may be backcharged as necessary and shall not be borne by the CITY.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Related Work Described Elsewhere:

1. Summary of Work - Section 01010

1.02 TEMPORARY UTILITIES

A. Light, Electricity and Telephone:

Furnish and install all necessary temporary water piping and wiring required to facilitate performance and completion of the work and remove all such temporary piping and wiring upon completion of the work. Pay all costs for providing and removing temporary utilities.

B. Sanitary Facilities:

1. Furnish and install sanitary conveniences for the use of all persons employed on the work, properly screened from public observation. Provide facilities in sufficient numbers in such manner and at such points as shall be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The CONTRACTOR shall vigorously prohibit the committance of nuisances within, on, or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the CITY.

2. The CONTRACTOR shall supply sufficient drinking water from approved sources to all of his employees.

3. The sanitary conveniences specified above shall be the obligation and responsibility of the CONTRACTOR until the completion of the work. The facilities shall be made available to all subcontractors and their employees.

C. Water for Construction Purposes:

1. The express approval of the Water Utilities Superintendent shall be obtained before water is used. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of use. Hydrants shall only be operated under the

supervision of Water Utilities Division personnel.

All water used shall be metered and reported to the CITY for record keeping purposes.

1.03 GUARDRAIL AND BARRICADES

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution and advanced warning signs, lights, and other means to prevent accidents to persons and damage to property. The CONTRACTOR shall, at their own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen.

B. The CONTRACTOR shall take precautions to prevent injury to the public due to construction. All excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.

C. The CONTRACTOR shall not open or excavate any street, way, or public or private place until contact has been made with all utilities to locate any existing underground gas, water, telephone, power or other installations.

D. The CONTRACTOR shall supply orange construction fence around the perimeter of the work area.

1.04 PROTECTION OF WORK AND PROPERTY

A. The CONTRACTOR shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act of, omission, neglect, or misconduct in the execution of the work on the part of the CONTRACTOR, the CONTRACTOR shall restore said damage, at their expense, to a condition similar or equal to that existing before the damage was done and at least meeting the Specifications contained herein.

B. Along the location of this work all fences, mail boxes, walks, bushes, trees, shrubbery and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in their original location. All grass areas beyond the limits of construction which have been damaged by the CONTRACTOR shall be regraded and seeded.

C. The protection, removal and replacement of existing physical features along the line of work shall be a part of the work under the contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the Items in the proposal.

1.05 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The CONTRACTOR shall assume responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to buildings, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's operations shall be repaired by them at their expense.

B. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under this contract and all costs in connection therewith shall be included in the price established in the proposal.

C. The CONTRACTOR, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained and any costs or charges resulting from damage thereto shall be paid for by the CONTRACTOR.

D. If, in the opinion of the CITY, permanent relocation of the utility owned by the CITY is required, the CITY may direct the CONTRACTOR in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work under Article 41 of the General Conditions. If relocation of a privately owned utility is required, the CITY will notify the utility to perform the work as expeditiously as possible. The CONTRACTOR shall fully cooperate with the CITY and utility, and shall have no claim for delay due to such relocation. The CONTRACTOR shall notify public utility companies in writing at least 48 hours (excluding Saturdays, Sundays and legal holidays) before excavating in any public way.

1.06 MAINTENANCE OF FLOW

The CONTRACTOR shall at their own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the CITY well in advance of the interruption of the flow.

1.07 EROSION CONTROL

The CONTRACTOR shall take all necessary precautions to prevent and control erosion and to construct sediment basins, diversion ditches or such other construction to satisfactorily accommodate runoff from any

area subject to erosion during the construction of this project. All such precautionary measures including but not necessarily limited to construction of sediment basins, diversion ditches, catch basin sediment traps/berms, beaches and berms or laying fiber matting on slopes until vegetation is established, shall be at no extra cost to the CITY.

1.08 DUST CONTROL

The CONTRACTOR shall take all necessary precautions at all times to prevent and control dust. In addition, daily dust control shall be performed as directed by the CITY to control dust at the close of workday operations. Specifically, all traveled ways shall be swept thoroughly, and calcium chloride spread to prevent dust from being a nuisance to the general public.

1.09 DETOURS

A. Unless permission to close the street is received in writing from the proper authority, all excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the CONTRACTOR's operations cause traffic hazards, they shall repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the CITY.

B. The local Fire Department and Police Department shall be notified in advance of any and all detours being implemented.

C. Detours around construction shall be subject to the approval of the CITY. Where detours are permitted the CONTRACTOR shall provide all necessary barricades, signs and warning devices as required to divert the flow of traffic. While traffic is detoured the CONTRACTOR shall expedite construction operations and periods when traffic is being detoured shall be strictly controlled by the CITY.

END OF SECTION

SECTION 02100

SITE PREPARATION

PART 1.00 – GENERAL

1.00 DESCRIPTION OF WORK

A. This work shall consist of clearing and grubbing, clean-up, cutting and removing trees and stumps, stripping and stockpiling topsoil, removing and disposing of all vegetation and any other obstructions and undesirable materials within the project site which are not designated or permitted to remain.

1.02 PROTECTION

A. Prior to commencing the work, all areas shown on the plans as existing tree save areas, and new tree line shall be identified, clearly marked and protected until accepted. Storage of building construction items, vehicle parking or access shall be allowed only in areas designated and approved by CITY. Any damaged plant materials resulting from neglect by the CONTRACTOR or their SUBCONTRACTORS shall result in replacement of the damaged material by the CONTRACTOR

B. All other non-tree areas indicated to remain in its natural state shall also be protected by the CONTRACTOR. Any resulting damage due to the CONTRACTOR's neglect shall be restored to the satisfaction of the CITY. If restoration is not satisfactory, then sufficient monies to cover damage shall be withheld from the CONTRACTOR. Felled trees shall be compensated at $150.00 per caliper inch, shrubs shall be at $75 per shrub.

C. CONTRACTOR shall protect treed and environmentally sensitive areas by installing snow fence or any such barriers necessary to protect these areas. Trees to be saved within the work area shall be protected by snow fence installed at the drip line. Snow fence shall be whitewashed for visibility.

1.03 RESTRICTIONS

A. Prior to clearing operation, CONTRACTOR shall clearly and plainly mark on the ground, by use of colored tape, limits of clearing and grubbing, as indicated on plans. No clearing or cutting shall be done prior to such field determination. CONTRACTOR shall relate the tree lines from the horizontal control geometry and other control points as plan referenced. Field staking shall clearly define these limits.

B. When limits of clearing have been physically and clearly marked together with building and roadway centerline stakes, CONTRACTOR shall then notify the CITY for an on-site review of the clearing limits. Failure of the CONTRACTOR to notify the CITY prior to commencing this work shall result in forfeiture of payment for this work.

C. It is the declared and acknowledged intention that other than those areas required for existing and new building and physical structures, roads, walks, parking areas, athletic fields and site grading, the remainder of site shall remain in its natural state.

D. Erosion control devices as herein described shall be located at the limits of the work as plan referenced. Installation shall be complete prior to commencing site clearing, grubbing, or earthwork activities.

1.04 SAFETY

A. All operations required under this Section shall be conducted in a safe manner employing whatever means are necessary to provide safety to all persons on the project site.

PART 2 – PRODUCTS

2.01 JUTE MESH

A. Jute mesh shall be uniform, open plain weave or undyed and unbleached single jute yarn, a minimum of four (4) feet in width plus or minus one (1) inch. There shall be 78 warp ends per width and 41 weft ends per yard. Weight shall average 1.22 pounds per linear yard, plus or minus 5%.

B. Staples shall be made from twelve (12) inch lengths of No. 9 gauge steel wire bent to form a “U” of 1 1/2 to 2 inches in width. Longer staples may be required for loose soils.

2.02 EXCELSIOR BLANKET

A. The excelsior blanket shall consist of a machine produced mat of curled wood excelsior of 80% six (6) inch or longer fiber length, with consistent thickness and the fiber evenly distributed over the entire area of the blanket.

B. The top side of each blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be made smolder resistant without the use of chemical additives.

C. Excelsior blanket shall be furnished in rolls of 48 inches by 180 feet, with a weight of 78 lbs. plus or minus 10%, covering an area of 80 sq. yards per roll.

D. Excelsior blanket to be "Erosion Control Blankets" by American Excelsior Company.

E. Staples shall be made of wire, 0.091 inches in diameter or greater, "U" shaped with legs 6 inches in length and a 1 inch crown. Longer staples may be required for loose soils.

2.03 HAY AND STRAW MULCH

A. Hay and straw for mulch shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woody stems and shall be reasonably dry. No salt hay shall be used.

B. This mulch shall be used to stabilize slopes and assist in maintaining soil temperature during seed germination.

C. Straw or hay mulch must be anchored immediately after spreading to prevent wind blowing. The following methods of anchoring straw or hay may be used.

1. Snow Fence: Standard snow fence, 48-inches in height, channel steel posts, with whitewashed sections (40 square feet in area) at least every ten (10) feet. Set snow fence around trees to be saved at the limit of the branches. Fencing shall be maintained throughout the duration of the construction activities.

a. Liquid mulch binders: Application of liquid mulch binders and tackifiers should be heaviest at edges of areas and at crests of ridges and banks to prevent wind blowing. The remainder of the area should have binder applied uniformly. Binders may be applied after mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. Applying straw and binder together is the most effective method.

b. Chemical binders such as petroset, terratack, hydro mulch and aerospray may be used as recommended by the manufacturer to anchor mulch.

2. NETTING

a. Plastic erosion control type netting to hold mulch in place as manufactured by Conwed. Netting shall be a polypropylene, extruded, oriented, plastic net. Netting shall have a square mesh opening of approximately ¾ inch x ¾ inch and have a strand count of approximately 1.375 x 1.3 strands per inch. It shall have a weight of 2.875 (plus or minus 3/8 lb.) per 1000 square feet.

2.04 BALED HAY

A. Hay shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woodsy stems and shall be reasonably dry. No salt hay shall be used.

B. Hay bales shall be approximately 36-inches long X 18-inches wide X 24-inches high.

C. Hay bales shall be anchored with 2-inch x 2-inch x 3-foot long wooden stakes.

2.05 SILT FENCE

A. Silt fence shall be Propex Silt Stop manufactured by Amoco Fabrics Company, Mirafi Envirofence or approved equal.

2.06 TEMPORARY SLOPE SEED MIX FOR STABILIZATION OVER WINTER

A.

Common Name	Proportion By Weight	% Purity	% Germination
1.Red Fescue, Creeping or Pennlawn	70	98	90
2. Perennial Ryegrass	15	95	90
3. Colonial Bentgrass Or Astoria	15	98	85

PART 3 – EXECUTION

3.01 CLEARING

A. Clearing shall consist of felling and cutting up or trimming of trees, and satisfactory disposal of trees together with downed timber, snags, brush, shrubs, fences, logs, rubbish, rock walls or other debris occurring within areas indicated on the plans as new construction.

B. Trunks of trees at the top of slopes, where rounding of slopes occur to meet existing ground and tree line, shall be cut off flush with or below the final slope line.

3.02 GRUBBING

A. Grubbing shall consist of removal and satisfactory disposal of stumps and buried roots larger than 1 ½ -inch diameter, to a depth of 18-inches below surface of original ground, except stumps within proposed structural foundation areas shall be entirely removed.

B. Areas to be grubbed shall be as follows:

1. New paved areas where depth of fill is less than 3-feet, measured from the subgrade to original ground surface.

2. In cut areas for the entire width of cut.

3. In non-paved areas required to be filled, if depth of fill is less than 2-feet.

4. No grubbing shall be required in areas where the height between subgrade and original ground surface exceeds 3 feet. The remaining stumps may be left, provided they do no extend more than 6-inches above the ground surface.

3.03 DISPOSAL OF CLEARED AND GRUBBED MATERIALS

A. The CONTRACTOR shall be responsible for the removal and disposal of trees, brush, stumps, shrubs and other perishable material removed under this section.

B. No burning of trees, brush, shrubs or perishable material will be allowed on project site. The CONTRACTOR will not be allowed to haul trees, brush, shrubs or perishable material from the project for the purpose of burning.

C. Stumps, roots and perishable materials shall be removed by the CONTRACTOR from the project site prior to Earthwork operations.

3.04 STRIPPING

A. The CONTRACTOR shall remove to the extent necessary to complete all work satisfactorily, transport and store all suitable topsoil for use as loam.

B. Stored area may be on site or off site. If no storage areas are indicated on plans, then CONTRACTOR shall make provisions to store topsoil elsewhere for use on the project.

C. All stripped topsoil shall remain the property of the City (unless otherwise stipulated in writing) and no material shall be hauled off-site until CITY is notified. Failure of the CONTRACTOR to notify the CITY prior to hauling any topsoil off site shall result in forfeiture of payment for this work.

D. Stripped topsoil shall be obtained from open fields or grassed areas containing organic material suitable for loaming operations. The depth of stripping shall vary based on subsurface information provided elsewhere in these specifications and actual site conditions. In any event, soils shall be removed to the minimum depth of topsoil. Mixing of subsoils shall be accepted. The depth of soil removal shall be verified in the field, All stripped topsoil shall be screened and tested for suitability for use under lawns and adjusted as required.

E. Any stripped topsoil not required for this project shall remain the property of the CITY unless the CONTRACTOR is directed to remove surplus topsoil from site, which they shall do at no additional expense to the CITY.

3.05 HAY BALES/STRAW WATTLE

A. CONTRACTOR shall furnish, place, secure (with stakes) and maintain hay bales at locations indicated on the plans or directed by the CITY.

B. Unless directed otherwise, hay bales shall be placed at the following locations.

1. Around catch basins in future paved areas.

2. At the down slope side of any earthwork.

C. Hay bales will remain around catch basins until paving occurs. At all other locations, hay bales shall remain and be maintained until directed to do otherwise by the CITY.

3.06 SILT FENCE

A. Unless directed otherwise, silt fences shall be placed at the following locations:

1. Around drainage structures.

2. At culvert and/or headwall ends of drainage pipe inlets and outfalls where concentration of flow will cross raw earth.

3. Along top and toe of slopes.

4. As required to control siltation and erosion during the course of the work.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1.00 GENERAL

1.01 DESCRIPTION OF WORK

A. Work under this section includes, but is not necessarily limited to, the following:

1. Excavating and trenching.

2. Filling, backfilling, and compacting fill conforming to these specifications where applicable.

3. Rough grading to required tolerances.

4. Filling, as directed, excess cut under footings, foundations, and trenches.

5. The placing of earth for forming and shaping of embankments.

6. Sheeting and shoring where required and/or necessary.

7. Maintaining bench marks, monuments, and other reference points. Obtaining accurate placement of final grade. Replacement of any disturbed or destroyed site elements that must be removed due to the nature of the work, furnishing certification by a professional surveyor that all disturbed items have been accurately relocated.

8. Written notice of readiness of footing excavations, fill materials, fill areas, compacted fills, and items requiring review and/or inspection by the CITY.

9. Maintaining excavation and trenches free of water.

10. Excavating, stock piling and placing material suitable for filling and backfilling.

11. Removing from site all debris, unsuitable material and excess excavated material as specified and/or as directed by CITY.

12. Restoration to original grades and condition, properties damaged by any activity related to the work, taking adequate precautions to avoid settlement or cave-in of properties higher than site, silting, erosion, or other damage to properties lower than site.

13. Installing temporary barriers to deter unauthorized access to areas of excavation or other such work which could be hazardous for the duration of the contract.

PART 2.00 PRODUCTS

2.01 MATERIALS

A. Fill materials shall be reviewed, and shall conform to the following unless specifically indicated otherwise:

1. Fill, unless otherwise specified, shall be earth free of debris, cinders, combustibles, frost, ice, roots, sod, wood, cellulose, and organic materials. Up to 30 percent of fill material may be rock-like materials not more than 10" in length, evenly distributed in fill, eighteen (18) inches below finished grade.

2. Upper 18 inches of fills under topsoil of lawn and planted areas shall be earth free of debris, cinders, frost, ice, sod, wood and roots of 1/4" in diameter. Up to ten (10) percent of fill materials may be rock-like materials not to exceed 4" in length.

3. Selected backfill shall be excavated materials, free-draining, clean, granular soil suitable for backfill. It shall not be frozen and shall be free from peat, vegetable or organic matter and any other debris and shall be readily compactible.

4. Bank run gravel shall be of a granular nature, the major portion of which may be sand, gravel, and other stone. It shall not be frozen and shall be free from peat, vegetable or organic matter and any other debris and shall be readily compactible. See trench backfill section for size requirements.

5. Fill under foundations and below bottom of concrete floors shall be clean, granular fill from stockpile or from off-site borrow area and shall consist of bank-run sandy gravel or gravely sand free of roots, sod, rubbish or other deleterious organic matter, fine silt, or clay.

B. Crushed gravel base shall conform to the following gradation requirements:

SIEVE SIZE	PERCENT FINER BY WEIGHT
1½"	100
½"	50 - 85

3/8”	45 - 80
No. 4	40 - 70
No. 40	0 - 45
No. 200	0 - 10

Crushed stone shall conform to the following gradation requirements:

SIEVE SIZE	PERCENT FINER BY WEIGHT
2 ¼"	100
2"	90 - 100
1 ½"	30 - 55
1 ¼"	0 - 25
1"	0 - 5

C. Grain-size distribution curve shall be furnished to CITY by a soil test lab Engineer for all materials supplied on this project.

D. Areas from which fill material is obtained shall have been completely stripped of topsoil and underlying sandy silt material. No fill shall be brought to site or purchased until such material has been reviewed by CITY. Fill shall conform in quality to sample as provided by the CONTRACTOR which conforms to the gradation requirements set forth herein. Sample materials shall be submitted for review by CITY and maintained as representative for contract duration.

E. Fill, outside of building toe of slope, shall be earth free of debris, cinders, combustibles, frost, ice, wood, roots, cellulose, and organic materials. Up to 40 percent of fill material may be rock-like materials not to exceed 0.02 cubic foot in volume, nor more than 3" in length.

F. Class C bedding shall be screened, crushed stone meeting the requirements of ASTM Designation C 33-71A, Gradation 67.

PART 3.00 EXECUTION

3.01 GENERAL EXCAVATION REQUIREMENTS

A. Where used herein "finished grade" refers to final grade at elevation indicated. Spot elevations govern contour elevations. Subgrade under lawn areas shall be maintained at 6" lower than "finished grade", unless indicated otherwise.

B. The extent of excavation open at any one time shall be controlled by the conditions, but shall always be confined to the limits prescribed by the CITY.

C. At least one lane of traffic shall be open at all times. The CONTRACTOR shall take the necessary care in the placement of excavated materials so as not to block the passage of vehicles or pedestrians where access maintenance is required.

D. No excavated material shall be placed on lawns, driveways or other private property. All disturbed areas shall be restored to conditions as described herein at no additional cost to the CITY.

E. The CONTRACTOR shall take all necessary measures to protect trees not to be removed from the site of the work against damage from machinery and from excavated material. Branches and roots shall not be cut unless permitted by the CITY.

F. Trees, cultivated plants, shrubs and hedges which might be damaged by the CONTRACTOR's operations shall be protected or shall be transplanted, maintained, watered, and replanted. Trees to be saved shall be protected by the installation of 2 x 4's wrapped around the trunk to a height of at least six (6) feet with approximately 6-inch to 8-inch spacing, depending on trunk diameter and a snow fence installed at the drip line. If such trees, plants, shrubs or hedges are damaged to the degree that their growth or beauty is affected, they shall be replaced by the CONTRACTOR at their own expense. All surfaces which have been damaged by the CONTRACTOR's operations shall be restored to a condition at least equal to that in which they were found just prior to the start of construction.

Damaged trees shall be replaced at a cost of <u>One Hundred Dollars</u> ($100.00) per caliper inch and maintained as specified herein.

G. The restoration of existing property shall be done as promptly as practicable and not left to the end of the construction work.

H. All existing pipes, poles, wires, curbing, property line markers, fences, walls, or other structures which, in the opinion of the CITY, must be preserved in place without relocation, shall be carefully supported and protected by the CONTRACTOR. In the event of damage, they shall be restored to their original condition by the CONTRACTOR at their own expense.

I. The CONTRACTOR shall note that the proposed structures and/or the line of the sewers cross existing utilities in certain locations. These have been shown based on best available information, but not guaranteed as to completeness or accuracy. Notify DIGSAFE <u>before</u> starting earthwork.

J. As excavation approaches existing utilities or other underground structures, digging with machinery shall cease and the excavation shall be done manually, as directed.

K. Excavation and backfill operations adjacent to existing utilities, structures, and construction shall be done in such a

manner as will prevent the loss of ground or caving in of excavation, the undermining, damage or disturbing of existing pipelines, utilities and structures or any completed construction of the project.

Backfill shall be placed, compacted, and done in such a manner as to prevent future settlement and damage to the existing pipelines, utilities, structures, or construction. Existing pipelines, utilities, structures, new construction, or property damaged due to excavation, backfilling and settlement of the backfill, shall be the responsibility of the CONTRACTOR, and shall be corrected in a manner satisfactory to the CITY, at no additional expense to the CITY.

L. Unsuitable excavated material shall systematically be separated and removed from suitable material to the satisfaction of the CITY.

M. Unsuitable material shall be disposed of properly by the CONTRACTOR at no additional cost to the CITY.

N. Surplus suitable material shall be the property of the CITY and stored on site as directed, or at the CITY's request, this material shall be removed from the site by the CONTRACTOR at no additional cost to the CITY.

O. Boulders over 16" in length, if encountered, shall be removed from subgrade of cut areas.

P. Remove obstructions to depth of 6" below new construction and 8" below subgrade in other areas.

Q. Support banks of excavations, where necessary, to protect persons and property, using suitable combinations of shoring, sheet piling, bracing or other methods.

R. If excavation goes beyond lines shown in details, CONTRACTOR shall use backfill conforming to materials specified herein and shall compact backfill to 95% or as otherwise directed by the CITY.

S. Excavations shall be carried to design depths.

T. If excavation is carried beyond line or below grade, except as directed, or subgrade is made unsatisfactory by act or neglect of CONTRACTOR, they shall remove such unsatisfactory material. No extra payment will be made for replacement with satisfactory fill, or additional concrete, or other method as directed.

U. CONTRACTOR shall provide adequate dust control during earthwork operations. Public ways shall be cleaned daily if required by intensity of the work, traffic, and weather.

V. CONTRACTOR shall provide and maintain temporary barricades and traffic controls as required.

W. Contractor shall install and maintain all erosion control measures in accordance with the Rhode Island erosion control manual.

3.02 CUTTING PAVEMENT

A. Excavations made on pavement shall be made in a careful manner so as to cause the least amount of damage to the pavement. Roadway pavement in state highways, local roads, sidewalks, and easement having Class 1 and Class 2 bituminous concrete pavement shall be saw cut prior to trench excavation. Pavement and/or cement concrete will be cut six (6) inches either side of the maximum allowable trench width. Any damage to the cut line due to the excavations, backfilling, or removal of temporary pavement shall be recut to neat lines at no additional cost to the CITY prior to replacement of the specified finished pavement. The width of pavement removed shall be kept as narrow as practicable. Existing pavement and base course disturbed or damaged beyond the pavement lines indicated shall be replaced by the CONTRACTOR to match existing pavement and base course, at no additional cost to the CITY.

B. CONTRACTOR shall remove and dispose of existing bituminous concrete pavement as is necessary to perform work of this contract as indicated.

C. CONTRACTOR shall saw cut, remove and dispose of concrete and bituminous pavement as is necessary to perform the work of this contract. Removal of concrete and bituminous walks shall be performed in a neat manner at the nearest joint of the remaining walk pavement.

D. Excavated pavement shall not be mixed with other excavated material which is to be used as backfill, and shall be removed immediately from the site of the work. This pavement may be reused as backfill so long as it is cold processed to a maximum dimension of two inches in any dimension and depth of processing is two to three times the depth of the existing bituminous concrete pavement and mixed to a homogeneous gradation.

3.03 ROCK EXCAVATION AND DISPOSAL

A. Rock excavation shall mean removal and disposal of rock material as directed by CITY.

B. It is not anticipated that rock shall be encountered. However, CONTRACTOR shall be paid for all rock encountered based on unit

prices and items of rock (open/trench) stated elsewhere in this specification.

C. All rock removal shall be in conformance with local and state authorities having jurisdiction over this work.

D. Definition of "rock excavation" shall mean:

1. Materials that cannot be removed without systematic drilling and blasting, such as rock material in ledges, or aggregate conglomerate deposits so firmly cemented as to possess the physical characteristics of solid rock.

2. Concrete or masonry structures larger than one (1) cubic yard in volume, and not less than thirteen (13) inches in least dimension.

3. Reinforced concrete larger than one (1) cubic yard in volume, with steel reinforcement.

4. Boulders one (1) cubic yard or more in volume, sound rock material in ledges, bedded deposits and unstratified masses which cannot be removed without blasting.

E. When, during excavation, material is encountered that CONTRACTOR may classify as rock excavation, such material shall be uncovered and CITY notified by CONTRACTOR. CONTRACTOR shall **not** proceed with excavation of this material until CITY has classified material as earth excavation or rock excavation. Failure on part of CONTRACTOR to uncover such material and notify CITY will cause forfeiture of CONTRACTOR's right of claim for payment of rock excavation.

F. Blasted rock shall be removed from the site of the work and deposited in such areas as directed by the CITY or at locations selected by the CONTRACTOR with approval of the CITY.

G. Soft or disintegrated rock or hardpan which can be removed with a hand pick or power operated excavating machines, or loose, previously blasted rock, will not be considered as rock excavation.

H. Before blasting commences, the CONTRACTOR shall uncover all ledge to be removed. Elevations shall be taken by the CITY Engineering Division. After completing rock removal, elevations shall be taken again by the surveyor. Amounts of ledge removed will be agreed to by CONTRACTOR and CITY.

I. CONTRACTOR shall develop cross sections to show and determine rock quantities for payment purposes. Cross sections shall be reviewed by the CITY.

J. Prior to blasting, the CONTRACTOR shall obtain written permission and approval of method from local or other authorities having jurisdiction before proceeding with the work. Explosives shall be

stored, handled and employed in accordance with state and local regulations or, in the absence of such, in accordance with the provisions of the Manual of Accident Prevention in Construction of the Associated General CONTRACTORS of America, Inc. In general, no blasting will be allowed within 100 feet of new construction or, in trenches, within 25 feet of laid utility piping. All blasting shall be well covered with heavy mats or timers chained together and the CONTRACTOR shall take great care to do no damage to existing buildings, foundations, and glazed areas. Any damage caused by the work of the CONTRACTOR shall be repaired to the full satisfaction of the CITY.

K. Wherever rock is shattered below grade and is unfit for foundations, the shattered rock shall be removed and replaced as specified. No extra payment will be made for overbreak or backfill as required.

3.04 STRUCTURE FILL, BACKFILL AND COMPACTED FILL

A. Fill, backfill and compact fills as necessary to complete the work, with suitable power equipment in accordance with the following, unless specifically indicated otherwise:

B. Do not start work until fill material, fill areas, and equipment to be used in performing the work have been reviewed by the CITY and foreign materials have been removed.

C. Loosen existing soil for a depth of 2" just prior to filling.

D. Surfaces of new subgrades shall be left clean.

E. Prior to placing fill, existing surface (subgrade) shall have been prepared as specified. When at proper moisture content, surface shall be compacted by rubber-tired roller compactor or drum type vibrator. Maximum thickness of layers measured before compaction shall be 8" for 10 wheel truck or rubber-tired roller compactor and 8" for drum type vibrator, or as otherwise specified. No fill material shall be placed on frozen soil, nor shall snow, ice or frozen earth be brought in as fill. Fill material shall not be placed on material which has been affected by frost or moisture.

F. No fill materials shall be placed and spread in area within which roller or 10 wheel truck is being operated for compaction. In large areas, fill material shall be placed and spread in layers prior to compaction which will permit orderly pattern for operating compaction equipment. Except as otherwise provided, surface of fill in reach being constructed shall be maintained approximately level.

G. Placement of fill shall be done in a manner to prevent contamination of selected granular fill by less suitable material being hauled by, or placed adjacent to, building area.

H. Acceptable on-site material and/or off-site borrow shall be placed in successive, even, horizontal layers to a depth no greater than 8" loose measure for fills within the building areas. Stones larger than 4" shall be removed prior to compaction of each lift. Areas around foundations, walls, or other restrictions which are inaccessible to roller-compactors, shall have granular fill placed in layers to a depth not than 6". Stones larger than 3" shall be removed prior to compaction.

I. After each layer of fill has been spread, cleared of large stones, and inspected, lift shall be compacted by not less than 4 complete coverages with specified roller, to percent maximum dry density specified, as determined by laboratory tests in accordance with ASTM D 698-66, and field tests in accordance with ASTM D 1556-64.

1. Fill under structure foundations, 95 percent.

2. Fill under lawn and planted areas, 90 percent.

3. Fills under surfaced areas: Floors, areaways, gutter curbs, parking areas, walls, walks, terraces, steps, etc., 95 percent.

4. Top 2' of fill under parking lots and roadways, 95 percent.

5. Fills and backfills within 4' from outside of walls and fills not otherwise specified, 90 percent.

6. In confined areas around piers, support posts and adjacent to building foundation walls, where fill cannot be compacted by equipment described above, compaction shall be performed by hand-operated power driven vibratory plate compactors of acceptable type, upon material spread in 8" layers as described above. Compaction shall attain the same relative density of 95 percent, as specified.

7. Backfill or fill around pipes using hand tools to a point of 12" above pipe. Compact remainder of such fills using small tools such as power-driven tampers and vibrators, to suit fill materials.

8. Keep power-driven, rider-operated spreading, compacting and other heavy equipment away from damaging in place structures, utilize temporary protection as required. Damaged structures, supports or other site improvements shall be reviewed by CITY, and manufacturer's representative. If warranties from manufacturer cannot be maintained due to damages sustained, the CONTRACTOR shall replace damaged material with new at no extra cost to the CITY.

9. Where fill is placed around, or on, two sides of any structure, carry it up evenly. Avoid displacement or other damage to such structure.

3.05 COMPACTION EQUIPMENT

A. CONTRACTOR shall use, for compaction of subgrade and fill in designated areas, equipment at number of coverages stipulated depending upon suitability of equipment for the work, as follows:

1. Rubber-tired roller-compactor, having 4 wheels equipped with pneumatic tires of such size and ply as can be maintained at pressures between 80 and 100 psi with 25,000 lb. wheel load during rolling operation.

Roller-wheels shall be located abreast, and so designed that each wheel will carry approximately equal load in traversing over even ground. Spacing of wheels shall be such that distance between nearest edges of adjacent tires will not be greater than one-half width of one tire at operating pressure for 25,000 lb. wheel load.

Roller shall have body suitable for ballast loading such that load per wheel may be varied, if so directed, between 10,000 lb. and 25,000 lb. roller shall be towed at speeds not exceeding 20 miles per hour.

2. Acceptable drum type vibratory compactor operating at not less than 2,000 vibrations per minute.

B. In any event, regardless of equipment used, compaction of soil shall meet the relative densities stated in this sections.

3.06 PROJECT CONDITIONS

A. "Dig-Safe" Damage Prevention System: All Contractors or Subcontractors performing drilling, boring, augering, jetting, sheeting or pile installation, demolition, excavation or like work shall, prior to commencement of these activities, contact utility companies having responsibility for underground transmission systems for information relative to locations of existing underground utilities and/or appropriate dig-safe damage prevention and notification agency.

B. "OSHA" requirements shall be met and adequate protection measures shall be provided to protect workers and pedestrians passing by the site. Streets adjacent to the property shall be fully protected throughout the operations.

C. Shoring, sheeting, and bracing and/or prefabricated trenching boxes shall be provided to prevent caving, erosion or gullying sides of excavation.

D. Provide for surface drainage and erosion control during the period of construction in a manner to avoid creating a nuisance to adjacent areas. Keep all excavations free of water during the entire progress of the work, regardless of the cause, source or nature of the water.

END OF SECTION

PART 1 GENERAL

1.1 Description

A. This specification is intended to be used for porous asphalt pavement in parking lot applications. Stormwater management functions of porous asphalt installations include water quality treatment, peak flow reduction, storm volume reduction via groundwater recharge, and increased hydrograph time lag. This specification is intended for cold climates application based on the field experience at the UNHSC porous asphalt parking lot located in Durham, NH.

B. The work of this Section includes subgrade preparation, installation of the underlying porous media beds, and porous asphalt mix (mix) design, production and installation. Porous media beds refer to the material layers underlying the porous asphalt pavement. Porous asphalt pavement refers to the compacted mix of modified asphalt, aggregate, and additives.

C. The porous asphalt pavement specified herein is modified after the National Asphalt Pavement Association (NAPA) specification outlined in Design, Construction, and Maintenance Guide for Porous Asphalt Pavements, Information Series 131 (2003) and Design, Construction, and Maintenance of Open-Graded Friction Courses, Information Series 115 (2002).

D. Alternative specifications for mix, such as Open Graded Friction Courses (OGFC) from Federal Agencies or state Departments of Transportation (DOT), may be used if approved by the Engineer. The primary requirements for the specifications of the mix are performance grade (PG) asphalt binder, binder content, binder draindown, aggregate gradation, air void content, and retained tensile strength (TSR).

1.2 SUBMITTALS

A. Submit a list of materials proposed for work under this Section including the name and address of the materials producers and the locations from which the materials are to be obtained.

B. Submit certificates, signed by the materials producers and the relevant subcontractors, stating that materials meet or exceed the specified requirements, for review and approval by the Engineer.

C. Submit samples of materials for review and approval by the Engineer. For mix materials, samples may be submitted only to the QA inspector with the Engineer’s approval.

D. Submittal requirements for samples and certificates are summarized in 1.3 QC/QA Table 1 and discussed in further detail in the Materials section.

1.3 QC/QA

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

B. Codes and Standards - All materials, methods of construction and workmanship shall conform to applicable requirements of AASHTO ASTM Standards, NHDOT Standard

Specifications for Road and Bridge Construction, latest revised (including supplements and updates), or other standards as specified.

C. QC/QA requirements for production of mix are discussed in the Materials section, and for construction of the porous media beds and paving in the Execution section.

Table 1. Submittal requirements.

Material or Pavement Course*	Properties to be reported on Certificate**
choker course, reservoir course	gradation, max. wash loss, min. durability index, max. abrasion loss, air voids (reservoir course)
filter course	gradation, permeability/ sat. hydraulic conductivity
filter blanket	gradation
geotextile filter fabric	manufacturer's certification, AOS/EOS, tensile strength
striping paint	certificate
binder	PGAB certification
coarse aggregate	gradation, wear, fracture faces (fractured and elongated)
fine aggregate	gradation,

* Samples of each material shall be submitted to the Engineer (or QA inspector for mix). These samples must be in sufficient volume to perform the standardized tests for each material.
** At a minimum, more material properties may be required (refer to Materials Section).

1.4 PROJECT CONDITIONS

A. Site Assessment should be performed per the steps outlined in IS 131 (NAPA, 2003).

B. Construction Phasing should be performed as outlined in IS 131 (NAPA, 2003).

C. Protection of Existing Improvements

1. Protect adjacent work from the unintended dispersal/splashing of pavement materials. Remove all stains from exposed surfaces of pavement, structures, and grounds. Remove all waste and spillage. If necessary, limit access to adjacent work/structures with appropriate signage and/or barriers.

2. Proper erosion and sediment control practices shall be provided in accordance with existing regulations. Do not damage or disturb existing improvements or vegetation. Provide suitable protection where required before starting work and maintain protection throughout the course of the work. This includes the regular, appropriate inspection and maintenance of the erosion and sediment control measures.

3. Restore damaged areas, including existing pavement on or adjacent to the site that has been damaged as a result of construction work, to their original condition or repair as directed to the satisfaction of the Engineer at no additional cost.

D. Safety and Traffic Control

1. Notify and cooperate with local authorities and other organizations having jurisdiction when construction work will interfere with existing roads and traffic.

2. Provide temporary barriers, signs, warning lights, flaggers, and other

protections as required to assure the safety of persons and vehicles around and within the construction area and to organize the smooth flow of traffic.

E. Weather Limitations

1. Porous asphalt, open graded friction course, or dense-mixed asphalt shall not be placed between November 15 and March 15, or when the ambient air temperature at the pavement site in the shade away from artificial heat is below 16 °C (60 °F) or when the actual ground temperature is below 10 °C (50 °F). Only the Engineer may adjust the air temperature requirement or extend the dates of the pavement season.

2. The Contractor shall not pave on days when rain is forecast for the day, unless a change in the weather results in favorable conditions as determined by the Engineer.

1.5 REFERENCES

A. General Porous Asphalt Bituminous Paving and Groundwater Infiltration Beds, specification by UNH Stormwater Center, February, 2005.

B. Design, Construction, and Maintenance Guide for Porous Asphalt Pavements, Information Series 131, National Asphalt Pavement Association (NAPA), 2003.

C. Design, Construction, and Maintenance of Open-Graded Friction Courses, Information Series 115, NAPA, 2002.

D. Annual Book of ASTM Standards, American Society for Testing and Materials, Philadelphia, PA, 1997 or latest edition.

E. Standards of the American Association of State Highway and Transportation Officials (AASHTO), 1998 or latest edition.

F. Section 401- Plant Mix Pavements – General, in Standard Specifications for Road and Bridge Construction – State of New Hampshire Department of Transportation, 2006.

G. Section 02725 - General Porous Pavement and Groundwater Infiltration Beds, specification from NAPA Porous Asphalt Seminar handout, Cahill Associates, Inc., 2004.

H. Correlations of Permeability and Grain Size, Russell G. Shepherd, Groundwater 27 (5), 1989. Porous Asphalt Pavement and Infiltration Beds Design Specifications Page-8 University of New Hampshire Stormwater Center –October 2009

I. Groundwater, R. Allan Freeze and John A. Cherry, 1979. PART 2 PRODUCTS

PART 2 PRODUCTS

2.1 MATERIALS

A. Porous Media Infiltration Beds

Below the porous asphalt itself are located the porous media infiltration beds (See Detail Sheet), from top to bottom: a 8 " thick layer of choker course of crushed stone (8" is preferable to alleviate compaction issues with the porous asphalt); an 18" thick layer of filter course of poorly graded sand (a.k.a. bankrun gravel or modified 304.1); 3" thickness filter blanket that is an intermediate setting bed (pea gravel). The fine gradation of the filter course is for enhanced

filtration and delayed infiltration. The filter blanket is placed to prevent downward migration of filter course material.

1. Choker Course

Material for the choker course and reservoir course shall meet the following:

Maximum Wash Loss of 0.5%

Minimum Durability Index of 35

Maximum Abrasion Loss of 10% for 100 revolutions, and maximum of 50% for 500 revolutions.

Material for the choker course and reservoir course shall have the AASHTO No. 57 and AASHTO No. 3 gradations, respectively, as specified in Table 2. If the AASHTO No. 3 gradation cannot be met, AASHTO No. 5 is acceptable with approval of the Engineer. AASHTO no. 3 is also suitable for the choker course.

2. Filter course material

Filter course material shall have a hydraulic conductivity (also referred to as coefficient of permeability) of 10 to 60 ft/day at 95% standard proctor compaction unless otherwise approved by the Engineer. Great care needs to be used to not over compact materials. Overcompaction results with loss of infiltration capacity. The filter course material is commonly referred to as a bankrun gravel (modified NHDOT 304.1). In order to select an appropriate gradation, coefficient of permeability may be estimated through an equation that relates gradation to permeability, such as described in Correlations of Permeability and Grain Size (Shepherd, 1989) or in Section 8.7 Estimation of Saturated Hydraulic Conductivity (Freeze and Cherry, 1979). The hydraulic conductivity should be determined by ASTM D2434 and reported to the Engineer.

3. Filter blanket material

Filter blanket material between the filter course and the reservoir course shall be an intermediate size between the finer filter course above, and the coarser reservoir course below, for the purpose of preventing the migration of a fine setting bed into the coarser reservoir material. An acceptable gradation shall be calculated based on selected gradations of the filter course and reservoir course using criteria outlined in the HEC 11 (Brown and Clyde, 1989). A pea-gravel with a median particle diameter of 3/8" (9.5 mm) is commonplace.

4. Reservoir Coarse (N/A) Storage within the Choker, filter and filter blanket material.

Example: If the 100-year storm is 8.7" of rainfall depth, and the reservoir void space is 30%, then the minimum subbase thickness = 8.7"/0.3 = 29".

Pavement system and subbase thickness are > 0.65 * design frost depth for area.

Example: East Providence, 40" = Dmaximum frost, therefore the minimum depth to the bottom of the subbase = 0.65(40") = 26".

B. 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 5

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 can 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. PG 64-28 with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for smaller projects with lower traffic counts or loading potential. This mix is manageable at common batch plants.

b. Pre-Blended PG 64-28 SBS with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for large projects > 1acre where high durability pavements are needed. 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 64-28 SBS. A copy of the BOL will be furnished to the QA inspector at the Plant.

c. Post-Blended PG 64-28 SBR with 5 pounds of fibers per ton of asphalt mix. This mix is recommended for projects where high durability pavements are needed. The SBR will be supplied by a HMA plant approved to perform in-line blending or blending by injection into the pugmill. A Post-Blended SBR Binder

Quality Control Plan (Table 4) will be submitted to the Engineer for approval at least 10 working days prior to production.

d. Pre-Blended PG 76-22 modified with SBS and 5 pounds of fibers per ton of asphalt mix. 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 76-22 SBS. A copy of the BOL will be furnished to the QA inspector at the Plant.

e. Post-Blended PG 76-22 modified with SBR and 5 pounds of fibers per ton of asphalt mix. This mix is recommended for large sites anticipating high wheel load (H-20) and traffic counts for maximum durability. The SBR will be supplied by a HMA plant approved to perform in-line blending or blending by injection into the pugmill. A Post-Blended SBR Binder Quality Control Plan (Table 4) will be submitted to the Engineer for approval at least 10 working days prior to production.

f. 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.

Post-Blended SBR Binder QC Plan requirements.

The QC Plan will contain:

1. Company name and address
2. Plant location and address
3. Type of Facility
4. Contact information for the Quality Control Plan Administrator
5. QC Tests to be performed on each PGAB
6. Name(s) of QC Testing Lab to perform QC and Process Control testing.
7. Actions to be taken for PG Binders and SBR in Non compliance
8. List of mechanical controls (requirements below)
9. List of process controls and documentation (requirements below)

List of Mechanical Controls

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
2. Provide means of calibrating the liquid SBR metering system to a delivery tolerance of 1%.
3. A batching tolerance at the end of each day’s production must be within 0.5% of the amount of SBR solids specified.
4. Mag-flow meter (other metering system may be considered)

5. Method of sampling liquid SBR

List of Process Controls and Documentation
1. Printouts of liquid SBR and PG binder quantities must be synchronized within one minute of each other
2. SBR supplier certification showing the percent of SBR solids in liquid SBR
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.
4. MSDS sheet for liquid SBR
5. Handling, storage, and usage requirements will be followed as required by the liquid SBR manufacturer
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.
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.
8. Method and Frequency of testing at the HMA plant, including initial testing and specification testing.
*This Plan shall be submitted to the Engineer 10 days before production.

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/m3 (1 oz. per 5000 gal). Fibers may be added per manufacturer and NAPA IS 115 recommendation if the draindown requirement cannot be 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.

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 state DOT, 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). Bulk SG shall be calculated using AASHTO T275 (paraffin wax) or ASTM D6752 (automatic vacuum sealing, e.g. CoreLok). Air void content shall be calculated from the bulk SG and maximum theoretical SG (AASHTO T209) using ASTM D3203.

The materials shall be combined and graded to meet the composition limits by mass (weight) as shown in Table 5.

Table 5: Porous Asphalt Mix Design Criteria.

Sieve Size (inch)	Percent Passing (%)
0.75	100
0.50	85-100
0.375	55-75
No.4	10-25
No.8	5-10
No.200 (#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 antistrip additive, such as hydrated lime (ASTM C977) or a fatty amine, to raise the TSR value above 80%.

C. Porous Asphalt Mix Production

1. Mixing Plants.

Mixing plants shall meet the requirements of hot mix asphalt plants as specified in the state DOT or regional equivalent unless otherwise approved by the Engineer (e.g. Section 401- Plant Mix Pavements – General for Quality Assurance specifications in the Standard Specifications for Road and Bridge Construction – State of New Hampshire DOT, 2006, or latest revised edition and including supplemental specifications and updates).

2. Preparation of Asphalt Binder.

The asphalt material shall be heated to the temperature specified in the state DOT specification (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. Porous Asphalt Pavement and Infiltration Beds Design Specifications Page-19 University of New Hampshire Stormwater Center –October 2009

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 ± 11 °C (± 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 6 and the Post-Blended SBR Binder Quality Control Plan (if applicable).

Table 6. QC/QA testing requirements during production.

Test	Min. Frequency	Test Method
Temp in truck @ plant	6 times per day	
Gradation	greater of either (a) 1 pre 500 tons	AASHTO
	(b) 2 per day, or (c) 3 per job	T30
Binder Content	greater of either (a) 1 pre 500 tons	AASHTO
	(b) 2 per day, or (c) 3 per job	T164
Air Void Content	greater of either (a) 1 pre 500 tons	ASTM
	(b) 2 per day, or (c) 3 per job	D6752
Binder Breakdown	greater of either (a) 1 pre 500 tons	AASHTO
	(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 6. The paving mixture produced should not vary from the design criteria for aggregate gradation and binder content by more than the tolerances in Table 7.

Table 7. QC/QA testing tolerances during production.

Sieve Size (inches)	Percent Passing
.75	-
.50	+/- 6.0
.375	+/-6.0
No. 4	+/-5.0
No. 8	+/-4.0
No. 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.

PART 3 EXECUTION

3.1 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 puddleforming 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 8.

Table 8 QC/QA requirements for porous media bed construction

Activity	Schedule
Contractor to notify Engineer for approval	24 hours in advance of start of work
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

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 state DOT's specification for asphalt mixes. The use of surge bins shall not be permitted.

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. Activity Schedule 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 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 1 1/4 to 4 inches. The bottom of the sloped plate shall be mounted 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 ºF (38 ºC). Curing time is preferably one week, or until the entire surface temperature cools

below 100 ºF (38 ºC). 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 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
Vacuum and clean surface to eliminate loose material and dust. 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.

Color for Handicapped Markings: Blue

C. QC/QA 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 devise. 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 9.

Table 9. QC/QA requirements during paving.

Activity	Schedule/ Frequency	Tolerance
Inspect truck beds for pooling (draindown)	every truck	NA
Take surface temp. behind joint heater	each pull	10°F of compaction temp
Consult w/engineer to determine locations		

of butt joints	as needed	NA
Test surface smoothness & positive drainage with 10 ft straightedge	after compaction	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

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. The work shall include design/permit/build services including labor, materials, equipment and services required to complete the irrigation work indicated on the drawings and in the specifications. The complete electrical system, including control wiring for line and low voltage, from the controller to the field sprinklers shall be included.

B. The electrical power supply to the field-mounted controller, and the power connections to the controller shall be done by the contractor's electrician, and shall come from the Riverside Middle School. The earthwork and bedding for trenches shall be included in this Bid.

C. The irrigation installation including the backflow valves, valves, and piping shall be provided by the contractor's irrigation contractor and shall be included in this Bid. The bid price shall include the installation of an irrigation well and pump indicated on the drawings capable of pumping a minimum of 72 gpm at 90 psi per Hunter I-25 standards. The pump shall be furnished by the irrigation installer and installed by the appropriate licensed irrigation installer, plumber and the electrician.

D. The point of connection for the irrigation water system shall be via a new irrigation well to be installed as part of this bid and as shown generally on the plans.

1.02 RELATED WORK

A. Carefully examine all of the Contract Documents for requirements that affect the work of this Section.

B. Particular attention is directed to the following Sections/Divisions that affect the Work of this Section.

C. Cooperate with other contractors on the project site to schedule work in proper sequence.

1.03 PERMITS, CERTIFICATIONS AND INSPECTIONS

A. Obtain and pay for permits, tests and certifications required for the execution of work under this section.

B. Furnish copies of Permits, Certifications and Approval Notices to the Owner's Representative.

1.04 QUALITY ASSURANCE

A. Installer: A firm which has at least five (5) years experience in work of the size and type required by this section and which is acceptable to the Owner's Representative.

B. References: Supply three references for work of this type and size with their bid including names and phone numbers of grounds personnel.

C. Applicable requirements of accepted Standards and Codes shall apply to the work of this Section:
American Society for Testing & Materials (ASTM)
National Plumbing Code (NPC)
National Electric Code (NEC)
National Sanitary Foundation (NSF)
American Society of Agricultural Engineers (ASAE)

1.05 TESTS

A. Observation: The Owner's Representative will be on site at various times to observe the system installation.

B. Operational Test: After completion of the system, test the operation of entire system and adjust sprinklers to the approval of the Owner's Representative. Demonstrate to the Owner's Representative that irrigated areas are being adequately covered.

1.06 SUBMITTALS

A. Submit manufacturer's product literature and Shop Drawings for approval on materials in accordance with Division 1 Submittals section. Shop Drawings shall include location and coverage of sprinkler heads, landscape features, structures, schedule of fittings, and control system wiring diagrams.

B. The contractor shall maintain complete Record ("As-Built") Drawings of the system as the project proceeds. Record Drawings shall specify sprinkler type, pop up height and nozzle for each sprinkler installed. Valve box locations to be referenced by distance in a triangular fashion from a minimum of two permanent locations.

1.07 DELIVERY, STORAGE AND HANDLING

A. Store and handle all materials in compliance with manufacturer's instructions and recommendations. Protect from all possible damage. Minimize on-site storage.

B. Coordinate a staging area location with the project superintendent. Coordinate on-site storage with Owner's Representative.

1.08 GUARANTEE

A. Obtain in the Owner's name, the standard written manufacturer's guarantee of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product data. These guarantees shall be in addition to, and not in lieu of, other legal liabilities.

B. Warranty the entire irrigation system, both parts and labor for a period of one (1) year from date of acceptance by the Owner.

C. As part of the one year warranty, perform the first year end blowout and spring start-up for the project site. Coordinate with Parks Superintendent.

1.09 MAINTENANCE AND OPERATING INSTRUCTIONS

A. Provide at least four (4) hours of instruction of Owner and/or Owner's personnel upon completion of check/test/start-up/adjust operations (Owner's Representative shall be notified at least one (1) week in advance of check/test/start-up/adjust operations).

B. Upon completion of work and prior to application for acceptance and final payment, a minimum of two (2) three ring binders titled MAINTENANCE AND OPERATING INSTRUCTIONS shall be submitted to the Owner's Representative office. After review and approval, the copies will be forwarded to the Owner.

C. Included in the Maintenance and Operating binders shall be:
One (1) copy of the original irrigation plan;
One (1) copy of the Record Drawing;
One (1) reproducible of the Record Drawing;
A complete set of "APPROVED" submittals of all irrigation equipment.
A copy of the suggested "System Operating Schedule" which shall call out the controller program required (zone run time in minutes per day and days per week) in order to provide the desired amount of water to each area under "no-rain" conditions.
One (1) copy of the controller valve system wiring diagram.
One (1) copy of the manufacturer's controller operation manual.

1.10 MAINTENANCE

A. Maintenance Period: 90 calendar days after Substantial Completion.

B. Subsequent to Substantial Completion, provide labor, materials, equipment, and services necessary for the full operation of the irrigation systems.

C. Operation: During the maintenance period, regularly illustrate the operation of the installed systems to Grounds personnel.

D. Adjust irrigation schedule at Owner's direction or for field conditions.

E. Adjust all sprinkler heads.

1.11 DESIGN INFORMATION

A. The work contemplated by these specifications consists of the provisions of labor, material, equipment and services required for all work described herein.

B. Unless otherwise specified, the plans and specifications are intended to include everything obviously requisite and necessary for the proper installation and completion of the work whether each necessary item is mentioned herein or not.

C. The plans and specifications are intended to be cooperative, and any item called for in one and not the other shall be as binding as if called for in both. If a discrepancy exists between an item called for in the plans and the specifications, or within the plans or specifications, the most stringent shall apply.

D. All work herein specified or called for on the drawings will be executed in accordance with all governing ordinances, laws and regulations that meet all local conditions. Additionally, any changes and/or additions in the work necessary to meet these ordinances, laws, regulations and/or conditions will be made without additional cost to the Owner.

PART 2 – PRODUCTS

2.01 GENERAL

A. Use only new materials conforming to the standard (s) applicable to each type, as specified and approved by the Owner's Representative. Provide listed manufacturers products specified, unless approved equals are specified. Any approved equals must be by complete system only, not components of a system. Components shall be as manufactured by Hunter Industries, 1940 Diamond Streetm San Marcos, CA 92078 (1-800-319-4796)

B. For warranty Purposes, irrigation products shall be supplied from authorized distributors of the various products.

2.02 POLY-VINYL CHLORIDE (PVC) IRRIGATION PIPE

A. Pipe sizes 2 ½ inch and under shall be PVC, Class 200, SDR 21, Solvent-Weld PVC, ASTM No. D2241, D3036 as manufactured by JM pipe.

B. Pipe for sleeving shall be PVC, Class 160, SDR 26, Gasketed Joint PVC to be joined with couplers, or Solvent Weld, ASTM No. D2241, D3036 as manufactured by JM pipe.

2.03 PVC IRRIGATION FITTINGS

A. Fittings for PVC pipe, sizes 2-1/2 inch and smaller, shall be Schedule 40 solvent weld PVC fittings as manufactured by Dura, Spears, or Lasco.

B. Fittings for PVC pipe, sizes 2-1/2 inch and larger shall be ring-tite PVC fittings as manufactured by Harco.

C. Solvent cement for use on PVC fittings shall be NSF approved for Type I and Type II PVC pipe and schedule 40 fittings. Cement is to meet ASTM D-2564 and F-493 for potable water, pressure, gas conduit and drain pipes. Application temperature shall be 35 to 110 degrees Farenheit.

D. Nipples to be schedule 80 PVC.

E. Saddles and male adapters shall not be approved for any type of connection on the irrigation system of this project. Use schedule 80 toe nipples and PVC couplings for threaded connections.

2.04 LARGE GEAR DRIVEN ROTARY SPRINKLER

A. The gear driven rotary sprinkler head shall be designed for in-ground installation. The sprinkler shall be capable of covering a 47-foot to 65-foot radius depending on the exact size of the nozzle. The Sprinkler shall use 6.0 to 25.0 gallons per minute of water at 40 to 90 pounds per square inch of pressure.

B. Water distribution shall be via two nozzles mounted in a 1-1/2 inch diameter stainless steel nozzle turret. The nozzles shall be locked in the gear drive with a set screw inaccessible to vandals. The nozzle assembly shall elevate 2-3/8 inches when in operation and retraction shall be achieved by a stainless steel spring. A nozzle wiper seal shall be included in the sprinkler for continuous operation under the presence of sand and other foreign material.

C. Coverage shall be full or part circle. The part circle coverage shall be available in standard arcs of 90,180, and 270 degrees and special arcs of 45, 60, 108, 127, 148, 173, 192, and 238 degrees. Rotation shall be accomplished by a sealed oil-packed gear assembly, with brass drive and bull gears, and totally isolated from the water supply. The thickness of the stainless steel drive assembly shall be no less than .024 inches.

D. The body of the sprinkler shall be constructed of stainless steel. An integral check valve for the control of 15 feet of elevation change shall also be included. All sprinkler parts shall be removable through the top of the unit through the removal of a heavy-duty 7 thread cap with a locking set screw inaccessible to vandals on the side of the cap into the body. The sprinkler shall have a 1-inch I.P.S. water connection on the bottom of the sprinkler.

E. The coverage of the sprinkler shall have a coefficient of uniformity of 91 and an R factor of 2.1.

F. The sprinkler shall have a 100 percent warranty for 5 years against defects in workmanship.

G. The sprinkler shall be a Hunter I-25 series as shown on the attached plan.

2.05 BRASS ELECTRIC VALVE

A. The automatic brass control valves, (1,1-1/2, or 2 inches in size) shall be Hunter brass body, solenoid actuated, diaphragm valve.

B. The valve body shall be manufactured from brass, with a wall thickness capable of withstanding normal operating pressures of 220 psi. The control valve shall have a fabric-reinforced rubber diaphragm for strength and durability. The range of motion of the diaphragm shall be within a diaphragm stem guide, to ensure proper seat alignment.

C. The electric solenoid of the valve shall be a 24 V.A.C. type, with an inrush current of .365 Amps, 8.8 V.A., and a holding current of .300 Amps, 7.2 V.A. The solenoid shall also have 22 inch lead wires for the simplification of installation.

D. The control shall have a flow control to adjust flow volume or to manually close the valve. The valve shall also have a manual bleed screw, for manual opening of the valve in the event of a loss of automatic operation.

E. A self-flushing filter screen shall be provided in the valve to filter the water supply to the 3-way actuator in the valve.

F. The control valve shall be operated automatically by way of a three-way triac feature. This feature creates a non-continuous bleed actuation within the valve, allowing only the water on top of the valve to be ported into the discharge cavity of the valve. The non-continuous bleed operation is essential in the reliable operation of the valve in dirty water conditions.

G. All parts shall be serviceable without removing the valve from line. The valve may be installed at any angle without affecting operation. Check manufacturer's data for friction loss.

H. The automatic control valve shall be manufactured by Hunter.

2.06 VALVE BOX

A. Valve boxes shall be constructed of a rigid combination of polyolefin and fibrous components especially compounded for underground enclosures. Superflexion plastic material shall be chemically inert and normally unaffected by moisture, corrosion and the effects of temperature changes. Superflexion shall also have a relatively high tensile strength with light weight because of its solid structural material.

B. Valve boxes shall be available in the following configurations: Round – 10 inches x 13 inches x 10 ¼ inches deep; Standard – top: 10 ¾ inches x 16 inches, bottom: 10 ¾ inches x 18 ½ inches and 12 inches deep; Jumbo – top: 14 ¾ inches x 21 ½ inches, bottom: 17 ¼ inches x 24 inches and 12 inches deep.

C. The contractor shall fill the entire area beneath the box with pea gravel before final installation of each box.

D. The valve box shall be model BKS1419-12WC, NDS-212BC, and/or NDS-108BC as manufactured by Brooks Industries, Flora, MS.

2.07 IRRIGATION CONTROL SYSTEM

A. MapTo capability provides the ability to program and communicate to another field controller within radio reception. The field satellite shall use modular solid-state control technology and be capable of automatic, semi-automatic and manual operations. The controller shall be programmable by the on-board keyboard with large back-lit LCD or by a laptop computer (unless a non-keypad model such as a map to universal).

B. It shall be housed in either a wall or pedestal enclosure made of 16 gauge polished stainless steel enclosures with a three-point locking system and key lock-set. Access to high voltage and 24-volt field wire shall be through a front door panel with a keyed lock. Both the cabinet and interior assemblies shall be UL approved for outdoor and indoor applications. The pedestal model shall be bolted into a concrete footing that has a mounting template embedded in the concrete pad. The concrete pad shall be sloped away from the pedestal to prevent water accumulation around the base of the enclosure.

C. The controller shall be capable of operating at 115 VAC (+/- 10%) 50/60 Hz capable of withstanding an incoming surge or electrical spike of 4.5 kV on the input side. Each 24-volt station output shall be capable of delivering 0.5 amperes at (12 VA) at 24 VAC. The controller shall be capable of operating 6 multiple stations for a total output current of 1.75 amperes (42 VA) at 24 VAC. The 24-volt outputs shall be offered with four configurations as follows: level 1 -LED's and large terminal block, level 2 – LED's, switches and large terminal block, level 3- LED's switches, gas pills and large terminal block and level 4 – LED's, switches, gas pills, chokes and large terminal block. The level 4 output shall be capable of withstanding 20 kVa of surge from a ground strike or defective solenoid.

D. The controller shall have three modes of operation: stand-alone, off and central. Time-of-day, day-of-week and programming and operational status shall be shown in a large LCD display. While operating in stand-alone mode, the field satellite shall have a 12/24-hour real time clock with adjustable day change hour. Time-of-day, day-of-week, programming, and operational statues shall be shown in large LCD display.

E. The controller shall have 16 independent programs. These are divided into four clusters (A through D) with four programs within each cluster (1 through 4). Each program shall be assigned to any of four watering schedules. Each watering schedule can be up to six weeks long with any combination of watering days. Each program shall have 8 start times, up to 99 repeat cycles and a programmable delay between cycles from 0-270 minutes. The controller shall be capable of running any one or combination of programs continuously. A water window may be entered for any program where watering will only take place between a start and end time. Each station can be programmed independently from one another and have the ability to operate each station in one minute increments between 1 minute and 4 hours and 14 minutes. The station will run continuously (infinite) when the run time is set at 4 hours and 15 minutes. Each station may be assigned independently to any or all of the 16 programs. Each program shall have the ability to irrigate on a 6-week calendar with any combination of active watering days. The controller shall be capable of running any one or combination of programs continuously.

F. The field satellite shall be expandable in 12 station increments from 12 to 48 stations. The controller shall have a program-adjust feature that allows for independent percent adjustment of each program from 10% to 250% in 1% increments. The controller shall have a non-volatile memory that can maintain time and all programming functions for a period of 10 years or less in the event of a power loss.

G. When the controller is operating in either manual or automatic modes, the remaining runtime will be displayed. The adjustment by program may be set to OFF to prevent operation of all or independent programs. The controller shall also have a global adjust feature adjusting all programs from 10% - 250% in 1% increments. The controller shall have a multi-manual cycle that allows the simultaneous operation of 1 to 6 stations with independent station run times. The multi-manual run time may be set for one to four hours and fourteen minutes.

H. The controller shall have the following additional standard features in a stand-alone mode:

- Alarm alerts against user errors for programming and communication
- Ability to create and store program for future use and
- On-line Help screens for training or first time users

- Running programs based on ET data
- Reading and reacting to flows
- Capable of monitoring the current draw of any and all stations

I. The controller shall be capable of running irrigation programs based on ET (evpotranspiration) input. When the ET functions are activated, the controller automatically adjusts program run times according to ET data. A weather station or ET gauge needs to be connected to provide ET data.

J. The controller shall also be capable of monitoring the current draw of any and all stations. If the current exceeds allowable limits the station shall be shut down to protect the fuse. The program shall complete its cycle and provide an alarm alert of the high current station.

K. The controller shall be capable of reading and reacting to flows (GPM). When the flow functions are activated, the controller automatically reads, records, flow data. Water usage for the current month, previous month and previous year accumulative totals are stored and are retrievable. The controller shall be capable of reacting to unexpected, over or under flows by shutting down the station(s) or a master valve. A properly sized and located flow meter is required to provide accurate flow data.

L. The controller shall have a manual start feature that allows a program or individual station to run in normal or syringe mode. Syringe mode run time may be specified in minutes (1-30) or as a percentage (10-99%) of normal station run time. When a program is running (automatic or manually started), the controller will display the current running station. The controller shall have a multi-manual cycle that allows the simultaneous operation of one of to six stations with independent station run times. The multi-manual run time may be set from 1 to 59 minutes.

M. The controller shall come standard with a “Dallas chip” for real time clock retention in the event of a power failure. The controller shall maintain the time-of-day, day-of-week and user defined program for a period of 10 years.

N. The controller components shall be enclosed in a weather-resistant plastic enclosure that is sealed against insects and other vermin that might cause failure.

O. The controller shall communicate to a phone app/wireless option without any additional hardware. Field changes made after the day change will take affect until the next active day’s watering cycle.

P. The controller shall have four sensor capability regardless of station count. The sensor board shall be a standard feature and shall be capable of sensing open and closure of dry contact switches not exceeding 12 Volts DC. Sensor inputs shall be capable of monitoring rain switches, freeze sensors, ET gauges and Davis Instrument weather stations.

Q. The controller shall have the ability to accept and execute commands from a phone app. The remote shall have the ability to execute the following commands:

- On/off of individual stations
- On/off of individual programs
- System wide or individual program shut down
- Two-way voice communication
- Selectable channels between wide and narrow band frequencies
- Communication to an individual controller or multiple controllers on a site as defined by the end user

R. The hand-held remote radio shall not require the installation of a central computer and shall have the ability to communicate directly to a field satellite in a stand-alone mode.

S. The controller shall have field diagnostics in a stand-alone mode, when used in conjunction with a troubleshooting kit. This kit when connected properly shall have the ability to diagnose programming conflicts versus a physical hardware problem.

T. The controller shall have the ability to communicate with a "Map to Universal" remote field satellite within radio reception range. The "Map to Universal" module shall be available in 12, 24, 36 & 48 station increments and shall be capable of receiving program functions from another controller in either stand-lone or central modes. This feature shall not diminish or limit the number of programs or functionality of the "master" controller.

U. In a central mode, the field satellite shall have the ability to forward sensor alarm alerts, communication alarms, and/or field programming changes via two-way radio or a remote transceiver unit via telephone.

V. The controller shall be developed and manufactured by an ISO 9001-certified facility. The controller shall be a Sentinel model as manufactured by the Toro Company, Irrigation Div.

2.08 WIRE AND SPLICING KIT

A. Valve power wire shall be minimum #14, common wire minimum #12, single strand, solid copper, 600v, UL Listed, polyethylene jacketed, direct burial and shall meet all state and local codes for this service. Individual wires must be used for each zone valve. Common wire shall be white in color. White color shall be used for common wire only. Power wires shall be red in color. Extra power wires for future use shall be blue in color. Increase wire size as necessary to limit voltage drop to 3%.

B. Wire splicing kits for single U.F. wire connections shall be direct burial kits consisting of sealant which shall not set-up hard allowing splices to be reworked without cutting wires. Direct burial kits shall have an application temperature range of 32 to 120 degrees Farenheit and service 600 VAC maximum.

C. D.B.Y. kits shall allow connections of two to five #18 AWG or two #12 AWG solid or stranded copper wires. D.B.R. kits shall allow connections to two to five #16 AWG or three #10 AWG solid or stranded copper wires.

2.09 BRONZE GATE VALVE

A. The bronze gate valves shall be constructed with non-rising stem, solid wedge disc and screwed ends. The body, bonnet and disc shall be made from #85-5-5-5 bronze, ASTM B62. The stem, lock nut, packing nut and gland follower shall be made of brass, ASTM B16, with the gland packing made of asbestos graphite. The hand wheel shall be constructed of cast iron, ASTM A126.

B. The gate valve shall have a working non-shock pressure of 125 psi for saturated steam and 200 psi for cold water, oil and gas. The body shall have a hydrostatic test pressure of 300 psi and the seat shall be at 200 psi.

C. The gate valve shall be manufactured by Aqua Valve Company, Orinda, CA.

2.10 SWING JOINT

A. All 1" and 1 ½" swing joint assemblies for sprinklers shall be pre-assembled units from the factory made of Schedule 80 PVC. Swing joint consists of four 90 degree elbows and one 12 inch long nipple with 90 degree bend on one end. All swing joint assemblies shall be made from virgin PVC Type I, Cell Classification 12454-B material listed for potable water conveyance by NSF. Working pressure shall be 200 psi combined static and surge.

B. The flexible swing joints for ¾" inlet sprinklers shall consist of two 90-degree F.P.T. els and a piece of 3/8" thick walled polyethylene pipe known as "Funny Pipe" not to be more than 36" in length.

C. The 1 inch assemblies for quick coupling valves shall be made of Schedule 80 PVC swing joint as manufactured by Lasco.

2.11 QUICK COUPLING VALVE

A. The quick coupler valve shall be Toro model 470 series, one piece single lug type.

B. The valve shall be constructed of brass with a wall thickness guaranteed to withstand a normal working pressure of 150 psi without leakage. The quick coupler valve shall accept a Toro model 460 series quick coupler key with a top connection of female pipe thread and male pipe thread.

C. The quick coupler valve shall be manufactured by the Toro Company, Riverside, California.

2.12 RAIN SENSOR

A. The rain sensor device shall be designed to prevent sprinkler operation during rainfall. The rain gauge shall install easily to roof eaves with a quick clip gutter bracket, screw mount, or pole with adapter. Two wire nuts and wood screws shall be provided. The rain gauge shall be easily wired into any new or existing sprinkler control system. The rain gauge is wireless with a transmitting range of up to 300 ft, in line of sight.

B. When exposed to rain water, a stack of absorbent disks within the rain gauge shall expand and open a microswitch, interrupting power to control valves. The disks shall have an adjustable rain sensitivity. When the rain stops, the disks dry out allowing the microswitch to close and the sprinklers to operate as scheduled. The normally open/normally closed microswitch shall be rated 125 VAC, 3A at 24 VAC. The rain gauge shall be U.L. listed. The (2) Cr2032, 3V cell batteries shall last for 5 years. The warranty shall last for 5 years.

C. The rain sensor shall be manufactured by The Toro Company, Riverside, CA.

2.13 IRRIGATION PUMP

A. Provide a pump capable of meeting the above specified requirements with a minimum 5-year warranty. Pump should not draw more than 30 amps. Pump can be located within the irrigation control shed. It shall include Line Sized check valve at the discharge, 0 to 200 psi liquid filled pressure gauge at the discharge, High temperature shut off device, Unions at the inlet and outlet, Brass nipples, fittings as necessary. Well and pump shall be capable of producing a minimum of 72 GPM at a minimum pressure of 90 PSI.

2.14 SPARES

A. In addition to all materials needed for installation, provide for the following spare parts:
Sets of tools for repair and maintenance of sprinklers supplies
Sets of spare keys for controller cabinet
Each type of sprinkler

PART 3 – EXECUTION

3.01 GENERAL

A. Examine contract documents applying to this Section noting any discrepancies and bringing same to the attention of the Owner's Representative for timely resolution.

B. Make field measurements necessary for the work noting the relationship of the irrigation work to the other trades. Coordinate with the Owner's Representative and the Project Superintendent. Project shall be laid out essentially as indicated on the Irrigation Plans, making minor adjustments for variations in the planting arrangement. Major changes shall be reviewed with the Owner's Representative prior to proceeding.

C. At all times, protect existing irrigation, landscaping, paving, structures, walls, footings, etc. from damage. Inadvertent damage to the work of another trade shall be reported at once.

3.02 INSTALLATION OF PIPE AND FITTINGS

A. Using proper width trencher chain, excavate a straight and true trench to a depth of V 2 inch of pipe invert elevation.

B. Pipe shall be laid on undisturbed trench bottom provided suitable base is available – no rock

larger than 1 inch or sharp edges. If not, excavate to 2 inches below pipe invert and provide sand base or crushed stone upon which to lay pipe.

C. Backfilling shall be accomplished as follows: the first 10 inch of backfill material shall contain no foreign matter and no rock larger than 1 inch in diameter. Carefully place material around pipe and wire tamp in place. Remainder of backfill shall be laid-up in 6 inch (maximum) lifts and tamped to compaction with mechanical equipment matching adjacent undisturbed area. Frozen material shall not be used for backfill.

D. Clean bell and spigot ends and make all gasketed joints in strict accordance with manufacturer's recommendations, making certain not to apply an excess of lubricant, and wiping off any excess lubricant from each connection. Maximum deflection per joint shall not exceed manufacturer's recommendations.

Make all solvent-weld joints in strict accordance with manufacturer's recommendations, making certain not to apply an excess of primer or solvent, and wiping off excess solvent from each connection. Allow connections to set minimum 24 hours before pulling or pressure is applied to the system.

Provide for expansion and contraction as recommended. Wire shall be laid in same trench as mainline and at pipe invert (see 3.08, below).

E. Mainline pipe shall have minimum 15 inches of COVER (excavate to invert as required by pipe size).

F. Lateral pipe shall have minimum 12 inches COVER (excavate to invert as required by pipe size).

G. Cut plastic pipe with hand saw or pipe-cutting tool, removing all burrs at cut ends. All pipe cuts are to be square and true. Bevel cut end as required to conform to manufacturer's specifications.

H. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the trench. At times, when installation of the piping is not in progress, the open end(s) of the pipe shall be closed by a watertight plug or other means. All piping that cannot temporarily be joined shall be sealed to make as watertight as possible. This provision shall apply during the lunch hour as well as overnight. Pipe not to be installed that day shall not be laid out. Should water enter the trench during or after installation of the piping, no additional piping may be installed or backfilled until all water is removed from the trench. Pipe shall not be installed when water is in the trench, when precipitation is occurring, or when the ambient temperature is at 35 degrees F. or below. PVC pipe shall be snaked in the trench to accommodate for expansion and contraction due to changes in temperature.

I. Route the pipe as necessary to prevent damage to tree roots. Maintain a minimum distance of 18 inches, if possible with all mainline and lateral line piping from trees. Where trenching must occur near trees or within drip lines, discuss the routing with the Owner's Representative and

the Project Superintendent and if directed, provide proper root pruning and sealing methods to all roots 1 inch and larger.

J. Throughout the guarantee period refill any trenches that have settled due to incomplete compaction.

K. Pulling of pipe sizes 2 inches and smaller will be allowed provided soil is suitable and specified depth of bury can be maintained.

L. Pipe shall be installed by hand through sleeving or laid in the planters.

3.03 SLEEVING INSTALLATION

A. Sleeving shall be used wherever wire or piping is going under a non-soil area, generally where indicated on the drawings. Cutting and patching will not be permitted. Irrigation sleeving installation shall be provided by boring underneath walks and roads.

B. Sleeving installations shall be fully coordinated with other construction operations before any installation takes place.

C. Sleeving to have a minimum depth of 30 inches of cover.

3.04 MAINLINE ISOLATION VALVE INSTALLATION

A. Install isolation valves on mainline using toe end nipples in standard valve boxes. Install isolation valves on a level crushed stone base so that they can be easily opened or closed by with the appropriate valve wrench.

3.05 VALVE BOX INSTALLATION

A. Remove and preserve established turf where re-use is anticipated.

B. Furnish and install a valve access box for each electric valve, quick coupling valve, isolation valve, valve manifold and wire splice.

C. Valve access boxes shall be installed on a minimum 4 inch crushed stone base. Finish elevation of all boxes shall be a minimum of 4 inches and a maximum of 6 inches below grade.

3.06 VALVE INSTALLATION

A. Valves shall be installed on a level crushed stone base. Grade of bases shall be consistent throughout the project so that finish grades fall within the limits of work. Valves shall be set plumb with adjusting handle and all bolts, screws and wiring accessible through the valve box opening.

B. Athletic field control valves: install on toe end nipples, 6” inlet and outlet, 3” between the gate valve and the control valve. Install a bronze i.p.s. gate valve before the control valve. Install in standard valve box. Use a DBY splice kit for the wire attachment.

C. Install a line sized gate valve on toe nipples in standard valve boxes.

D. Install 1” quick coupler valve on a brass el before the backflow for winterization point. Install 1” quick coupler valve on Lasco locking swing joint in econo box.

3.07 WIRING INSTALLATION

A. Wiring shall be installed along with the main line. Multiple wire bundles shall be cinched together at maximum 12-foot centers using plastic cable cinches and shall be laid beside, and at the same invert as, irrigation lines. Sufficient slack for expansion and contraction shall be maintained and wiring shall at no point be installed tightly. Provide an additional 8 inches to 12 inches slack at all changes of direction. Wiring in valve boxes shall be sufficient length to allow the valve solenoid, splice, and all connections to be brought above grade for servicing. This additional slack shall be coiled for neatness in the valve box. Each valve shall have a separate continuous wire back to the controller.

B. Expansion curls shall be provided within 3 feet of each wire connection to a solenoid and at least every 300 feet in length. Expansion curls are easily formed by wrapping at least 5 turns of wire around a rod or pipe 1 inch or more in diameter, then withdrawing rod.

C. Wire shall be laid in trenches and shall be carefully back-filled to avoid any damage to the wire insulation or wire conductors themselves. In areas of unsuitable material, the trench shall have a 2 inches layer of sand or stone dust on the bottom before the wires are laid into the trench and back-filled. The wires shall have a minimum of 12 inches of cover. Wire not to be installed that day shall not be laid out.

D. Control circuitry, whether electrical or hydraulic, passing through the wall of the building or beneath a sidewalk, road or drive shall be installed in a suitable sleeve; whereas in all other locations they shall be installed in the pipe trench and protected by the pipe whenever possible.

E. Provide a common ground wire of white color. No white color shall be used for power wire. Power wire shall be red in color. Blue shall be used for extra power wires where indicated on the drawings.

F. Service wiring in connection with drawings and local codes for 24-volt service. Provide extra wires coiled neatly in valve box where indicated on the drawings.

G. Provide a complete wiring diagram showing wire routing for the connections between the controller and valves.

H. The joining of all underground wires shall be by the use of wire nuts covered with Scotchlok per installation instructions provided by the manufacturer.

3.08 CONTROLLER INSTALLATION

A. Mount controllers within the irrigation shed. Wire valves into controller and set program.

B. Final locations shall be as approved/directed by the Owner’s Representative.

3.09 RAIN GAUGE INSTALLATION

A. Install rain shut-off with protective shield as per detail. Coordinate final location of rain shut-off with Owner's Representative. Install conduit for wires to the sensor, where applicable.

3.10 SPRINKLER INSTALLATION

A. Install 1" and 1 ½" inlet heads on Lasco (4) el, 1" x 12" lay swing joints, Install ¾" heads on Funny pipe, 2 el swing joints with up to 36" of 3/8" high density polyethylene pipe also known as "Funny Pipe".

B. Backfill the head in clean, native material. Install flush with grade.

C. Install sprinklers as per details. Adjust the radius and arc to avoid spraying buildings or into the road.

D. Attach to the pipe with the fpt tees.

3.11 CHECK/TEST/START-UP/ADJUST

A. Flushing: After all piping, valves and sprinkler bodies are in place and connected, but prior to installation of sprinkler internals, flush piping under a full head of water.

B. Testing: Leakage test: test all lines for leaks under operating pressure. Repair all leaks and re-test. Coverage test: perform a coverage test in the presence of the Owner's Representative (notify Irrigation Consultant at least seven (7) days in advance of scheduled coverage test). Representative will determine if the water coverage is complete and adequate. Readjust heads and/or head locations as necessary or directed to achieve proper coverage.

3.12 FIELD ADJUSTMENT

A. Adjust sprinkler heads, valve boxes, and quick coupling valves to grade as required, so that they will not be damaged by mowing operations.

B. Continue sprinkler coverage adjustment as required by settlement, etc., throughout the guarantee period.

C. Each control zone shall be operated for a minimum of 5 minutes and all sprinklers checked for consistency of delivering water. Adjustments shall be made to sprinklers that are not consistent to the point that they match the manufacturer's standards. Sprinklers, valves, timing devices or other mechanical or electrical components, which fail to meet these standards, shall be rejected, replaced and tested until they meet the manufacturer's standards.

3.13 ACCEPTANCE AND OPERATION BY OWNER

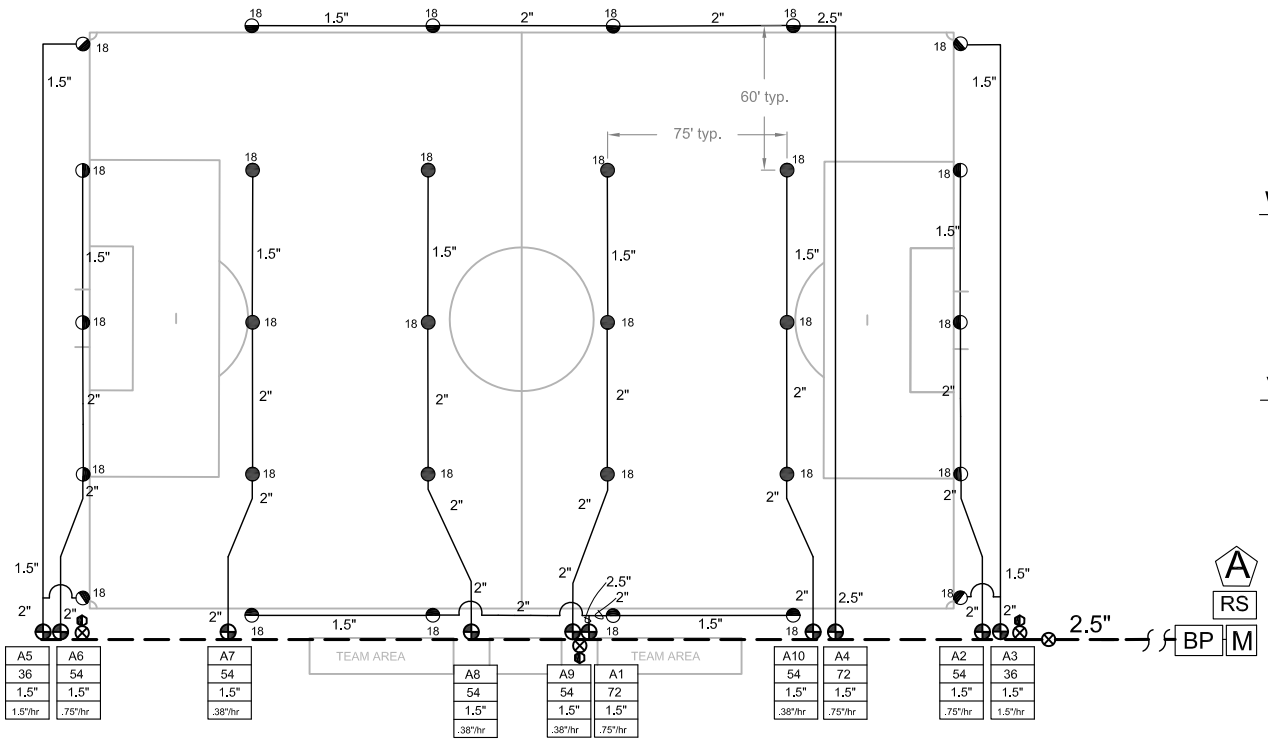
A. Upon completion of the work and acceptance by the Owner, train the Owner's Representative(s) in the operation of the system. Furnish, in addition to the Record Drawings and operational manuals, copies of all available, specification sheets and catalog sheets to the Owner's personnel responsible for the operation of the irrigation system. Guarantee all parts and labor for a minimum period of one (1) year from date of acceptance.

3.14 CLEANUP

A. Upon completion of all installation work, Contractor shall remove all leftover materials and equipment from the site in a safe and legal manner.

B. Contractor shall leave the site clean and free of soil, stones and other debris generated from installation of the irrigation system.

END OF SECTION



WATER REQUIREMENT

-AT FIELD ELEVATION
-WITHIN 100' OF FIELD
-DOWNSTREAM OF BACKFLOW IS 72 GPM @ 90 PSI

VALVE ID GUIDE

A1	STATION NUMBER
55	GPM
1.5"	VALVE SIZE
.50"/hr	PRECIPITATION RATE

IRRIGATION LEGEND

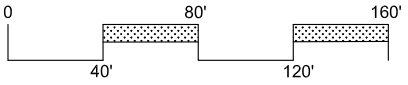
PRODUCT DESCRIPTION
- HUNTER I-25-36S-XX/I-25-6P-36S-XX NOZZLE AS SHOWN
- HUNTER I-25-ADS-XX/1-25-6P-ADS-XX NOZZLE AS SHOWN
  NOZZLE PERFORMANCE:
  #18 @ 80 PSI - 18.2 GPM 63' RADIUS
- HUNTER ICV/IBV ELECTRIC CONTROL VALVE SIZE AS SHOWN
- HUNTER HQ-44-XX-AW QUICK COUPLER VALVE (OPTIONAL)
- A HUNTER IC-1200 SOLID STATE METAL CABINET CONTROLLER
- RS HUNTER SOLAR-SYNC-SEN ON SITE WEATHER SENSOR
- M WATER METER MINIMUM SIZE @ 72 GPM IS 2.0"
- BP BACKFLOW PREVENTER SIZED TO SYSTEM GPM
- MAINLINE PIPE
- LATERAL PIPE
- SLEEVING
- ISOLATION VALVE LINE SIZED

IRRIGATION NOTES

1. SPRINKLER LOCATIONS ARE TO SCALE
2. PIPE LOCATIONS ARE DIAGRAMMATIC
3. ALL SPRINKLERS TO BE INSTALLED ON 1" SCH 80 SWING JOINTS
4. ALL COMPONENTS TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS
5. MAINLINE DEPTH TO BE NO LESS THAN 18"
6. LATERAL DEPTH TO BE NO LESS THAN 16"
7. ELECTRIC CONTROL VALVES TO BE COVERED WITH 12" VALVE BOX
8. LOCATE VALVES/QCV'S OUT OF HIGH TRAFFIC AREAS
9. WIRE SPLICE CONNECTIONS TO BE WATERPROOF
10. QCV TO BE LOCATED IN 10" VALVE BOX
11. ALL SLEEVES TO BE 2X PIPE RUN THROUGH THEM
12. INSTALL ALL COMPONENTS AS PER LOCAL, STATE, FEDERAL CODES
13. REFER TO HUNTER INSTALLATION DETAILS
14. REFER TO HUNTER CATALOG FOR PERFORMANCE SPECIFICATIONS
15. ADD HUNTER "FS" FOR DIRTY WATER VALVE
16. ADD HUNTER "AS" FOR PRESSURE REGULATED VALVE

SYSTEM PERFORMANCE DATA

ZONE	SIZE	FLOW	PR	DU	SC (10% WINDOW)
A1	1.5"	72	.75"	.83	1.2
A2	1.5"	54	.75"	.83	1.2
A3	1.5"	36	1.50"	.83	1.2
A4	1.5"	72	.75"	.83	1.2
A5	1.5"	36	1.50"	.83	1.2
A6	1.5"	54	.75"	.83	1.2
A7	1.5"	54	.38"	.83	1.2
A8	1.5"	54	.38"	.83	1.2
A9	1.5"	54	.38"	.83	1.2
A10	1.5"	54	.38"	.83	1.2



SCALE: 1" = 80'

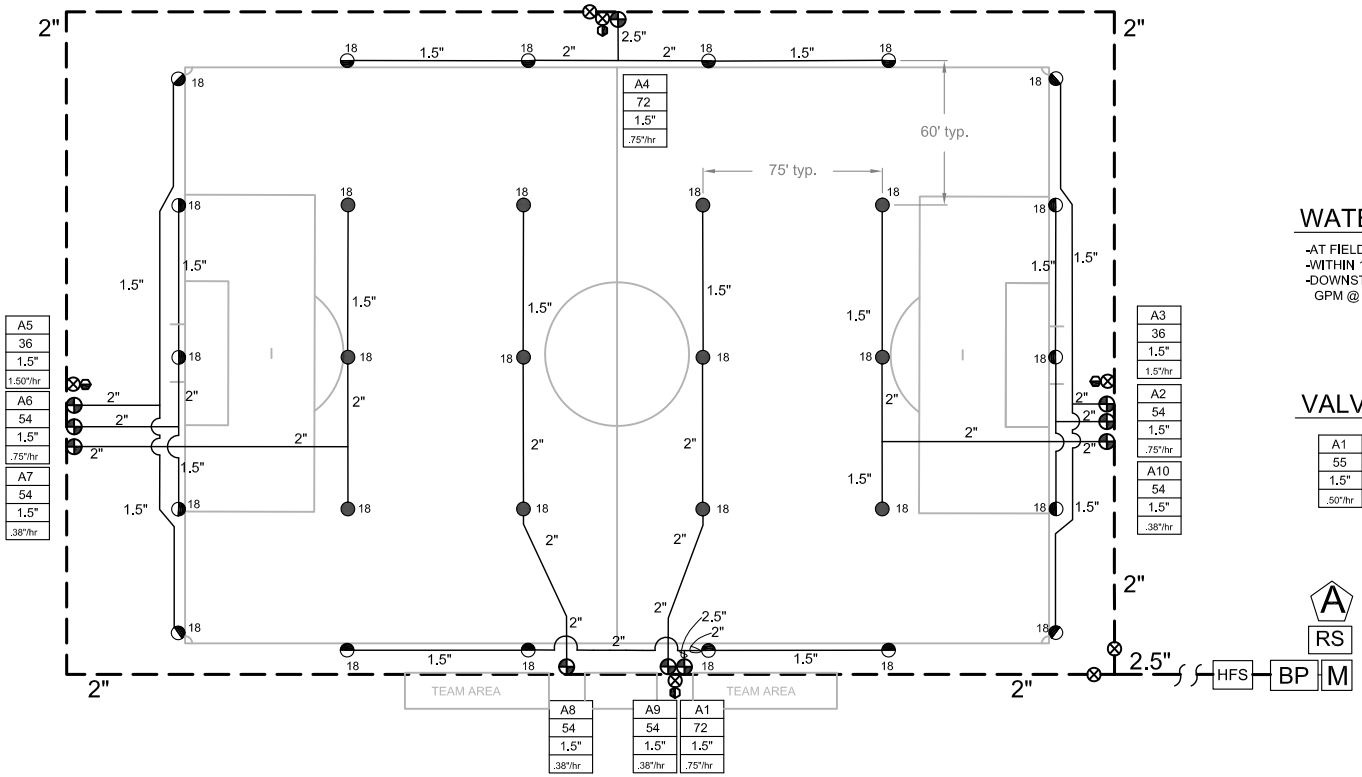
Hunter®

OFFICIAL SOCCER FIELD 360 x 240

I-25 FIVE ROW DESIGN

Hunter Industries
1940 Diamond Street
San Marcos, California 92078
SpecPro Technical Assistance
1-800-319-4796
www.HunterIndustries.com

SHEET
1 OF 1



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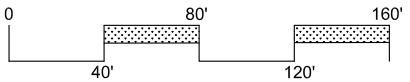
- BP BACKFLOW PREVENTER SIZED TO SYSTEM GPM
- MAINLINE PIPE
- LATERAL PIPE
- SLEEVING
- ISOLATION VALVE LINE SIZED
- HFS HUNTER FLOW SENSOR IN LINE SIZED FLOW CLIK TEE "FCT"

IRRIGATION NOTES

1. SPRINKLER LOCATIONS ARE TO SCALE
2. PIPE LOCATIONS ARE DIAGRAMMATIC
3. ALL SPRINKLERS TO BE INSTALLED ON 1" SCH 80 SWING JOINTS
4. ALL COMPONENTS TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS
5. MAINLINE DEPTH TO BE NO LESS THAN 18"
6. LATERAL DEPTH TO BE NO LESS THAN 16"
7. ELECTRIC CONTROL VALVES TO BE COVERED WITH 12" VALVE BOX
8. LOCATE VALVES/QCV'S OUT OF HIGH TRAFFIC AREAS
9. WIRE SPLICE CONNECTIONS TO BE WATERPROOF
10. QCV TO BE LOCATED IN 10" VALVE BOX
11. ALL SLEEVES TO BE 2X PIPE RUN THROUGH THEM
12. INSTALL ALL COMPONENTS AS PER LOCAL, STATE, FEDERAL CODES
13. REFER TO HUNTER INSTALLATION DETAILS
14. REFER TO HUNTER CATALOG FOR PERFORMANCE SPECIFICATIONS
15. ADD HUNTER "FS" FOR DIRTY WATER VALVE
16. ADD HUNTER "AS" FOR PRESSURE REGULATED VALVE

SYSTEM PERFORMANCE DATA

ZONE	SIZE	FLOW	PR	DU	SC (10% WINDOW)
A1	1.5"	72	.75"	.83	1.2
A2	1.5"	54	.75"	.83	1.2
A3	1.5"	36	1.50"	.83	1.2
A4	1.5"	72	.75"	.83	1.2
A5	1.5"	36	1.50"	.83	1.2
A6	1.5"	54	.75"	.83	1.2
A7	1.5"	54	.38"	.83	1.2
A8	1.5"	54	.38"	.83	1.2
A9	1.5"	54	.38"	.83	1.2
A10	1.5"	54	.38"	.83	1.2



SCALE: 1" = 80'

Hunter®

OFFICIAL SOCCER FIELD 360 x 240

I-25 FIVE ROW DESIGN
LOOPED MAINLINE

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SHEET
1 OF 1

SECTION 02711

VINYL CLAD CHAIN LINK FENCING

PART 1.00 – GENERAL

1.01 DESCRIPTION OF WORK

A. Provide all materials, equipment, and labor necessary to complete the work as indicated on the drawings or as specified herein.

B. The principal work of this Section includes:

1. Installation of approximately 920 linear feet of 6-foot high vinyl coated 9 gauge core fusion bonded class 2B chain link fencing around three quarters of the athletic field, (see plans).

2. Excavation for post bases.

1.02 REFERENCES

A. ASTM STANDARDS

1. A120 – Pipe, Steel, Black, and Hot-dipped zinc coated (Galvanized) welded and seamless, for ordinary use.

2. A123 – Zinc (hot galvanized) coatings of products fabricated from rolled, presses and forged steel shapes, plates, bars and strips.

3. F567 – Installation of chain – link fence

B. Federal Standard (RS) RR-F-191 – Fencing, wire and post, metal.

1.03 SUBMITTALS

A. Submit shop drawings and product data under provision of Section 01300, “Submittal and Substitutions. Submit shop drawings for fences and gates.

B. Include layout, spacing of components, accessories, fittings, anchorages, and schedule of components.

C. Submit manufacturer’s installation instructions under provisions of Section 01300, “Submittals and Substitutions”.

D. Under provisions of Section 01300, "Submittals and Substitutions", submit sample of fence fabric finish, color and gauges. Sample size to be 6" x 12" minimum.

PART 2 – PRODUCTS

2.01 MATERIALS

A. FABRIC

1. Vinyl-coated chain link fabric shall be No. 9 gauge core wire with a uniform square mesh measuring approximately two (2) inches between its parallel sides, woven with "Permafused" wire having a 9 gauge core which shall consist of a primed zinc coated steel to which seven (7) mil coating of Polyvinyl Chloride (PVC) has been bonded by the fusion method class 2B. The vinyl in the coating shall have a maximum specific gravity of 1.33, be evenly applied and free of blisters with the bond between the vinyl coating and the steel wire equal or greater than the cohesive strength of vinyl. The color of the coating shall be black. The minimum breaking strength of the coated core wire shall one thousand two hundred and ninety pounds (1290 lbs).

2. The fabric shall be installed opposite the playing side of the posts. The bottom of the fence fabric shall be three-quarters of an inch (3/4") plus or minus one-quarter (1/4") inch above the finished surface. Fabric shall be furnished with salvages knuckled on both edges. Ends of each wire strand shall be coated with vinyl at the factory during the weaving process.

B. LINE POSTS

1. The line posts for the chain link fence shall be 2 ½ inch O.D., (5.79 lbs/ft) black poly 40 weight (schedule 40) as shown on the plans.

C. FITTINGS

1. All fixed component parts, such as post tops, bands, connectors, boulevard clamps, and rail ends, shall be pressed steel (No Aluminum) vinyl coated on visible surfaces. Non-visible portions of steel or iron components not vinyl-coated must be coated with a zinc coating of not less than 1.8 ounces of zinc per square foot of uncoated surface. All threaded parts shall be coated in the field with a vinyl-based compound after installation. (No Aluminum)

D. TERMINAL, CORNER, ANGLE, AND GATE POSTS

1. Terminal, corner, angle, and gate posts shall be three inch (3") round black poly 40 weight vinyl coated steel weighing 7.58 pounds per lineal foot, unless otherwise shown. Fabric shall be attached to these posts by means of vinyl coated or fiberglass reinforced (40 minimum glass content) bar held in place by clips spaced approximately fifteen (15") inches apart.

E. TOP, MIDDLE, BOTTOM, AND CORNER BRACE RAILS

1. The top, middle, bottom, and corner brace rails shall be one and five-eights inch (1 5/8") outside diameter vinyl-coated steel pipe, 40 weight, weighing 2.95 pounds per lineal foot. The top rail shall pass through openings provided in the vinyl-coated post tops and each length shall be coupled with a vinyl-coated sleeve seven (7") inches long. Fabric shall be attached to the top, middle and bottom rail by means of a double wrap of "Permafused" black vinyl coated 6 gauge aluminum tie wire spaced at intervals of approximately 15 inches. The bottom rail shall be attached to the corner and line posts using boulevard clamps or bands and rail and cups as appropriate.

2. Brace rails shall be 40 weight vinyl coated steel pipe and be installed between each terminal post and the next adjacent line post. Each brace rail shall have attachments for a 5/16-inch vinyl coated truss rod and turn buckle attachment.

3. No middle rail is proposed for this 6-foot high fence. Only a top and bottom rail will be installed.

F. COATING

1. The framework consisting of line posts, terminal posts, top rail, bottom rail, braces, and gate frames shall be "Permafused" with black poly (Polyvinyl Chloride (PVC)) coating. The thickness of the coating shall be 7 mils. The vinyl shall be plasticized and thoroughly compounded so there are no undispersed pigments, stabilizers, or other discrete particles present. The color shall match the fabric (black).

G. FENCE COLOR

1. Fence color shall be black.

H. GATES

1. Gate frame(s) shall be 1 5/8" black poly 40 weight welded at all joints. Hinges shall be heavy duty commercial box hinges. Gate shall include heavy duty fulcrum latch which is lockable.

2. No gates are proposed with this project.

2.02 CONCRETE MIX

A. CONCRETE

1. As specified in Section 03300

PART 3 – EXECUTION

3.01 FENCE INSTALLATION

A. Install new fencing as indicated on drawings; accessories in accordance with ASTM F567.

B. Provide dimensions as indicated and space line posts at intervals indicated.

C. Excavate holes for concrete with vertical side in cylindrical form.

D. Setting new posts:

1. Remove loose and foreign materials from sides and bottom of holes, and moisten soil prior to placing concrete.

2. Center and align posts.

3. Place concrete around posts in a continuous pour, and vibrate or tamp for consolidation.

4. Check each post for vertical and top alignment, and hold in position during placement.

5. Top of concrete footing shall be four (4") inches below finished grade.

6. Keep exposed concrete surfaces moist for at least seven (7) days after placement.

7. Posts for gates shall be set in concrete bases to a depth of three (3') feet.

E. CONCRETE STRENGTH

1. Concrete shall be 3,000 psi. Allow concrete to attain at least seventy-five (75) percent of its minimum twenty-eight (28) day strength before rails, tension wire, and fabric are installed.

2. Do not, in any case, install such items in less than seven (7) days after placement of concrete.

3. Do not stretch and tension fabric and wire until concrete has attained it full design strength.

F. Stretch fabric between terminal posts.

G. Perimeter fencing on gates: Install fabric one (1) inch above finished grade.

H. Provide top rail through line post tops and splice with seven (7) inch long rail sleeve.

I. Fasten fabric to top rail, line posts, and bottom tension wire or bottom rail with black 6 gauge aluminum ties maximum fifteen (15) inches on centers.

J. Install bottom tension wire stretched taut between terminal posts (N/A, bottom rail proposed).

K. Provide bottom rails were indicated.

L. All fencing shall be protected from damage until accepted. Any damaged items shall be removed and replaced at no expense to the CITY. Repairing of damaged items will not be acceptable. Damaged items and waste material shall be disposed of off-site by the CONTRACTOR.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.

B. The principal work of this section includes, but may not be limited to, the following:

1. Preparation of Subgrade
2. Grading and Spreading Topsoil
3. Grading and Spreading of Top Dressing
4. Preparation of Areas for Seeding
5. Soil Testing
6. Application of Limestone
7. Application of Lawn Starter Fertilizer
8. Application of Turf Maintenance Fertilizer

1.03 QUALITY ASSURANCE

A. Subcontract work to a firm specializing in such work unless contractor is fully experienced and qualified.

B. Do not make substitutions without written approval. If specified materials are not available, obtain approval for substitution from the Landscape Architect.

1.04 SUBMITTALS

A. Certified analysis and source of off-site and on-site topsoil to be provided. Certification shall list soil additives to topsoil including rates and type of lime, humus, peat, fertilizer, etc.

B. Certifications and/or labels of proposed soil additives and proposed seed, stating names of each.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Protect all products from weather and or other damaging or deteriorating conditions.

PART 2 – PRODUCTS

2.01 TOPSOIL

A. Fertile, friable, medium-textured sandy loam with no admixture of refuse or any natural or introduced materials toxic to plant growth and free from subsoil and stumps, roots, brush, stones, clay lumps or other extraneous matter over ¾" in diameter. (Screen to ¾".)

B. Sandy loam shall possess good filtration and permeability rates, and shall possess a mechanical analysis where: N 85% of sand size is 0.5 to 1.0 mm and N 95% of sand mix is between 0.5 and 2.0 mm and no more than 5% of mix is less than 0.5 mm.

C. Acidity range of approximately pH 5.5 to 7.5 when tested according to methods of testing of A.O.A.C. and organic content not less than 3% nor more than 20% as determined by wet combustion method (Chromic acid reduction). Topsoil may be amended to meet such requirements. Provide analysis prior to delivering topsoil to site, including recommended rates and types of soil additives to achieve desired mix.

D. On site topsoil (stockpiled), if available, shall be free of debris, roots and branches. It shall be made to conform to the requirements for sandy loam furnished from the site as specified herein.

2.02 SANDY SUBSOIL FILL

A. Sandy subsoil fill, loose and friable, no clay content, no fine silt content, minimum organic content 1%, no stones larger than 3 inches; no roots, stumps or brush.

2.03 TOP DRESSING

A. Same as topsoil, except it shall be screened to 3/8-inch.

2.04 LIMESTONE

A. Dolomitic limestone containing up to 50% magnesium carbonate in a dry, granular form.

2.05 LAWN STARTER FERTILIZER

A. Complete fertilizer in granular form, from commercial sources, bearing manufacturer's analysis 10-20-10 ratio of N-P-K, synthetic fertilizer with slow release component.

2.06 TURF MAINTENANCE FERTILIZERS

A. Complete fertilizer in granular form, bearing a manufacturer's analysis of 20-5-10 ratio of N-P-K, synthetic fertilizer with slow release component.

2.07 WATER

A. Clean, fresh potable water, from on-site public water system (hydrant).

2.08 JUTE MESH

A. Geocoir DeKo We 400 Jute mesh, staked in place.

PART 3 – EXECUTION

3.01 SOIL TESTING

A. The tested material shall equal loose, friable, sandy loam or loam topsoil free of a mixture of subsoil, refuse, stumps, roots, rocks, brush, weeds and other materials that will prevent the formation of a suitable seed bed. Organic matter shall constitute not less than five (5) percent nor more than twenty (20) percent of the loam as determined by loss-on-ignition of oven-dried samples that have been drawn by the Landscape Architect unless otherwise specified or directed. The loam shall have an acidity range of approximately 5.5 pH to 7.6pH. The Contractor shall notify the Owner of the intended source of loam to be employed, at least three weeks prior to the intended time of use to allow time for sampling.

   If after the testing of samples, the loam is found unsatisfactory for intended use, the Engineer may require as a requisite for acceptance that the Contractor, without additional compensation, add to the loam proposed by him for use such lime, particulate fertilizer, or particulate humus as is necessary to render the loam suitable.

B. Both existing soil in existing turf areas, as well as new soils shall be tested for nutrient content and pH to determine correct quantities of soil additions.

3.02 PREPARATION OF SUBGRADE

A. Prepare subgrade in accordance with the requirements of Section 02200.

B. Grade to final uniform subgrade.

C. Scarify and loosen subgrade to a friable condition in any areas where compaction exists before placing new topsoil.

3.03 GRADING AND SPREADING 9" OF TOPSOIL IN SPORTS FIELDS (6" ELSEWHERE)

A. Remove all debris and other inorganic materials on any prepared subgrades, and reshape and dress any damaged or eroded slopes, swales, and other areas. Place 4.5 inches of topsoil on top of prepared subgrade and rototill in to a depth of 12". Topsoil shall not be placed until subgrade is in suitable condition and free of excessive moisture or frozen materials.

On sports fields, place an additional 4.5 inches of topsoil on the prepared subgrade. Topsoil shall be spread as required on all other disturbed and bare areas to produce a total depth of 6" as shown. Fill all depressions in existing grades with suitable fill material as specified in Section 02200, prior to spreading of topsoil, then shape and finish grade to depth of topsoil required.

B. Area shall be progressively fine graded to laser optical tolerances and machine and hand raked. Off-site topsoil added as required to correct depressions and other irregularities, to produce smooth and unbroken finish grades and the depth of topsoil required.

C. Drawings show grading design intent. Finish grades shall conform to lines, grades, sections, and shapes of lawn areas as required. Provide positive drainage. Provide smooth, uniform, rounded transitions at all changes and breaks in grade.

D. Starter fertilizers: all required materials shall be spread and distributed into the soil at rates and amounts specified herein.

E. After establishment of finish grade, entire area shall be hand raked and rolled using a light roller. Remove any resultant depressions.

3.04 PREPARATION OF AREAS FOR SEEDING

A. GENERAL DESCRIPTION: This work shall consist of the preparation of the seed bed. Work shall be done as described herein:

1. Areas shall be finely raked to a finished grade. Substantially, all sticks, litter, wire, weeds, cable or stones larger than one (1) inch in greatest dimension shall be removed and disposed of as directed.

2. Where the soil has become compacted, prior to fine raking, areas to be seeded shall be rototilled to a minimum depth of four (4) inches.

3. No seeding will be permitted on areas where the seed bed has not been properly prepared or where the soil is compacted.

4. Request inspection of the work for approval before proceeding with seeding.

3.05 PREPARATION OF AREAS FOR TOP DRESSING

A. All sports fields and other identified areas not otherwise disturbed shall receive this renovation work.

B. Mow existing turf to 1" or less. Re-edge in field to conform to standard dimensions for that field type.

C. Make two passes in different directions with a power de-thatcher to remove thatch. Remove from surface.

D. Make two passes with a deep-tinted core aerator, in different directions. Leave cores on surface.

E. Remove by scarifying all high areas around in field edges, bike paths, mounds, etc. Apply top dressing material up to a depth of 2" (where necessary to smooth potholes) by means of mechanical spreader, throughout the entire area to be rehabilitated.

3.06 APPLICATION OF LIMESTONE

A. When applied dry, limestone shall be spread evenly and incorporated thoroughly into the soil by discing or other approved means, except in top dressing areas.

B. When applied hydraulically, no discing will be necessary.

C. Granular treatment to be applied at the rate of 25 to 50 lbs. per 1,000 square feet, or as required by soil pH test to produce a pH of 6.0 to 6.5.

D. Perform one additional soil test at the end of the guarantee period to determine the effect of the lime application.

3.07 APPLICATION OF LAWN STARTER FERTILIZER

A. After the incorporation of ground limestone into the seed bed, then apply the fertilizer.

B. Fertilizer shall be applied at the rate of 1.5 lbs. of N per 1,000 square feet for starter fertilizer.

C. Apply fertilizer according to manufacturer's recommendations.

3.08 APPLICATION OF SEED

A. See section 02821

3.09 APPLYING JUTE MESH

A. Apply jute mesh loosely (on all slopes 3:1 or steeper) but smoothly to fit the contour of the finished grade, parallel to and in the same direction as the flow of water. The up-slope end of each separate strip or piece of jute mesh shall be buried in a six (6) inch minimum vertical anchor slot or junction slot with the soil tamped firmly against the mesh. Where more than one width of material is required, edges shall overlap a minimum of twelve (12) inches, and the up-slope section of mesh will be on top. Down-hill ends of the jute mesh shall be folded under approximately four (4) inches and stapled in place. Staples will be inserted through the mesh along edges, overlaps, and in the center of all jute mesh strips at intervals not greater than three (3) feet. All anchor slots, junction slots, check slots and terminal folds shall have five (5) staples spaced not more than nine (9) inches on center across widths.

B. On seeded banks, jute shall be applied immediately after seeding.

3.10 APPLICATION OF TURF MAINTENANCE FERTILIZER

A. Four applications of turf maintenance fertilizer will be required before final acceptance of seeded areas.

B. Fertilization Schedule:

Fall Fertilization (Oct – root development)	(1 lb. N / 1000 sf)
Spring Fertilization/seed starter (mid-late March)	(1.5 lb. N / 1000 sf)
Fertilizer w/Crabgrass control (Siduron – Late April)	(.75 lb. N / 1000 sf)
Late Summer (late Aug./Sept.)	(.75 lb. N / 1000 sf)

C. 1 lb. of N per 1,000 square feet for turf maintenance fertilizer, or in accordance with soil test reports.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.

B. The principal work of this section includes, but may not be limited to, the following:

1. Preparation of seed bed
2. Application of seed
3. Acceptance of seeding

1.03 QUALITY ASSURANCE

A. Subcontract seeding work to a firm specializing in such work unless contractor is fully experienced and qualified.

B. Each seed bag or container shall display a label that identifies the contents as a true representation of the seed mix and percentages required by specification. No seed shall be applied to a site until the Owner's Representative has determined the mixture meets all requirements.

C. Do not make substitutions without written approval. If specified seed mixes are not available, obtain approval for substitution from the Owner's Representative.

D. Loam to be screened to ¾ , with 3% min. organic matter, applied to a depth of 4" min. See Section 02810 for additional information.

1.04 SUBMITTALS

A. Certifications and/or labels of proposed seed mixtures stating common and scientific names of grasses, percentages by weight, and percentages of purity and germination.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Protect all products from weather and or other damaging or deteriorating conditions.

B. Seed mixes that have been damaged or have deteriorated in transit or storage are not acceptable.

C. Seeding Schedule: Prepare a proposed seeding schedule. Schedule dates for each type of landscape work during normal seasons for such work.

Seeding:	April 1 – June 1	August 15 – October 15

D. Correlate with specified maintenance periods to provide maintenance to date of acceptance. Once the schedule is accepted, revise dates only as approved in writing, after documentation of reasons for delays.

1.06 WARRANTY

A. Warranty seeding until final acceptance of grass stand.

1.07 MAINTENANCE

A. Maintenance of seeding to be performed by the installer includes:

1. Watering
2. Regrading and replanting eroded areas
3. Seeding or patching sparse or bare areas

B. Maintain seeded areas immediately after placement until grass is accepted.

C. Mow lawn area twice before final acceptance.

PART 2 – PRODUCTS

2.01 SEED

A. General: Pure, live, fresh seed from commercial sources meeting and labeled in accordance with State and Federal laws, rules and regulations. All seed to have minimum germination rate of 85%, unless noted otherwise. Seed all areas indicated including all disturbed areas and top dressed areas with the following mixes, corresponding to area delineated on the plans:

SEED TYPE # 1 (GENERAL LAWN AREAS)

Grass Type	*Proportioned By Weight*	*Purity*	*Germination*
Champion Perennial Ryegrass	40%	99%	90%
Jamestown Red Fescue	20%	99%	90%
Shamrock Kentucky Bluegrass (improved variety)	40%	95%	85%

Weed seed content shall be 0%, and inert materials shall be 1% maximum.
Apply at the rate of 6# per 1000 s.f.

2.03 WATER

A. Clean, fresh potable water.

2.04 JUTE MESH

A. Apply to all slopes 3:1 or greater. See Section 02810.

PART 3 – EXECUTION

3.01 APPLICATION OF SEED

A. Prior to on-site mixing of seed with Hydroseed blend, contractor shall supply L.A. with approximately 1.2-lb. sample of seed from unopened containers. L.A. and/or City will test-grow sample.

B. The approved seed mixture shall be applied at the specified rate by Hydroseed method.

C. Broadcast seeding will be permitted only with written permission of Owner. All requests shall be in writing with detailed and itemized procedure to be followed.

3.02 JUTE MESH

A. Apply jute mesh over all slopes 3:1 or greater immediately after seeding. See Section 02810.

3.03 ACCEPTANCE OF SEEDING

A. PROVISIONAL ACCEPTANCE:

Provisional acceptance period shall be defined as the elapsed time between application of seed and the establishment of a good, healthy uniform growth of grass.

1. Provisional acceptance for purposes of payment will not occur until the seeded areas are well established, exhibiting a vigorous growing condition, devoid of bare spots greater than 1 square foot.

B. FINAL ACCEPTANCE:

1. It will be the Contractor's responsibility to maintain seeding areas in an approved condition until provisional acceptance.

2. The Contractor shall keep all seeded areas watered and in good condition reseeding if and when necessary during the provisional acceptance period.

3. All seeded areas shall be guaranteed by the Contractor for not less than one growing season from the time of provisional acceptance. Growing season shall be defined as follows:

   a.) If provisional acceptance is received during April, May, June or July, next growing season shall end on October 15.

   b.) If provisional acceptance is received during September, October, November or December, next growing season shall end on June 1.

4. At the end of the guarantee period, inspection will be made by the L.A. upon written request submitted by the Contractor at least ten (10) days before the anticipated date. Lawn areas not demonstrating satisfactory stand as outlined above, (except if damaged by vandalism) as determined by the L.A., shall be renovated, reseeded and maintained meeting all requirements as specified herein.

5. After all necessary corrective work has been completed, the L.A. shall certify in writing the final acceptance of the lawn area.

6. Decision of Owner as to necessity to replace lawns or repair any defects in workmanship, or cause of any destruction or loss, impairment or failure to flourish, shall be conclusive and binding upon Contractor. Replacements shall be the same as specified. All replacements shall be planted as specified herein at Contractor's expense.

7. "Vandalism" as noted above, is intended to mean any acts, whether intentional or accidental, by other persons, which clearly result in damage, and which may reasonably be considered to be beyond the Contractor's reasonable control, as determined by the Owner's representative.

END OF SECTION

SECTION 02989

MISCELLANEOUS WORK AND CLEANING UP

PART 1.00 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Furnish all labor, materials, equipment and incidentals required to do all miscellaneous work and cleaning up not otherwise specified. The work of this Section includes, but is not limited, to the following:

1. Driveways shall be made accessible at the end of each work day. Any extra work required to accomplish this shall be included in this item.

2. Provide access for mail delivery on a daily basis.

3. Provide access for trash pickup. CITY shall provide pickup schedule so that work does not conflict with trash vehicles.

4. Restoration, repair or replacement of existing catch basins, sewer manholes, sewer and drainage pipe, water and sewer services encountered during construction.

5. Restoration of concrete walks, driveways, fences, walls, mailboxes, signs, etc., as required.

6. Installation of erosion control measures and continued maintenance for the duration of the Contract.

7. Restore grass areas with loam and seed.

8. Cleaning up the construction site.

9. Providing and setting up of temporary Fluorescent Traffic Cones (RIDOT Std. 26.1.0) and or Polyethylene Drums with markings around the work zones during construction operations and overnight.

10. Maintaining the safe passage of traffic in accordance with specified traffic control.

11. All water gate boxes shall be cleaned out using a vacuum and a key shall be placed on the valve nut in the presence of Water Utilities Supervisors to assure proper cleaning has taken

place. Failure to do so will delay in final payment.

12. All other work incidental to completing the project.

PART 2.00 - PRODUCTS

None this Section

PART 3.00 - EXECUTION

3.01 CLEAN UP

A. The Contractor shall remove all construction material, excess excavation, equipment or other debris remaining on the job as a result of construction operations and shall render the site of the work in a neat and orderly condition at least equal to that which existed prior to the start of construction.

B. The Contractor shall remove all material from the water gate boxes with the use of an appropriate vacuum. The Contractor shall install a key on the valve nut in the presence of a Water Utilities Supervisor to assure the box has been cleaned appropriately. Failure to do so will result in delay of payment.

END OF SECTION

SECTION 03300

CEMENT CONCRETE – CAST ION PLACE

PART 1.00 – GENERAL

1.01 DESCRIPTION OF WORK

A. Provide all materials, equipment, and labor necessary to complete the work as indicated on the drawings or as specified herein.

B. The principal work of this section includes, but may not be limited to, the following:

1. Installation of cast in place concrete

1.02 TEST SPECIMENS

1. Furnish all concrete necessary for casting test cylinders or performing slump tests as directed by the CITY.

1.03 JOB CONDITIONS

A. Examine all surfaces to receive concrete to see that they are in proper condition to receive the work specified. Report to the CITY in writing all unacceptable surfaces. Starting work in any area shall constitute acceptance of that surface. All defects resulting from use of accepted surfaces shall be corrected by the CONTRACTOR at no additional expense to the CITY.

B. Subbase and base preparation, including material shall be as specified in Section 02200 of these Specifications. Start of work under this Section shall constitute acceptance of the foundation conditions to which the work is to be applied. Any defects in work resulting from such conditions shall be corrected at no extra cost to the CITY.

PART 2 – PRODUCTS

2.01 GENERAL

A. Unless otherwise specified, all methods and materials shall conform to the relevant provisions of Section 600, PORTLAND CEMENT CONCRETE, and Section M.02, PORTLAND CEMENT CONCRETE MATERIALS, of the Rhode Island Standard Specifications.

2.02 CONCRETE

A. Cement concrete to be used shall be class "B", unless otherwise specified, according to the classification defined in the RIDOT Standard Specifications and shall meet the following requirements.

Class	Minimum Cement Content	Minimum Compressive Strength	Type of Cement		
	Lbs. Per Cubic Yd.	Lbs. Per Sq. Inch		Max Size Aggregate	Percent of Air Entrainment
B	517	3000	2	¾	5.0

2.03 FORMWORK

A. Formwork for concrete shall be smooth plywood for exposed portions with two (2) inch framing and bracing members. Below grade portions of concrete may be formed with rough lumber.

B. Forms shall be strong enough to resist pressure of the concrete without springing, and tight enough to prevent leakage of mortar. Forms shall be staked, braced, or tied together to maintain their positions and shape when concrete is compacted in place. Forms shall be clean and shall produce a smooth, even finish for exposed surfaces.

2.04 REINFORCING

A. Welded wire fabric shall be 6-inch x 6-inch – W1.4 x W1.4 gauge cold-drawn steel wires formed into a mesh and welded together at points of intersection in conformance with ASTM – A-185. Welded wire fabric shall be furnished in mats.

B. Reinforcing bars shall consist of deformed bars unless otherwise specified. The bars shall be rolled from new billet steel conforming to the requirements of ASTM – 615, Grade 60.

C. All reinforcement shall be free from imperfections and surface coatings of rust, dirt, oils, paint, grease, and mill scale and shall present a clean, fresh surface when placed in the structure. Rust that occurs in scales or that pits

the steel will not be considered an imperfection, but the surface shall be brushed to remove loose material.

2.05 EXPANSION JOINT FILLER

A. Preformed non-extruding resilient type filler conforming to AASHTO-M153.

PART 3 – EXECUTION

3.01 GRADING AND COMPACTION OF SUBGRADE BASE

A. Do all grading and compaction of subgrade and base in conformance with Section 02200 of these specifications.

B. Bring subbase and base to required grades and cross sections after final compaction. Remove spongy and otherwise suitable material and replace with approved material. Loosen exceptionally hard spots and re-compact. Take every precaution to obtain a foundation of uniform bearing power. In absence of specific requirement, compact subbase and vase by such means as will provide firm base and insurance against settlement and cracking of superimposed work.

3.02 GENERAL FORMWORK

A. Forms shall be smooth, free from warp, sufficient in strength to resist springing out of shape, equal in height to the depth of concrete and free from all dirt or mortar if previously used. The forms shall be rigidly supported, well staked, thoroughly braced and set to the proper lines with the upper edges conforming to the finish grades. Forms shall be coated with non-staining mineral oil prior to placing concrete.

B. Forms for exposed surfaces shall be coated with Nox-Crete form coating, Sta-Kleen, or Pro-Cote as taken from its original container or approved equal, applied before the reinforcement is placed. After coating, any surplus on the form surface and any on the reinforcing steel shall be removed. Forms for unexposed surfaces may be thoroughly wetted with water in lieu of coating immediately before the placing of concrete except that in cold weather with probably freezing temperatures, coating shall be mandatory.

C. Forms shall not be removed for at least twenty-four (24) hours or until the concrete has adequately hardened. Extreme care shall be taken in removing forms in order to prevent damage to the concrete. Under no conditions shall any bar, pick or other tool be used which depends upon leverage on the concrete for removal of the forms.

3.03 CAST – IN PLACE

A. Reinforcing shall be placed as shown on the plans.

3.04 CONCRETE PLACING AND FINISHING

A. Placing and finishing of cement walls, and steps.

1. Placing and finishing shall be in accordance with applicable provisions of Section 807, of the State of Rhode Island Standard Specifications, referenced herein.

2. In conveying the concrete from the place of mixing to the place of deposit, the operation shall be conducted in such a manner that no mortar will be lost, and the concrete shall be so handled that it will be of uniform composition throughout, showing neither excess not lack of mortar in any areas.

3. Concrete shall be placed in the forms in an approved manner in order to prevent stone pockets, voids or segregation and to reduce rehandling and flowing in the forms to a minimum. Concrete shall be evenly distributed by rodding and vibrating. The face of the forms shall be carefully spaded to bring a dense mortar to the face in order to produce good surface finish. Compaction shall be accomplished by applying approved mechanical vibrators to the mass of concrete at the point and time of deposit using care to avoid over vibration. Vibration of forms or reinforcing shall not be permitted and extreme care shall be taken to prevent disturbing previously placed concrete which has become partially set.

4. Within forty-eight (48) hours after forms have been removed, all surfaces shall be finished as follows:

a. Removal of all fins, projections and irregularities from surfaces exposed to view. All voids and cavities on all surfaces shall be completely filled with stiff mortar of same composition and air entrainment as the mortar in the original concrete mix. The same brand and color of cement, and the same kind and color of fine aggregate used in the original concrete mix shall be used in this mortar. The mortar shall be mixed, allowed to set for thirty (30) minutes and then mixed, allowed to set for thirty minutes and then remixed before placing in the work. Carefully remove surface film from these pointed areas before the mortar sets. If surfaces exposed to view do not present a

uniformly smooth, clean surface of even texture and appearance when prepared in accordance with the foregoing, they shall be rubbed to obtain a satisfactory finish. Surfaces shall be wetted with clean water and rubbed with a carborundum brick without applying any cement or other coating until smooth and inform in appearance.

5. Protection and curing shall be accomplished by one of the applicable methods as approved by the CITY, specified in Section 501.03.12 of the State of Rhode Island Standard Specifications.

6. The CONTRACTOR shall be responsible for the quality and strength of the concrete. Inferior concrete, including that damaged by frost action, shall be removed and replaced at no additional cost to the CITY.

7. Existing concrete work damaged by the CONTRACTOR during operations under this contract shall be restored to the original condition acceptable to the CITY.

B. CEMENT CONCRETE FOOTINGS

1. The CONTRACTOR shall construct cement concrete footings to the dimensions and details as shown on the drawings.

3.05 EXPANSION JOINTS

A. Expansion joints shall be located as shown on the plans and details and as directed by the CITY.

3.06 COLD WEATHER CONCRETE

A. Refer to RIDOT Standard Specifications Section 601.03.08 and 807.03.7.

B. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather. No frozen materials or materials containing ice shall be used.

END OF SECTION