INVITATION TO BID # 1778-B

Date: December 6, 2021

Owner: Suffolk City School Board
User: Suffolk Public Schools
Engineer: Timmons Group
Suffolk Public Schools Bid # 1778-B

Suffolk Public Schools is soliciting lump sum, sealed bids for the construction a turf field at Lakeland High School. The project is located at the rear of Lakeland High School, 214 Kenyon Road, Suffolk VA 23434.

All bids must be submitted in a sealed envelope or package clearly marked **"BID-1778-B Lakeland High School Turf field," including the due date and time**. All bids shall be received in the Purchasing Office, on or before **12:00 PM., Friday, January 7, 2022** and delivered to:

Anthony W. Hinds, MBA
Department of Purchasing
Suffolk Public Schools
100 North Main Street (entrance @ rear of building)
Suffolk, Virginia 23434

Bids may be delivered or mailed into the above address. Failure of any courier to meet the stated time and date will be require bids to be returned unopened to the bidder. Suffolk Public Schools will hold no responsibility for a late bid arrival. Furthermore, the use of the United States Postal Service close to the due date is discouraged as the post office box is checked only once daily. Any bid received after the time designated above will be returned unopened.

Bids shall be publicly opened and read aloud at the above stated date, time and location.

Any award resulting from this solicitation will be issued to the successful offeror in writing and will be posted on the Suffolk Public School Bid Board located at 100 North Main Street, Suffolk, Virginia 23434 and the Suffolk Public Schools website.

A bid bond is required. Performance and Payment bonds will be required upon award of the contract. Procedures for submitting a bid, claiming an error, withdrawal of bids, and other pertinent information are contained in the contract documents. The procedure for withdrawal of bids shall be in accordance with the Instructions to Bidders and Section 2.2-4330, Code of Virginia. Bidders shall be required to comply with the provisions of Section 2.2-4311, Code of Virginia, in regard to nondiscrimination in employment. The owner reserves the right to reject any or all bids.

Digital copies of the any portion of the bid documents may be requested by any bidder. Should that request take place, the digital version will be emailed to the potential bidder.

Any questions regarding this invitation to bid should be directed in writing to Anthony W. Hinds, Purchasing Manager at the above address or emailed to anthonyhinds@spsk12.net and Casey Heron at casey.heron@timmons.com.

END OF INVITATION TO BID

IFB- 1778 LAKELAND HIGH SCHOOL TURF FIELD
BID FORM

This bid is for the **Construction of a Turf Field at Lakeland High School** per the attached specifications and drawings contained in this Invitations for Bids.

Each bidder shall submit their bid on this form. Submit two (2) copies of this form completed and with original signatures.

To: **Anthony W. Hinds, MBA**
Department of Purchasing
Suffolk Public Schools
100 North Main Street
Suffolk, Virginia 23434

From: _____
(Name)

_____
(Address)

_____

Having carefully examined the bid documents including the Invitation to Bid, Instructions to Bidders, Specifications, Drawings, Terms of Agreement and Addenda (if any) prepared by the architect, entitled:

Lakeland High School Turf Field

as well as the premises and conditions affecting the work, the undersigned proposes to furnish all labor, supervision, materials, equipment, and services necessary to perform all the work in accordance with the contract documents for the following lump sum amount.

BASE BID:

The Lump Sum Base Bid price for the entire work in this package, including any allowances, completed within the time limits and in accordance with the contract documents is:

_____ Dollars
(Words)

($ _____) .
(Figures)

BID ALTERNATES:

Bid Alternate No. 1: Outer Perimeter curb and concrete pad at track access points in accordance with contract documents and drawings.

_____ Dollars
(Words)

($ _____) .

Bid Alternate No. 2: Provide and install 2 Sportsfield Specialties – High School aluminum sand pit covers (SP6820) with ½" black track surfacing insert for aluminum panels. Contractor shall provide O&M documents. An approved alternate will be contemplated but the alternate's specifications proving equal or better to the item specified must be provided in this bid.

_____ Dollars
(Words)

($ _____) .

ADDENDA:

The above stated bid is based on the Contract Documents and the following additional addenda issued subsequent to the release of the drawings and specifications for bids. (List all addenda with dates, if issued. If no addenda are issued, write the word "none".)

Addenda # _____ Date _____ Addenda # _____ Date _____

Addenda # _____ Date _____ Addenda # _____ Date _____

TIME OF COMPLETION:

Work at the site shall commence within ten (10) working days following the execution of the contract or the Notice-To-Proceed. The Owner anticipates the Award of this contract or the issuance of the Notice-Of-Award on or before January 10, 2022. All work shall be substantially complete no later than May 2, 2022 and 100% Final Completion shall be achieved no later than June 2, 2022. The Owner will consider any request made by the Contractor to extend the Contractor's time for performance of the work and may grant time reasonable time extensions when delays in the Contractor's work performance are directly caused by supply chain delays, if the Contractor has provided the Owner with (i) reasonable notice in advance that its work is being impacted by supply chain delays; (ii) adequate verification to support the Contractor's claim; and (iii) written certification that any delay in its performance of this Contract is beyond the Contractor's control and not the result of actions or any failure to act by the Contractor.

PROFIT AND OVERHEAD FOR CHANGE ORDERS:

Change Orders initiated per Article 9 of the General Conditions shall be executed on the basis of the cost of the work, plus a percentage of the work, according to the percentages indicated in Articles 9.3.4.2.1 and 9.3.4.2.2 of the General Conditions.

OTHER:

If notified of the acceptance of this bid within (60) calendar days after the date fixed for the opening of the bids, the undersigned agrees to execute and deliver to the owner the Contract and Contractor's Bonds within ten (10) calendar days from the date of notification and, to faithfully and properly complete the work with the best interest of the Owner, the safety of the public, and in accordance with first class workmanship.
The undersigned agrees that the Owner may retain five percent (5%) of the Contract amount as specified in the **Sample Agreement/Agreement**.

BID SECURITY:

Attached hereto is a cashiers check, certified check, or Bid Bond (AIA Document A310 or from a Surety Company authorized to do business in the Commonwealth of Virginia and acceptable to the Owner), none of which shall be less than five percent (5%) of the principle bid amount, and made payable to Suffolk City School Board.

The undersigned agrees, if awarded the Contract, to comply with all provisions regarding commencement, performance, completion, and acceptance of the work described in the above-mentioned specifications and drawings, construction contract, and as stipulated in this proposal. The undersigned further agrees, if awarded this contract, to execute and deliver Performance and Labor and Material Payment bonds each in an amount equal to one hundred percent (100%) of the Contract Price. In case of bidders failure to execute the Contract, provide a performance bond, or to commence the work, the check or bid bond shall be paid as liquidated damages for such failure; otherwise the check or bid bond accompanying the proposal will be returned to the Undersigned.

LIQUIDATED DAMAGES:

The Bidder acknowledges and agrees to the liquidated damages specified in the **Sample Agreement/Agreement**. Bidder also acknowledges that time is of the essence and that work to be performed by others and/or use of the school is restrained by the timely completion of the work within this contract.

BID FORM SIGNATURE(S):

The Undersigned declares that this firm is (check one):

- ❑ A Corporation organized and existing under the laws of _____.
- ❑ A Partnership consisting of _____.
- ❑ A sole Proprietorship.
- ❑ Other _____.

Virginia State Corporation Commission ID #_____

It is agreed, that the Undersigned has complied with and/or will comply with all requirements concerning licensing and with all other Local, State, and National laws and that no legal requirement has been, or will be, violated in making or accepting this proposal, in awarding the contract to him, and/or in the prosecution of the work required therein.

The Undersigned declares that the person, or persons, signing this proposal is/are fully authorized to sign the proposal on behalf of the firm listed and to fully bind their firm listed to all the conditions and provisions thereof. It is agreed that no person, persons, or company other that the firm listed below or as otherwise indicated hereinafter has any interest whatsoever in this proposal of the Contract that may be entered into as a result thereof and that in all respects the proposal is legal, fair, and submitted in good faith without collusion or fraud.

Respectfully submitted this _____ day of _____, 2021.

_____
(Name of Firm)

_____
(Address)

_____ *Affix Seal*

Telephone (____)_____ Fax (____)_____

Email address _____

Registered Virginia Contractor #: _____ (Please attach a copy of the registration)

By: _____
(Signature)

Name: _____
(Printed)

Title: _____ *Affix Seal*
(Printed)

END OF BID FORM

Sample Agreement

Suffolk City School Board
Bid # -1778 B – Lakeland High School Turf Field

THIS AGREEMENT, made and entered into this _____ day of _____, 20__ by and between the Suffolk City School Board, (hereinafter called the Owner), whose address is 100 N Main Street, Suffolk, VA 23434 and _____ (hereinafter called the Contractor), whose address is _____.

WITNESSETH: WHEREAS, the Owner intends to contract the construction of a new turf field in accordance with the bidding documents, IFB 1778B.

WHEREAS, the Contractor agrees to perform the work for the sum herein stated.

NOW THEREFORE, the Owner and the Contractor agree as set forth below.

ARTICLE 1. SCOPE OF WORK

The work to be performed shall be in accordance with IFB-1778-B and all related Contract Documents prepared by Timmons Group dated December 3, 2021 and entitled **"Lakeland High School Turf Field".** The Contractor agrees to furnish all labor, materials, equipment and supervision to complete the work as required in the Contract Documents, which are hereby made a part of this contract by reference. It is understood and agreed by the parties hereto that all work shall be performed as required in IFB-1778-B and related Contract Documents and shall be subject to inspection and approval by the Owner or its authorized representative. The relationship of the Contractor to the Owner hereunder is that of an independent Contractor. The Contract Documents are defined in the General Conditions and are incorporated herein by reference.

ARTICLE 2. TIME OF COMPLETION

The Contractor shall commence the work promptly upon the date established in the Notice of Award or Notice to Proceed. The Contractor shall achieve all the times and dates shown on the bid form, which are incorporated herein by reference and made a part of this Contract as though fully set forth herein. All work shall be Substantially Complete no later than May 2, 2022 and 100% Final Completion shall be achieved no later than June 2, 2022. The Owner will consider any request made by the Contractor to extend the Contractor's time for performance of the work and may grant time reasonable time extensions when delays in the Contractor's work performance are directly caused by supply chain delays, if the Contractor has provided the Owner with (i) reasonable notice in advance that its work is being impacted by supply chain delays; (ii) adequate verification to support the Contractor's claim; and (iii) written certification that any delay in its performance of this Contract is beyond the Contractor's control and not the result of actions or any failure to act by the Contractor.

ARTICLE 3. CONTRACT SUM

The Owner agrees to pay, and the Contractor agrees to accept in full performance of this Contract, the sum of _____, ($_____) which sum also includes:

A) The cost of a 100% Performance Bond and a 100% Payment Bond, said bonds having been posted by the Contractor pursuant to laws of the Commonwealth of Virginia;
B) All work included in bid Addenda Number(s) _____.

ARTICLE 4. PAYMENT

The Owner agrees to pay the Contractor as the work progresses, but not more frequently than once each month after the date of the Notice of Award or Notice to Proceed, and only after fully complying with the General Conditions and completion of an acceptable Certificate of Payment for the work performed during the preceding calendar month, ninety-five percent (95%) of the value of the labor performed and, subject to the requirements of the General Conditions, ninety-five percent (95%) of the value of materials furnished in place or on-site.

The Contractor shall supply such evidence of labor performed and materials furnished, as the Owner may desire, at time of request for the Certificate of Payment of account. Materials for which payment has been made cannot be removed from job site.

Retainage Reduction – Five percent (5%) of the earned amount shall be retained from each monthly payment until fifty percent (50%) of the dollar amount of the Contract has been earned. During the last fifty percent (50%) of the Contract, retainage may be reduced pursuant to applicable provisions of the General Conditions.

ARTICLE 5. INDEBTEDNESS

Before final payment is made, the Contractor must submit evidence in the form of a final waiver of lien or claim to the Owner that all payrolls, materials bills, subcontracts and outstanding indebtedness in connection with the work have been paid or what arrangements have been made for their payment.

Payment will be made without unnecessary delay and after receipt of such evidence as mentioned above and final acceptance of the work by the Owner.

ARTICLE 6. ADDITIONAL WORK

It is understood and agreed by the parties hereto that no money will be paid to the Contractor for any additional labor or materials furnished unless a new contract in writing or a modification hereto for such additional materials or labor has been executed by the Owner and Contractor. The Owner specifically reserves the right to modify or amend this Contract and the total sum due hereunder either by enlarging or restricting the scope of work.

ARTICLE 7. ACCEPTANCE

The work shall be inspected for acceptance by the Program Manager and Architect promptly upon receipt of notice from the Contractor that the work is complete and ready for inspection.

ARTICLE 8. DISPUTES PERTAINING TO PAYMENT FOR WORK

Should disputes arise regarding the value of any work done, or any work omitted, or of any extra work which said Contractor may be required to perform, or respecting any other elements involved in this Contract, said dispute shall be brought to the attention of the Program Manager who will

endeavor to settle matters. If he/she is unsuccessful, the dispute will be brought to the attention of the Suffolk City School Board and their decision shall be final and conclusive.

ARTICLE 9. TERMINATION FOR BREACH, ETC.

If the Contractor shall be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he or any of his subcontractors violate any of the provisions of this Contract, the Owner may serve written notice upon him of its intention to terminate said Contract; and unless, within ten (10) days after the serving of such notice, such violation shall cease, the Owner then may take over the work and prosecute same to completion by contract or by any other method it may deem advisable for the account and at the expense of the Contractor. The Owner may take possession of and utilize in completing the work, such materials, equipment, and any other property belonging to the Contractor as may be on the site of the work and necessary therefore. The Owner may, at any time upon ten (10) days written notice to the Contractor, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the work for the convenience of the Owner.

ARTICLE 10. OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNT AND MAKE APPLICATION THEREOF

The Owner may withhold from payment to the Contractor such an amount or amounts as, in the Owner's sole judgment, may be necessary to pay just claims against the Contractor or any subcontractor for labor and services rendered and materials furnished in and about the work. The Owner may apply such withheld amounts on the payment of such claims in its sole discretion. In so doing, the Owner shall be deemed the agent of the Contractor and payments so made by the Owner shall be made by the Owner under the terms of the Contract and in good faith and no liability whatsoever shall attach to the Owner for having made such payments. Such payments may be made without prior determination by the Owner of the validity of any claim or claims.

ARTICLE 11. LIABILITY AND INDEMNIFICATION

The Contractor agrees that it shall at all times protect and indemnify and save harmless, the Suffolk City School Board and all institutions, agencies, departments, authorities and instrumentalities of the School Board and any member of the School Board or of their boards or commissions or any of the elected or appointed officers or any of their employees or authorized volunteers as described in the General Conditions of the project specifications which are included herein by reference, from any and all claims, damages of every kind and nature made, rendered or incurred by or in behalf of any person or corporation whatsoever, including the parties hereto and their employees that may arise, that occur or grow out of any acts, actions, work or other activity done by the said Contractor in the performance and execution of this Contract.

ARTICILE 12. SUBCONTRACTOR

No part of this Contract shall be sublet by the Contractor without prior written approval of the Owner.

ARTICLE 13. LIQUIDATED DAMAGES

Should the Contractor fail to Finally Complete the work on or before the Contract Completion Date, referred to in Article 2 hereof, the Contractor shall pay to the Owner the sum of $500.00 for each consecutive calendar day that terms of the Contract remain unfulfilled as defined in Article 9, Section 9.11 of the Supplementary General Conditions of the Construction Contract.1

ARTICLE 14, NONDISCRIMINATION

During the performance of this contract, the contractor agrees as follows:

a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The contractor will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

Suffolk Public Schools does not discriminate against faith-based organizations.

ARTICLE 15, DRUG FREE WORKPLACE

During the performance of this contract, the contractor agrees to:

a. Provide a drug-free work place for the contractor's employees,

b. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the contractor's work place and specifying the actions that will be taken against employees for violations of such prohibition,

c. State in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free work place,

d. Include the provisions of the foregoing clauses in every subcontract or purchase order of over $10, 000 so that the provisions will be binding upon each subcontractor or vendor.

ARTICLE 16, CONTRACTOR/EMPLOYEE BACKGROUND CERTIFICATION

Upon award, the contractor and any employee who will have direct contact with students shall provide a background certification.

Any person making a materially false statement regarding such offense shall be guilty of a Class 1 misdemeanor and, upon conviction, the fact of such conviction shall be grounds for the revocation of the contract to provide such services and, when relevant, the revocation of any license required to provide such services. **(Included)**

ARTICLE 17, STATE CORPORATION COMMISSION ID NUMBER

In accordance with new registration requirements effective July 1, 2010, the Contractor shall include the identification number issued by the State Corporation Commission as proof of registration or justification for non-registration per the requirements in Section 13.1 or Title 50 of the Code of Virginia.

SCC ID #_____

ARTICLE 18, COMPLIANCE WITH FEDERAL IMMIGRATION LAW

The Contractor shall not, during the performance of a contract knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

SIGNATURE PAGES

IN WITNESS WHEREOF, the parties have caused the Agreement to be executed by the following duly authorized officials.

SUFFOLK CITY SCHOOL BOARD,
A Body Corporation

By: _____
Dr. John B. Gordon III
Superintendent
Suffolk City Public Schools

NOTARY CLAUSE

Commonwealth of Virginia

City/County_____, to wit: The following instrument was

Acknowledged before me this _____day of _____, 2022 by _____
Name

_____, _____, and
Name Title

_____, _____.
Name Title

My commission expires:_____

Notary Number:_____

_____
Notary Public

Contractor

By: _____
Signature

_____
Print Name

_____
Title

NOTARY CLAUSE

Commonwealth of Virginia

City/County_____, to wit: The following instrument was

Acknowledged before me this _____day of _____, 2022 by _____
Name

_____, _____, and
Name Title

_____, _____.
Name Title

My commission expires:_____

Notary Number:_____

_____
Notary Public

APPROVED AS TO FORM AND CONTENT:

_____
School Board Attorney

DOCUMENT 000213 - INSTRUCTIONS TO BIDDERS

1. DRAWINGS AND SPECIFICATIONS:

   Contract Documents will be posted on EVA. In the event a Contract is not awarded, all plans, drawings and specifications will be recalled.

2. BIDS:

   Before submitting a bid, each bidder shall carefully examine the drawings, specifications and other Contract Documents; read and understand the bidding documents and his bid; shall visit the site of the work; shall fully inform himself as to all existing conditions and limitations; and shall include in the bid the cost of all labor, supervision, items, materials, systems, and equipment described and included in the Contract Documents without exceptions.

3. CONTRACT AND BONDS

   Each bid shall be accompanied by a bid security in the form of a Bid Bond, a cashier's check, or a certified check in the amount of five percent (5%) of the total bid, made payable to the Suffolk City School Board. This Bid Bond, cashier's check, or certified check pledges that the bidder will enter into a Contract with the Owner on the terms stated in the Bid and will furnish bonds covering faithful performance of the Contract and payment of all obligations arising there under. Should the bidder refuse to enter into such a Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

   Surety Bonds shall be written on AIA Document A310, Bid Bond, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

   All bonds shall be written by sureties or insurance companies licensed to do business in the Commonwealth of Virginia. Other bid bond forms will be acceptable if in the same format as AIA Document A310, Bid Bond.

   The Contract agreement will be on a form similar to that which is bound in the specifications. The completion date of construction shall be as indicated in the bid document. The successful bidder, simultaneously with the execution of the Contract agreement, shall be required to furnish a performance bond and a payment bond in an amount equal to one hundred percent (100%) of the Contract price, said bonds shall be secured from a surety company licensed to do business in the Commonwealth of Virginia and acceptable to the Suffolk City School Board.

4. QUALIFICATION OF CONTRACTORS

   Each bidder shall submit with the bid a completed Contractors Qualification Statement using AIA Document A305, 1986 Edition (a copy is included after the Supplementary General Conditions).

   Bidders are required to submit with the bid evidence of proper and current certificates of contractors' registration in Virginia.

5. LISTING OF SUBCONTRACTORS

The experience and responsibility of subcontractors may have bearing on the choice of a contractor by the Owner.

If required by the Owner, the apparent two low bidders shall deliver to the Owner within seventy-two (72) hours (not including Saturday, Sunday or State Holidays) for review the following information:

a. Provide a list of the work to be performed by the bidder with his own forces.
b. Provide the proprietary names and the suppliers of the principle parts (items, systems, materials, and equipment) proposed for the work.
c. Provide a list of the names of the subcontractors to be employed for each of the principal parts of the work, copies of their agreements, and their corresponding dollar amounts.
d. Provide a list of references and/or past projects for individual subcontractors performing a principal part of the work. This requirement applies to subcontractors at any tier.

Principal part shall mean a subcontract dollar value in excess of $10,000.00.

The bidder will be required to establish the reliability and responsibility of the proposed subcontractors, manufactures, and suppliers who shall furnish and perform the work described in the specifications to the satisfaction of the Architect and the Owner.

These lists shall be binding upon the Contractor; however, the Owner has the right to reject any or all subcontractors which the Architect and the Owner determines to be unqualified to do the work. Owner may withhold awarding a contract to any particular bidder if the Owner considers one or more of the proposed contractors to be unqualified.

6. INTERPRETATIONS OF PLANS AND SPECIFICATIONS

If any person contemplating the submission of a bid for the proposed Contract is in doubt as to the true meaning of any part of the drawings, specifications or other proposed contract documents, he/she may submit a written request to Timmons Group, Attention: Casey Heron, at casey.heron@timmons.com and Anthony Hinds at anthonyhinds@spsk12.net. Requests must be in writing and received no later than five days (5) days prior to the date of the bid opening, for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by addendum. The Owner and the Architect will not be responsible for any other explanations or interpretations of the proposed documents.

7. ADDENDA OR BULLETINS

Contract documents, including any subsequent addenda, will be posted on eVa. It is the bidders' responsibility to check eVa's website to obtain any addenda.

8. RIGHT TO NEGOTIATE

The Owner reserves the right to negotiate with the lowest responsive and responsible Bidder to obtain a Contract price with funds available to the Owner whenever such low bid exceeds the Owner's availability of funds for the work.

9. AWARD OF CONTRACT

The Owner intends to award this contract in writing to the lowest responsive and responsible bidder provided the bid has been submitted in accordance with the requirements of the bid and contract documents, Virginia procurement regulations, is judged to be reasonable, and does not exceed the funds available. The Notice of Award will be posted on the Suffolk Public Schools Bid Board, located on

the second floor of the School Board office, 100 North Main Street, Suffolk, VA 23434 and on the Suffolk Public Schools website.

The Owner reserves the right to waive any informality in any bid or in the bidding. The accepted bidder shall assist and cooperate with the Owner in preparing a formal Contract Agreement and within five (5) days following its presentation shall sign and deliver four (4) complete sets of Contract Agreement documents to the Owner, including but not limited to: the Agreement, the Performance Bond, Payment Bond, Hold Harmless Agreement, and all necessary Certificates of Insurance.

The successful bidder, upon failure or refusal to enter in the Contract and/or to furnish the required Performance Bond, Payment Bond, and other required documents within the time specified, shall pay to the Owner as liquidated damages, an amount equal to the bid guarantee deposited with the bid or a portion thereof equal to the difference between the bid security and the next highest acceptable bid.

10. TIME IS OF THE ESSENCE

Time is of the essence for this Contract.

11. RESPONSIBLE BIDDER

The Owner reserves the right to award a contract as may be in their best interest and to award to the lowest responsive and responsible bidder. In determining the "lowest responsible bidder" Suffolk Public Schools may consider the following:

a. Past performances of the contractor and subcontractors that indicate their ability to complete this project (includes organization, equipment available and any other indicators)
b. Whether the bidder can perform the contract or provide the service promptly, or within the time specified, without delay.
c. Quality of products used and adherence to bid specifications

d. The sufficiency of financial resources and the ability of bidder to perform the contract
e. The previous and existing compliance by the bidder with laws and ordinances
f. The quality of performance of previous contracts or services

In addition, the Owner reserves the right to reject any or all bids or to negotiate with the low bidder in the case of insufficient funds.

12. COST BREAKDOWN

The Contractor shall, before starting his work, submit to the Owner and Architect the cost of various segments of the work according to construction activity, the total amount equaling the Contract price. This breakdown shall be used as the basis for the payment of estimates as stated in the Contract Documents.

13. RIGHT TO REJECT BIDS

The Owner reserves the right to reject any or all bids, in whole or in part; to waive informalities; and/or to delete items prior to making an award; whenever it may be deemed by the Owner to be in their best interest.

14. BID BOND OR CHECKS OF SUCCESSFUL BIDDERS

Bid Bond or Checks submitted by the successful bidder will be returned upon acceptance of the 100% performance bond and separate 100% payment bond. Checks from other bidders, not previously for-

feited, will be returned as soon as it is determined that the bids represented by the checks will receive no further consideration by the Owner.

15. REVISIONS TO BID

Handwritten or typed notes on the envelope containing the bid will not be accepted as authorized modifications to the Bid Form included herein. The bid amount indicated on the Bid Form will be the only data considered.

16. WITHDRAWAL OF BIDS

Bids may be withdrawn by written or telegraphic request received from bidders prior to the time fixed for the bid opening. Telegraphic requests must be received by the Owner in written form before the bid opening. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened except as permitted in Section 2.2-4330 of the Code of Virginia as outlined below.

A bidder may withdraw his bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid, whereby the unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn.

The bidder must give notice in writing of his claim of right to withdraw his bid within two (2) business days after the conclusion of the bid opening procedure. This notice to the Owner must be accompanied with his original work papers, documents, and materials used in the preparation of the bid. Such work papers shall be delivered to the Owner by the bidder in person or by registered mail.

Such mistake shall be proved only from the original work papers, documents, and materials delivered to the Owner as required herein.

Failure of bidder to submit his original work papers, documents, and materials used in the preparations of this bid at the time, date and place required, shall constitute a waiver of bidders' right to claim a mistake in his bid.

No bid shall be withdrawn under this section when the result would be the awarding of the Contract on another bid of the same bidder.
No bidder who is permitted to withdraw a bid shall for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the Contract is awarded or otherwise benefit directly or indirectly from the performance of the Project for which the withdrawn bid was submitted.

If the bid is withdrawn under authority of this section, the next lowest responsive and responsible bidder shall be deemed to be the low bidder on the Project.

When the procedure set forth in the paragraphs above is utilized, original work papers, documents, and materials used in the preparation of the bid must be submitted in an envelope or package separate and apart from the envelope containing the bid marked clearly as to the contents.

END OF DOCUMENT

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SUPPLEMENTAL CONDITIONS

The following Supplemental Conditions modify the "General Conditions of the Contract for Construction", AIA Document A201, Fifteenth Edition, 2007. Where a portion of the General Conditions is modified or deleted by these Supplemental Conditions, the unaltered portions of the General Conditions shall remain in full force and effect.

ARTICLE 1; GENERAL PROVISIONS

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add to 1.2. the following Clause 1.2.3.1:

1.2.3.1 Where on any drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other work. Where details or conditions are indicated but started only, such details, or conditions shall be continued throughout the course or parts in which they occur and shall also apply to all other similar parts of the Work unless otherwise indicated or specifically noted. On all Drawings, figures shall take precedence over measurements by scale, and scaling is done at the Contractor's own risk.

ARTICLE 2; OWNER

2.1. GENERAL

Delete Subparagraph 2.1.2 in its entirety.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

Delete Subparagraph 2.2.1 in its entirety.

Delete subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor will be furnished, free of charge ten (10) copies of the drawings. Additional sets will be furnished at the cost of reproduction, postage and handling.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 Delete the sentence in Subparagraph 2.4.1 reading "Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect."

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

Add the following subparagraph 3.10.4:

3.10.4 Contract time adjustments for abnormal inclement weather will be based upon the following requirements:

3.10.4.1 Contractor agrees that Dates under this Contract will not be extended due to normal inclement weather. For a time extension to be granted for abnormal inclement weather: (1) such weather must, in the judgment of the Architect, actually have an adverse effect upon the progress of the Contractor's work which is of a critical nature; and (2) in the judgment of the Architect, the adverse effect must not be due to any fault or negligence of Contractor and could not have been avoided by Contractor through proper planning, coordination, and implementation of adequate weather protection necessary to allow the Work to be continued. Contractor agrees that the fact that abnormal inclement weather may occur, does not, of itself, justify any time extension hereunder.

3.10.4.2 Contractor agrees that it shall not be entitled to a time extension for normal inclement weather which can be expected at the Project locale due to precipitation, based on actual data from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) for the locale of the Project. Contractor acknowledges and warrants that in making its bid and Construction Schedule for the Work, it gave due care and consideration to this expected number of work days of inclement weather for the locale of the Project and allowed therefore the impact of inclement weather on subsequent work. During the time of performance, should the expected number of work days of inclement weather for the locale of the Project be less than originally anticipated by Contractor and Owner, at the time of contracting, those days not so affected by inclement weather shall be considered float time.

January	8	July	8
February	7	August	7
March	8	September	5
April	6	October	5
May	6	November	5
June	6	December	7

3.10.4.3 Time extensions for weather delays during a given month will be allowed only for actual work days lost in excess of the anticipated number of work days lost (listed above) and only when those excess lost days adversely impact the current critical path(s) leading to the specified Substantial Completion or Contract Completion dates. Actual work days lost are defined as days that work was prevented on critical path activities for fifty percent (50%) or more of the Contractor's scheduled workday.

3.10.4.4 Within fourteen (14) calendar days after the end of a given month, the Contractor must submit its time extension request for any weather related delays along with supporting data. For instance, if the contractor requests a time extension for weather related delays during March, the request is due on April 14. If the extension request is not submitted within the aforementioned timeframe, the Contractor shall have waived any and all rights it may have against the Owner.

Add the following subparagraph 3.10.5:

3.10.5 The Contractor shall submit an updated construction schedule monthly with his application for payment. The revised schedule will demonstrate a strategy for overcoming any variances in the previous month's schedule in order to complete the project on time. Pay requests will not be reviewed unless accompanied by the update schedule.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Amend subparagraph 3.12.5 by adding new sub-paragraphs 3.12.5.1 and 3.12.5.2, as follows:

3.12.5.1 Any Drawings, Schedules, and Catalog Data submitted without the Contractor's stamp of approval will not be considered by the Architect and will be returned to the Contractor.

3.12.5.2 The Contractor shall be responsible for the satisfactory construction of all Work in accordance with the quantities, dimensions, and designs shown in the Contract documents and the furnishing of all materials necessary for the Work and required by the Contract Documents even if not indicated on the submittals that have been approved by the Architect.

Amend subparagraph 3.12.8 by adding the following to the end of the paragraph:

Failure to so notify the Architect in writing of such deviations shall constitute just cause for rejection of samples and Shop Drawings, including all finished work resulting therefrom, at any time during the construction and up through the prescribed guarantee period. The Architect's approval of samples and Shop Drawings is made with the understanding that such Shop Drawings and samples conform with, and do not deviate from the Contract Documents unless Architect is so informed in writing at the time of submittal thereof.

3.14 CUTTING AND PATCHING

Add to 3.14 the following subparagraph 3.14.3:

3.14.3 No cutouts, access doors or mechanical or electrical conduit or devices of any sort shall be installed in finished materials or areas other than in mechanical rooms, wall chases and shafts without specified prior approval of location, and without the prior submittal by Contractor to Owner of a sample of the proposed catalog cut.

3.18 INDEMNIFICATION

Delete the wording within the parentheses in Subparagraph 3.18.1.

ARTICLE 4; ADMINISTRATION OF THE CONTRACT

4.1 ARCHITECT

Add to 4.1.1 the following clause 4.1.1.1:

4.1.1.1 Wherever the term "Architect" is used in the Contract Documents, it refers to RRMM Architects and/or their duly authorized representatives.

Delete Subparagraphs 4.1.2 and 4.1.3.

4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT

Delete subparagraph 4.2.12 and substitute the following:

4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor.

ARTICLE 5; SUBCONTRACTORS

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Delete Subparagraph 5.4.2 in its entirety.

ARTICLE 6; CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.2 MUTUAL RESPONSIBILITY

Add the following subparagraph 6.2.6:

6.2.6 If any other Contractor or his subcontractors or their material suppliers shall suffer loss or damage through acts of omissions on the part of the Contractor, any subcontractor, and sub-subcontractor or any material man of any foregoing, the Contractor agrees to reimburse such other Contractor or his sub-contractor or material supplier to the extent that they may be entitled to reimbursement. If such other Contractor or subcontractor or his material supplier shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor and the Contractor shall indemnify and save the Owner harmless from and against loss, liability, claim, damage, fee, expense, including

reasonable attorney's fees of any kind whatsoever arising out of or in any way connected with any such claim and Contractor shall defend at his own expense any suit in connection with any such claim, and if a judgment shall be rendered against the Owner in connection with any such claim, Contractor shall pay or satisfy any such judgment or claim and shall pay all costs, fees, expenses, disbursements and liabilities of whatsoever kind in connection therewith.

ARTICLE 7; CHANGES IN THE WORK

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.7 At the end of the first sentence, delete the words "an amount for overhead and profit as set forth in the Agreement, or if no such agreement, a reasonable amount." and substitute "an allowance for overhead and profit in accordance with Clause 7.3.11.1 through 7.3.11.6 below."

Add the following Subparagraph 7.3.11:

7.3.11 In Subparagraph 7.3.7, the allowance for the combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:

.1 For the Contractor, for Work performed by the Contractor's own forces, ten percent of the cost.

.2 For the Contractor, for Work performance by the Contractor's Subcontractor, five percent of the amount due the Subcontractor.

.3 For each Subcontractor or Sub-subcontractor involved, for Work performed by the Subcontractor's or Sub-subcontractor's own forces, ten percent of the cost.

.4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five percent of the amount due the Sub-subcontractor.

.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.

.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over $500.00 be approved without such itemization.

ARTICLE 9; PAYMENTS AND COMPLETION

9.3 APPLICATIONS FOR PAYMENT

Add the following clause 9.3.1.3 to 9.3.1:

9.3.1.3 Until substantial completion, the Owner shall not pay more than ninety-five percent (95%) of the amount due the Contractor on account of progress payments.

9.7 FAILURE OF PAYMENT

Delete Paragraph 9.7.

9.8 SUBSTANTIAL COMPLETION

Delete Paragraph 9.8.

9.10 FINAL COMPLETION AND FINAL PAYMENT

Delete Subparagraph 9.10.3

Delete Subparagraph 9.10.5 and substitute the following:

9.10.5 Acceptance of final payment by the Contractor or sub-contractor or material supplier shall constitute a waiver and release of all Claims by that payee except those previously made in writing and pursued by the payee as required by the terms of the Contract Documents. Such Claims previously made must be identified by the payee as unsettled at the time of final application for payment.

Add Subparagraph 9.10.6 as follows:

9.10.6 Contractor's obligation to perform the work and complete the project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment nor the issuance of a certificate of substantial completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the project or any part thereof by Owner, nor any act of acceptance by Owner, nor any failure to do so, nor the failure of Owner to file a Claim as set forth in the Contract Documents, nor any correction of defective work by Owner, shall constitute an acceptance of work not in accordance with the Contract Documents nor shall the same relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his surety from any obligation under the contract, the performance bond or the payment bond.
Add the following Paragraph 9.11 as follows:

9.11 LIQUIDATED DAMAGES

9.11.1 Because time is of the essence and because the consequences of untimely completion

of the Work cannot be quantified as of the date of this Agreement, the parties agree that the Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner the sums hereinafter stipulated as liquidated damages, and not as a penalty, for each calendar day of delay until the Work is finally complete, Five Hundred U.S. Dollars ($500.00), and Contractor further agrees that Owner may deduct and retain such liquidated damages out of any money due Contractor under the terms of this Contract.

ARTICLE 10; PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

Add to 10.2.1 the following paragraph 10.2.1.4:

10.2.1.4 Contractor's materials, tools, machinery, equipment, appliances, shoring, sheds and personal property of the Contractor's employees.

Add to 10.2.2 the following clause 10.2.2.1:

10.2.2.1 The Contractor agrees in order that work be executed with the greater degree of safety:
(1) To comply with all laws, ordinances, and regulations regarding safety.

(2) To comply as applicable with the "Rules and Regulations Governing Construction Demolition and All Excavations" as adopted by the Safety Codes Commission of the Commonwealth of Virginia.

(3) To conform to all applicable provisions of the "Manual of Accident Prevention in Construction" published by the Association of General Contractor of America, Inc., latest edition.

(4) To comply with all applicable provisions of the "Occupational Safety and Health Act of 1970," as amended.

In subparagraph 10.2.5 delete the language within the parentheses.

10.3 HAZARDOUS MATERIALS

Delete subparagraph 10.3.2 and in its place substitute the following:

10.3.2 The Owner shall verify the presence or absence of the material or substances reported by the Contractor and, in the event such material or substance is found to be present, verify that it has been rendered harmless. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

Delete subparagraph 10.3.3 in its entirety.

Delete subparagraph 10.5 in its entirety.

ARTICLE 11; INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

Add new subparagraphs 11.1.1.9 and 11.1.1.10, as follows:

11.1.1.9 Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Premises Operations (including X, C, and U coverage as applicable).

2. Independent Contractor's Protective

3. Products and Completed Operations

4. Personal Injury Liability with Employment Exclusion deleted.

5. Contractual, including specified provision for Contractor's obligation under Paragraph 3.18.

6. Owned, non-owned and hired motor vehicles.

7. Broad Form Property Damage including Completed Operations.

11.1.1.10 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or Retroactive Date shall predate the Contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Subparagraph 9.10.2.

Add the following Clause 11.1.2.1:

11.1.2.1 The insurance required by Subparagraph 11.1.1 shall be written for not less that the following limits, or greater if required by law:

1. Worker's Compensation

(a) State:		Statutory
(b) Applicable Federal (e.g., Longshoreman's):		Statutory
(c) Employer's Liability:	$100,000 per Accident $100,000 Disease, Policy Limit $100,000 Disease, Each Employee	

2. Comprehensive or Commercial General Liability (including Premises Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):

(a)	Bodily Injury:	$1,000,000 $1,000,000	Each Occurrence Aggregate
(b)	Property Damage:	$100,000 $1,000,000	Each Occurrence Aggregate
(c)	Products and Completed Operations to be maintained for one year after final payment:	$1,000,000	Aggregate
(d)	Property Damage Liability Insurance shall provide X, C, and U coverage		
(e)	Broad Form Property Damage Coverage shall include Completed Operations.		

3. Contractual Liability:

(a)	Bodily Injury:	$1,000,000 $1,000,000	Each Occurrence Aggregate

4. Personal Injury, with Employment Exclusion deleted: $1,000,000 Aggregate

5. Business Auto Liability (including owned, non-owned and hired vehicles):

(a)	Bodily Injury:	$1,000,000 $1,000,000	Each Person Each Occurrence
(b)	Property Damage:	$100,000	Each Occurrence

6. Umbrella Excess Liability: $1,000,000 over primary insurance
$10,000 retention for self-insured hazards each occurrence.

11.1.3 Add the following sentence to Subparagraph 11.1.3:

If this insurance is written on the Comprehensive General Liability policy form, the Certificates shall be AIA Document G705, Certificate of Insurance. If this insurance is written on a Commercial General Liability policy form, ACORD form 25S will be acceptable. The Certificate of Insurance shall provide an endorsement naming Suffolk Public Schools of the City of Suffolk, Virginia as Additional Insured.

11.3 PROPERTY INSURANCE

Delete subparagraphs 11.3.1, 11.3.1.1, 11.3.1.2, 11.3.1.3, 11.3.1.4 and 11.3.1.5, and substitute the following:

11.3.1 Contractor or builder's risk insurance in the all-risk form shall be provided by the Contractor in a minimum amount of 100 per cent of the Contract Sum covering damage to or loss of work performed under the Contract caused by fire, explosion, wind, lightening, vandalism, malicious mischief and any other similar casualty risk or peril. The insurance shall be payable to the Owner and the Contractor as their respective interests may appear. The Owner shall be named as an additional insured in the insurance contract. Such insurance shall cover portions of the Work stored off site, and also portions of the Work in transit.

Delete Subparagraphs 11.3.3, 11.3.4, 11.3.5, 11.3.6, 11.3.7, 11.3.8, 11.3.9 and 11.3.10.

11.4 PERFORMANCE BOND AND PAYMENT BOND

Delete Subparagraph 11.4.1 and substitute the following:

11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds shall be in the form specified in the Contract Documents with surety approved by the County Attorney. The cost of all bonds shall be included in the Contract sum. The amount of each bond shall be equal to 100 percent of the Contract sum. The bonds shall be maintained in full force and effect until final acceptance of the Work by the Owner. The Contractor will cause the surety to agree to be bound by each and every provision in the Contract Documents.

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not later than the date of execution of the Contract or if the work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the work, submit evidence satisfactory to the Owner that such bonds will be furnished.

11.4.1.2 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

11.4.1.3 The surety will give written notice to the Owner, within seven (7) days after receipt of a declaration of default of the surety's election either to remedy the default or defaults promptly or to pay the Owner the penal sum of the bond, time being of the essence. In the notice of election, the surety shall indicate the date on which the remedy or performance will commence, and it shall then be the duty of the surety to give prompt notice in writing to the Owner immediately upon completion of (a) the remedy and/or correction of each default, (b) the remedy and/or correction of each item of Work, (c) the finishing of each omitted item of Work, and (d) the performance of the Work. The surety shall not assert insolvency of the Contractor or Contractor's denial of default as justification for its failure to promptly remedy the default or defaults or to perform the Work.

ARTICLE 13; MISCELLANEOUS PROVISIONS

13.6 INTEREST

Delete paragraph 13.6.

13.7 TIME LIMITS ON CLAIMS

Delete paragraph 13.7 and all subparagraphs thereof, in their entirety.

Add a new paragraph 13.8 as follows:

13.8 EQUAL OPPORTUNITY

13.8.1 During the performance of this contract, the Contractor shall maintain policies of employment as follows:

13.8.1.1 The Contractor, in accordance with Articles 5.10 and 5.11 of the IFB, will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

13.8.1.2 The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.

13.8.1.3 Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

13.8.2 The Contractor will include the provisions of the foregoing subparagraphs 13.8.1.1, 13.8.1.2, and 13.8.1.3 in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

ARTICLE 14; TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION OF THE CONTRACTOR

Delete Subparagraph 14.1.1.4

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.2 In the first sentence, delete "upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,"

ARTICLE 15; CLAIMS AND DISPUTES

15.1 CLAIMS

Delete Subparagraph 15.1.1 and substitute the following:

15.1.1 Definition. A claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of the Contract Documents, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract but specifically does not include any Claim or demand arising for the first time after final payment is made. Claims must be made by written notice. The responsibility to substantiate claims shall rest with the party making the claim.

Delete Subparagraph 15.1.2 and substitute the following:

15.1.2 NOTICE OF CLAIMS.

a. Notice. Notice of a claim by either party must be given to the other party within twenty-one (21) calendar days after occurrence of the event giving rise to such Claim or within twenty-one (21) days after the Claimant should reasonably have known of the condition giving rise to the Claim, whichever is later. Notice of claim must be made by written notice. Failure to make claims within the time period specified in this subparagraph shall be deemed a waiver of the claim.

b. Documentation. Supporting documentation of the claim shall be submitted within thirty (30) calendar days of the event on which the claim is based. Failure to submit supporting documentation within thirty (30) days bars further pursuit of the claim.

c. Additional claim. An additional claim made after the initial claim had been implemented by change order will not be considered unless submitted in a timely manner.

15.1.5 CLAIMS FOR ADDITIONAL TIME.

Add the following to the end of subparagraph 15.1.5.1:

Requests for extension of time based on delayed deliveries of materials will not be considered, except in Owner's sole and unreviewable discretion. Submission of a bid and the time of completion stated thereon shall be considered confirmation of Contractor's having verified delivery dates for required materials.

15.3 MEDIATION

Delete Paragraph 15.3 and all subparagraphs thereof in their entirety.

15.4 ARBITRATION

Delete paragraph 15.4 and all subparagraphs thereof in their entirety.

END OF SUPPLEMENTAL CONDITIONS

ADDITIONAL CONDITIONS

DRUG FREE WORK PLACE

1. During the performance of this contract, the contractor agrees to:

   a. Provide a drug-free work place for the contractor's employees,
   b. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession or use of a controlled substance or marijuana is prohibited in the contractor's work place and specifying the actions that will be taken against employees for violations of such prohibition,
   c. State in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free work place,

   d. Include the provisions of the foregoing clauses in every subcontract or purchase order of over $10, 000 so that the provisions will be binding upon each subcontractor or vendor.

NONDISCRIMINATION

1. During the performance of this contract, the contractor agrees as follows:

   a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
   b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
   c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

2. The contractor will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.
3. Suffolk Public Schools does not discriminate against faith-based organizations.

CONTRACTOR/EMPLOYEE BACKGROUND CERTIFICATION

1. Upon award, the contractor and any employee who will have direct contact with students shall provide certification that (i) he has not been convicted of a felony or any offense involving the sexual molestation or physical or sexual abuse or rape of a child; and (ii) whether he has been convicted of a crime of moral turpitude.

   Any person making a materially false statement regarding such offense shall be guilty of a Class 1 misdemeanor and, upon conviction, the fact of such conviction shall be grounds for the revocation of the contract to provide such services and, when relevant, the revocation of any license required to provide such services. **(See Attachment 1)**

COMPLIANCE WITH FEDERAL IMMIGRATION LAW

The successful bidder shall not, during the performance of a contract for goods and services in the Commonwealth of Virginia knowingly employ an unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986

SUSPENSION AND DISBARMENT

In submitting your bid, you are certifying that the bidder has not been disbarred at the federal, state, or local levels and are eligible for award of a contract.

The Vendor certifies that neither the Vendor or its principals; the sub-recipients or their principals; or the subcontractors or their principals are suspended, debarred, proposed for debarment, voluntarily excluded from covered transactions, or otherwise disqualified by any federal department or agency from doing business with the Federal government pursuant to Executive Orders 12549 and 12689. The Vendor specifically covenants that neither the Vendor nor its principals; the subcontractors or their principals; norm the sub-recipients or their principals are included on the Excluded Parties List System maintained by the General Services Administration or the debarment and suspension list kept on file by EVA. By responding to this solicitation, the Vendor is certifying they are in "Good Standing". (Attachment 2).

CONTRACTOR/EMPLOYEE BACKGROUND CERTIFICATION

Pursuant to Virginia Code Section 22.1-296.1.C, prior to the award of a contract for the provision of services that require the contractor or any of its employees to have direct contact with students, the school board is required to have the contractor, and when relevant, any employee who will have direct contact with students, provide certification that (i) he has not been convicted of any violent felony as set forth in the definition of a barrier crime in Virginia Code 19.2-392.02, or any offense involving the sexual molestation or physical or sexual abuse or rape of a child.

The School Board may award a contract for the provision of services that require the contractor or employees of the contractor to have direct contact with students on school property during regular school hours or during school-sponsored activities when any individual who provides such services has been convicted of any felony or crime of moral turpitude that is not set forth in the definition of barrier crime in subsection A of Virginia Code 19.2-392.02 and does not involve sexual molestation, physical or sexual abuse, or rape of a child, provided that in the case of a felony conviction, the Governor has restored the individual's civil rights.

So as not to place an undue burden or hardship on the day to day operation of the school division and remain in compliance with the aforementioned Code provision, any contractor providing services for Suffolk Public Schools, whose employees will have direct contact with students, is required to provide the certification listed below:

As a contractor providing services for Suffolk Public Schools, whose employees will have direct contact with students, I certify that neither the contractor nor any of its employees, whether current employees or those who will be employed in the future, have been (i) convicted of a violent felony as set forth in the definition of a barrier crime **or any offense involving the sexual molestation or physical or sexual abuse or rape of a child and/or meet the terms as outlined above:**

CONTRACTOR NAME _____

BUSINESS ADDRESS _____

_____

PHONE NUMBER _____

CERTIFIED BY _____

PRINTED NAME _____

TITLE _____

DATE _____

Any person making a materially false statement regarding any such offense shall be guilty of a Class 1 misdemeanor and, upon conviction, the fact of such conviction shall be grounds for the revocation of the contract to provide such services and, when relevant, the revocation of any license required to provide such services. School boards shall not be liable for materially false statements regarding the certifications required by this subsection. For the purposes of this subsection, "direct contact with students" means being in the presence of students during regular school hours or during school-sponsored activities

ATTACHMENT 2: SUSPENSION AND DISBARMENT

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, **Federal Register** (Pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(Before completing certification, read instructions on Page 2)

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public *(Federal, State or Local)* transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity *(Federal, State or Local)* with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) have not within a three-year period preceding this application/proposal had one or more public transactions *(Federal, State or Local)* terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME	PR/AWARD NUMBER OR PROJECT NAME
NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
SIGNATURE	DATE *(MM-DD-YYYY)*

END OF DOCUMENT

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DRAFT

AIA® Document A305™ – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)
« »

SUBMITTED TO:
(Organization name and address.)
« »

TYPE OF WORK TYPICALLY PERFORMED
(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)
« »

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

[« »] Exhibit A – General Information
[« »] Exhibit B – Financial and Performance Information
[« »] Exhibit C – Project-Specific Information
[« »] Exhibit D – Past Project Experience
[« »] Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION
The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

_____ « »
Organization's Authorized Representative Signature **Date**

« »
_____
Printed Name and Title

NOTARY
State of: « »
County of: « »
Signed and sworn to before me this « » day of « » « »

_____
Notary Signature

My commission expires: « »

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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DRAFT

AIA® Document A305™ – 2020

Exhibit A

General Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

§ A.1 ORGANIZATION
§ A.1.1 Name and Location
§ A.1.1.1 Identify the full legal name of your organization.

« »

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

« »

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

« »

§ A.1.1.4 Identify the address of your organization's principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

« »

§ A.1.2 Legal Status
§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

« »

.1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.

« »

.2 If your organization is a partnership, identify its partners and its date of organization.

« »

.3 If your organization is individually owned, identify its owner and date of organization.

« »

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.4 If the form of your organization is other than those listed above, describe it and identify its individual leaders:

« »

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

« »

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

« »

§ A.1.3.2 How many full-time employees work for your organization?

« »

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

« »

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

« »

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

« »

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

« »

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

« »

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

« »

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

« »

§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

« »

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

« »

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

« »

§ A.4 REFERENCES

§ A.4.1 Identify three client references:
(Insert name, organization, and contact information)

« »

§ A.4.2 Identify three architect references:
(Insert name, organization, and contact information)

« »

§ A.4.3 Identify one bank reference:
(Insert name, organization, and contact information)

« »

§ A.4.4 Identify three subcontractor or other trade references:
(Insert name, organization, and contact information)

« »

SECTION 011000 — SUMMARY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division l Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Project Completion Schedule.
4. Use of premises.
5. Owner's occupancy requirements.
6. Work restrictions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification:

1. Turf Replacement —Lakeland High School
   a. Address: 214 Kenyon Rd, Suffolk, VA 23434

B. Owner: Suffolk Public Schools

1. Owner's Representative: Anthony Hinds

C. Civil Engineer: Dan Ruby, Timmons Group

D. The contractor is responsible for:

1. Remove existing grass field and replace with artificial turf field.
2. Replace long and triple jump as concrete with latex rubber surface and install new sand pit.
3. Provide take off boards and blanking boards for long jump and triple jump.
4. Stockpile surplus material onsite and stabilize.
5. Install stormwater infrastructure.
6. Furnishing all maintenance equipment described in the plans as well as a John Deere TS 4x2 Traditional Utility Vehicle or approved equal.
7. Diligently protect existing track and high jump during construction.
8. All items shown as proposed work in the plans and specifications.
9. ALL permitting and bonding costs required by the authority having jurisdiction.

E. During the construction period, the Contractor will be responsible for the maintenance and proper operation of facilities which the Contractor alters, connects to, or damages as a result of project work.

F. Use of Professional Seals on Bidding, Procurement, and Contract Documents: for the purposes of this paragraph, the term "Regulant" refers to the individual who signs and seals parts of the Contract Documents (e.g. the Drawings and Specifications). Certain information has been excerpted verbatim from a source or sources (e.g., UL Assemblies, SMACNA details, IBC code text) which was considered or used by Regulant in preparing parts of the Contract Documents, as follows:

1. The excerpted information was neither prepared under the direct control nor personal supervision nor created by the Regulant, as it was prepared by the source and owner of the excerpted information.
2. For purposes of bidding, procuring, and performance of the Work, and in any event of conflicts or ambiguities between the excerpted information in the Contract Documents and the requirements of applicable codes and standards, provide the better quality or greater quantity of Work which, at a minimum, complies with the requirements of the applicable codes and standards.
3. Advise Architect immediately upon becoming aware of requirements of the Work which are not consistent with the requirements of the excerpted information.
4. Attribution is acknowledged for information obtained and included herein verbatim from other source or sources.
5. Regulant has taken into consideration and used certain excerpted information from other sources which are applicable to the Contract Documents, and the Regulant indicates by its seal that it is assuming responsibility for its services in use and application of the excerpted information to the requirements of Work, but not for the excerpted information itself which was prepared by others. Regulant does not indicate by its seal that it is responsible for use or application of other information in such source or sources which was not included herein.

1.4 TYPE OF CONTRACT

A. This project will be constructed under a single prime contract.

1.5 PROJECT COMPLETION SCHEDULE AND WORK SEQUENCE

A. Contractor shall provide the Owner with a schedule of work prior to commencing any construction.

B. The Contractor shall not interfere with the operation of equipment and services in those areas of the facility where work is not scheduled and where the Owner, students, employees and others occupy the facility, facilities and/or site.

C. Notice to Proceed will be issued by Owner on or before January 3, 2022. Construction activities cannot begin until this date.

D. Construction Contract Project Substantial Completion and a Certificate of Occupancy shall be obtained by May 2, 2021.

E. Final Complete shall be obtained by June 2, 2022.

F. Contractor shall submit Certificates of Insurance to the Owner within 2 weeks of Notice of Award. Failure to submit Certificates of Insurance within this 2-week period will not be considered for extensions of Contract Time.

1.6 USE OF PREMISES

A. Contractor Use of Premises and Partial Owner Occupancy: Contractor shall have limited use of the premises for construction operations. Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

2. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

3. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.7 OWNER'S OCCUPANCY REQUIREMENTS

A. The Owner will occupy the site and all facilities located at the site during the entire period of construction. The Contractor shall cooperate fully with the Owner and any of his representatives during construction operations to minimize conflicts and to facilitate the Owner's usage of the facilities. The Contractor shall perform the work so as not to interfere with the Owner's usage, class schedules, and any other facility operations.

1.8 WORK RESTRICTIONS

A. On-Site Work Hours are unrestricted.

1.9 EXAMINATION OF SITE

A. Bidders are required to visit the site, compare the Drawings and specifications with existing conditions and inform themselves of all conditions. Failure to visit the site and examine the existing conditions in relation to the Work to be performed will in no way relieve the Contractor from necessity of furnishing any materials or performing any Work that may be required to complete Work in accordance with Drawings and specifications without any additional cost to the Owner. The Contractor will be responsible for demolition of all existing utilities and site elements necessary to provide finished product as indicated by the Contract Documents.

B. The Contractor shall be responsible for locating, determining, and clearly identifying (marking) all existing underground utilities in the work area, including but not limited to, conduits for exterior electrical services and communication services. The Contractor shall contact "Miss Utility" at 1-800-532-7001 prior to any digging work to identify and mark any underground utilities. The Contractor shall commission an independent utility locator to determine the exact location of all utilities before commencing Work and agree to be fully responsible for any and all damages which might be occasioned by the Contractor's failure to fully and exactly locate and preserve any and all underground utilities.

C. Any relocations of existing utilities for the convenience of the Contractor shall be at no additional

cost to the Owner.

D. The Contractor shall not damage utilities. Damage caused to utilities by the Contractor shall be repaired and the facilities restored to their original conditions at no additional cost to the Owner.

E. The Contractor shall be responsible for filing all requests with public utility corporations, jurisdictional agencies, or other Owners to make all adjustments to public utility fixtures.

1.10 MISCELLANEOUS PROVISIONS

A. Use, consumption, and/or possession of any controlled substance, substances consider to be illegal, and alcohol are strictly prohibited on school property.

B. The entire school site, including construction areas, are no tobacco zones. Use of tobacco products and/or cigarette smoking are strictly prohibited on school property.

C. Use or possession of weapons, firearms, or archery equipment of any types, including those intended for hunting, are strictly prohibited on school property.

D. Use of vulgar, suggestive, or abusive language and/or gestures are strictly prohibited on school property.

E. Contractor shall provide identity badges that must be visibly worn at all times by each construction worker while on school property.

F. Contractor and construction workers shall not consult with school personnel regarding any issue of a construction nature, except in emergency situations and as necessary for safely scheduling school activities.

G. Fraternization between Contractor or construction workers and school staff or students is strictly prohibited on school property.

H. Use of school restrooms is strictly prohibited.

I. Use of, eating from, or dining in school cafeterias are strictly prohibited in an occupied school facility.

J. Use of school dumpsters for construction debris and trash is strictly prohibited.

K. Use of radios, stereos, compact disc players, and/or other noise producing equipment may be deemed unacceptable in occupied school facilities if they are disruptive to the educational environment.

1.11 ACBM MATERIALS AND CERTIFICATION

A. All new materials provided by this Contract shall be free from all new asbestos-containing building materials. The Contractor shall submit certification at the completion of the Project that no asbestos-containing materials have been used in the construction.

1.12 LEAD-BASED PAINT MATERIALS AND CERTIFICATION

A. The Work shall be free from all new lead-containing building materials. Contractor shall submit certification at the completion of the Project that the Project is free from all new lead-containing building materials.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 011000

SECTION 01100 – BID ALTERNATES

PART 1 - GENERAL

1.1 1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Conditions and Division 1 Specification Sections, apply to this Section, with special attention to the following:

1. Price Proposal Form.

1.2 1.02 DESCRIPTION

A. The bid shall include a lump sum amount constituting a base bid. The individual amounts proposed for addition to the base bid for each alternate specified shall be stated separately.

1. The base bid shall include all costs for performing all work indicated or specified but excluding those items of work indicated and/or specified to be added as alternates.

2. The alternate prices shall be a sum for adding work as indicated or specified. Alternate prices shall include all costs of labor, materials, taxes, equipment and tools, other direct costs, indirect costs, safety costs, overhead, taxes, insurance profit, delay costs and any other related cost required to perform the alternate work plus overhead and profit.

B. The Owner will evaluate acceptance of the bid alternates in accordance with the Price Proposal Form.

C. The Contract Time will be the same regardless of the bid alternates that are selected by the Owner.

1.3 1.03 BID ALTERNATES

A. ALTERNATE 1:

1. Outer Perimeter Curb and Concrete Pad at Track Access Points in accordance with contract documents.

B. ALTERNATE 2:

1. Provide and install (2) Sportsfield Specialties – High School Aluminum Sand Pit Covers (SP6820) with ½"-inch black track surfacing insert for aluminum panels. Contractor shall provide O&M documents

END OF SECTION 01100

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 010200 — GENERAL SITEWORK REQUIREMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work of this Section.

1.2 TRAFFIC

A. Construction access shall be limited to one route as defined by Owner.

1.3 SUBMITTALS

A. Site photographs of all existing features to be impacted by construction, including, but not limited to, curbing, sidewalks, lawn areas, light poles. Photographs shall be taken prior to the commencement of construction and shall represent the existing site conditions.

B. For those submittals, close-out documents and O&M manuals requiring review by the Architect's consultants, Contractor shall ship such documents directly to the consultant, while sending a copy of the transmittal to the Architect.

1.4 CORRELATION OF CONSTRUCTION DOCUMENTS

A. Review construction documents thoroughly prior to the start of construction.

B. Report any conflict or discrepancy discovered in the Construction Documents to the Architect prior to the start of construction.

C. Report any conflict or discrepancy discovered between the Construction Documents and state and local governmental regulations to the Architect prior to the start of construction.

1.5 PROJECT CONDITIONS

A. The conditions existing at the time of inspection for bidding purposes will be maintained by the Owner to the extent practical. However, minor variations may occur due to the natural occurrences prior to the start of work.

B. Call "Miss Utility" prior to the start of demolition work requiring excavation for assistance in the location of existing underground utilities.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 PROJECT CLEANUP

A. Clean site as construction progresses. Do not allow trash or other waste materials to accumulate.

B. Prior to requesting the punch-list inspection, clean the site to the following requirements:

1. The site shall be broom clean.
2. Remove all trash and debris.

3.2 EXISTING FACILITIES

A. Preserve existing signs, markers, guardrails and fences in their original condition unless written permission is obtained for their removal and replacement.

B. Replace damaged items at no additional cost to the Contract.

END OF SECTION 010200

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 022110 – SITEWORK ALLOWANCES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements regarding allowances associated with sitework.

B. This section provides anticipated quantities and values for each of the anticipated potential materials required due to unforeseen site conditions or owner revisions. The intent of this section is to provide a uniform dollar value to be included in the base bid for all bidders. Actual unit pricing will be negotiated at the time the need is identified. Pricing will be considered for cost of materials installed plus reasonable overhead and profit not to exceed 10%.

C. This Section includes the following allowances and assumes the quantities and values shown below:

1. Additional Excavation
2. VDOT Std. No.1 Stone
3. VDOT Std. No. 57 Stone
4. Woven Geotextile Fabric

PART 2 – PRODUCTS

(Not Applicable)

PART 3 EXECUTION

3.1 SCHEDULE OF UNIT PRICE ALLOWANCES

A. Additional Excavation, import structural fill and stockpile excess material onsite, 100 (C.Y.) at $25/CY = $2,500.

1. Provide in the Base Bid an allowance for excavation of material, where authorized or directed, below or in addition to the levels required for the Work.
2. Dispose of excavated material onsite in the areas indicated on the plans. Backfill with imported structural fill material compacted per specifications. Credit or additions to the Contract Price for actual quantities removed and replaced (based on volume of material cut) shall be made per the Unit Prices contained in the Bid Form. Include in the unit price the cost of quantity verification by a Surveyor Licensed in the Commonwealth of Virginia.

B. VDOT #1 stone, in place 10 (C.Y.) at $75/CY = $750.

C. VDOT #57 aggregate, in place 100 (C.Y.) at $50/CY = $5,000.

D. Woven Geotextile Fabric, in place 50 (S.Y.) at $4/SY = $200.

3.2 SCHEDULE OF ALLOWANCES

A. Not used.

3.3 ADMINISTRATION OF SITEWORK UNIT PRICE ALLOWANCES

A. Unit Prices for each allowance shall be given on the Bid Form.

1. The Owner reserves the right to negotiate said Unit Prices prior to the award of Contract.

B. Allowances required by this Section shall be included in the Base Bid amount.

C. Allowances required by this Section shall be indicated on the Bid Form.

D. Submit invoices or surveyor's certificate, as required, with pay requests that involve the Unit Price Allowances.

E. Credit unused amount of Unit Price Allowance (if any) to Owner by Change Order at Project Closeout.

3.4 ADMINISTRATION OF ALLOWANCES

A. Conform to the requirements of the General Conditions.

END OF SECTION 022110

SECTION 024113 - SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work of this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of existing asphalt and/or concrete pavement, concrete and/or asphalt walks, curbs and gutters, and other exterior site items indicated or not indicated which interfere with the Work.
2. Removal and replacement of fencing.

1.3 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.

B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area.

C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.

D. Existing to Remain: Protect items indicated to remain against damage and soiling. When permitted by the Architect, items may be removed to a suitable, protected storage location and then cleaned and reinstalled in their original locations.

1.4 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, remove demolished materials from the site with further disposition at the Contractor's option.

B. Storage or sale of removed items or materials on-site will not be permitted.

C. Historical items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the Owner, which may be encountered, remain the Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the Owner.

1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by the Work.

B. Record drawings at Project closeout.

1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

C. Schedule of selective demolition activities indicating the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
2. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
3. Locations of temporary partitions and means of egress.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: All work shall comply with Federal, State and Local laws and regulations concerning hauling and disposal of demolition debris.

B. Notify the proper agencies prior to the start of work and obtain all necessary permits for this work.

1.7 PROJECT CONDITIONS

A. Owner assumes no responsibility for actual condition of items or structures to be demolished. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner to the extent practical. However, minor variations may occur due to Owner's removal and salvage operations prior to the start of demolition work.

B. The location of existing underground utilities indicated is approximate only. Field locate all existing underground utilities in the area of work, regardless of whether or not they are indicated. Call "Miss Utility" prior to the start of demolition work for assistance in the location of existing underground utilities.

C. Should charted, uncharted or incorrectly charted utilities be encountered during demolition, contact the Architect immediately for instructions. Cooperate with Owner and utility companies to keep services and facilities in operation.

D. Do not interrupt existing utilities serving facilities occupied and used by the Owner and others, except when permitted in writing by the Owner. Provide acceptable temporary utility service as required to maintain Owner's operations.

1.8 SCHEDULING

A. Owner will occupy portions of the building immediately adjacent to the Work. Conduct selective demolition so that the Owner's operations will not be disrupted. Provide not less than 72 hours notice to Owner of activities that will affect Owner's operations.

B. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

C. Notify and coordinate any required relocation and/or removal of existing underground utilities, poles, meters or other above ground appurtenances with the appropriate utility company (i.e. power, telephone, cable and natural gas/propane) prior to the start of selective demolition work.

1.9 USE OF EXPLOSIVES

A. Do not use explosives to perform selective site demolition work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Call "Miss Utility" prior to the start of demolition work for assistance in the location of existing underground utilities. Field locate all existing underground utilities in the area of work, regardless of whether or not they are indicated.

B. Should uncharted or incorrectly charted existing utilities be identified, contact the Architect immediately for instructions. Provide a scale drawing with the location of the uncharted or incorrectly charted utilities for use by the Architect in preparing additional direction.

C. Verify that utilities indicated as removed, abandoned and/or relocated have been disconnected and capped.

D. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

E. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged and turned over to the Owner.

3.2 PROTECTION OF PERSONS AND PROPERTY

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
2. Protect existing site improvements, appurtenances, and landscaping to remain.

D. Barricade areas of demolition occurring as part of this work, and post with warning lights as required by authorities having jurisdiction.

E. Protect structures, buildings, utilities, walks, pavements, existing vegetation and other facilities to remain from damage caused by settlement, lateral movement, undermining, washout and other hazards created by demolition operations.

3.3 POLLUTION CONTROLS

A. Perform all work in accordance with the requirements of the latest edition of the Virginia Erosion and Sediment Control Handbook and those of the local Erosion Control official.

B. Clean adjacent structures and improvements of dust, dirt, and debris caused by the Work. Return adjacent areas to condition existing before start of selective demolition.

3.4 DEMOLITION OF EXISTING FACILITIES

A. Electric Service

1. Coordinate the removal and/or relocation of existing utilities with Dominion Energy if necessary.
2. Contact to arrange for required removal and/or relocation of existing service.

B. Phone Service

1. Coordinate the removal and/or relocation of existing utilities, if necessary.
2. Contact to arrange for required removal and/or relocation of existing service.

C. Cable Television

1. Coordinate the removal and/or relocation of existing utilities with Charter/Spectrum, if necessary.
2. Contact to arrange for required removal and/or relocation of existing service.

D. Gas

1. Coordinate the removal and/or relocation of existing utilities with Virginia Natural Gas, if necessary.
2. Contact to arrange for required removal and/or relocation of existing service.

E. Fiber Optic Lines

1. Coordinate the removal and/or relocation of existing utilities, if necessary.
2. Contact to arrange for required removal and/or relocation of existing service.

F. Utilities

1. Coordinate the removal and/or relocation of existing utilities with the appropriate utility companies.
2. Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and to local jurisdictional codes.
3. Provide adequate means of support and protection during demolition and other construction operations for existing utilities that are to remain in place. Repair utilities damaged by construction operations to the satisfaction of the utility owner.

G. Asphalt Pavement

1. Remove asphalt concrete pavement by saw cutting to the full depth of the pavement. Provide neat saw cuts at the limits of pavement removal indicated.

H. Fencing

1. Temporarily remove existing chain-link fencing as indicated on the drawings.
2. Fencing to be reinstalled or replaced as indicated on the plans.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Do not burn demolished materials or debris.

C. Transport and legally dispose of demolished materials off of Owner's property.

3.6 CLEANUP AND REPAIR

A. Upon completion of demolition work remove all tools, equipment and demolition materials from site. Remove demolition work area protection and leave areas clean.

B. Repair any demolition performed in excess of that required. Return elements of construction and surfaces to remain to the condition existing prior to the start of construction. Repair adjacent construction or surfaces soiled or damaged by demolition work.

END OF SECTION 024113

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

Section 02749 — Sand-Rubber Synthetic Turf System Athletic Field Surface And Related Work

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Conditions and Division 1 Specifications Sections, apply to the Work of this Section, with special attention to the following:

1. Shop Drawings, Product Data and Samples: Section 01340
2. Project Record Information: Section 01720
3. Operating and Maintenance Data: Section 01730
4. Warranties and Bonds: Section 01740

1.2 RELATED WORK

A. Base Construction and Related Work Synthetic Turf Field System: Section 02752

1.3 DESCRIPTION

A. This project is a natural grass athletic field conversion to a multipurpose synthetic turf athletic field in which the contractor shall furnish all labor materials, materials, equipment and tools necessary to convert the existing natural grass field to synthetic turf including installation of typical Sand/Rubber In-Fill Synthetic Turf System as indicated on the drawings and as specified herein. The installation of all new materials shall be performed in strict accordance with the Synthetic Turf Manufacturer's instructions and in accordance with all approved shop drawings. A Synthetic Turf System includes all earthwork, base construction and athletic field surface.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements and references as listed below are the current guidelines set forth by the governing bodies listed. All work under this Section shall conform to the latest edition as applicable:

1. American Society for Testing and Materials (ASTM)
2. Consumer Product Safety Commission (CPSC)
3. International Hockey Federation (FIH)
4. National Collegiate Athletic Association (NCAA)
5. National Federation of State High School Association (NFHS)
6. National Recreation and Park Association (NRPA)
7. USA Field Hockey
8. US Lacrosse Foundation
9. United States Soccer

B. The Contractor must employ competent workers skilled in the installation of Synthetic Turf as

outlined in Section 1.05.

C. The designated supervisory personnel on the project must be certified in writing by the Synthetic Turf Manufacturer as competent in the installation of this material, including sewing seams and proper installation of the infill mixture.

D. The Contractor is responsible for reviewing and certifying that the proposed subgrade, drainage, and laser grading are completed in accordance with the contract documents prior to the installation of the Synthetic Turf, that the Synthetic Turf system being supplied and installed meets or exceeds the design criteria of the specifications, and that the site conditions exceed the minimum requirements of the system's design performance standards as set by the Synthetic Turf Manufacturer. Installation of synthetic field surface materials may not commence until the Engineer receives the final acceptance of finished crushed stone/aggregate base from the synthetic turf field manufacturer.

E. The Contractor is required to use a licensed Land Surveyor registered in the State of Virginia for all layout and engineering work.

F. In-fill materials will be tested by the Owner for conformance to the specification.

1.5 EXPERIENCE

A. Firm Experience:

1. The Synthetic Turf System shall be installed by an experienced Contractor who shall provide a list of twenty-five (25) completed field installations in the United States within the last three years performing business under the name of the current installation company, providing specific information about the name of the product, contact names, addresses, telephone numbers, year of the installation and type of infill material for the following type of fields:

   A. A soccer field and a football field of 70,000 sq. ft. or larger.

   B. A list of synthetic turf fields, other than soccer or football.

2. The list shall include a minimum of twenty-five (25) fields that have been approved for game play by one of the following associations:

   A. National Collegiate Athletic Association-(NCAA)

   B. National Federation of State High School Associations

   C. Federation Internationale de Football Associations (FIFA)

   D. National Recreation and Park Association (NRPA)

3. The Contractor may use Subcontractors/Installers who employ only qualified and experienced Supervisors and Technicians skilled in the installation of the Synthetic Turf.

4. The contractor shall have a minimum of one (1) certified field builder on staff through American Sports Builders Association (ASBA).

B. Principal Staff Experience:

1. The Contractor shall detail the experience, educational background and training of the

proposed principal staff, as follows:

A. Contract Manager- The Contract Manager shall be a current and qualified employee of the Contractor; be skilled in the performance of the assigned duties; and have a minimum of three years experience managing or supervising similar sized projects.

B. Supervisor- The supervisor shall be a current and qualified employee of the Contractor; be skilled in the performance of the assigned duties; have a minimum of eighteen months experience in supervising similar sized projects; and have installed In-Fill Synthetic Turf System products a minimum of twenty-five (25) installations

C. The turf installation crew personnel qualifications shall include the individuals' resume, project list and contact information. Such information shall clearly identify the experience and qualifications in performing the type of work covered by these Specifications. All information provided shall include a description of the identified projects, and the name and telephone number of a responsible contact person who can verify the information provided.

D. The Contractor shall not replace the named individuals for the duration of the contract unless the substitute individuals have equivalent qualifications as approved by the Owner.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in sealed unopened containers with manufacturer's labels intact.

B. Store materials in protected area at a temperature not to exceed maximum and minimum temperatures as recommended by manufacturer. Protect products from UV degradation.

1.7 SUBMITTALS

A. All submittals shall be directed to the Owner and Engineer electronically for distribution. The contractor may only send paper submittals where applicable.

B. One sample of Synthetic Turf, a minimum of 12 x 12 inches in size, illustrating details of the finished product.

C. A letter and specifications sheet certifying that the products of this specification Section meet or exceed specified requirements.

D. Submit Certified copies of independent (third-party) laboratory reports on ASTM tests as follows for Synthetic Turf carpet:

1. Specific Gravity and Density of Plastics by Displacement, ASTM D792
2. Tuft Bind without Infill, ASTM D1335
3. Melt Point Index, American Association of Textile Chemists and Colorists #20 (AATCC #20)
4. Total Product Weight without Infill, ASTM D5848

5. Average Pile Yarn Weight, ASTM D5848
6. Average Tuft Height, ASTM D5823
7. Grab Tear Strength, ASTM D5034
8. Breaking Strength of Textile Fabrics (Length) – Glued or Sewn Seam Turf Sample, ASTM D5034
9. Pile Height, Face Width & Total Fabric Weight, ASTM D5848
10. Methanamine Pill Test ASTM D2859
11. Impact Attenuation, GMax, ASTM F355/F1936
12. Coefficient of Friction, ASTM F1551
13. Water Permeability with Infill, ASTM D4491
14. Abrasiveness, ASTM F1015
15. Primary Backing Weight, ASTM D5848
16. Secondary Backing Weight, ASTM D5848
17. Machine Gauge, ASTM D5793
18. Yarn Dernier, ASTM D1577
19. Fiber Thickness, ASTM D5034
20. Average Fiber Break Strength and Elongation, ASTM D2256
21. Accessibility of Surface, ASTM F1951
22. Heavy Metal Content for all metals in fiber and infill, ASTM F2765-09

E. One copy of the Synthetic Turf Manufacturer's insured non-prorated warranty and Insurance policy information.

F. Shop drawings indicating:

1. A Field Layout with tufted/inlaid lines
2. Field Marking Plan and details for all fields shown.
3. Roll/Seaming Layout.
4. Methods of Attachment, Field Openings and Perimeter Conditions
5. Synthetic Turf Manufacturer's technical product data literature
6. Sewing/Adhesives technical specification
7. Sieve Analysis of Sand and Ambient Rubber In-Fill
8. Sample of Ambient Rubber and Sand from actual source supplier
9. Base and Finish Aggregate Stone source and material specification/certification
10. Drainage Piping specifications
11. Concrete Curb Edging details

12. Concrete Mix design
13. Asphalt Mix design
14. Seed Mix and sod supplier
15. Specifications for soccer goal posts, backstays, and ground sleeves
16. Material Safety Data Sheet (MSDS) for rubber infill, turf backing system, and glue (if applicable)
17. Method of attachment, field openings and perimeter conditions

G. The Contractor shall submit a statement of the origin, composition, and manufacturer of all materials to be used in the work, including optional or alternate items.

H. The Synthetic Turf Manufacturer's name, type and composition of fiber.

I. Sieve analysis of the infill rubber and sand with a certification that the drainage rates comply with the Synthetic Turf Manufacturer's requirements.

1.8 WARRANTY

A. The Synthetic Turf Manufacturer shall provide a Warranty to the Owner that covers defects in materials and workmanship of the Synthetic Turf for a minimum period of eight (8) years from the date of Substantial Completion. The Synthetic Turf Manufacturer must verify that their on-site Representative has inspected the installation and that the work conforms to the Synthetic Turf Manufacturer's requirements.

B. The Synthetic Turf Manufacturer shall provide a Warranty to the Owner that covers defects in materials and workmanship of the Synthetic Turf for a period of eight (8) years from the date of Substantial Completion. The Synthetic Turf Manufacturer shall include coverage for damage caused from UV degradation or defects in workmanship and materials in the manufacturing or installation of the Synthetic Turf. All Synthetic Turf warranties shall include repair or replacement of the affected areas and include all necessary materials, labor, transportation costs, etc. to complete the required repairs.

C. The synthetic turf system shall drain vertically a minimum of 14 inches per hour without prolonged accumulation of surface water. If the synthetic turf system does not drain in accordance with this Specification, then punching the carpet backing or any method creating additional holes in the backing other than the designed drainage holes will not be permitted. The removal and replacement of the infill will be permitted given there is not damage to the fibers in the process.

D. The Synthetic Turf Manufacturer's Warranty must be supported by a pre-paid insured warranty policy. A copy of the policy must be provided with the Bid Submittal and include the following information and features:

1. Name of the carrier
2. Method for payment of the policy (must be pre-paid and non-cancelable).
3. Insured warranty shall be provided by a third-party insurer with an A.M. Best financial strength rating of A- or better.
4. The policy shall not be a re-insurance or off-shore policy or a letter of credit.

5. Insured warranty coverage shall be for the full 100% replacement value of the total square footage installed.
6. Insured warranty coverage shall apply to the full 8-year period from substantial completion date of project with no uninsured periods or periods of self-insurance.
7. The insured warranty policy must have a zero deductible.
8. Insured warranty policy coverage shall specifically provide for reimbursement to the warranty holder (i.e. the Participating Public Agency) in the event of a bankruptcy of the synthetic turf provider.
9. Insured warranty coverage shall apply to playing surface inclusive of infill, seaming, labor and colored inlays for event markings.
10. Insured warranty coverage shall not have exclusions for epidemic or catastrophic failure.
11. Insured warranty coverage shall not limit the hours of use.
12. Insured warranty coverage shall not exclude heavily trafficked areas or related uses such as team or band practices.
13. Insured warranty coverage shall not exclude any colored turf fibers.
14. Insured warranty coverage shall offer a minimum claim limit of Five Million Dollars ($5,000,000) in the aggregate per annum.
15. Insured warranty coverage shall offer a minimum claim limit of Five Hundred Thousand Dollars ($500,000) per field.
16. Additional insured warranty policy features of importance.

E. The contractor shall provide one Gmax test at completion and one Gmax test at the one-year warranty anniversary.

PART 2 – PRODUCTS

2.1 MATERIALS

A. The only approved Synthetic Turf products identified for the purpose of this bidding solicitation are:

1. Astroturf – 2.25" Inch – Slit File Turf (minimum 13,000 Denier)
2. FieldTurf USA, Inc. – 2.25" Inch – Slit File Turf (minimum 13,000 Denier)
3. Shaw Sports Turf – 2.25" Inch – Slit File Turf (minimum 13,000 Denier)

Selection of these products represents the required minimum performance criteria as outlined herein. The manufacturer's performance criteria and product properties and declarations both physical and chemical are as represented by the manufacturers at the time of this solicitation. Approved equals must be pre-bid approved.

B. The approved shock pad products indentified for the purpose of this bidding solicitation are:

1. Brock International - SP-17 Composite Shock Pad.
(See Bid Alternate Section 01100 for all specified material)

C. The Synthetic Turf material and resilient ambient rubber/sand infill shall be in accordance with the following:

1. The Slit Film fiber shall be tufted with (2) two ends per needle to achieve 13,000 minimum denier with one (1) fiber less than 8000 denier and 100 micron thickness 100% polyethylene, low friction fiber, measuring not less than 2.25" inches high, product as manufactured by Controlled Products, Shaw, Bonar Yarns & Fabrics, TTC/Polyloom, Ten Cate Thiolon, or equal. The low friction fiber shall be specifically designed to minimize abrasion.

2. The tufted fiber weight shall not be less than 48 ounces per square yard for manufacturers using a sand/ambient rubber infill mix. The fiber shall be tufted on a 3/8" of an inch to a ½ " an inch tufting machine at a rate necessary to achieve specified face weight. The overall product weight must not be less than 60 ounces per square yard. The low friction non-abrasive fiber shall be 100% polyethylene, treated with a UV inhibitor. Systems that use polyethylene/polypropylene blended fibers and systems that include any type of nylon fibers are unacceptable.

3. The primary backing shall consist of a backing with a minimum weight of 7 ounces per square yard. The secondary backing shall consist of an application of polyurethane or urethane (minimum of 18 ounces per square yard) heat activated to permanently lock fiber tufts in place. Products using latex based secondary backings will not be acceptable. The Synthetic Turf system shall be perforated with a minimum of 1/8" of an inch diameter holes every 3/16" of an inch at 4" inches in both directions to provide for maximum drainage or independently tested approved equal performance system. Manufacturers may use a permeable non punched backing only if the system is capable of draining greater than 14 inches per hour. Water Permeability through the entire synthetic turf system shall drain equal to or greater than 14" inches per hour.

A summary of the required properties for the installed Synthetic Turf properties are as follows:

	Testing Standards	Specifications	Properties
A.	ASTM D1577	Fiber Denier (A)	8,000 (min) – Slit Film
		Fiber Denier (B)	5,000 (min) – Slit Film
B.	ASTM D3218	Fiber Thickness	100 microns (min) – Slit Film
C.	ASTM D5823	Pile Height	2.25" inches nominal (minimum)
D.	ASTM D5848	Pile Weight	48 oz. /sq. yd. (minimum)
E.	ASTM D1335	Tuft Bind without Infill	8 lbs./force (minimum)
F.	ASTM D5848	Primary Backing	7 oz./sq. yd. (minimum)
G.	ASTM D5848	Secondary Backing	18 oz./sq. yd. (minimum)
H.	ASTM D5848 (without Infill)	Total Product Weight	60 oz./sq. yd. (minimum)
I.	ASTM D5793	Machine Gauge	3/8" inch to 1/2" inch
J.	ASTM D5034	Grab Tear (width)	200 lbs./force (minimum)
K.	ASTM D5034	Grab Tear (length)	200 lbs./force (minimum)
L.	ASTM F1015	Relative Abrasiveness Index	Ranges between 14 and 22
M.	ASTM F2765	Total Lead Content	Less than 50 ppm

N.	ASTM D4491	Water Permeability	>=14 inches/hour (minimum)
O.	ASTM D2859	Flammability (Pill Burn)	Pass
P.	ASTM F355/ F1936	Impact Attenuation	=<110 at installation (GMax) =<140 over life of warranty
Q.	ASTM F1951	Accessibility of Surface	Present Test Findings
R.	ASTM F2765	Heavy Metal Testing	**Present Test Findings
S.	Headspace GC/MS - VOC Testing		**Present Test Findings
T.	Solvent extraction GC/MS - PAH Testing		**Present Test Findings

** Test findings shall comply with EPA soil and drinking water standards.

4. The carpet shall be delivered in 15' wide rolls. The rolls shall be of sufficient length to go from sideline to sideline of the soccer field. Head seams between the sidelines of the football field will not be acceptable.

D. All field lines, numbers and markings indicated on the drawings shall be permanently inlaid.

E. The fiber shall be green in color to simulate natural grass as closely as possible, treated with UV inhibitor and guaranteed for a minimum of eight years.

F. Infill Material: The infill system shall be graded, ambient hammer-milled SBR rubber. The rubber shall be free of all dust, toxic materials, and metals. The proposed ambient rubber and sand infill shall be clean material and shall be tested for compliance. The sand shall be select and graded dust-free silica sand. Depth of material at completion of placement shall be 1-¾" inches (± 1/16 inches) and as required to reach the required initial and subsequent Gmax ratings. Samples of both the ambient rubber and sand shall be submitted to the Owner for approval prior to installation.

Silica sand within the infill mix, 35% to 50% by weight, will meet the following size distribution:

U.S. Mesh	Metric (mm)	% Retained per sieve
16	1.190	0
20	08.840	0-3
25	0.710	10-30
30	0.590	30-50
35	0.500	15-35
40	0.420	5-15
50	0.297	<5
70	0.210	Trace

Sand will consist of uniform, sub-angular to rounded, single grains. **It will be dust-free,** and un-ground. Crusher fines are unacceptable.

Ambient rubber shall be governed by the following specifications:

Size Specifications for Ambient Ground 10-14 Rubber

$1.60\text{mm} < D_{50} < 1.75\text{mm}$

$1.10 < D_{60}/D_{10} < 1.40$

$0.80 < \frac{D^2_{30}}{} < 1.20$

D_{10} D_{60}

Where Dx represents the grain size for which x% of the rubber is smaller. i.e., if D_{50} = 0.7mm, this means that 50% of grains (by weight) are smaller than 0.7mm.

The shape of the rubber particles shall be granular (edges shall not be stringy). As an approximation, the following ranges of values for the sieve analysis are acceptable:

MILLMTR	MICRONS	US MESH	% PASSING	% RETAINED
2.38	2380	8	95-100%	0-5%
2.00	2000	10	90-100%	0-10%
1.68	1680	12	35-65%	40-60%
1.41	1410	14	0-10%	40-60%
1.19	1190	16	Trace	0-10%
0.841	841	20	Trace	0%

G. The exposed fiber height above the infill material shall be approximately 5/8" of an inch +/- 1/16" of an inch. The entire Synthetic Turf system shall be resistant to bacteria and fungal growths.

H. Surplus Materials: The Contractor shall provide the Owner, at each installation as a part of the Contract, the following surplus materials transported to storage location selected by the Owner:

1. Synthetic Turf Fabric (green) – 500 square feet with at least one piece fifteen (15) feet by thirty (30) feet.
2. Synthetic Turf Fabric (White, Yellow, Blue, Orange, Red or any other colors) – 50 linear feet each.
3. Infill Material – as required to infill 500 square feet. This material shall not be used by the Synthetic Turf Subcontractor to maintain depth and GMax values during the warranty period. The Contractor must provide material, matching the existing infill material, during the warranty period at no cost to the Owner.
4. Shock Pad – 250 square ft. minimum. The Contractor must provide material, matching the existing shock pad material if needed for warranty repairs, during the warranty period at no cost to the Owner

2.1 EQUIPMENT

A. Maintenance Equipment: The Contractor shall deliver to the Owner as a part of the contract, one (1) non-powered new 7 ft. Mechanical Sweeper per Greens Groomer LitterKat with tow-behind sports field magnet and one (1) 7 ft. Fieldspec Drag Brush per Sportsfield Specialties, Inc. The Fieldspec equipment shall be provided with standard hitch to connect to the Owner's tractor vehicles. The Contractor shall be responsible for verifying the type of hitch attachment, at the project site, with the Owner.

1. The 7 ft. Drag Brush shall be of a design as recommended by the Synthetic Turf system in-order to satisfy and maintain the warranty requirements as described above. The 7 ft. Drag Brush shall operate utilizing synthetic bristle brushes that follow metal dethatching tines to loosen the infill and can be set a variety of heights. During a single pass the 7 ft. Drag Brush shall de-compact or loosed the infill, level the infill materials, and groom the

pile fibers to stand upright and uniform. At no settings shall the 7 ft. sweeper damage the pile. Drag Brush shall have ability to mount a tow-behind magnet.

2. The 7 ft. mechanical sweeper shall operate utilizing rotating synthetic bristle brushes that can be set at a variety of heights. During a single pass the 7 ft. sweeper shall automatically and simultaneously collect all foreign surface debris, return all collected infill material to the field, level the infill materials, and groom the pile fibers to stand upright and uniform. At no settings shall the 7 ft. sweeper damage the pile. Sweeper shall have ability to mount a tow behind magnet.

The Contractor shall deliver to the Owner as part of the contract for each school, one (1) field sweeper with mechanically driven rotating brushes and one Fieldspec 7' Dragbrush with dethatching tines by Sportsfield Specialties Inc., Delhi NY. A pull behind magnet shall be provided as per part number FSMAG as manufactured by Sportsfield Specialties Inc., Delhi NY. Drag Brush and Sweeper shall be manufactured to be able to connect to a pull behind magnet.

B. Other Equipment: Refer to plan details and specification section 02752 for athletic accessories including permanent and/or portable goals.

PART 3 - EXECUTION

3.1 GENERAL

A. The installation of the Synthetic Turf System shall be performed in full compliance with approved Shop Drawings.

B. All designs, markings, layouts, and materials shall conform to all applicable and current National State High School Federation rules and other standards that may apply to this type of Synthetic Turf installation.

C. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer supervisors, shall undertake any cutting, sewing, gluing, shearing, topdressing or brushing operations.

D. The designated Supervisory personnel on the project must be certified, in writing by the turf Manufacturer, as competent in the installation of this material, including sewing seams and proper installation of the Infill mixture.

3.2 EXAMINATION

A. The Contractor shall verify that all subbase, drainage, and leveling are completed prior to installation. The subbase shall be drag-boxed prior to Synthetic Turf Manufacturer's approval of the subbase.

B. The finished grade of the aggregate base shall not vary more than 3/16" of an inch in ten feet. A laser grader must be used to meet these requirements

C. Prior to the beginning of installation, the Installer of the Synthetic Turf shall inspect the subbase and accept in writing the subbase surface planarity and compaction. The Contractor shall have the field dimensions and locations for markings measured by a licensed Land Surveyor

registered in the State of VA in order to verify conformity to the specifications and applicable standards. A record of the finished field as-built measurements shall be made and submitted to the Owner.

D. The overall base design, vertical drainage system, and the gradations of the aggregate shall be approved in writing by the Synthetic Turf Manufacturer prior to Synthetic Turf installation

E. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

F. Restoration of Damage: The Infilled Synthetic Turf Removal contractor and/or Installation contractor shall exercise care in the execution of his work and avoid damage or defacement of the existing aggregate base substrate and adjacent or surrounding areas by using suitable protective means. Damage or defacement that occurs shall be remedied to the satisfaction of the Owner.

3.3 SYNTHETIC TURF FABRIC INSTALLATION

A. Install in accordance with Manufacturer's instructions. The Turf Contractor shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing, by the Manufacturer's onsite representative, and submitted to the Engineer/Owner, verifying that the changes do not in any way affect the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer's standard procedures

B. The turf carpet rolls are to be installed directly over top of the shock pad system which is placed on the accepted aggregate base surface and geotextile membrane. Extreme care should be taken to avoid disturbing the underlayment material and aggregate base, both regarding compaction and planarity. The Contractor shall ensure that a 2-5 ton static roller is on-site and available to repair and properly compact any disturbed areas of the aggregate base.

C. Compaction of the perimeter around the playing field is essential to maintain the integrity of the perimeter and the soil surrounding the voided area.

D. The Synthetic Turf carpet shall be installed in accordance with Manufacturer's instructions. The Contractor shall adhere to the installation procedures outlined under this section. Any variance from these requirements must be accepted in writing, by the Owner, verifying that the changes do not in any way affect the warranty. Infill materials shall be approved by the Manufacturer and installed in accordance with the Manufacturer's standard procedures.

E. The full width rolls shall be laid out across the field. The Synthetic Turf shall be of sufficient length to permit full cross-field installation from sideline to sideline. No head or cross seams shall be allowed in the main playing area between the sidelines. Utilizing standard state-of-the-art sewing procedures, each roll shall be attached to the next at the 5-yard line locations on the white line, no seams between yard lines shall be permitted. When all the rolls of the playing surface have been installed, the sideline areas shall be installed at right angles to the playing field

F. This is a 99% sewn installation. Gluing of rolls shall not be acceptable. Minimum gluing will only be permitted to repair problem areas, corner completions, and to install any logos or inlaid lines as required by the specifications. All seams shall be sawn using double bagger stitches and polyester thread or adhered using seaming tape and high-grade adhesive (per the Manufacturer's

Standard Procedures). Seams shall be flat, tight, and permanent with no separation or fraying.

G. All primary seams must be sewn using double bagger stitches or polyester thread on the football yard lines every 5-yards. Seams shall be flat, tight, and permanent with no separation or fraying. All inlays shall be glued with Mapei Adhesive (or equal) two-part epoxy adhesive and seam tape only. Hot melt glue is not allowed for any use on this project.

H. Prior to the application of any line painting the turf shall be fibrillated by means of a nylon rotary brush to provide the look, feel, and safety of optimally maintained natural grass, including subtle undulations normally associated with natural grass athletic fields

I. Non-turfed or inlaid lines and markings shall be painted according to the recommendations of the turf Manufacturer and of the paint manufacturer. Several applications may be required.

J. Provide extra turf and infill for replacement of the complete circular LAX goal creases (2 circles per field) once during the warranty period. Include turf replacement cost for the 2 circular goals per field in bid cost. Owner is not responsible for the turf replacement labor costs or material costs in the lax goal areas for first set of LAX goal area replacement

K. Infill material shall be applied in numerous thin lifts. The turf shall be brushed as the mixture is applied.

L. The sand and ambient rubber infill materials shall be installed in accordance with the Synthetic Turf Manufacturer's recommendations. The sand and ambient rubber infill materials shall be installed to a minimum depth of 1-5/8" inches +/-1/16" of an inch (42mm +/- 1mm) on a minimum pile height of 2- ¼" inches of Synthetic Turf fibers.

M. The sand/ambient rubber infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional.

N. Synthetic turf shall be attached to the perimeter edge detail in accordance with the Manufacturer's standard procedures with continuous Mapei Adhesive (or equal) two part epoxy adhesive glue or in-conjunction with mechanical fasteners at minimum 16" inches on center.

O. Installation shall not proceed when:

1. Ambient air temperature is below forty (40°) degrees Fahrenheit (F).
2. Material temperature is below forty (40°) degrees Fahrenheit (F).
3. Rain is falling or pending, unless acceptable to qualified installers.
4. Conditions exist, or are pending, that will be unsuitable for the installation of the system.

P. Follow-up Visits

1. The turf manufacturer/installer shall include in their price, two (2) follow-up visits at six-month intervals after the final turf inspection date. The visits shall be scheduled by the Owner or Engineer to inspect the condition of the synthetic turf, infill material, seams, painted lines, anchorage, and peripheral attachments. Items found to require repair, amendment, or replacement shall be the responsibility of the turf manufacturer/installer. Repairs, except those required due to vandalism, shall take place immediately upon notification by the Engineer.
2. The manufacturer shall include the cost to perform independent Gmax testing once per

year for 8 years after turf is installed. Manufacturer shall arrange Gmax testing yearly and supply owner with test results identifying any deficiencies or issues observed during the test and field inspection. Any maintenance issues shall be identified and proper instructions to the owner for corrective action. Any Gmax value outside of the allowed tolerances shall be identified and corrected by the turf manufacturer. An executed Purchase Order shall be provided verifying yearly Gmax testing has been accounted for.

3.4 FIELD MARKINGS

A. All synthetic turf fields shall follow the lines or inlaid according to National Federation of State High School Association Standards (NFSHSA). Inlaid / tufted line(s) and field marking(s) shall be per the Front-End Specifications and Construction Document Drawings.

B. Painted lines shall be acceptable for all tick marked event(s) and paint product(s) shall be a manufacturer approved.

C. Designated soccer and football fields will have the following lines inlaid according to FIFA and NCAA standards., and the National Federation of State High School Associations (NFHS) for soccer and football and as shown on the contract documents:

1. Side lines
2. End lines
3. Center line
4. Goal lines
5. Penalty lines
6. Media lines

D. Designated soccer fields shall have the following markings inlaid in with a specific color:

1. Center circle (to be determined by the Owner)
2. Goal mouth (to be determined by the Owner)
3. Corner kick areas (to be determined by the Owner)

E. Designated Field Hockey Striping will inlaid according to National Federation of State High School Associations (NFHS) and NCAA Standards.

3.5 DELIVERABLES

A. Prior to Final Acceptance, the Contractor shall submit to the Owner:

1. Three (3) copies of Maintenance Manuals, which shall include all necessary instructions for the proper care and preventive maintenance of the synthetic turf system, including painting and markings.
2. Project Record Documents: Recording actual locations of seams, drains or other pertinent information including three (3) copies of the certified "as-built" drawings for all work performed on this project.
3. Warranty: Manufacturer Warranty ensuring that applicable documented forms have been

completed in Owner's name and registered with the Manufacturer. The Manufacturer shall have a representative on-site to certify the installation and Warranty compliance.

4. Necessary testing data to the Owner that the finished field meets the required shock attenuation (GMax), as per ASTM F355/F1936 at turf installation. GMax to be <= 110 at installation and no greater than 140 for the life of the warranty.

5. The synthetic turf supplier/installer shall submit at the pre-construction conference a certificate stating that it is not aware of any aspects of the proposed turf system to be installed which knowingly violate any patented materials or methods and that the manufacturer fully indemnifies the Owner and Design Engineer from any liability arising out of any issue related to patent infringement.

6. Submit a certified statement issued by the synthetic field surfacing materials supplier/installer, attesting that all areas and surfaces designated to receive synthetic field surfacing have been inspected and found satisfactory for the reception of the Work covered under this Section; and are not in conflict with the "Guarantee" requirements. Installation of synthetic field surfacing materials may not commence until the Design Engineer has determined that the specifications of the aggregate base planarity and sideline drainage have been met.

3.6 CLEANING AND PROTECTION

A. Protect installed Synthetic Turf from subsequent construction operations.

B. Do not permit traffic over unprotected Synthetic Turf surface.

C. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.

D. All usable remnants of new material shall be come the property of the Owner. These shall become the contractors responsibility to dispose if not wanted by owner.

E. The Contractor shall keep the area clean throughout the project and clear of debris.

F. Surfaces, recesses, enclosures, etc., shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

END OF SECTION 02749

SECTION 02752 — BASE CONSTRUCTION AND RELATED WORK SYNTHETIC TURF FIELD SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Conditions, Supplementary Conditions and Division 1 through Division 3 Specification Sections, apply to the Work of this Section.

1.2 1.02 RELATED WORK

A. Section 02749: Sand/Rubber Synthetic Turf Field Surface and Related Work Synthetic Turf Field System Replacement

1.3 DESCRIPTION OF WORK

A. Furnish all labor, materials, equipment, and tools necessary to install a typical Synthetic Turf System as indicated on the drawings and as specified herein. The installation of all new materials shall be performed in strict accordance with the Synthetic Turf Manufacturer's instructions and in accordance with all approved shop drawings. Installation of the Synthetic Turf System shall be a turn-key operation. A Synthetic Turf System includes all earthwork, base construction, and athletic field surface as follows:

1. All engineering and layout work.
2. Pouring in-place concrete around the perimeter edge as detailed on the drawings. Attachment of the synthetic turf to the concrete perimeter edge shall be accomplished per the Synthetic Turf Manufacturer's recommendations.
3. Acceptance of the subgrade by the Owner will be based on the compaction testing and conformance planarity survey meeting compliance design grade requirements.
4. Trenching for all subsurface drainage systems including installation of geotextile filter fabric.
5. Installation of all horizontal pipes, collector pipes, and outfall pipes per drawings.
6. Installation of new football goal post and foundations.
7. Backfilling pipe drainage system per drawings.
8. Installation of stone drainage base system per drawings.
9. Survey verification of stone base elevation tolerances by the Owner's Engineer to check for conformance. Base and existing condition as-built elevations to be submitted to Owner.

1.4 QUALITY ASSURANCE

A. Standards: Install Synthetic Turf System complying with Synthetic Turf Manufacturer's requirements and the plans and specifications.

B. The Contractor, prior to installation of the Synthetic Turf, shall inspect the sub-base for conformance with the drawings and verify that the sub-base meets or exceeds the requirements of the Turf Installer. The Contractor shall be responsible for compaction testing of the sub-grade and sub-base to ensure compliance with the specifications and drawings. The Contractor shall survey the sub-grade and the sub-base to verify conformance with the approved drawings. The Contractor shall be responsible for correcting grades, elevations and planarity to conform with the drawings prior to installing the Synthetic Turf. The Contractor shall be responsible for conducting a water permeability test on the finished stone base drainage layer as specified herein and conducted in the presence of the Owner's representative. The Contractor shall be responsible for contracting a testing agent to conduct a infiltration test per BSI 7044 Method #4, Standard Test Method for Infiltration Rate of Soils in Field, Using Double-Ring Infiltrometer to affirm the water permeability rates at four (4) locations on each field to exceed a **minimum of 20 inches/hour** on the completed aggregate base system.

C. The Contractor shall provide the necessary written certification that the aggregate base has been tested and meets the standards for infiltration, compaction and planarity. Written certification shall also be provided from turf manufacturer accepting the aggregate surface prior to placing artificial turf.

D. The performance of the aggregate base system shall be guaranteed in writing by the base contractor, or third party insured warranty for 8 years to accompany the synthetic turf warrantee for a "complete system guarantee". If a third-party warrantee is not available for the aggregate base and drainage system by the base contractor, the turf manufacturer shall include a letter guaranteeing the performance of the complete system for a minimum of 8 years after substantial completion. At no time during the 8-year "guarantee" period shall the owner be responsible for paying for any portion of remedial repairs to the aggregate base or turf system

E. Acceptance of the subgrade by the Owner will be based on the compaction testing and as-built survey verification provided by the contractor meeting compliance with design grade elevations for all disturbed areas within the field and outside of the field area. No aggregate, sod or finish materials shall be installed without the authorization from the owner/engineer that all grades have been properly established in accordance with the contract documents.

1.5 EXPERIENCE

A. Firm Experience:

1. The Synthetic Turf aggregate base system shall be installed by an experienced Contractor who shall provide a list of ten (10) completed full size athletic field installations in the United States within the last five (5) years, providing specific information about the name of the project, contact names, addresses, telephone numbers, year of the installation and type of turf material for the following type of fields:

   A. A soccer field and a football field of 70,000 sq. ft. or larger.

   B. A list of synthetic turf fields, other than soccer or football.

2. The list shall include a minimum of five (5) fields that have been approved for game play by one of the following associations.

   A. National Collegiate Athletic Association – (NCAA)

   B. National Federation of State High School Associations (NFHS)

C. Fédération Internationale de Football Associations (FIFA)

D. National Recreation and Park Association (NRPA)

3. The Contractor may use Subcontractors/Installers who employ only qualified and experienced Supervisors and Technicians skilled in the installation of the Synthetic Turf.

4. The Subcontractor/Installer must demonstrate its past experience on at least ten (10) acceptable preparations of the sub-base for the installation of Synthetic Turf system for full-size football, soccer or other athletic/recreational fields (minimum of 70,000 square feet) in the United States within the past five years. A completed list of all installations of vertically draining porous stone base and drainage systems, contact names, and phone numbers shall be submitted to the Owner for review to demonstrate the Subcontractor's/Installer's qualifications.

B. Principal Staff Experience:

1. The Contractor shall detail the experience, educational background and training of proposed principal staff, as follows:

A. Contract Manager – The Contract Manager shall be a current and qualified employee of the Contractor; be skilled in the performance of the assigned duties; have a minimum of three years experience managing or supervising similar size projects: and have installed the proposed product at least twenty (20) installations.

B. On Site Supervisor – The Supervisor shall be a current and qualified employee of the Contractor; be skilled in the performance of the assigned duties; have a minimum of eighteen months experience in supervising similar size projects; and have installed the proposed product at lease twenty (20) installations.

C. The turf installation crew personnel qualifications shall include the individual's resume, project list and contact information. Such information shall clearly identify the experience and qualifications in performing the type of work covered by these specifications. All information provided shall include a description of the identified projects, and the name and telephone number of a responsible contact person who can verify the information provided.

D. The Contractor shall not replace the named individuals for the duration of the contract unless the substitute individuals have equivalent qualifications as approved by the Owner.

1.6 DELIVERY, STORAGE, AND HANDLING

A. The Contractor shall deliver product materials to the project site in a sealed unopened container with manufacturer's labels intact.

B. Store materials in protected area at a temperature not to exceed maximum and minimum temperatures as recommended by manufacturer. Protect products from UV degradation.

1.7 SUBMITTALS

A. The Contractor shall submit the following information for approval prior to the start of base

construction.

1. A statement of the origin, composition, and manufacturer of all aggregate materials to be used in the work, including testing information supporting that the proposed aggregates meet or exceed the technical specifications.
2. Supplier's material certifications for aggregate.
3. Supplier's material certification for concrete.
4. Product data sheets on all drainage pipe geotextile fabrics and fittings.
5. Athletic and Maintenance Equipment product data and shop drawings.
6. Communication boxes, Irrigation Boxes and Clean out boxes.
7. Fences and Gates, fence pole foundation details.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Concrete for field perimeter curb shall be VDOT A4 4000 PSI or a minimum strength of 4000 PSI.

B. Geotextile Fabric shall be Mirafi 140N or approved equal, unless specified otherwise on plans.

C. Drainage Pipe shall be HDPE highway grade ADS N-12, unless specified otherwise on plans. Flat panels to be manufactured by Advanced Drainage Systems or approved equal and consist of polymeric core surrounded by geotextile.

D. The base aggregate shall consist of a minimum of six (6) inches of VDOT #57 coarse aggregate (open graded) type material or of a base stone material meeting the gradation specifications shown in the table below. The base aggregate must be an open graded aggregate material and free draining, consistent with the vertical draining requirements of the Synthetic Turf Manufacturer.

BASE STONE GRADATION SPECIFICATIONS
%PASSING AND %RETAINED

Sieves	Base Stone % Passing	Base Stone % Retained
1½" or 38.1mm	100	0
1" or 25.4mm	95-100	0-5
¾ or 19mm	Optional	Optional
½" or 12.7mm	25-60	40-75
3/8" or 9.51mm	Optional	Optional
US #4 or 4.76mm	0-10	90-100
US #8 or 2.38mm	0-5	95-100

E. The secondary aggregate shall comprise, not to exceed two (2) inches of VDOT #8 coarse aggregate (open graded) type material or of a secondary stone material meeting the gradation specifications as displayed in the table below. VDOT #8 coarse aggregate or the secondary stone material meeting the gradation specifications shall be transitioned in with the base aggregate and vibrated and rolled to provide a compacted sub-base.

SECONDARY STONE GRADATION SPECIFICATIONS
%PASSING AND %RETAINED

Sieves	Secondary Stone % Passing	Secondary Stone % Retained
½" or 12.7mm	100	0
3/8" or 9.51mm	75-100	0-25
US #4 or 4.76mm	5-30	70-95
US #8 or 2.38mm	0-5	95-100
US #16 or 1.19mm	0	100

F. The compacted sub-base of base aggregate and secondary aggregate shall be top-dressed with **not to exceed one (1) inch of porous, free draining material**, washed screenings that will provide a 90% minimum overall compaction of the finished aggregate base. The finishing aggregate shall meet the gradation specifications as shown in the table below.

TOP FINISH GRADATION SPECIFICATIONS
%PASSING AND %RETAINED

Sieves	2" Top Finish % Passing	2" Top Finish % Retained
½" or 12.5mm	100	0
3/8" or 9.51mm	95-100	0-5
US#4 or 4.76mm	70-85	15-30
US#8 or 2.38 mm	45-60	40-55
US#16 or 1.19mm	25-40	60-75
US#40 or 0.400 mm	2-12	88-98
US#200 or 0.074 mm	0-2	98-100

To ensure proper drainage: Permeability of complete aggregate system >20in/hr
Porosity of both stones > 25%

G. EQUIPMENT

1. 30' (H) Sportsfield Specialties – Custom GoalPak® Football / Round Soccer Goal System with base plate foundations (GPKR30HSRH) or approved equal. Contractor is responsible for providing and installing the stadium football goal post systems composed of two (2) 6' Gooseneck Goal Posts with access frame and turf cover (SG2SGP), with all necessary footings, attachment hardware, reinforcement, access frame and turf covers over footings. Turf covers shall be removable in order to access the base of the goal posts. Gooseneck length shall be field verified. The Goal Pak system shall include (2) two portable soccer goals per Model No. SG824R Round Faced Soccer Goal with SGMKR Integrated SGMobile Wheel Kit. Contractor shall drill side frame holes for soccer goal on-site during assembly process by sliding the soccer goal into the correct position and set the soccer ground bar in place to mark bolt holes in accordance with the manufacturer's recommendations. An approved equal will be allowed. Should a substitute be proposed, please include a specification sheet proving the item is indeed equal.
2. Sportsfield Specialties JumpForm® (SP6020) Sandpit and Sand Catchers with Mesh Sandpit Cover. An approved equal will be allowed. Should a substitute be proposed, please include a specification sheet proving the item is indeed equal.
3. Sportsfield Specialties 12" Long/Triple Jump Take-off Board System with Replacement Blanking Lid. An approved equal will be allowed. Should a substitute be proposed, please include a specification sheet proving the item is indeed equal.

H. BID ALTERNATES

1. Bid Alternate #1 - Outer Perimeter Curb and Concrete Pad at Track Access Points in accordance with contract documents
2. Bid Alternate #2 – Provide and install (2) Sportsfield Specialties High School Aluminum Sand Pit Covers (SP6820) with ½" black latex track surfacing for aluminum panels. Contractor shall provide O&M documents. An approved equal will be allowed. Should a substitute be proposed, please include a specification sheet proving the item is indeed equal.
3. See Bid Alternate Section 01100 for specified equipment.

I. MAINTENANCE EQUIPMENT

1. See Section 02749 for specified maintenance equipment.

PART 3 - EXECUTION

3.1 MATERIAL TESTING

A. Testing During Construction: To ensure that the quality of drainage stone materials remain constant from point of supply to jobsite, the following protocol shall be used by the Contractor:

1. Contractor shall submit a gallon supply of each base stone, secondary stone and finishing aggregate stone that meet the aforementioned properties for testing to ensure compliance by the Owner's testing agency prior to stone placement.

2. If anytime during the installation of the base stone, the secondary stone, and the finish aggregate stone the Contractor or owner observes a change in material and/or quality based on a visual inspection, then the Contractor must stop all operations immediately and contact the Owner/Engineer in order to perform additional testing on the materials in question. Failure to do so is the sole responsibility of the Contractor. The Owner will not be held accountable for any liability if the Contractor does not contact the Owner.

3. Before commencing the placement of synthetic turf on the stone drainage base, Contractor shall perform a conformance survey by a Licensed Surveyor registered in the State, on a 30-foot grid over the finished stone of the entire playing field for the Owner's approval. Additional layers of the base may be required to be as-built if indicated on the construction drawings. Finished stone elevations shall be verified using laser survey. Finished grade must be within 3/16" of an inch form the elevation shown on the plans.

4. Prior to commencing the base aggregate, confirm that the geotextile has been installed satisfactorily.

5. Protect the geotextile work as installation of the stone base is commenced.

6. Do not operate machinery directly over the geotextile fabric. Delivery trucks shall enter the field only form the designated entrance point. Stone shall be dumped at the entrance first and spread toward the furthest point of the field. Extreme care must be taken not to disturb the geotextile or subgrade surfaces. Ensure a minimum depth of 4" inch of aggregate between the geotextile fabric and equipment.

7. Percolation Testing: The contractor shall contract a professional engineer to perform infiltration testing per BSI 7044, Standard Test Method for Infiltration Rate of materials using Double-Ring Infiltrometer administered under BSI 7044 test method #4 by a licensed professional engineer at five (5) locations on each field to exceed 20 inches per hour. (4) Random locations covering all 4 field quadrants and minimum of 2 locations on each sideline directly over the perimeter collector trench. **Any location not exceeding 20 inches per hour shall be remediated and re-tested to verify conformance.** Any remedial work required due to a non-compliant infiltration test will not be additional scope or considered as a scope change.

3.2 EXAMINATION

A. The Contractor shall verify that all sub-base, drainage, and leveling are completed prior to release of Synthetic Turf Installer.

B. Finished stone elevations shall be verified using laser survey. Finished grade must be within 3/16" of an inch from the elevations shown on the plans. The finished grade of the stone drainage base shall not vary more than 3/16" of an inch in ten feet. A laser grader must be used to verifiably meet these requirements.

C. Prior to the beginning of installation, the installer of the Synthetic Turf shall inspect the subbase and accept in writing the subbase surface planarity and compaction. The Contractor shall have the field dimensions and locations for markings measured by a licensed Land Surveyor registered in the State of Virginia to verify conformity to the specifications and applicable standards. A record of the finished field as-built measurements shall be made and submitted to the Owner

D. The surface to receive the Synthetic Turf shall be inspected by the Contractor and reviewed with

the Owner. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

3.3 3GEOTEXTILE INSTALLATION

A. Place geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 24" inches and transverse joints 24" inches.

B. Protect geotextile from traffic and other damage and place aggregate the same day. Only place as much geotextile as can be covered with aggregate in the same working day.

3.4 SUBGRADE PREPARATION

A. The subgrade must be sloped as specified on drawings but not less than a minimum slope of 0.50% (or as shown on the drawings) for consistent base thickness, from the longitudinal center of the field towards the sidelines.

B. The subgrade must be compacted in both directions to attain the specified compaction rate, which is 95% of standard Proctor at a moisture content within 2.0% of optimum in accordance with ASTM D1557. Subgrade shall also be proof rolled to check entire field for inadequate compaction requiring correction.

C. The subgrade must be prepared to tolerances of not more than ½ " of an inch from design grade to allow for even drainage. Subgrade shall be inspected with Owner's representative prior to covering with geotextile. Contractor to provide written acceptance of subgrade prior to geotextile installation.

D. Repair and reestablish the grades to specified tolerances where completed or partially completed surfaces become saturated, settled, eroded or compromized due to subsequent construction traffic or weather conditions.

E. When testing agency reports that fills, lifts backfills or subgrades to not achieve the degree of compaction specified, recompact and retest until specified compaction is obtained. Contractor may be required to undercut, aerate, scarify, moisten or completely replace with suitable materials to the depth required to achieve adequate compaction at no additional cost to the contract.

3.5 AGGREGATE BASE COURSE AND SECONDARY STONE INSTALLATION

A. The aggregate must be laid without damaging the soil bed, geo-textile liner or membrane, or underlying drains. It is very important not to create any depressions in the sub-grade with heavy equipment. The specified aggregate supplied must conform to the recommended specifications, as noted above. The finished crushed aggregate base supplied must be stable and permeable.

B. The base course shall be constructed in layers or lifts. Each layer must be compacted in both directions to attain the specified compaction rate. The base course total thickness shall be in accordance with the details shown on the drawings.

C. The aggregate base course must be sloped a minimum of 0.50% from the center longitudinal axis towards the sidelines or as specified on the Plans.

D. The finish surface slope of the base course shall not vary from the finish grade surface slope.

E. The base course must be compacted in both directions to attain the specified compaction rate,

which is 95% standard Proctor at a moisture content within 2.0% of optimum in accordance with ASTM D1557.

3.6 AGGREGATE FINISH COURSE INSTALLATION

A. The final lift of aggregate layer shall be installed at the specified depth shown on the project drawings and details.

B. The final lift material must be sloped 0.50% from the center longitudinal axis towards the sidelines unless otherwise specified.

C. The final grade must be compacted in both directions to attain the specified compaction rate, which is 95% standard Proctor at a moisture content within 2.0% of optimum in accordance with ASTM D1557.

D. The final grade of the finishing stone shall not vary from the specified grade by more than 3/16" of an inch from design grade, nor by more than 3/16" of an inch when measured under a 10 ft straightedge, in all directions. Laser guided fine grading is mandatory and shall be performed with laser equipped grading equipment (GPS grading will not be acceptable). This tolerance is required over the entire field. Check the tolerance-to-grade by means of an orbital laser once the stone is fine graded and compacted to proper density. Additional testing and inspection required as outlined within this specification.

E. All track events, track edges, turf boxes and goal posts transitions shall meet the field's planarity requirements of 3/16" of an inch per 10ft using a straightedge. All transitions shall be inspected and accepted by engineer and owner.

F. Contractor to demonstrate final grade surface tolerance to owner and engineer with all parties present with string line and professional survey. Finish surface shall be inspected by the turf manufacturer and accepted in writing prior to installing synthetic turf.

3.7 CONCRETE PERIMETER CURB INSTALLATION

A. The layout of the concrete curb shall be inspected by the Owner prior to construction to verify field location, size, and geometry.

B. The curb shall be constructed with 4000psi concrete on subgrade compacted to 95% according to the Modified Proctor procedure (ASTM D1557) with 6" inches aggregate base

C. The curb shall be formed and poured in a uniform width AND monolithically as shown on the drawings. The curb shall include two (2) number four (4) rebar evenly spaced from the top and bottom.

D. Provide Fabric Expansion Joints every 50ft O.C. and DO NOT saw cut through curb and rebar. Expansion material set ¼ "-inch depth of slab thickness.

E. Provide Control Joints (saw cut) every 10ft O.C. Use max ¼ "-inch wide diamond blade, cut into ¼" – inch depth of slab thickness.

F. For Exposed curb, the top elevation of the curb shall match the top elevation of the infill and as shown on the drawings. The elevation of the preformed step for turf attachment shall be the same elevation as the finish stone surface.

G. For Non-Exposed curb, the top elevation of the curb shall be at the same elevation of the finished stone to provide a smooth transition to the terminal edge of the synthetic turf.

H. Form curbs per contract document details including a 2" (W) x Depth of infill material notch for turf attachment to curb.

3.8 INSTALLATION OF PERIMETER COLLECTOR

A. Excavate perimeter drainage collector trenches minimum 20" wide and to the depth as required to achieve pipe inverts shown on the drawings. The trenches should be constructed with a minimum 0.5% slope commencing at the low point of the collection system and extending to the high points as shown on the drawings. Collection trenches should be void of all debris.

B. The trenches shall be backfilled using premium #57 drainage stone materials specified in detail and compacted by machinery to a minimum 95% of the maximum density.

C.

D. The fabric should be placed in the perimeter trench prior to placing aggregate or piping. The fabric should be separate from the fabric on the field. Overlap field and trench liners at least 36" in the direction of runoff flow.

E. Weight down the fabric with ballast to prevent fabric movement by wind.

F. Place corrugated, perforated plastic pipes in the collector trenches. The centerline of the pipe shall coincide with the centerline of the trench. Pre-manufactured fittings shall be used for all connections into the collector drainage network.

G. A minimum of 2" clean, drainable crushed stone aggregate shall be placed in the bottom of the collector trenches, on top of the geotextile. The crushed aggregate must be compacted suitably. Place a minimum of 4" clean, crushed aggregate on the sides of the underdrain pipes and headers, and 6" minimum of the aggregate on top of the pipe network. Compact all trenches in minimum of 12" lifts.

H. Repair and reestablish the grades to specified tolerances where completed or partially completed surfaces become saturated, settled, eroded, or compromised due to subsequent construction traffic or weather conditions.

3.9 INSTALLATION OF HORIZONTAL STRIP DRAIN SYSTEM

A. Install according to the manufacturer's specifications, 1" x 12" Horizontal Strip Drain (Horizontal Flat Panel Drain) by Advanced Drainage Systems (ADS) or approved equal, prefabricated flat composite under drain lines as shown on drawings with lines spaced at a minimum 30' on center and terminating at perimeter drain trench per the layout and details on the drawings. An approved equal specification sheet must be included in this bid submission.

B. The Contractor shall supply all necessary connectors and waterproof tape and is responsible for a proper and secure connection at the seams. Horizontal drains shall terminate in the perimeter trench directly above the collector pipe.

C. Tape the drains every 15' to the fabric using suitable tape. Do not use metal sod spikes.

D. Horizontal drain shall consist of a formed polymeric core surrounded by geotextile fabric.

3.10 CAST-IN-PLACE CONCRETE

A. SECTION INCLUDES

1. Cast-in-place concrete items.
2. Footings for benches and steal handrails.
3. Concrete Trials

B. REFERENCES

1. VDOT standards and specifications for aggregate and concrete placement.
2. ACI 302 - Guide for Concrete Floor and Slab Construction.
3. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
4. ACI 305R - Hot Weather Concreting.
5. ACI 306R - Cold Weather Concreting.
6. ACI 308 - Standard Practice for Curing Concrete.
7. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
8. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
9. ASTM C33 - Concrete Aggregates.
10. ASTM C94 - Ready-Mixed Concrete.
11. ASTM C150 - Portland Cement.
12. ASTM C260 - Air Entraining Admixtures for Concrete.

C. QUALITY ASSURANCE

1. Perform Work in accordance with VDOT Specifications and contract drawing details.
2. Maintain one copy of each document on site.
3. Acquire cement and aggregate from same source for all work.
4. Conform to ACI 305R when concreting during hot weather.
5. Conform to ACI 306R when concreting during cold weather.

D. PLACING CONCRETE

1. Place concrete in accordance with VDOT standards and specifications.
2. Notify Owner minimum 24 hours prior to commencement of operations.
3. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and foundation hardware are not disturbed during concrete placement.
4. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

5. Place concrete continuously between predetermined expansion, control, and construction joints.
6. Form curbs per contract document details including a 1.75' x 2' step for turf attachment. Do not interrupt successive placement; do not permit cold joints to occur.
7. Saw cut joints within 24 hours after placing. Use max ¼" wide diamond blade, cut into ¼-inch depth of slab thickness.

E. CONCRETE FINISHING

1. Finish plain concrete by hand float to a uniform surface texture.
2. Saw cuts shall be every 10 feet O.C. in perimeter curb.
3. Expansion joints minimum 50 feet apart and at each cold joint, with expansion material set ¼" to ½" below surface. Sika-flex shall be installed over expansion material.

F. CURING AND PROTECTION

1. Immediately after placement, protect concrete from premature drying, excessively hot, or cold temperatures, and mechanical injury.
2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

G. FIELD QUALITY CONTROL

1. Submit proposed mix design of each class of concrete to Owner for review and approval prior to commencement of Work.

END OF SECTION 02752

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 312000 - EARTHWORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work of this Section.

B. Refer to Section 31 1000 for topsoil stripping and Section 32 9200 for topsoil placement.

1.2 SUMMARY

A. This Section includes the following:

1. Excavation, filling, backfilling, and grading indicated and necessary for proper completion of the work.
2. Preparing of subgrade for turf and field events.
3. Excavating and backfilling of trenches.

1.3 SUBMITTALS

A. VDOT approved Job Mix for stone.

B. Imported fill (if required): Submit location of borrow pit and a sample of the soil for approval to the Owner's Geotechnical Engineer a minimum of fourteen (14) working days prior to use

C. Geotextile Fabric

1.4 DEFINITIONS

A. Excavation: Removal of all material encountered to design subgrade elevations indicated for cut areas and to subsoil elevations in fill areas. Excavation also includes subsequent respreading, moisture conditioning, compaction, and grading of satisfactory materials removed.

B. Unauthorized Excavation: Removal of materials beyond the limits indicated in the definition of "Excavation" without specific direction of Architect.

C. Additional Excavation: Removal, disposal and replacement of materials beyond the limits indicated in the definition of "Excavation" at the direction of the Architect. Refer to Part 3 of this Section for requirements of Additional Excavation.

D. Subgrade: The undisturbed earth (in cut) or the compacted soil layer (in fill) immediately below granular subbase, drainage fill, or topsoil materials.

E. Subsoil: The undisturbed earth immediately below the existing topsoil layer.

F. Pavements: The area extending 10 feet beyond the exterior limits of paved areas and down to undisturbed soils at a one horizontal to one vertical slope. The area extending 3 feet beyond the exterior limits of walks and down to undisturbed soils at a one horizontal to one vertical slope

G. Subbase Material: Artificially graded mixture of crushed gravel or crushed stone meeting VDOT specifications. Material type is indicated on the drawings.

H. Drainage/Porous Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel meeting the requirements of VDOT No. 57 Stone.

1.5 ADDITIONAL WORK

A. Paragraph 4.3.4 of General Conditions refers to certain conditions that may require additional excavation work. This paragraph is further defined herein and, where there are conflicts, is superseded by this section.

B. Claims for concealed, unknown, or unanticipated subsurface conditions are limited to those circumstances where:

1. Additional excavation work is required below the contract limits indicated to provide acceptable bearing for building pad, structures or pavements.

2. Additional excavation work below the utility trench design elevations, for utilities outside the limits of the building, as required to provide acceptable bearing for the utility.

C. The risks of concealed, unknown, or unanticipated subsurface conditions (except for rock) from existing ground surface to the design subgrade elevations in cut areas and to subsoil elevations in fill areas shall be included in the Contract Amount and shall not be considered as grounds for additional costs to the Contract. The risks of concealed, unknown, or unanticipated subsurface conditions below the elevations stated above shall be considered as Additional Excavation.

D. During construction, if concealed, unknown, or unanticipated subsurface conditions are encountered which require that footings, foundations or other parts of the building be raised, lowered or revised to provide acceptable bearing for the building or if, outside the building limits, additional depth of utility trench excavation below the design subgrade or subsoil elevations is required, immediately notify the Architect upon discovery of such condition prior to disturbing the material encountered.

1.6 EARTHWORK BALANCE ADJUSTMENTS

A. Not used

1.7 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of authorities having jurisdiction.

B. Environmental Compliance:

1. Comply with the requirements of the latest edition of the Virginia Erosion and Sediment Control Handbook for erosion control during earthwork operations.

2. Comply with the permit conditions for all work performed within wetlands.

C. Testing and Inspection Service: Owner will employ and pay for an independent Geotechnical testing and inspection laboratory to perform soil testing and inspection service during earthwork operations. Cooperate with Owner's Geotechnical Engineer as required for testing and inspection of work. These services do not relieve the responsibility for compliance with Contract Document requirements.

1.8 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner of others except when permitted under the following conditions and then only after arranging to provide acceptable temporary utility services.

1. Notify Architect not less than 48 hours in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without receiving Architect's written permission.
3. Existing utilities across or along the line of work are indicated only in an approximate location. Locate all underground lines and structures. Call "Miss Utility" at 1-800-552-7001 prior to construction. If utilities are marked that are not shown on the plans, locate utility vertically and horizontally and provide information to architect. Repair and correct any damage to underground lines and structures.

1.9 SAFETY

A. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.

1. Operate warning lights as recommended by authorities having jurisdiction and governing regulations and standards.
2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Work within the road right-of-way shall meet all requirements of the latest edition of the Virginia Department of Transportation Work Area Protection Manual.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups CL, GC, SC, GW, GP, GM, SM, SW, and SP.

B. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups CH, OL, OH, MH, ML and PT.

C. Backfill and Fill Materials: Satisfactory soil materials free of clay, rock or gravel larger than 4 inches in any dimension (2 inches for material used in trench backfill), debris, waste, frozen materials, organics, vegetation and other deleterious matter.

D. Imported material for structural fill shall comply with ASTM D2487 soil classification groups CL, ML, SC, SM, SP, SW, GC, GM, GP, or GW.

2.2 ACCESSORIES

A. Non-woven Geotextile Fabric (for drainage): Mirafi 140N, or equivalent.

B. Woven Geotextile Fabric (for reinforcement): PROPEX 2002, or equivalent.

PART 3 – EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Section 311000 "Site Clearing."

C. Protect and maintain erosion and sedimentation controls during earthwork operations.

3.2 DEWATERING

A. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrade and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or runoff areas. Do not use utility trench excavations as temporary drainage ditches.

B. Should any springs or running water be encountered in the excavation, notify the Architect and provide discharge by trenches (or other acceptable means) and drain to an appropriate point of disposal. Provide temporary drainage facilities to minimize the flow of rainwater onto adjacent property. Repair any damage to property or to subgrade as a result of construction and/or dewatering (or lack thereof) operations at no additional cost to the Contract. If permanent provision must be made for disposal of water other than as indicated, the Contract price shall be adjusted.

3.3 EXPLOSIVES

A. Strictly prohibited.

3.4 EXCAVATION

A. Excavation consists of removal, placement and disposal of material encountered when establishing required subgrade or finish grade elevations.

1. Excavation includes removal and disposal of pavements and other obstructions visible on ground surface; underground structures, utilities and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as rock or unauthorized excavation.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Cut surface under pavements to comply with crosssections, elevations and grades as indicated.

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to uniform width, sufficiently wide to provide ample working room and a minimum of 6 to 9 inches of clearance on both sides of pipe or conduit.

B. Excavate trenches to depth indicated or required to establish indicated slope and invert elevations and to support bottom of pipe or conduit on undisturbed soil. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

1. Where rock is encountered, carry excavation to required elevations and backfill with VDOT #57 crushed stone prior to installation of pipe.

2. For pipes or conduit less than 6 inches in nominal size, and for flatbottomed, multipleduct conduit units, do not excavate beyond indicated depths. Handexcavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.

3. For pipes and equipment 6 inches or larger in nominal size, shape bottom of trench to fit bottom of pipe for 90 degrees (bottom 1/4 of the circumference). Fill depressions with tamped sand backfill. At each pipe joint, dig bell holes to relieve pipe bell of loads ensure continuous bearing of pipe barrel on bearing surface.

3.7 EXCAVATION STABILITY

A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.

B. Slope sides of excavations to comply with local codes, ordinances, and requirements of agencies having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

C. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross braces, in good serviceable condition. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.

3.8 SUBGRADE INSPECTION

A. Notify Architect when mass, trench and footing excavations have reached required subgrade. The Architect will arrange for an inspection of conditions by the Owner's Geotechnical Engineer. *Alternative procedures for arranging this review may be implemented at the Owner's written option.*

B. If the Owner's Geotechnical Engineer determines that the subgrade bearing conditions are unacceptable, the Architect will authorize additional excavation until suitable bearing conditions are encountered.

C. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction. Limit vehicle speed to 3 mph (5 km/h).

2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes).

3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Under supervision of the Owner's Geotechnical Engineer, proofroll subgrade in cut areas below the building pad and pavement(s) with a loaded dump truck or other approved pneumatic tired vehicle. Should any unstable sub-soil be encountered below pavement or structures, break up the top eight inches of ground surface, pulverize, moisturecondition to optimum moisture content, and compact to percentage of maximum density as stated in Percentage of Maximum Density Requirements. Perform this work at no additional cost and/or time to the Contract.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 ADDITIONAL EXCAVATION

A. Additional Excavation in Trenches: Remove excavated materials and dispose of off-site as directed by the Architect. Replace this excavated material with stone.

B. The quantity of material removed as Additional Excavation shall be calculated (on an in-situ basis) by a surveyor licensed in the Commonwealth of Virginia and employed by the Contractor. The Owner's Project Representative shall review the quantity calculated within 48 hours of receiving the survey notes.

C. Protect the subgrade during construction. During wet conditions, the subgrade soils may become saturated and soften, possibly resulting in damage to the subgrade if disturbed by equipment. Correct subgrade damaged in this manner. **No additional payment will be made to correct subgrade damaged in this manner.**

3.10 UNAUTHORIZED EXCAVATION

A. Correct Unauthorized Excavation as follows:

1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to Architect.

2. Elsewhere, backfill and compact unauthorized excavations as indicated for authorized excavations of same classification unless otherwise directed by Architect.

3.11 STORAGE OF EXCAVATED MATERIALS

A. Temporarily stockpile excavated materials acceptable for use as backfill and fill. Place, grade, and shape stockpiles for proper drainage. Cover to prevent windblown dust.

1. Stockpile excavated materials away from edge of excavations. Do not store within the drip line of trees to remain.

3.12 BACKFILL AND FILL

A. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance by local authority having jurisdiction of construction below finished grade, including perimeter insulation.

2. Review, approval, and recording of the locations of underground utilities.
3. Removal of concrete formwork.
4. Removal of shoring and bracing (including backfilling of voids with satisfactory materials).
5. Removal of trash and debris from excavation.
6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow or ice.

C. Ground Surface Preparation: Remove vegetation, debris, obstructions, and deleterious materials from ground surface prior to placement of fills.

D. Bench sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material. Plow, scarify, bench or break up sloped surfaces flatter than 1 vertical to 4 horizontal so fill material will bond with existing material.

E. Place soil material in layers to required subgrade elevations, for each area classification listed below, using materials indicated in Part 2 of this Section.

1. Under grassed areas, use satisfactory excavated or borrow material.
2. Under walks, curbs, and pavements, use satisfactory excavated or borrow material.
3. Under building slabs, use satisfactory excavated or borrow materials and drainage/porous fill material as indicated.

3.13 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Backfill trenches with concrete where trench excavations pass within 18 inches of column or wall footings and that are carried below bottom of such footings or that pass under wall footings. Place concrete to level of bottom of adjacent footing.

D. Provide 4-inch- (100-mm-) thick, concrete-base slab support for piping or conduit less than 30 inches (750 mm) below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches (100 mm) of concrete before backfilling or placing roadway subbase.

E. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the utility pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

F. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches (300 mm) over the utility pipe or conduit.

G. Backfill voids with satisfactory soil while installing and removing shoring and bracing.

H. Place and compact final backfill of satisfactory soil to final subgrade elevation.

I. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

J. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

K. Do not backfill trenches until any required testing and inspections have been completed and Architect authorizes backfilling. Backfill carefully to avoid damage or displacement of pipe systems.

L. Under piping and conduit and equipment, use crushed stone where required over rock bearing surface and for correction of unauthorized excavation. Shape excavation bottom to fit bottom 90 degrees of cylinder.

M. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

3.14 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percentage points of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percentage points and is too wet to compact to specified dry unit weight.

B. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations. Maintain the moisture content of the structural fill materials to within 2 percentage points of the optimum moisture content until permanently covered.

C. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to required density.

1. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

2. Work wet materials as directed by the Owner's Geotechnical Engineer. Base bids on working material daily for a maximum of five days of acceptable weather.

3. No additional payment will be made for these operations.

3.15 COMPACTION OF SOIL BACKFILL AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for

material compacted by handoperated tampers.

B. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

C. Control soil and fill compaction, providing minimum percentage of density indicated for each area classification indicated below. Correct improperly compacted areas or lifts as directed by Architect if soil density tests indicate inadequate compaction.

D. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density at a moisture content within 2 percentage points of optimum in accordance with ASTM D698:

1. Under structures, building pad and pavements, compact each layer of backfill or fill material at 95 percent maximum density. This includes ground under future expansion areas.

2. Under grass or unpaved areas, compact each layer of backfill or fill material at 90 percent maximum density.

E. Seal all fill areas at the end of each working day, utilizing a smooth drum roller.

3.16 GRADING

A. General: Rough grading of areas within the Project, including cut and fill sections and adjacent transition areas, shall be reasonably smooth, compacted and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from either blade-grader or motor patrol except as otherwise indicated. The finished subgrade surface from the grassed areas generally shall be not more than 0.2 feet above or below the final grade or approved cross section, with due allowance for topsoil.

B. The tolerance for areas within 10 feet of building perimeter, walks and all areas to be paved shall not exceed 0.10 feet above or below the established subgrade. Finish all ditches, swales and gutters to drain readily. Unless otherwise indicated, evenly slope the subgrade to provide drainage away from building walls in all directions at a grade not less than ¼ inch per foot. Provide rounding at top and bottom of cut and fill slopes and at other breaks in grade.

C. Protection of Graded Areas: Protect newly graded areas and areas of cut, fill and design/subgrade elevations from the actions of the elements and from deterioration as a result of construction operations and weather conditions (frost, rains, snow, sleet, hail, etc.). Repair any settlement or washing that occurs prior to or after acceptance of the work. Fill to required subgrade levels any areas where settlement occurs. Protect trees to remain, and, at all areas of the Site where construction operations are in progress, provide protection for the safety of occupants of the existing facilities.

D. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

E. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
2. Walks: Plus or minus 1 inch (25 mm).
3. Pavements: Plus or minus 1/2 inch (13 mm).

F. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch (13 mm) when tested with a 10-foot (3-m) straightedge.

3.17 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction: Allow testing service to inspect and approve each subgrade and fill layer before further backfill or construction work is performed.

1. If in the opinion of the Architect, based on testing service reports and inspection, subgrade or fills have been placed that are below required density, perform additional compaction and testing until required density is obtained.

B. The Owner will engage, and pay for, the services of a Geotechnical Engineer whose function shall be to afford complete engineering control by testing of the conditions of all footing subgrades, the placement of all structural fills under structures, building pad and pavement areas, and all compaction where required, and to observe the proof rolling of the building pad and pavement areas.

C. The Owner's Geotechnical Engineer will be present as deemed necessary during all phases of the Work requiring filling, compaction operations or testing. The Geotechnical Engineer will provide the Architect with written certification that fill and compaction was completed with accepted materials in accordance with the Documents, and give a professional opinion regarding shrinkage or settlement of fill and safe load bearing capacity of fill.

D. Site Preparation and Proofrolling: The Owner's Geotechnical Engineer will determine if any additional excavation or in-place densification is necessary to prepare a subgrade for fill placement for slab or pavement support.

E. Fill Placement and Compaction: The Owner's Geotechnical Engineer will witness all fill operations and take sufficient in-place density tests to verify that the indicated degree of fill compaction is achieved. The Owner's Geotechnical Engineer will observe and approve borrow materials used and shall determine if their existing moisture contents are suitable/acceptable.

F. Footing Excavation Review: The Owner's Geotechnical Engineer will review the footing excavations for the building foundations. He will verify that the design bearing pressures are available and that no loose or soft areas exist beneath the bearing surfaces of the footing excavations.

G. The Owner's Geotechnical Engineer will submit two (2) copies each of his reports, recommendations and/or opinions to the Architect/Engineer and the Owner. Pertinent information will be provided to the Contractor as required.

3.18 EROSION CONTROL:

A. Provide erosion control methods in accordance with requirements of authorities having jurisdiction, the Virginia Erosion and Sediment Control Handbook, and as indicated in the

Contract Documents.

3.19 PROTECTION

A. Repair and reestablish grades in settled, eroded, and rutted areas to indicated tolerances.

B. Reconditioning Compacted Areas: Where subsequent construction operations or adverse weather disturbs completed compacted areas, scarify surface, reshape, and compact to required density prior to further construction.

C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

D. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.20 DISPOSAL OF WASTE MATERIALS

A. Excess material is intended to be permanently stockpiled and stabilized on site in the locations shown on the plans.

END OF SECTION 312000

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 321313 — SITE CONCRETE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work of this Section.

1.2 DESCRIPTION OF WORK:

A. Extent of Portland cement concrete paving is shown on drawings, including:
   1. Curbs
   2. Long Jump/Triple Jump runways

1.3 SUBMITTALS

A. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

B. Material Certification: Certification signed by Contractor certifying that each material complies with requirements.

C. Concrete scoring plan. (unless shown in the drawings)

1.4 JOB CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
   1. Use flexible spring steel forms or laminated boards to form radius bends as required.
   2. Coat forms with a nonstaining form release agent that will not discolor or deface surface of concrete.

B. Welded Wire Mesh: Welded plain colddrawn steel wire fabric, ASTM A 185.

C. Reinforcing Steel: ASTM A 615, Grade 60, deformed

D. Concrete Materials: Comply with requirements of applicable Division 3 sections for concrete materials, admixtures, bonding materials, curing materials, and others as required.

E. Expansion Joint Materials: Comply with requirements of applicable Division 7 sections for preformed expansion joint fillers and sealers.

F. Antispalling Compound: Combination of boiled linseed oil and mineral spirits, complying with AASHTO M233.

G. LiquidMembrane Forming and Sealing Curing Compound: Comply with VDOT Road and

Bridge Specifications.

2.2 CONCRETE MIX, DESIGN, AND TESTING

A. Comply with requirements of applicable Division 3 sections for concrete mix design, sampling and testing, and quality control or VDOT Road and Bridge Specifications whichever is more stringent.

B. Design mix to produce normalweight concrete consisting of Portland cement, aggregate, waterreducing or highrange waterreducing admixture (superplasticizer), airentraining admixture, and water to produce the following properties:

1. Comply with the requirements of VDOT Std. Class A3 Concrete, unless otherwise indicated.

C. Testing to be performed by the Owner's third-party testing firm.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

D. Proofroll prepared subbase surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving,

3.2 FORM CONSTRUCTION

A. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

B. Check completed formwork for grade and alignment to following tolerances:

1. Top of forms not more than 1/8 inch in 10 feet.

2. Vertical face on longitudinal axis, not more than 1/4 inches in 10 feet.

C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

3.3 REINFORCEMENT

A. Locate, place and support reinforcement as specified in Division 3 sections, unless otherwise indicated.

3.4 CONCRETE PLACEMENT

A. General: Comply with requirements of applicable Division 3 sections for mixing and placing concrete or VDOT Road and Bridge Specifications whichever is more stringent.

B. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase if required to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

C. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only squarefaced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.

D. Deposit and spread concrete in a continuous operation between transverse joints as far as possible. If interrupted for more than 1/2 hour, place a construction joint.

E. Fabricated Bar Mats: Keep mats clean and free from excessive rust, and handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities or replace units as required before placement. Set mats for a minimum 2inch overlap to adjacent mats.

F. Place concrete in 2 operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.

G. Remove and replace portions of bottom layer of concrete that have been placed more than 15 minutes without being covered by top layer or use bonding agent if acceptable to Architect.

H. Curbs and Gutters: Automatic machine may be used for curb and gutter placement. If machine placement is to be used, submit revised mix design and laboratory test results that meet or exceed minimums indicated. Machine placement must produce curbs and gutters to required crosssection, lines, grades, finish, and jointing as indicated for formed concrete. If results are not acceptable, remove and replace with formed concrete meeting requirements.

3.5 JOINTS

A. General: Construct expansion, weakenedplane (contraction), and construction joints true to line with face perpendicular to surface of concrete. Construct transverse joints at right angles to the centerline, unless otherwise indicated.

B. WeakenedPlane (Contraction) Joints: Provide weakenedplane (contraction) joints, sectioning concrete into approximately 10' areas or as shown on drawings. Construct weakenedplane joints for a depth equal to at least 1/4 concrete thickness, as follows:

1. Tooled Joints: Form weakenedplane joints in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a jointer.

2. Sawed Joints: Form weakenedplane joints with powered saws equipped with shatterproof abrasive or diamondrimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.

C. Construction Joints: Place construction joints at end of placements and at locations where placement operations are stopped for more than 1/2 hour, except where such placements terminate at expansion joints.

D. Construct joints as indicated or, if not indicated, use standard metal keywaysection forms.

E. Expansion Joints: Provide premolded joint filler for expansion joints abutting catch basins, manholes, inlets, structures, walks, and other fixed objects, unless otherwise indicated.

F. Locate expansion joints at 50 feet o.c. for each pavement lane unless otherwise indicated.

G. Extend joint fillers full width and depth of joint, not less than 1/2 inch or more than 1 inch below finished surface where joint sealer is indicated. If no joint sealer, place top of joint filler

flush with finished concrete surface.

H. Provide joint fillers in onepiece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.

I. Protect top edge of joint filler during concrete placement with a metal cap or other temporary material. Remove protection after concrete has been placed on both sides of joint.

J. Fillers and Sealants: Comply with requirements of applicable Division 7 sections for preparation of joints, materials, installation, and performance.

K. Refer to Drawings for scoring patterns for:

1. Selected sidewalk areas
2. Service Area

3.6 CONCRETE FINISHING

A. After strikingoff and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.

B. After floating, test surface for trueness with a 10ft. straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

C. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2inch radius, unless otherwise indicated. Eliminate tool marks on concrete surface.

D. After completion of floating and when excess moisture or surface sheen has disappeared, complete troweling and finish surface as follows:

1. Broom finish by drawing a finehair broom across concrete surface perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to Architect.
2. Exposed-Aggregate Finish: At handicap ramps and where indicated on drawings, by applying an approved retardant curing compound to the surface. Allow minimum 12 hours of setting time before washing surface to expose a maximum of (1/3) one-third of stone surface. Aggregate shall be brown Riverstone having a uniform size and color for each subsequent concrete pour. Aggregate size shall range between 1/2" and 3/4".

E. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and pointup any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Architect.

3.7 CURING

A. Protect and cure finished concrete paving in compliance with applicable requirements of Division 3 sections. Use membraneforming curing and sealing compound or approved moistcuring methods.

3.8 REPAIRS AND PROTECTIONS

A. Repair or replace cracked, broken or defective concrete curbs and curb and gutter, as directed by Architect.

B. Replace cracked, broken or defective concrete sidewalks.

C. Repair or replace cracked, broken or defective concrete pavement, as directed by Architect.

D. Drill test cores where directed by Architect when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.

E. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

F. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just before final inspection.

END OF SECTION 321313

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 321823.33 – TRACK AND FIELD SURFACE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract Documents apply to the work in this Section.

1.1 DESCRIPTION OF WORK

A. Provide a mixture of uniformly graded rubber particles bound together with formulated styrene butadiene resin, providing a durable, resilient surface for the running track and designated field event areas. No asphalt material shall be incorporated into this system.

B. The following surfaces shall receive the surface system:

1. Runways for long jump; triple jump;

C. Provide line markings in accordance with the most current National Federation of State High School Association (NFHS) standards including the 400M hurdles.

1.1 SUBMITTALS

A. Product data in the form of manufacturer's technical data, specifications, and construction.

B. Shop drawings showing line striping (with dimensions) that meets current NFHS standards.

C. Samples: Submit sample representative of actual surface to architect/owner for approval.

1.1 QUALITY ASSURANCE

A. Surfacing Installer Requirements: Over the last five years, the Contractor must have installed at least 20 running track surfaces that utilize the exact same material as specified herein. Contractor must be a licensed general contractor in the Commonwealth of Virginia.

B. Weather Conditions: The quality of the installation is dependent upon proper weather conditions. No installation shall be made when rain is imminent or when ambient temperatures are below 60° F. It is best to install the system in full sun, and dry weather with daytime temperatures of at least 60° F and rising for five (5) hours. When nighttime temperatures fall below 45° F, the system should not be installed.

1.1 WARRANTY

A. Warrant surface against defects in workmanship and materials for THREE (3) YEARS from date of Substantial Completion. The contractor shall repair or replace defective surface at no cost to the owner. Excluded from the warranty are defects caused by faulty design, acts of God, improper maintenance, abuse, and uses other than those set forth above. The owner is required to maintain the facility in accordance with the maintenance instructions which are provided with the warranty.

1.1 1.6 PROJECT CONDITIONS

A. **Concrete Substrate:** The concrete upon which the MAXFLEX BL 1/2" TRACK SURFACE is installed shall be clean, free-draining, and shall exhibit the planarity and tolerances set forth in running Track and Field Event Base Course Construction as published by Precision Athletics, Inc.

PART 2 – PRODUCTS

2.1 BASIS FOR SPECIFICATION

A. The design basis for this specification is the MAXFLEX BL 1/2" system as manufactured and installed by Precision Athletics, Richmond, VA (804-585-3015). Alternative equivalent systems may be submitted for approval as set forth below.

2.2 MATERIALS

A. BINDER A – formulated styrene butadiene polymer containing a minimum of 50% resin solids content; having a styrene butadiene ratio of 45:55; and having a Glass Transition Temperature of - 32° C

B. BINDER B - formulated styrene butadiene polymer containing a minimum of 50% resin solids content; having a styrene butadiene ratio of 65:35; and having a Glass Transition Temperature of - 7° C.

C. Ultraviolet Protectant/Pigment: proprietary aqueous solution of black pigments.

D. Rubber Particulate: proprietary black SBR rubber particulate having a specific gravity of 1.15.

E. Line Marking Paint: acrylic line marking paint approved by the manufacturer of the track surface.

2.3 SUBSTITUTIONS

A. With any request for substitution, provide the following information in addition to the source of the proposed material:

1. Latex: Tensile strength and elasticity; glass transition temperature; styrene butadiene ratio
2. SBR Rubber: Compound content and sieve analysis
3. List of five installations within 100 miles radius of this project that have had the same system installed within at least the last two years.

PART 3 – EXECUTION

3.1 SCHEDULING

A. Inform the owner's representative 48 hours prior to material placement. Any material placed when owner's representative has not been given 48 hours notice may be required to be removed and replaced.

3.2 PREPARATION

A. New asphalt shall be allowed to cure for a minimum of 14 days prior to the installation of any

surfacing material. Thoroughly clean the new asphalt substrate and check for deviations of planarity exceeding 3/16" when measured with a ten-foot straight-edge. Correct deviations exceeding this tolerance using asphalt. Minimum cross slope on the asphalt shall be 1%.

3.3 CONSTRUCTION

A. Mat Construction: The track and field event surface shall be constructed in accordance with the methods approved by the manufacturer of the system. The methods employed shall be designed to fully encapsulate all rubber particulate with a resin film of sufficient thickness to produce the required system tensile strength. Ultraviolet protectant/pigment shall be added to Binder A and B in accordance with the manufacturers recommendations and in sufficient quantity to protect the finished track system for the duration of the warranty period. The mat shall be constructed using the following material quantities:

1. SBR Resin: 3.3 to 3.5 dry lbs. per square yard of surface area.
2. Rubber Particulate: 12.5 to 12.7 dry lbs. per square yard of surface area.
3. Total System Weight: 15.8 to 16.2 dry lbs. per square yard.

B. Physical Properties: The finished surface shall be uniform in appearance, depth, and density, and shall exhibit the following physical characteristics:

1. Thickness: 1/2" (13mm)
2. Color: Black
3. Spike Use: Yes, 1/8" Pyramid Type

3.4 LINE MARKING

A. Line field events according to most current National Federation of State High School Association (NFHS) standards.

END OF SECTION 321823.33

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 32 31 13 - CHAIN LINK FENCE
PVC COATED CHAIN LINK FABRIC ON PVC COLOR COATED GALVANIZED FRAMEWORK

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Poly Vinyl Chloride (PVC) coated chain link fabric with PVC color coated galvanized steel framework and accessories for commercial or industrial applications.

1.2 RELATED SECTIONS

01 33 13 Certifications
01 33 23 Shop drawings, product data
01 43 13 Manufacturers Qualifications
01 43 13 Installer qualifications
01 45 00 Quality control
01 65 00 Product delivery requirements
03 30 00 Cast-In-Place Concrete
25 50 00 Integrated automation, gate operators/access control
32 31 13.23 Recreational Court Fences and Gates
32 31 13.26 Tennis Court Fences and Gates
32 31 13.33 Chain Link Backstops
32 1 13.53 High-Security Chain Link Fences and Gates

1.3 REFERENCES

A. ASTM A36 Standard Specification for Carbon Structural Steel

B. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-dip Galvanized Coatings

C. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Bars, Rods, Wire Profiles and Tubes

D. ASTM F552 Standard Terminology Relating to Chain Link Fencing

E. ASTM F567 Standard Practice for Installation of Chain Link Fence

F. ASTM F626 Standard Specification for Fence Fittings

G. ASTM F668 Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric

H. ASTM F900 Standard Specification for Industrial and Commercial Swing Gates

I. ASTM F934 Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials

J. ASTM F1043 Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework

K. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

L. ASTM F1184 Standard Specification for Industrial and Commercial Horizontal Slide Gates

M. ASTM F1664 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer- Coated Steel Tension Wire Used With Chain Link Fence

N. ASTM F1665 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer- Coated Steel Barbed Wire Used With Chain Link Fence

O. ASTM F1910 Standard Specification for Long Barbed Tape Obstacles

P. ASTM F1911 Standard Practice for Installation of Barbed Tape

Q. ASTM F2200 Standard Specification for Automated Vehicular Gate Construction

R. UL 325 Door, Drapery, Gate, Louver and Window Operators

S. WLG2445 Chain Link Fence Manufacturers Institute, Chain Link Fence Wind Load Guide for the Selection of Line Posts and Line Post Spacing

1.4 SUBMITTALS

A. Changes in specifications may not be made after the bid date.

B. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of components, accessories, and post foundations.

C. Product data: Manufacturer's catalog cuts indicating material compliance and specified options.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company having manufacturing facilities in the United States with 5 years experience specializing in manufacturing of chain link fence products.

B. Fence contractor: Contractor having 5 years experience installing similar projects in accordance with ASTM F567.

C. Tolerances: ASTM current specification and tolerances apply and supersede any conflicting tolerance.

D. Substitutions: Alternate chain link products may be acceptable by the architect as equal if approved in writing ten days prior to bidding provided that the items submitted meet the specifications contained in this document.

E. Single source: To ensure system integrity obtain the chain link system, framework, fabric, fittings, gates and accessories from a single source.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Approved Manufacturers:

1. Master Halco, Inc.

One City Blvd. West, Suite 900 Orange, CA 92868

Phone (800) 229-5615 Fax (714) 385-0107

www.masterhalco.com, E-mail: spec@fenceonline.com

2. Merchants Metals

www.merchantsmetals.com

Tech-Info@merchantsmetals.com

Phone: (888) 260-1600 Fax: (888) 261-3600

3. Ameristar Fence Products in Tulsa, Oklahoma

4. Approved Equal

2.2 CHAIN LINK FENCE FABRIC

A. Poly Vinyl Chloride (PVC) color coated steel chain link fabric per ASTM F668 Class 1 Extruded over metallic coated steel wire

B. Size and Height: See plans

C. Color of chain link fabric per ASTM F934 Black

2.3 PVC COLOR COATED STEEL FENCE FRAMEWORK

A. Steel pipe Type I: ASTM F1043 Group IA, ASTM F1083 standard weight schedule 40 hot-dip galvanized pipe having a zinc coating of 1.8 oz/ft² (550 g/m²) on the outside and 1.8 oz/ft² (550 g/m²) on the inside surface. Exterior of pipe to have F1043 PVC thermally fused color coating, minimum thickness 10 mils (0.254 mm). Regular Grade: Minimum steel yield strength of 30,000 psi (205 MPa)

B. Pipe End and Corner Post 2 3/8" OD

C. Pipe Line Post 1.9" OD

D. Pipe Rail and Braces, 1.660 in. OD

2.4 FITTINGS

A. All fittings to be PVC thermally fused color coated having a minimum thickness of 0.006" (0.152 mm) per ASTM F626. PVC color to match fabric and framework. Moveable parts, nuts and bolts to be field coated with PVC liquid touch up after installation.

B. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. "C" shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.

C. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

D. Top rail sleeves: 7" (178 mm) galvanized steel sleeve per ASTM F626.

E. Wire ties: 9 gauge (0.148") (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148") (3.76 mm) galvanized steel or aluminum for attachment of fabric to tension wire. Tie wire and hog rings PVC coated and in compliance with ASTM F626. Color to match fabric color.

F. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105") (2.67mm) pressed steel by 3/4" (19mm) formed to a minimum 300 degree profile curvature for post

attachment. Secure bands using minimum 5/16" (7.94 mm) galvanized carriage bolt and nut.

G. Tension (stretcher) galvanized steel bars: One piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

H. Truss rod assembly: Galvanized steel minimum 5/16" (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626

I. Carriage bolts and nuts: Galvanized of commercial quality

2.5 TENSION WIRE

A. Tension wire: Poly Vinyl Chloride (PVC) coated metallic coated steel tension wire per ASTM F 1664 9 gauge steel core wire, 0.148 PVC coating class and color to match chain link fabric

2.6 POST SETTING MATERIALS

A. Concrete: Minimum 28 day compressive strength of 3,000 psi (20 MPa).

B. Drive Anchors: Galvanized ASTM A36 steel drive anchor angle blades, 30" long secured to post with a pressed steel galvanized shoe clamp.

2.7 ACCESSORIES

A. Not used.

PART 3 EXECUTION

3.1 SITE EXAMINATION

A. Ensure property lines and legal boundaries of work are clearly established.

B. Survey of fence location to be provided by general contractor

C. Verify areas to receive fencing are completed to final grade.

3.2 CHAIN LINK FRAMEWORK INSTALLATION

A. Install chain link fence system in accordance with ASTM F567 and manufacturer's instructions.

B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

C. Space line posts as shown on the drawings.

D. Concrete set posts: Dig holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts.

E. Drive Anchor set line posts: With protective cap, drive post 36" (914 mm) into ground. Excavate a 6" (152.4 mm) diameter by 6" (152.4 mm) deep section around post to accommodate the drive

anchor shoe clamp. Drive the 2 diagonal drive anchor angle blades into the soil and securely tighten the angle blades to the post using the shoe clamp, bury the shoe clamp.

F. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.

G. Bracing: Install horizontal brace and truss assembly at mid-height or above for fences 6' (1829 mm) and over at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.

H. Tension wire: Install tension wires so that it will be located 4" (101.6 m) up from bottom the fabric. If top rail is not specified, install the tension wire so that it will be located 4" (101.6 mm) down from the top of the fabric. Stretch and Install tension wire before installing the chain link fabric and attach it to each post using wire ties.

I. Top rail: Install in lengths of 21' (6.400 m). Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.

J. Bottom Rails: Install bottom rails between posts and attach to post using rail end or line rail clamps.

K. Touch up any nicks or scratches of the PVC color coating with liquid PVC paint.

3.3 CHAIN LINK FABRIC INSTALLATION

A. Fabric: Install fabric on security side, pull fabric taut; thread the tension bar through fabric and attach to terminal posts with tension bands spaced maximum of 15" (381 mm) on center and attach so that fabric remains in tension after pulling force is released. Install fabric so that it is 2" (50 mm) +/- 1" (25 mm) above finish grade.

B. Secure fabric using wire ties to line posts at 15" (381 mm) on center and to rails and braces 24" (610 mm) on center, and to the tension wire using hog rings 24" (610 mm) on center. Tie wire shall be secured to the fabric by wrapping it two 360 degree turns around the chain link wire pickets. Cut off any excess wire and bend back so as not to protrude so as to avoid injury if a pedestrian may come in contact with the fence.

3.4 SITE CLEAN UP

A. Clean up area adjacent to fence line from debris and unused material created by fence installation.

END OF SECTION 323113

LAKELAND HIGH SCHOOL TURF REPLACEMENT
SUFFOLK PUBLIC SCHOOLS
SUFFOLK, VIRGINIA

SECTION 334100 - STORM DRAINAGE

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. The provisions of the Contract Documents apply to the work of this Section.

1.2 SUMMARY:

A. This Section includes the storm sewerage system piping and appurtenances.

1.3 SUBMITTALS

A. Product data for:
   1. Concrete pipe
   2. Polyethylene pipe
   3. Ductile iron pipe
   4. Frames and covers.
   5. Grates
   6. Couplings for connection into concrete pipe.

B. Certification, signed by material producer and contractor, that standard precast and cast in place concrete storm drainage manholes and Drop Inlets comply with VDOT standards and specifications.

C. VDOT approved job mix for bedding stone.

D. Shop drawings for:
   1. Stormwater structures
   2. Cleanouts
   3. Underdrains

E. Record drawings of installed storm drainage system.

1.4 QUALITY ASSURANCE

A. Environmental Compliance: Comply with applicable portions of local environmental agency regulations pertaining to storm sewerage systems.

B. Utility Compliance: Comply with state and local regulations and standards pertaining to storm sewerage systems.

C. All materials shall be new and free of defects (i.e. pipe shall not have chipped spigots or bells).

1.5 PROJECT CONDITIONS

A. Site Information: Perform site surveys, research public utility records, and verify existing utility locations. Verify that storm sewerage system piping may be installed in compliance with

original design and referenced standards.

B. Locate existing structures and piping to be closed and abandoned.

C. Existing Utilities: Do not interrupt existing storm sewer serving facilities occupied by the Owner of others except when permitted under the following conditions and then only after arranging to provide acceptable temporary storm sewer services.

1. Notify Architect not less than 48 hours in advance of proposed storm sewer interruptions.
2. Do not proceed with storm sewer interruptions without receiving Architect's written permission.

D. Existing utilities across or along the line of work are indicated only in an approximate location. Locate all underground lines and structures. Call "Miss Utility" at 811 prior to construction. If utilities are marked that are not shown on the plans, locate utility vertically and horizontally and provide information to architect.

1.6 SEQUENCING AND SCHEDULING

A. Coordinate with owner for disruptions in service.

B. Coordinate with other utility work.

PART 2 – PRODUCTS

2.1 GENERAL

A. All materials used for construction of the storm sewerage system shall comply with the requirements of the latest edition of the Virginia Department of Transportation Road and Bridge Standards and Road and Bridge Specifications.

2.2 PIPE AND FITTINGS

A. Provide pipe and pipe fitting materials compatible with each other. Pipe materials are indicated on the drawings.

B. Reinforced Concrete Pipe (RCP): Shall conform to the requirements of ASTM C76/AASHTO M170, Class III, unless otherwise indicated. All RCP shall be gasketed.

C. PVC Storm Sewer Pipe: Shall conform to the requirements of ASTM D3034, SDR-35 with bell and spigot ends for gasketed joints with ASTM F 477 elastometric seals

2.3 CLEANOUTS

A. Castiron ferrule and countersunk brass cleanout plug, with round castiron access frame and heavyduty, secured, scoriated castiron cover.

2.4 CONCRETE AND REINFORCEMENT

A. Concrete: Conform to the requirements of VDOT Standard Class A3 concrete.

B. Reinforcement: Steel conforming to the following:

1. Fabric: ASTM A 185 welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

2.5 UNDERDRAINS

A. Underdrains and combination underdrains: Conform to the requirements of the latest edition of the VDOT Road and Bridge Specifications and the VDOT Road and Bridge Standards for the type of underdrain, unless otherwise indicated.

1. PVC underdrains shall conform to the requirements of ASTM F758, Type PS 28 or ASTM F949.

2. PE corrugated underdrain pipe shall conform to AASHTO M252.

PART 3 EXECUTION

3.1 GENERAL

A. Install the storm sewerage system in accordance with the latest edition of the Virginia Department of Transportation's Road and Bridge Standards and Road and Bridge Specifications.

3.2 PREPARATION OF FOUNDATION FOR BURIED STORM SEWERAGE SYSTEMS

A. Grade trench bottom to provide a smooth, firm, stable, and rockfree foundation, throughout the length of the pipe.

B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with clean sand or pea gravel to indicated level.

C. Install pipe bedding conforming to the requirements of the latest edition of the Virginia Department of Transportation's Road and Bridge Standards and Road and Bridge Specifications.

3.3 PIPE INSTALLATION

A. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

B. Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.

C. Extend storm sewerage system piping to connect to building storm drains, of sizes and in locations indicated.

D. Join and install concrete pipe and fittings per VDOT specifications.

E. Join and install PE pipe and fittings per manufacturer's recommendations.

F. Join different types of pipe with standard manufactured couplings and fittings intended for that purpose.

3.4 FIELD QUALITY CONTROL

A. Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.

2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.

3. Flush piping between manholes and drop inlets to remove collected debris. Flush pipes through an approved erosion and sediment control measure.

B. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

1. Make inspections after pipe between have been installed and approximately 2 feet of backfill is in place, and again at completion of project.

2. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects correct such defects and reinspect.

END OF SECTION 334100

RESPONSIBLE LAND DISTURBER DESIGNATION

THE PERSON IDENTIFIED BELOW IS DESIGNATED AS THE RESPONSIBLE LAND DISTURBER WHO WILL BE IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND DISTURBING ACTIVITY ASSOCIATED WITH THIS PROJECT. THE PERSON MEETS THE APPLICABLE REQUIREMENTS OF VIRGINIA CODE SECTION 10.1-563 AND 10.1-566 BY VIRTUE OF THE FOLLOWING:

__ RESPONSIBLE LAND DISTURBER CERTIFICATE
__ DCR CERTIFICATION FOR COMBINED ADMINISTRATOR, ADMINISTRATOR, PLAN REVIEWER, INSPECTOR, OR CONTRACTOR.
X VIRGINIA PROFESSIONAL ENGINEER, LAND SURVEYOR, LANDSCAPE ARCHITECT, OR ARCHITECT

RESPONSIBLE LAND DISTURBER CONTACT INFORMATION:

NAME (SIGNATURE): [signature]
NAME (PRINT): DAN RUBY
CERTIFICATION/REGISTRATION NUMBER: 045941
COMPANY: TIMMONS GROUP
MAILING ADDRESS: 2901 S. LYNNHAVEN RD, SUITE 200, VIRGINIA BEACH, VA 23452
TELEPHONE: 757-213-6681
EMAIL: DAN.RUBY@TIMMONS.COM

THIS DESIGNATION MAY ONLY BE CHANGED BY A PLAN COVER SHEET REVISION THAT MUST BE SUBMITTED TO THE CITY FOR VERIFICATION AND APPROVAL.

LAKELAND HIGH SCHOOL TURF FIELD CONVERSION

CIVIL SITE PLANS

CITY OF SUFFOLK, VIRGINIA
FILE #: SPL2021-00043
NOVEMBER 29, 2021

RESPONSIBLE LAND DISTURBER NOTE

THE PROFESSIONAL WHOSE SEAL IS AFFIXED HEREON SHALL ACT AS THE "RESPONSIBLE LAND DISTURBER" FOR THE PURPOSES OF PLAN APPROVAL ONLY. PRIOR TO THE ISSUANCE OF THE LAND DISTURBING PERMIT, THE OWNER OR DEVELOPER SHALL PROVIDE THE NAME OF A "RESPONSIBLE LAND DISTURBER" WHO SHALL ASSUME RESPONSIBILITY AS THE "RESPONSIBLE LAND DISTURBER" FOR THE CONSTRUCTION PHASE OF THE PROJECT. THE OWNER OR DEVELOPER SHALL PROVIDE WRITTEN NOTIFICATION SHOULD THE "RESPONSIBLE LAND DISTURBER" CHANGE DURING CONSTRUCTION.

SUFFOLK PUBLIC SCHOOLS

DEVELOPER/OWNER
SUFFOLK PUBLIC SCHOOLS
100 N. MAIN STREET
SUFFOLK, VA 23434
CONTACT: ANTHONY HINDS
PHONE: (757) 925-6750 x55226
EMAIL: ANTHONYHINDS@SPSK12.NET

PLANNING
DEPT. OF PLANNING & COMMUNITY DEVELOPMENT
442 W. WASHINGTON ST.
SUFFOLK, VA 23434
CONTACT: KEVIN WYNE, CURRENT PLANNING MGR.
PHONE: (757) 514-4060
EMAIL: KWYNE@SUFFOLKVA.US

WATER/SEWER SERVICE
CITY OF SUFFOLK PUBLIC UTILITIES
442 W. WASHINGTON ST.
SUFFOLK, VA 23434
CONTACT: DEAN ADAMS
PHONE: (757) 514-7020
EMAIL: DMADAMS@SUFFOLKVA.US

CIVIL ENGINEER
TIMMONS GROUP
2901 S. LYNNHAVEN ROAD, SUITE 200
VIRGINIA BEACH, VA 23452
CONTACT: DAN RUBY, PE
PHONE: (757) 213-6681
EMAIL: DAN.RUBY@TIMMONS.COM

STORMWATER MANAGEMENT
PUBLIC WORKS DEPT. OF ENGINEERING
442 W. WASHINGTON ST., 2ND FLOOR
SUFFOLK, VA 23434
CONTACT: ERIN ROUNTREE
PHONE: (757) 514-7070
EMAIL: EROUNTREE@SUFFOLKVA.US

NATURAL GAS SERVICE
COLUMBIA GAS OF VIRGINIA
7001 HARBOUR VIEW BLVD.
SUFFOLK, VA 23435
PHONE: (800) 543-8911

TURF FIELD SPECIALIST
LODSPORTS, LLC.
13284 BERLIN TURNPIKE
LOVETTSVILLE, VA 20180
CONTACT: MATT VETTER, PE
PHONE: (703) 888-0740
EMAIL: MATT.VETTER@LODSPORTS.COM

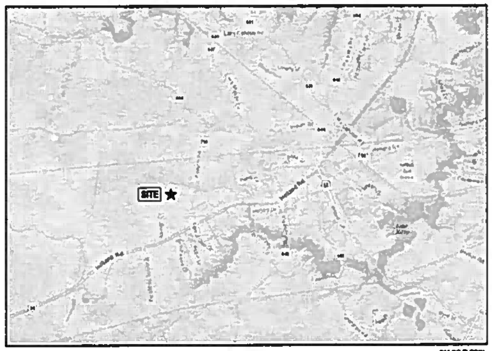
TRAFFIC ENGINEERING
DEPT. OF PUBLIC WORKS TRAFFIC ENGINEERING
866 CAROLINA ROAD
SUFFOLK, VA 23434
CONTACT: JASON SOUDERS
PHONE: (757) 514-7640
EMAIL: JSOUDERS@SUFFOLKVA.US

ELECTRIC SERVICE
DOMINION ENERGY
2700 CROMWELL DRIVE
NORFOLK, VA 23509
CONTACT: BELINDA WINSTEAD
PHONE: (757) 857-2870
EMAIL: BELINDA.WINSTEAD@DOMINIONENERGY.COM

SURVEYOR
TIMMONS GROUP
2901 S. LYNNHAVEN ROAD, SUITE 200
VIRGINIA BEACH, VA 23452
CONTACT: TODD FRENCH, LS
PHONE: (757) 217-4871
EMAIL: TODD.FRENCH@TIMMONS.COM

FIRE MARSHAL
CITY OF SUFFOLK FIRE PREVENTION BUREAU
300 KINGS FORK ROAD
SUFFOLK, VA 23434
CONTACT: CHARLES "CHUCK" CHAFIN
PHONE: (757) 514-4530
EMAIL: CCHAFIN@SUFFOLKVA.US

TELEPHONE/INTERNET SERVICE
VERIZON
3020 ELMHURST LANE, 2ND FLOOR
PORTSMOUTH, VA 23701
CONTACT: JIM FULTON
PHONE: (757) 683-0721



SCALE 1"=4000'
0 4000' 8000'

VICINITY MAP

IMAGE © ESRI

SHEET INDEX

SHEET NO.	SHEET TITLE
C-0.0	COVER SHEET
C-0.1	CIVIL PROJECT NOTES
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C-0.3	POST-DEVELOPMENT DRAINAGE AREA MAP
C-1.0	EXISTING CONDITIONS SURVEY
C-2.0	EROSION & SEDIMENT CONTROL NARRATIVE
C-2.1	PHASE 1 EROSION & SEDIMENT CONTROL PLAN
C-2.2	PHASE 2 EROSION & SEDIMENT CONTROL PLAN
C-2.3	EROSION & SEDIMENT CONTROL DETAILS
C-3.0	DEMOLITION PLAN
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C-4.1	FIELD DIMENSION PLAN
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C-6.3	DRAINAGE DETAILS
C-6.4	DRAINAGE DETAILS
C-7.0	ATHLETIC DETAILS
C-7.1	ATHLETIC DETAILS
C-7.2	ATHLETIC DETAILS
C-7.3	ATHLETIC DETAILS

SITE STATISTICAL DATA

1. PROPERTY ADDRESS — 214 KENYON ROAD, SUFFOLK, VA 23434
2. TAX MAP NO. — 33*11*H
3. ACCOUNT NO. — 153000000
4. SOURCE PLAT — P.B. 12, P. 113
5. SOURCE DEED — D.B. 233, P. 195
6. ZONING — RLM (RESIDENTIAL LOW-MEDIUM DISTRICT)
7. STORMWATER DESIGN CRITERIA — IIB
8. JPA/WETLANDS PERMIT REQUIRED — NO
9. ONSITE RESOURCE PROTECTION AREA — NO
10. EXISTING USE — INSTITUTIONAL - PUBLIC HIGH SCHOOL
11. PROPOSED USE — INSTITUTIONAL - PUBLIC HIGH SCHOOL
12. WATERSHED — NANSEMOND RIVER >> CHESAPEAKE BAY
13. FLOOD PLAIN INFORMATION — ZONE 'X' OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
14. FEMA FIRM INFORMATION — NUMBER: 510156 | PANEL: 0210D | EFFECTIVE 11/16/2011
15. TOPOGRAPHIC SURVEY SOURCE — TIMMONS GROUP
16. HORIZONTAL DATUM — NAD83 & 93HARN (US SURVEY FEET)
17. VERTICAL DATUM — NAVD 1988
18. PROPERTY AREA — 60.40 ACRES - PER CITY GIS
19. DISTURBED AREA — ON-SITE DISTURBED AREA: 175,450 SF (4.03 AC); DISTURBED AREA IN RIGHTS-OF-WAY: 0 SF (0.00 AC); TOTAL DISTURBED AREA: 175,450 SF (4.03 AC)
20. BUILDING DATA — NO EXISTING BUILDINGS AFFECTED NOR NEW BUILDINGS PROPOSED
21. PARKING DATA — NO EXISTING SPACES AFFECTED NOR NEW SPACES PROPOSED
22. DOMESTIC WATER SERVICE — CITY WATER AVAILABLE. EXISTING SERVICES NOT AFFECTED
23. WASTEWATER FLOW DATA — CITY SANITARY SEWER AVAILABLE. EXISTING SERVICES NOT AFFECTED
24. FIRE PROTECTION DATA — NOT AFFECTED
25. GROUND COVER DATA

DISTURBED AREA	175,450 SF, 4.03 AC	
PRE-DEVELOPMENT IMPERVIOUS AREA	8,394 SF, 0.19 AC	(4.8%)
PRE-DEVELOPMENT MANAGED TURF	167,056 SF, 3.84 AC	(95.2%)
POST-DEVELOPMENT IMPERVIOUS AREA	104,189 SF, 2.40 AC	(59.4%)
POST-DEVELOPMENT MANAGED TURF	71,261 SF, 1.63 AC	(40.6%)

26. SOIL TYPES — PER USDA NRCS WEB SOIL SURVEY AND ONSITE SOILS EVALUATION

9A	EUNOLA LOAMY FINE SAND	HSG C	0 - 2% SLOPES
9B	EUNOLA LOAMY FINE SAND	HSG C	2 - 6% SLOPES
14	LYNCHBURG FINE SANDY LOAM	HSG B	
22B	SUFFOLK LOAMY SAND	HSG B	2 - 6% SLOPES

ADVISORY NOTES

1. THE CONTRACTOR MUST CONTACT DEAN ADAMS, PUBLIC UTILITIES CONSTRUCTION MANAGER, AT (757) 514-7020 AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO SET UP A PRECONSTRUCTION MEETING.
2. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF THE PROPERTIES ADJACENT TO THE PROJECT SITE 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE CITY.
3. PUBLIC REFUSE COLLECTION WILL NOT BE PROVIDED TO THIS SITE. THE OWNER/DEVELOPER SHALL COORDINATE REFUSE COLLECTION WITH A PRIVATE HAULER.
4. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF IN A LAWFUL MANNER. THE CONTRACTOR SHALL COORDINATE HAUL ROUTES, MATERIAL QUANTITIES, TRUCK CAPACITIES AND NUMBER OF TRIPS WITH THE CITY CIVIL INSPECTOR.
5. ANY AND ALL MATERIALS OR DEBRIS TRACKED ONTO A PUBLIC OR PRIVATE ROAD SURFACE SHALL BE REMOVED AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND WILL BE TRANSPORTED TO A SEDIMENT- CONTROLLED DISPOSAL AREA. STREET WASHING IS NOT PERMITTED UNTIL SEDIMENT HAS BEEN REMOVED BY SWEEPING AND SHOVELING.
6. THIS PROPERTY IS LOCATED WITHIN THE CHESAPEAKE BAY PRESERVATION OVERLAY DISTRICT AND IS DESIGNATED AS A RESOURCE MANAGEMENT AREA (RMA). ALL LAND DISTURBANCE, USES, DEVELOPMENT AND REDEVELOPMENT IN THE CHESAPEAKE BAY PRESERVATION AREA OVERLAY DISTRICT ARE REQUIRED TO RETAIN AN UNDISTURBED VEGETATED 100-FOOT BUFFER AREA AROUND RPA FEATURES, SUCH AS WETLANDS, SHORELINES, AND ALONG WATERBODIES WITHIN PERENNIAL FLOW.
7. NO DELIVERY, LOADING, TRASH REMOVAL OR COMPACTION, OR OTHER SUCH OPERATIONS SHALL BE PERMITTED BETWEEN THE HOURS OF 10 P.M. AND 7 A.M.
8. THE CONTRACTOR SHALL FIELD-VERIFY THE LOCATION, DEPTH, AND SIZE OF EXISTING UNDERGROUND UTILITIES. THE LOCATIONS SHOWN ARE APPROXIMATE AND NOT GUARANTEED BY TIMMONS GROUP. THE CONTRACTOR SHALL ALERT THE CIVIL ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
9. THE CONTRACTOR SHALL INSTALL SIGNAGE IN AREAS THAT ARE RESTRICTED TO THE PUBLIC DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL PROVIDE LIGHTING THROUGHOUT THE CONSTRUCTION AREA IF WORK IS TO BE PERFORMED AFTER DARK. THE EXISTING STADIUM LIGHTS ARE ACCEPTABLE FOR ILLUMINATING THE FOOTBALL FIELD. THE CONTRACTOR SHALL COORDINATE WORK HOURS AND LIGHTING USAGE WITH THE OWNER.

PERMITTING NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS FOR THIS PROJECT PRIOR TO COMMENCING CONSTRUCTION.
2. A LAND DISTURBANCE PERMIT IS REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL CONTACT THE CITY OF SUFFOLK (BETH GILL) AT BGILL@SUFFOLKVA.US OR (757) 514-7611 A MINIMUM OF 48 HOURS IN ADVANCE OF APPLYING FOR A LAND DISTURBANCE PERMIT.
3. IN ORDER TO ISSUE A LAND DISTURBANCE PERMIT FOR THIS PROJECT THE FOLLOWING ITEMS ARE REQUIRED:
   - A GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES (CONSTRUCTION GENERAL PERMIT) MUST BE OBTAINED FROM DEQ FOR LAND-DISTURBING ACTIVITIES OF ONE ACRE OR GREATER. APPLICANT MUST PROVIDE EITHER EVIDENCE OF A VALID CONSTRUCTION GENERAL PERMIT FOR THE LAND-DISTURBING ACTIVITY OR MUST PROVIDE A COMPLETE AND ACCURATE REGISTRATION STATEMENT TO THIS OFFICE FOR REVIEW AND SUBMISSION TO DEQ IN ORDER TO OBTAIN A CONSTRUCTION GENERAL PERMIT. UPON RECEIPT OF VERIFICATION FROM DEQ THAT THE REGISTRATION STATEMENT HAS BEEN ACCEPTED AND THAT A CONSTRUCTION GENERAL PERMIT WILL BE ISSUED BY DEQ, A LAND DISTURBANCE PERMIT WILL BE ISSUED BY THE CITY OF SUFFOLK. BE ADVISED THAT LAND-DISTURBING ACTIVITIES MAY NOT COMMENCE UNTIL THE DEQ CONSTRUCTION GENERAL PERMIT IS RECEIVED BY THE PERMITTEE.
   - AN INVOICE FOR INSPECTION FEES FOR PUBLIC UTILITIES, PUBLIC WORKS ENGINEERING (INSPECTION FEES) AND TRAFFIC ENGINEERING MUST BE OBTAINED FROM THIS OFFICE. THIS INVOICE MUST BE PAID AT THE TREASURER'S OFFICE.
   - THE EROSION AND SEDIMENT CONTROL SURETY IN THE AMOUNT REVIEWED AND APPROVED BY PUBLIC WORKS ENGINEERING DURING SITE PLAN APPROVAL MUST BE PROVIDED.
   - A COMPLETE AND SIGNED LAND DISTURBANCE PERMIT APPLICATION WITH ORIGINAL SIGNATURES.
   - A COMPLETED RESPONSIBLE LAND DISTURBER DESIGNATION SHEET.
   - A COPY OF THE PLANNING APPROVAL LETTER.

MISS UTILITY OF VIRGINIA

THE CONTRACTOR SHALL CALL "MISS UTILITY" 48 HOURS PRIOR TO THE START OF EXCAVATION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF THE LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN, IF THERE APPEARS TO BE A CONFLICT, AND/OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITY WITHIN THE EXISTING AND/OR RIGHT-OF-WAY REQUIRED BY THE DEVELOPMENT. CONTACT MISS UTILITY OF VIRGINIA: 1-800-552-7001 (TOLL FREE) OR DIAL 811.

DIG WITH CARE — KEEP VIRGINIA SAFE

BMP INFORMATION TABLE

TOTAL POLLUTANT REMOVAL REQUIRED	4.12 LB/YR
TYPE OF BMP	SYNTHETIC TURF FIELD (FUNCTIONS AS PERMEABLE PAVEMENT LEVEL 1)
GEOGRAPHIC COORDINATES	N: 3427671.99' E: 12021351.54'
DRAINAGE AREA OF BMP	3.77 AC | 3.44 AC IMPERVIOUS
POLLUTANT REMOVAL PROVIDED BY BMP	4.37 LB/YR
BMP OWNER	SUFFOLK PUBLIC SCHOOLS
MAINTENANCE RESPONSIBILITY	SUFFOLK PUBLIC SCHOOLS
EXCESS POLLUTANT REMOVAL PROVIDED	0.25 LB/YR

LAND RECORDS

SOURCE OF TITLE
THIS PROPERTY WAS CONVEYED TO THE SCHOOL BOARD OF THE CITY OF SUFFOLK FROM LOUISE LUTER PARKER AND JAMES HODGES PARKER BY DEED DATED AUGUST 25, 1966, RECORDED IN DEED BOOK 233, PAGE 195 IN THE CLERK'S OFFICE OF THE CIRCUIT COURT OF THE CITY OF SUFFOLK, VIRGINIA.

APPROVALS

TIMMONS GROUP IS NOT RESPONSIBLE OR LIABLE FOR ANY CONSTRUCTION OR DAMAGES TO THIS PROJECT PRIOR TO ALL FINAL PLAN APPROVALS.

CONSTRUCTION RECORD DRAWING NOTES

1. CONSTRUCTION RECORD DRAWINGS WILL BE REQUIRED FOR ALL STORMWATER MANAGEMENT FACILITIES AND ANY WORK IN THE RIGHT-OF-WAY. REFER TO CHAPTER 6 OF THE SUFFOLK PUBLIC FACILITIES MANUAL (PFM) FOR SUBMISSION INSTRUCTIONS.
2. UPON CONSTRUCTION COMPLETION, ALL STORMWATER PIPE INSTALLED IN THE RIGHT-OF-WAY SHALL BE DOCUMENTED BY MEANS OF CLOSED-CIRCUIT VIDEO RECORDING. THE DEPARTMENT OF PUBLIC WORKS SHALL BE GIVEN AT LEAST A 72 HOUR NOTICE (CONTACT JASON TRIMYER AT 757-514-7704) PRIOR TO THE CLOSED-CIRCUIT VIDEO DOCUMENTATION OCCURRING. REFER TO CHAPTER 6 OF THE SUFFOLK PUBLIC FACILITIES MANUAL (PFM) FOR DETAILS AND FURTHER REQUIREMENTS.
3. THE CONTRACTOR SHALL PROVIDE THE CITY OF SUFFOLK DEPARTMENT OF PUBLIC UTILITIES A COMPLETE SET OF AS BUILT DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE SUFFOLK PUBLIC FACILITIES MANUAL, VOLUME II.

SIGNATURE BLOCK FOR CITY USE

DIRECTOR OF PLANNING ______ DATE ______

COMMONWEALTH OF VIRGINIA — DANIEL E. RUBY — Lic. No. 045941 — 11/29/2021 — PROFESSIONAL ENGINEER

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YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP

DATE	REVISION DESCRIPTION

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	AS SHOWN

LAKELAND HIGH SCHOOL TURF FIELD CONVERSION
CITY OF SUFFOLK, VIRGINIA — HOLY NECK BOROUGH
COVER SHEET

JOB NO. 49297
SHEET NO. C-0.0

GRADING AND DRAINAGE NOTES

1. THE OWNER/DEVELOPER SHALL CONTRACT WITH A REPUTABLE AND QUALIFIED GEOTECHNICAL ENGINEERING FIRM TO PROVIDE SOILS INSPECTIONS, TESTING, AND RECOMMENDATIONS DURING CONSTRUCTION.
2. THE SITE CONTRACTOR SHALL FOLLOW THE EARTHWORK STANDARDS PROVIDED IN THE PROJECT SPECIFICATIONS, THE RECOMMENDATIONS OF THE SITE GEOTECHNICAL ENGINEER, AND THE PROJECT GEOTECHNICAL REPORT AT ALL TIMES DURING CONSTRUCTION.
3. ALL AREAS, ESPECIALLY THE SUBGRADE BELOW THE FIELD, SHALL BE GRADED FOR POSITIVE DRAINAGE AS SHOWN ON THE PLANS. POSITIVE DRAINAGE IS CRITICAL TO THE PROJECT.
4. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO RELIEVE AREAS THAT EXPERIENCE PONDING OR COULD CAUSE DAMAGE TO LIFE, SAFETY, AND PROPERTY.
5. ALL FILL MATERIAL SHALL BE VOID OF DEBRIS AND PLACED IN UNIFORM LIFTS (8" MAXIMUM) OR AS SPECIFIED BY THE SITE GEOTECHNICAL ENGINEER AND/OR SITE-SPECIFIC GEOTECHNICAL REPORT.
6. COMPACT SUBGRADE TO 95% OF STANDARD PROCTOR THEORETICAL MAXIMUM DRY DENSITY (ASTM D-698).
7. COMPACTION SHALL BE PERFORMED BY HEAVY COMPACTION EQUIPMENT AS SPECIFIED BY THE SITE GEOTECHNICAL ENGINEER AND/OR SITE-SPECIFIC GEOTECHNICAL REPORT.
8. SITE PREPARATION, INCLUDING FILL PLACEMENT AND COMPACTION, SHOULD BE OBSERVED BY A QUALIFIED SOILS TECHNICIAN WORKING UNDER THE DIRECTION OF THE SITE GEOTECHNICAL ENGINEER. DURING FILL PLACEMENT, A SUFFICIENT AMOUNT OF IN-PLACE DENSITY TESTS SHOULD BE CONDUCTED TO CONFIRM THAT COMPACTION AND FILL MOISTURE IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SITE GEOTECHNICAL ENGINEER AND/OR SITE-SPECIFIC GEOTECHNICAL REPORT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING COMPACTION TEST RESULTS BY A GEOTECHNICAL ENGINEER TO THE OWNER FOR VERIFICATION OF PROPER COMPACTION.
10. WHEN MATERIAL UNSUITABLE FOR FOUNDATION, SUBGRADES, OR OTHER PURPOSES OCCURS WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE SUCH MATERIAL AND BACKFILL WITH APPROVED SUITABLE MATERIAL. THE EXTENT OF UNDERCUTTING AND BACKFILLING IS TO BE DETERMINED BY THE OWNER'S SOILS ENGINEERING CONSULTANT. THE USE OF OPEN-GRADED STONE AND/OR GEOGRID REINFORCEMENT MATERIALS IS OFTEN RECOMMENDED BASED ON OBSERVATIONS OF THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION.
11. ALL OBJECTIONABLE, HAZARDOUS, AND/OR DELETERIOUS MATERIAL ENCOUNTERED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A STATE-APPROVED FACILITY MEETING THE REQUIREMENTS OF ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
12. EXCAVATED SOIL CAN BE STOCKPILED ONSITE PROVIDED IT IS CLEAN AND FREE FROM DEBRIS, ORGANIC MATTER, HAZARDOUS MATERIAL, AND CONTAMINATION. THE LOCATION OF THE PERMANENT STOCKPILE IS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS AND SHALL BE CONFIRMED WITH THE OWNER PRIOR TO EXCAVATION.
13. TOPSOIL THAT IS REMOVED FROM THE PROJECT CAN BE RE-USED TO RESTORE GRASS AREAS THAT ARE DISTURBED DURING CONSTRUCTION AND/OR TO ESTABLISH GROUND COVER ON THE PERMANENT STOCKPILE.
14. ALL STORM DRAINAGE IMPROVEMENTS AND FACILITIES SHALL BE INSTALLED AS SOON AS FEASIBLE IN THE CONSTRUCTION SCHEDULE.
15. UNDERGROUND STORM SEWER PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARDS AND SPECIFICATIONS, AND THE LATEST EDITION OF THE CITY OF SUFFOLK PUBLIC FACILITIES MANUAL - VOLUME I.
16. STORM SEWER PIPING SHALL CONSIST OF:
    - N-12 HIGH-DENSITY POLYETHYLENE (HDPE) PIPE WITH SMOOTH WALL INTERIOR
    - SCHEDULE 40/80 POLYVINYL CHLORIDE (PVC) PIPE, AS SHOWN ON THE PLANS.
17. THE CONTRACTOR SHALL INSTALL PIPES, FITTINGS, AND OTHER STORM DRAINAGE COMPONENTS IN DRY TRENCH CONDITIONS AND IN ACCORDANCE WITH THE MANUFACTURER'S AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE ALL DE-WATERING, WELL POINTING, SHEETING, TRENCH BOXES, AND TRENCH STABILIZATION AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER/DEVELOPER.
18. STORM STRUCTURES SHALL CONFORM TO THE CURRENT VDOT ROAD AND BRIDGE STANDARDS AND VDOT SPECIFICATIONS. ALL STRUCTURES SHALL INCLUDE INLET SHAPING (IS-1) AND STRUCTURES DEEPER THAN 4-FEET SHALL HAVE STEPS (ST-1). STORM SEWER PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT STANDARD "PB-1", THE MANUFACTURER'S GUIDELINES, AND THE THE DETAILS SHOWN ON THESE PLANS.
19. ALL THERMOPLASTIC, HDPE, PE, AND NON-CONCRETE PIPE JOINTS AND CONNECTIONS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE DETAILS SUPPLIED BY THE MANUFACTURER AND SHOWN ON THE PLAN. WHEN CONNECTING TO DRAINAGE STRUCTURES (PRE-CAST, CAST-IN-PLACE, CONCRETE BLOCK, BRICK, ETC.), ALL PIPES MUST BE INSTALLED IN ACCORDANCE WITH ASTM AND VDOT REQUIREMENTS TO ELIMINATE THE POTENTIAL FOR SHEAR FAILURE, TO BE SOIL TIGHT, AND LEAK RESISTANT (FLEXIBLE CONNECTORS).
20. CONSTRUCTION STAKEOUT FOR STORM SEWER INFRASTRUCTURE SHALL BE PERFORMED BY A VIRGINIA LICENSED SURVEYOR.
21. ALL ON-SITE STORM DRAINS AND PIPES WITHIN THE PROJECT LIMITS SHALL BE VACUUMED CLEAN AFTER THE SITE HAS BEEN PERMANENTLY STABILIZED. THE CONTRACTOR SHALL DISPOSE OF SEDIMENT, TRASH, AND DEBRIS IN A LAWFUL MANNER.
22. THE STONE SECTION BELOW THE TURF FIELD SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN A MANNER THAT PERMITS THE REQUIRED INFILTRATION RATE. INFILTRATION TESTS SHALL BE PERFORMED ON THE STONE USING BS-7044 METHOD #4 - "DUAL RING INFILTROMETER TEST" TO ENSURE A MINIMUM PERMEABILITY OF 20 INCHES PER HOUR IS PROVIDED ACROSS THE FIELD. THIS TEST SHALL BE PERFORMED BY OWNER'S REPRESENTATIVE.
23. THE TURF FIELD SHALL BE GRADED TO ELIMINATE LOCALIZED LOW SPOTS AND DEPRESSIONS.

DEMOLITION AND ABANDONMENT NOTES

1. THE CONTRACTOR SHALL STRICTLY ADHERE TO THE LIMITS OF DISTURBANCE, SAWCUT LIMITS, AND PERIMETER SILT FENCE AS SHOWN ON THE APPROVED PLANS. IF IT IS NECESSARY TO PERFORM WORK BEYOND THE LIMITS OF DISTURBANCE, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER AND COORDINATE THE WORK PRIOR TO COMMENCING CONSTRUCTION.
2. SAWCUTTING SHALL BE PERFORMED ON EDGES OF PAVEMENT AND CONCRETE DEMOLITION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING (WITH MATCHING MATERIALS) PAVEMENT, DRIVEWAYS, SIDEWALKS, SIGNS, PAVEMENT MARKINGS, LIGHT POLES, CURBS, CONCRETE, FENCES, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION. CONCRETE SIDEWALKS, CURBS, OR ENTRANCES THAT ARE DAMAGED SHALL BE REPLACED TO THE NEAREST UNDISTURBED JOINT.
4. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO VERIZON, CHARTER COMMUNICATIONS, COLUMBIA GAS OF VIRGINIA, AND DOMINION ENERGY TO RELOCATE AND/OR REMOVE EXISTING UTILITIES THAT ARE IN CONFLICT WITH PROPOSED IMPROVEMENTS.
5. PIPE DEMOLITION SHALL BE PERFORMED IN ACCORDANCE WITH THE DEMOLITION PLAN. WHEN PIPES ARE REMOVED FROM DRAINAGE STRUCTURES, THE FORMER PENETRATIONS MUST BE PATCHED AND SEALED TO BE WATERTIGHT.
6. PIPES THAT ARE FILLED WITH FLOWABLE FILL SHALL BE MONITORED BY THE SITE GEOTECHNICAL ENGINEER TO ENSURE THAT THE PIPES ARE SEALED AT BOTH THE UPSTREAM AND DOWNSTREAM STRUCTURES.

CIVIL PROJECT GENERAL NOTES

1. SUBMITTALS ON MATERIALS FOR THIS PROJECT SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THESE CIVIL SITE PLANS, PROJECT SPECIFICATIONS, AND WITH ALL CURRENT APPLICABLE CODES AND THE LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:
    - A. HAMPTON ROADS PLANNING DISTRICT COMMISSION (HRPDC) REGIONAL CONSTRUCTION STANDARDS
    - B. VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS
    - C. VDOT ROAD AND BRIDGE STANDARDS
    - D. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
    - E. VIRGINIA WORK AREA PROTECTION MANUAL
    - F. VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)
    - G. CITY OF SUFFOLK PUBLIC FACILITIES MANUAL - VOLUME I (PFM-VI)
    - H. CITY OF SUFFOLK PUBLIC FACILITIES MANUAL - VOLUME II (PFM-VII)
3. THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS AND REQUIREMENTS OF THE OVERHEAD HIGH VOLTAGE LINES SAFETY ACT (SECTION 59.1-406, ET. SEQ. OF THE CODE OF VIRGINIA) IN PERFORMING WORK ON THIS PROJECT. AS A MINIMUM:
    - 3.1. CONTACT THE ELECTRICAL UTILITY 48 HOURS PRIOR TO COMMENCING WORK IF THE CONTRACTOR'S TOOLS OR MATERIALS WILL INTRUDE TO WITHIN TEN (10) FEET OF AN OVERHEAD POWER LINE.
    - 3.2. CONTACT THE ELECTRICAL UTILITY 48 HOURS PRIOR TO COMMENCING WORK IF COVERED EQUIPMENT SUCH AS CRANES OR DERRICKS WILL BE OPERATED WITHIN TEN (10) FEET OF AN OVERHEAD POWER LINE.
    - 3.3. POST AND MAINTAIN WARNING SIGNS WITHIN AND ON THE OUTSIDE OF EQUIPMENT OPERATING NEAR AN OVERHEAD HIGH VOLTAGE LINE.
    - 3.4. COORDINATE WITH THE UTILITY OWNER SHOULD THE CONTRACTOR'S EXCAVATION ACTIVITIES REQUIRE SHORING AND BRACING OF EXISTING UTILITY POLES. DOMINION ENERGY SHALL BE NOTIFIED TEN (10) WORKING DAYS BEFORE ANTICIPATED SHORING AND BRACING ACTIVITIES COMMENCE. ALL SHORING AND BRACING ACTIVITIES SHALL BE ACCOMPLISHED BY DOMINION ENERGY PERSONNEL AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO CONSTRUCTION, INCLUDING BUT NOT LIMITED TO UNDERGROUND UTILITY CONNECTION POINTS, RECEIVING PIPE SIZES, INVERTS, AND PIPE MATERIALS. ALL ERRORS AND DISCREPANCIES WITH THE PLANS OR EXISTING CONDITIONS SHALL BE REPORTED TO THE ENGINEER OR SURVEYOR OF RECORD BEFORE PROCEEDING WITH THE WORK.
5. THE EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. OTHER EXISTING UTILITIES MAY BE PRESENT. INFORMATION HAS BEEN OBTAINED FROM THE BEST AVAILABLE SOURCES AT THE TIME OF SURVEY BUT IS NOT REPRESENTED AS BEING COMPLETE AND ACCURATE. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT EXISTING UTILITIES AND UNDERGROUND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY (811) FOR EXISTING UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. DAMAGE TO EXISTING UTILITIES AND UNDERGROUND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEVELOPER.
7. EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD-VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. IF EXISTING UTILITIES ARE FOUND TO BE IN CONFLICT WITH PROPOSED SITE IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER, OWNER, AND THE UTILITY COMPANY TO EITHER REDESIGN THE PROPOSED IMPROVEMENTS OR RELOCATE THE EXISTING UTILITIES. ANY UTILITIES TO BE RELOCATED SHALL BE RELOCATED AT THE OWNER/DEVELOPER'S EXPENSE, INCLUDING UTILITIES WITHIN THE RIGHT-OF-WAY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION EFFORTS WITH DOMINION ENERGY, COLUMBIA GAS OF VIRGINIA, VERIZON, CHARTER COMMUNICATIONS, SUFFOLK PUBLIC WORKS, SUFFOLK PUBLIC SCHOOLS, AND OTHER ENTITIES AS REQUIRED.
9. THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF THE APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO ALL SITE CONDITIONS PRIOR TO CONSTRUCTION.
12. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A CLEAN WORK SITE AND REMOVAL OF CONSTRUCTION DEBRIS AND MATERIALS.
13. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON THIS PROJECT. ALL MATERIALS SHALL BE STORED SO AS TO ENSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK.
14. ALL STAGING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL BE ONSITE. NO VEHICLES WILL BE ALLOWED TO PARK WITHIN THE TRAVEL LANES OR SHOULDERS OF ANY PUBLIC STREET.
15. THE CONTRACTOR'S LAYDOWN & STORAGE AREA IS LIMITED TO THE AREA WITHIN THE SITE CONSTRUCTION LIMITS. COORDINATE EXACT LOCATIONS WITH THE OWNER.
16. ALL SALVAGEABLE ITEMS REMOVED AND NOT USED REMAIN THE PROPERTY OF THE OWNER.
17. MATERIALS, EQUIPMENT, PRODUCTS, AND METHODS OTHER THAN THOSE INDICATED IN THE DRAWINGS SHALL NOT BE CONSIDERED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE OWNER'S REPRESENTATIVE, DESIGN ENGINEER, AND THE APPLICABLE GOVERNING CODE AUTHORITY IF NECESSARY.
18. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA AND STATE SAFETY ORDERS AT ALL TIMES.
19. ALL DISTURBED AREAS, INCLUDING BUT NOT LIMITED TO PAVEMENT, SHOULDERS, DITCHES, HEADWALLS, ENDWALLS, CULVERT PIPES, FENCES, CURB AND GUTTER, UTILITIES, DRIVEWAYS, LIGHT POLES, SIGNS, MAILBOXES, ETC. SHALL BE REPAIRED TO A CONDITION EQUAL TO OR BETTER THAN THOSE EXISTING PRIOR TO CONSTRUCTION, OR AS SHOWN ON THE DRAWINGS. SIGNS AND MAILBOXES THAT ARE DISTURBED SHALL BE RETURNED TO THEIR ORIGINAL LOCATIONS DAILY, AND MAINTAINED THROUGHOUT THE PROJECT.
20. THE CONTRACTOR SHALL REESTABLISH ALL PROPERTY PINS AND MONUMENTS DISTURBED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE DEVELOPER.
21. ONSITE EXTERIOR CONCRETE IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI (28-DAYS) WITH 5% TO 7% AIR ENTRAINMENT, UNLESS OTHERWISE NOTED.
22. ALL PROPOSED PAVING SURFACES SHALL MEET ADJACENT PAVING SURFACES IN A SMOOTH CONTINUOUS MANNER, FLUSH ALONG ENTIRE COMMON EDGE.
23. THE CONTRACTOR SHALL MAKE ANY NECESSARY ADJUSTMENTS TO ALL UTILITY SPLICE BOXES, JUNCTION BOXES, METER BOXES, VALVE BOXES, ELECTRICAL SPLICE BOXES, MANHOLES, CLEANOUTS, AND OTHER ITEMS TO MATCH FINISHED GRADE.
24. ALL RADII INDICATED SHALL HAVE CONTINUOUS/SMOOTH TRANSITIONS WITHOUT ABRUPT CHANGES, BENDS, OR FACETED EDGES. ALL RADIAL DIMENSIONS ARE TO THE EDGE OF CONCRETE UNLESS OTHERWISE NOTED.
25. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES FOUND SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND BE RESOLVED BEFORE PROCEEDING WITH ANY WORK. DIMENSIONS TAKE PRECEDENCE OVER SCALE.
26. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
27. CITY OF SUFFOLK FLOOD CERTIFICATION: THE PROPERTY SHOWN HEREON APPEARS TO FALL WITHIN FLOOD ZONE "X" (UNSHADED) ACCORDING TO THE F.E.M.A. FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR THE CITY OF SUFFOLK, VIRGINIA MAP NUMBER: 51015C0210D, MAP REVISED: NOVEMBER 16, 2011.
28. ALL CLEARING, GRUBBING AND GRADING SHALL BE PERFORMED IN ACCORDANCE WITH VDOT SPECIFICATIONS AND STANDARDS.
29. ALL UNPAVED SURFACES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE GRADED TO DRAIN, TOPSOILED, SEEDED, MULCHED, AND FERTILIZED.
30. THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL CONSTRUCTION SURVEYING REQUIRED.
31. SAW CUTTING OF EXISTING CONCRETE AND ASPHALT PAVING SHALL COMPLY WITH OSHA. THE CONTRACTOR SHALL KEEP DUST TO A MINIMUM AND SHALL BE RESPONSIBLE FOR THE DAMAGE TO AND REPLACEMENT OF ADJACENT MATERIALS AND FINISHES.
32. THE CONTRACTOR SHALL INSTALL SIGNAGE IN AREAS THAT ARE RESTRICTED TO THE PUBLIC DURING CONSTRUCTION.
33. THE CONTRACTOR SHALL PROVIDE LIGHTING THROUGHOUT THE CONSTRUCTION AREA IF WORK IS TO BE PERFORMED AFTER DARK. THE EXISTING STADIUM LIGHTS ARE ACCEPTABLE FOR ILLUMINATING THE FOOTBALL FIELD. THE CONTRACTOR SHALL COORDINATE WORK HOURS AND LIGHTING USAGE WITH THE OWNER.

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER — 11/29/2021

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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION

TIMMONS GROUP

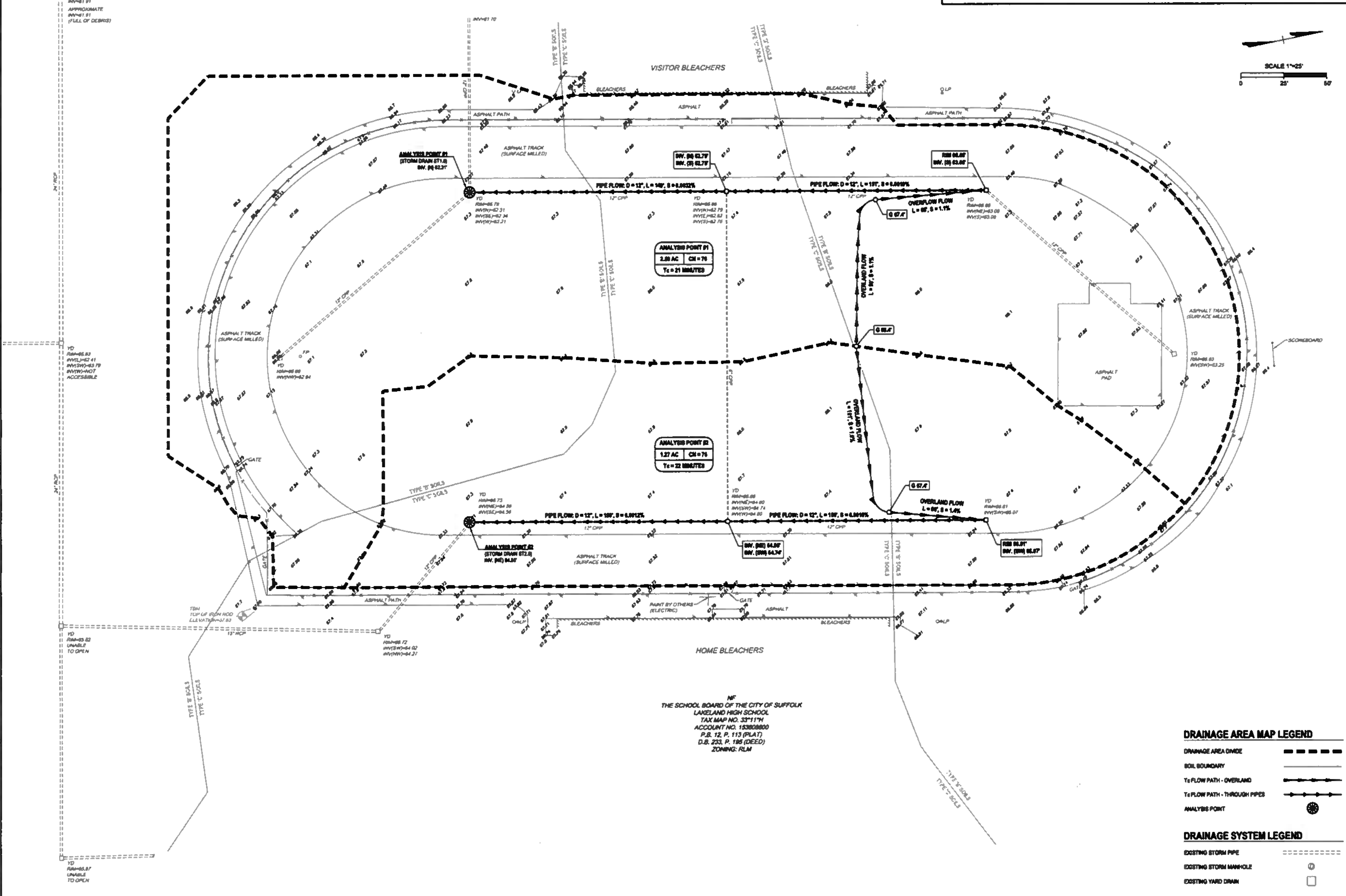
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
CIVIL PROJECT NOTES

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	NO SCALE
JOB NO.	49297
SHEET NO.	C-0.1

ANALYSIS POINT	DRAINAGE AREA	IMPERVIOUS AREA	CURVE NUMBER, CN	TIME OF CONCENTRATION, Tc	1-YEAR VOLUME	1-YEAR PEAK FLOW	2-YEAR PEAK FLOW	10-YEAR PEAK FLOW
P1 (ST1.0)	2.59 AC	0.89 AC	76	21 MINUTES	9,252 CF	2.55 CFS	3.91 CFS	5.87 CFS
P2 (ST2.0)	1.27 AC	0.34 AC	76	22 MINUTES	4,798 CF	1.29 CFS	1.84 CFS	4.10 CFS

NOTE: VOLUMES AND PEAK FLOWS OBTAINED DIRECTLY FROM HYDRAFLOW HYDROGRAPHS EXTENSION FOR AUTOCAD CIVIL 3D 2019



DRAINAGE AREA MAP LEGEND

- DRAINAGE AREA DIVIDE
- SOIL BOUNDARY
- Tc FLOW PATH - OVERLAND
- Tc FLOW PATH - THROUGH PIPES
- ANALYSIS POINT

DRAINAGE SYSTEM LEGEND

- EXISTING STORM PIPE
- EXISTING STORM MANHOLE
- EXISTING YARD DRAIN

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

THIS DRAWING PREPARED AT THE VIRGINIA BEACH OFFICE
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DATE	REVISION DESCRIPTION

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 25'

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
PRE-DEVELOPMENT DRAINAGE AREA MAP

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

JOB NO. 49297
SHEET NO. C-0.2

COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER
11/29/2021

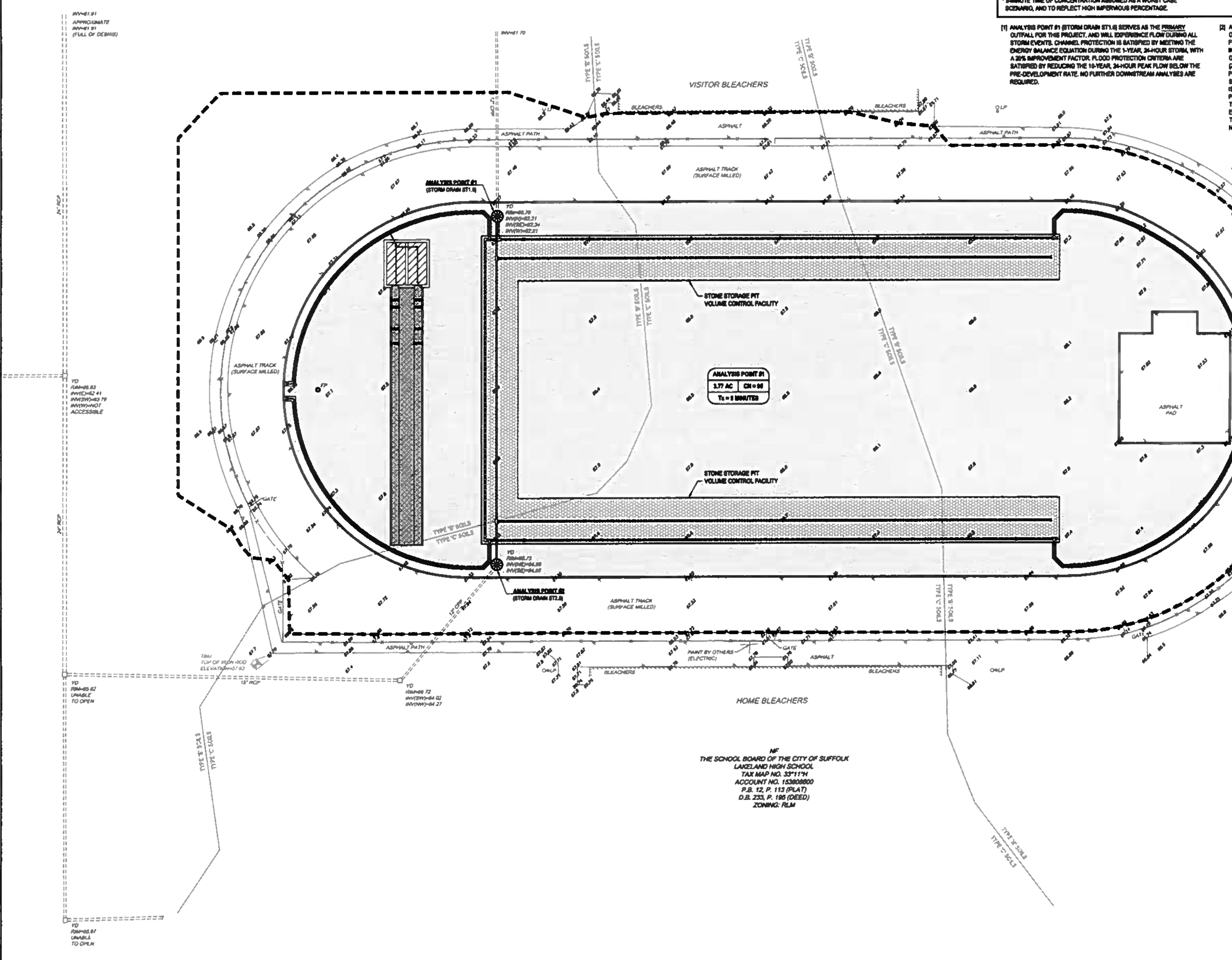
ANALYSIS POINT	DRAINAGE AREA	IMPERVIOUS AREA	CURVE NUMBER, CN	TIME OF CONCENTRATION, Tc	1-YEAR VOLUME	1-YEAR PEAK FLOW	2-YEAR PEAK FLOW	10-YEAR PEAK FLOW
#1 (ST1.0)	3.77 AC	3.44 AC	98	5 MINUTES*	31,137 CF	0.57 CFS	0.81 CFS	2.58 CFS
#2 (ST2.0)	0.00 AC	0.00 AC	N/A	N/A	0 CF	0 CFS	0.81 CFS	2.58 CFS

* 5-MINUTE TIME OF CONCENTRATION ASSUMED AS A WORST CASE SCENARIO, AND TO REFLECT HIGH IMPERVIOUS PERCENTAGE.

NOTE: VOLUMES AND PEAK FLOWS OBTAINED DIRECTLY FROM HYDRAFLOW HYDROGRAPHS EXTENSION FOR AUTOCAD CIVIL 3D 2019

[1] ANALYSIS POINT #1 (STORM DRAIN ST1.0) SERVES AS THE PRIMARY OUTFALL FOR THIS PROJECT, AND WILL EXPERIENCE FLOW DURING ALL STORM EVENTS. CHANNEL PROTECTION IS SATISFIED BY MEETING THE ENERGY BALANCE EQUATION DURING THE 1-YEAR, 24-HOUR STORM, WITH A 20% IMPROVEMENT FACTOR. FLOOD PROTECTION CRITERIA ARE SATISFIED BY REDUCING THE 10-YEAR, 24-HOUR PEAK FLOW BELOW THE PRE-DEVELOPMENT RATE. NO FURTHER DOWNSTREAM ANALYSES ARE REQUIRED.

[2] ANALYSIS POINT #2 (STORM DRAIN ST2.0) SERVES AS A SECONDARY OUTFALL FOR LARGER STORM EVENTS ONLY. IT DOES NOT EXPERIENCE FLOW DURING THE 1-YEAR, 24-HOUR STORM BECAUSE THE WATER LEVEL IN THE STONE STORAGE PIT DOES NOT RISE TO THE LEVEL OF THE OVERFLOW DRAIN SHOWN ON SHEET C-6.1. DURING LARGER STORMS (2-YEAR, 24-HOUR AND GREATER), WATER LEAVES THE STONE STORAGE PIT THROUGH THE OVERFLOW DRAIN, WHICH IS CONNECTED TO BOTH ST1.0 AND ST2.0. THE REPORTED PEAK DISCHARGE LEAVING THE FACILITY IS SHARED EQUALLY BETWEEN THE TWO STORM DRAINS. CHANNEL PROTECTION IS SATISFIED BECAUSE NO FLOW IS EXPERIENCED DURING THE 1-YEAR, 24-HOUR STORM, THEREBY MEETING THE ENERGY BALANCE EQUATION. FLOOD PROTECTION CRITERIA ARE SATISFIED BY REDUCING THE 10-YEAR, 24-HOUR PEAK FLOW BELOW THE PRE-DEVELOPMENT RATE. NO FURTHER DOWNSTREAM ANALYSES ARE REQUIRED.



DRAINAGE AREA MAP LEGEND

- DRAINAGE AREA DIVIDE
- SOIL BOUNDARY
- ANALYSIS POINT

DRAINAGE SYSTEM LEGEND

- EXISTING STORM PIPE
- EXISTING STORM MANHOLE
- EXISTING YARD DRAIN
- HDPE N-12 STORM SEWER PIPE
- HDPE N-12 UNDERDRAIN
- PVC STORM SEWER PIPE
- ELBOWS, TEES, CROSSES, REDUCERS
- OBSERVATION WELL W/ TURF BOX
- CLEANOUT ON COLLECTOR PIPE
- STONE STORAGE PIT VOLUME CONTROL FACILITY (UNDERGROUND)

GROUND COVER LEGEND

- SYNTHETIC TURF FIELD (IMPERVIOUS SURFACE)
- SANDPIT FOR LONG/TRIPLE JUMP (IMPERVIOUS SURFACE)
- CONCRETE RUNWAY LONG/TRIPLE JUMP (IMPERVIOUS SURFACE)

THIS DRAWING PREPARED AT THE VIRGINIA BEACH OFFICE
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YOUR VISION ACHIEVED THROUGH OURS.

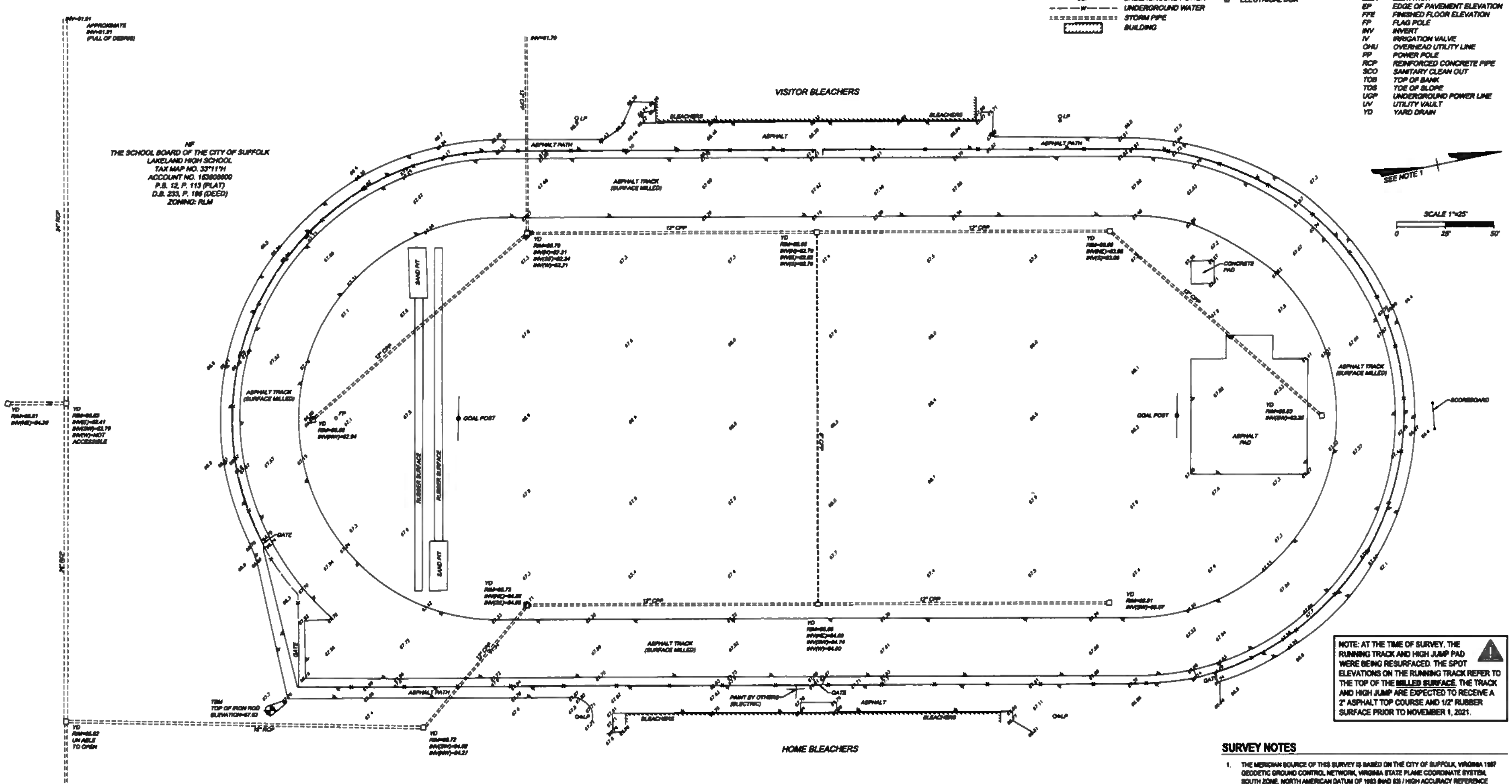
DATE	REVISION DESCRIPTION

TIMMONS GROUP

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
POST-DEVELOPMENT DRAINAGE AREA MAP

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 25'
JOB NO.	49297
SHEET NO.	C-0.3



SURVEY LEGEND

FENCE LINE	UTILITY VALVE
EDGE OF PAVEMENT	CLEANOUT
EDGE OF GRAVEL	BUMPER POST / BOLLARD
SWALE CENTERLINE	LIGHT POLE
OVERHEAD UTILITY LINE	UTILITY POLE
UNDERGROUND POWER	ELECTRICAL BOX
UNDERGROUND WATER	
STORM PIPE	
BUILDING	

ABBREVIATIONS

CLF	CHAIN LINK FENCE
CLS	CENTERLINE SWALE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
CONC	CONCRETE
DIP	DUCTILE IRON PIPE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT ELEVATION
FFE	FINISHED FLOOR ELEVATION
FP	FLAG POLE
INV	INVERT
IV	IRRIGATION VALVE
OHU	OVERHEAD UTILITY LINE
PP	POWER POLE
RCP	REINFORCED CONCRETE PIPE
SCO	SANITARY CLEAN OUT
TOB	TOP OF BANK
TOS	TOE OF SLOPE
UGP	UNDERGROUND POWER LINE
UV	UTILITY VAULT
YD	YARD DRAIN

NOTE: AT THE TIME OF SURVEY, THE RUNNING TRACK AND HIGH JUMP PAD WERE BEING RESURFACED. THE SPOT ELEVATIONS ON THE RUNNING TRACK REFER TO THE TOP OF THE MILLED SURFACE. THE TRACK AND HIGH JUMP ARE EXPECTED TO RECEIVE A 2" ASPHALT TOP COURSE AND 1/2" RUBBER SURFACE PRIOR TO NOVEMBER 1, 2021.

SURVEY NOTES

1. THE MERIDIAN SOURCE OF THIS SURVEY IS BASED ON THE CITY OF SUFFOLK, VIRGINIA 1997 GEODETIC GROUND CONTROL NETWORK, VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83) / HIGH ACCURACY REFERENCE NETWORK OF 1994 (94 HARN). COORDINATE VALUES SHOWN ARE EXPRESSED IN U.S. SURVEY FEET. CITY OF SUFFOLK STATIONS USED: 140, 146, 147 AND 323.
2. ELEVATIONS SHOWN HEREON ARE IN FEET AND ARE REFERENCED TO THE CITY OF SUFFOLK, VIRGINIA 1997 GEODETIC GROUND CONTROL NETWORK, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CITY OF SUFFOLK STATIONS USED: 140, 146, 147 AND 323.
3. TBM 'A' IS AN IRON ROD DRIVEN FLUSH
ELEVATION = 67.83
4. THE PROPERTY SHOWN HEREON APPEARS TO FALL INSIDE ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) FLOOD INSURANCE RATE MAPS (F.I.R.M.) FOR THE CITY OF SUFFOLK, VIRGINIA, COMMUNITY PANEL NO 510156 0210 D, MAP REVISED: NOVEMBER 16, 2011. FLOOD ZONE DETERMINATION IS BASED ON F.I.R.M. AND DOES NOT IMPLY THAT THIS PROPERTY WILL OR WILL NOT BE FREE FROM FLOODING OR DAMAGE. CONTACT THE LOCAL COMMUNITY FLOOD OFFICIAL TO CONFIRM THE ABOVE INFORMATION. FLOOD ZONE INFORMATION WAS SCALED FROM F.E.M.A. F.I.R.M. TIMMONS GROUP IS NOT A PARTY IN DETERMINING THE REQUIREMENTS FOR FLOOD INSURANCE ON THE PROPERTY SHOWN HEREON.
5. THIS SURVEY DOES NOT GUARANTEE THE EXISTENCE, SIZE OR HORIZONTAL LOCATION OF ANY UNDERGROUND UTILITIES. THE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY, IF ANY, WERE ESTABLISHED USING ABOVE GROUND STRUCTURES (VALVES, MANHOLES, ETC.). NO GUARANTEE IS MADE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. ACCURACY OF THE UTILITY INFORMATION SHOWN CANNOT BE GUARANTEED, AND ALL UNDERGROUND UTILITY LOCATIONS SHOWN HEREON SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR MUST VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

COMMONWEALTH OF VIRGINIA
TODD FRENCH
Lic. No. 2410
11-29-2021
LAND SURVEYOR

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DATE	REVISION DESCRIPTION

YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
EXISTING CONDITIONS SURVEY

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

DATE	08/26/2021
DRAWN BY	W. LEWIS
DESIGNED BY	----
CHECKED BY	T. FRENCH
SCALE	1" = 25'
JOB NO.	49297
SHEET NO.	C-1.0

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT PROPOSES IMPROVEMENTS TO THE EXISTING ATHLETIC FACILITIES AT LAKELAND HIGH SCHOOL, LOCATED AT 214 KENYON ROAD IN SUFFOLK, VIRGINIA. SPECIFICALLY, THE PROJECT WILL CONVERT THE EXISTING GRASS FOOTBALL FIELD TO A SYNTHETIC TURF FIELD; REPLACE THE LONG AND TRIPLE JUMP EVENTS; AND REPLACE THE FOOTBALL GOAL POSTS. THE EXISTING RUNNING TRACK AND HIGH JUMP PAD WERE RECENTLY MILLED AND OVERLAID AND RECEIVED NEW RUBBER SURFACING. IT IS CRITICAL THAT THE TURF FIELD CONTRACTOR PROTECTS THE NEW RUBBER SURFACE DURING CONSTRUCTION.

THE SYNTHETIC TURF FIELD WILL INCLUDE A STONE STORAGE LAYER UNDER THE ENTIRE FOOTPRINT OF THE FIELD, AS WELL AS A DEEPER STONE STORAGE PIT FOR MANAGING STORMWATER QUANTITY. THE TURF FIELD, WHILE CONSIDERED AN IMPERVIOUS SURFACE, WILL ALSO FUNCTION AS A PERMEABLE PAVEMENT SYSTEM (DESIGN LEVEL 1) FOR ADDRESSING STORMWATER QUALITY CRITERIA.

THE SUBJECT PROPERTY IS ZONED RLM (RESIDENTIAL LOW-MEDIUM DISTRICT) WHICH PERMITS PUBLIC SCHOOL USAGES BY-RIGHT. THE PROPERTY IS APPROXIMATELY 69.49 ACRES, OF WHICH 4.03 ACRES WILL BE DISTURBED. CONSTRUCTION ACTIVITIES ARE NOT ANTICIPATED NOR PROPOSED IN THE PUBLIC RIGHT-OF-WAY OR ADJACENT PRIVATE PROPERTIES. CONSTRUCTION IS EXPECTED TO BEGIN IN NOVEMBER 2021 AND LAST APPROXIMATELY FIVE MONTHS.

ADJACENT AREAS

THE PROPERTY IS BOUNDED BY UNDEVELOPED LAND TO THE NORTH AND WEST, AND SINGLE-FAMILY RESIDENTIAL HOMES TO THE EAST AND SOUTH. KENYON ROAD IS LOCATED TO THE EAST OF THE SCHOOL ON THE OTHER SIDE OF THE SINGLE-FAMILY HOMES.

EXISTING CONDITIONS

THE SUBJECT PROPERTY CURRENTLY CONSISTS OF THE HIGH SCHOOL BUILDING, ASPHALT PARKING LOTS, TENNIS COURTS, AND GRASS FIELDS FOR FOOTBALL, BASEBALL, SOFTBALL, AND FIELD HOCKEY. THE SCHOOL BUILDING, TENNIS COURTS, AND PARKING LOTS ARE SITUATED ON THE EASTERN SIDE OF THE PROPERTY WHEREAS THE SPORTS FIELDS AND TRACK ARE LOCATED ON THE WEST SIDE BEHIND THE SCHOOL. THE FOOTBALL FIELD IS LOCATED IN THE NORTHWEST CORNER OF THE SITE ADJACENT TO THE UNDEVELOPED (WOODED) PROPERTY. ELEVATIONS WITHIN THE PROJECT AREA RANGE FROM 66 TO 69 (NAVD88) WITH SLOPES GENERALLY RANGING BETWEEN 1% AND 3%. THE SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" (UNSHADED) OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP (FIRM) 5101560216D, EFFECTIVE 11/16/2011.

THE EXISTING FOOTBALL FIELD IS SURROUNDED BY A DEEP NATURAL DITCH THAT ABUTS THE WESTERN AND NORTHERN PROPERTY LINES. DRAINAGE FROM THE FIELD IS CURRENTLY HANDLED BY TWO SEPARATE STORM SEWER SYSTEMS, BOTH OF WHICH OUTFALL TO THE DITCH. THE SYSTEM TO THE WEST CONSISTS OF FIVE YARD DRAINS, INCLUDING ST1.0 IN THE SOUTHWEST CORNER, AND RECEIVES APPROXIMATELY 2.50 ACRES OF DRAINAGE. THE SYSTEM TO THE EAST CONSISTS OF THREE YARD DRAINS, INCLUDING ST2.0 IN THE SOUTHEAST CORNER, AND RECEIVES APPROXIMATELY 1.27 ACRES OF DRAINAGE. THE WESTERN SYSTEM IS APPROXIMATELY 2-FEET DEEPER THAN THE EASTERN SYSTEM. DRAINAGE FROM THE PROJECT SITE IS CONVEYED THROUGH THE DITCH TO THE SPEIGHTS RUN RESERVOIR, WHICH CONNECTS TO LAKE KILBY AND THE NANSEMOND RIVER, AND ULTIMATELY TO THE CHESAPEAKE BAY.

OFFSITE AREAS

CONSTRUCTION ACTIVITIES WILL BE LIMITED TO THE SUBJECT PROPERTY. CONSTRUCTION ACTIVITIES ARE NOT ANTICIPATED NOR PROPOSED IN THE PUBLIC RIGHT-OF-WAY OR ADJACENT PRIVATE PROPERTIES. ANY MATERIALS THAT ARE DISPOSED OFFSITE SHALL BE TRANSPORTED IN A LAWFUL AND SAFE MANNER, AND DELIVERED TO A CONTROLLED FACILITY IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

SOIL PROPERTIES

TIMMONS GROUP ENVIRONMENTAL SCIENTISTS PERFORMED A SOILS AND GROUNDWATER INVESTIGATION TO BENEFIT THIS PROJECT. FOUR SHALLOW BORINGS WERE DRILLED WITHIN THE EXISTING FOOTBALL FIELD TO EVALUATE THE PRESENCE OF A SEASONAL-HIGH GROUNDWATER TABLE OR RESTRICTIVE SOIL LAYERS. THE INVESTIGATION SHOWED EVIDENCE OF THE SEASONAL-HIGH GROUNDWATER TABLE AT APPROXIMATELY 2-FEET BELOW EXISTING GRADE, CORRESPONDING TO AN AVERAGE ELEVATION OF 65.4. IN ADDITION, THE STUDY SHOWED THAT THE SOILS ARE MODERATELY WELL-DRAINED WITH HYDROLOGIC SOIL GROUPS (HSG) RANGING FROM "B" TO "C".

ACCORDING TO THE "WEB SOIL SURVEY" PROVIDED BY THE NATURAL RESOURCE CONSERVATION SERVICE (NRCS), THE EXISTING SITE HAS THE FOLLOWING SOIL CHARACTERISTICS:

MAP UNIT: 8A	EUNOLA LOAMY FINE SAND	0 TO 2 PERCENT SLOPES	HSG C
MAP UNIT: 8B	EUNOLA LOAMY FINE SAND	2 TO 6 PERCENT SLOPES	HSG C
MAP UNIT: 14	LYNCHBURG FINE SANDY LOAM		HSG B
MAP UNIT: 22B	SUFFOLK LOAMY SAND	2 TO 6 PERCENT SLOPES	HSG B

CRITICAL AREAS

THIS PROJECT DOES NOT IMPACT ANY KNOWN CRITICAL AREAS.

STORMWATER CONSIDERATIONS

THIS PROJECT WILL REPLACE THE EXISTING GRASS FOOTBALL FIELD WITH A SYNTHETIC TURF FIELD. THE TURF FIELD IS CONSIDERED IMPERVIOUS FOR BOTH STORMWATER QUANTITY AND QUALITY PURPOSES.

THE TURF FIELD FUNCTIONS AS A STORMWATER MANAGEMENT FACILITY AND WILL CONTAIN A 6-INCH THICK STONE STORAGE LAYER ACROSS THE ENTIRE FOOTPRINT. IN ADDITION, A DEEP STONE STORAGE PIT WILL BE INSTALLED UNDER THE MIDDLE OF THE FIELD TO PROVIDE NEARLY 30,000 CF OF EXTRA STORAGE. THE STONE UNDER THE FIELD WILL BE INTERCONNECTED WITH THE STORAGE PIT TO FUNCTION TOGETHER AS ONE LARGE UNDERGROUND DETENTION SYSTEM. A NETWORK OF PERIMETER COLLECTOR DRAINS AND FLAT PANEL DRAINS WILL BE USED TO DIRECT THE WATER UNDER THE FIELD TO THE STONE STORAGE PIT.

THE STONE STORAGE PIT WILL CONTAIN A 10" UNDERDRAIN AT THE BASE OF THE FACILITY, WHICH REDUCES TO A 4" SCHEDULE 80 PVC PIPE (INTERNAL DIAMETER = 3.83") TO SERVE AS THE LOW-FLOW ORIFICE. IT WILL ALSO CONTAIN A 10" OVERFLOW DRAIN APPROXIMATELY 2.6-FEET ABOVE THE BOTTOM. THE UNDERDRAIN CONNECTS TO STORM STRUCTURE ST1.0 IN THE SOUTHWEST CORNER OF THE FIELD SINCE THAT STRUCTURE IS DEEPEST. THE OVERFLOW DRAIN CONNECTS TO *BOTH* ST1.0 AND ST2.0.

CHANNEL PROTECTION CRITERIA

ANALYSIS POINT #1 (STORM DRAIN ST1.0): CHANNEL PROTECTION CRITERIA ARE SATISFIED BY MEANS OF THE ENERGY BALANCE EQUATION USING A 1-YEAR, 24-HOUR STORM FOR COMPARISON PURPOSES AND A 20% IMPROVEMENT FACTOR. THE STONE STORAGE PIT AND 4" LOW FLOW ORIFICE FUNCTION TOGETHER TO MINIMIZE THE FLOW RATE DURING THIS STORM EVENT AND SATISFY THE EQUATION.

ANALYSIS POINT #2 (STORM DRAIN ST2.0): THIS STRUCTURE DOES NOT EXPERIENCE FLOWS DURING THE 1-YEAR, 24-HOUR STORM BECAUSE THE WATER LEVEL IN THE STONE STORAGE PIT DOES NOT RISE TO THE LEVEL OF THE OVERFLOW DRAIN (WATER LEVEL = 64.46, OVERFLOW DRAIN INVERT = 64.90). CHANNEL PROTECTION CRITERIA ARE SATISFIED BECAUSE NO FLOW IS EXPERIENCED, THEREBY MEETING THE ENERGY BALANCE EQUATION.

FLOOD PROTECTION CRITERIA

FLOOD PROTECTION CRITERIA ARE SATISFIED BY REDUCING THE PEAK FLOW DURING THE 10-YEAR, 24-HOUR STORM TO LESS THAN THE PRE-DEVELOPMENT RATE. DURING THIS STORM, FLOWS ARE CONVEYED TO *BOTH* STRUCTURES ST1.0 AND ST2.0 THROUGH THE 10" OVERFLOW DRAIN. IT IS ASSUMED THAT THE TOTAL REPORTED OUTFLOW IS SHARED EQUALLY BETWEEN THE TWO STORM DRAINS. EACH STRUCTURE RECEIVES HALF OF THE TOTAL PEAK FLOW, WHICH IS SIGNIFICANTLY LESS THAN THEIR RESPECTIVE PRE-DEVELOPMENT FLOW RATES.

STORMWATER QUALITY

THE PROPOSED TURF FIELD IS CONSIDERED IMPERVIOUS FOR STORMWATER QUALITY PURPOSES, BUT THE FIELD IS ALSO CONSIDERED A "PERMEABLE PAVEMENT" SYSTEM (DESIGN LEVEL 1) AND EARNS POLLUTANT REMOVAL CREDIT. THE TURF FIELD (PERMEABLE PAVEMENT) WILL TREAT THE RAINWATER THAT FALLS DIRECTLY ON THE FIELD SURFACE AS WELL AS THE RUNOFF FROM THE ADJACENT RUNNING TRACK, ASPHALT SIDEWALKS, HIGH JUMP PAD, AND LONG/TRIPLE JUMP. ACCORDING TO THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) SPREADSHEET, THE REQUIRED POLLUTANT REMOVAL RATE IS 4.12 LB/YR AND THE TURF FIELD WILL TREAT 4.37 LB/YR. THIS RESULTS IN 0.25 LB/YR OF EXCESS CREDITS THAT COULD BE USED ELSEWHERE BY SUFFOLK PUBLIC SCHOOLS.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), 3RD EDITION. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. THE FOLLOWING MEASURES SHALL BE INSTALLED AND MAINTAINED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL SHEETS IN THE CIVIL SITE PLANS.

TEMPORARY CONSTRUCTION ENTRANCE - STD. & SPEC. 3.02
A TEMPORARY STONE CONSTRUCTION ENTRANCE SHALL BE INSTALLED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS SET FORTH IN THE VESCH. THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED IN THE LOCATION SHOWN ON THE SITE PLANS DURING THE INITIAL PHASES OF CONSTRUCTION.

CONSTRUCTION ROAD STABILIZATION - STD. & SPEC. 3.03
THE CONTRACTOR SHALL STABILIZE THE TEMPORARY ACCESS ROAD LEADING TO THE PERMANENT SOIL STOCKPILE WITH STONE OR OTHER PROPRIETARY MATERIALS (I.E. PLASTIC MATS) PRIOR TO COMMENCING EARTHWORK ACTIVITIES.

SILT FENCE - STD. & SPEC. 3.05
TEMPORARY SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED AROUND THE LIMITS OF DISTURBANCE, OUTSIDE THE FOOTBALL FIELD, TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE. TWO (2) LAYERS OF SILT FENCE SHALL BE INSTALLED AROUND SOIL STOCKPILES.

STORM DRAIN INLET PROTECTION - STD. & SPEC. 3.07
ALL STORM DRAIN INLETS WITHIN THE PROJECT DISTURBED AREA AND IMMEDIATE VICINITY SHALL BE PROTECTED DURING CONSTRUCTION. INLET PROTECTION SHALL BE INSTALLED ON ALL EXISTING INLETS TO REMAIN AND SHALL BE PRESERVED ON THE INLETS WITHIN THE TRACK ENVELOPE UNTIL THE NEW DRAINAGE SYSTEM IS INSTALLED AND THE INLETS ARE FILLED WITH FLOWABLE FILL OR REMOVED.

DEWATERING STRUCTURE - STD. & SPEC. 3.26
DEWATERING STRUCTURES SHALL BE USED WHENEVER SEDIMENT-LADEN WATER MUST BE REMOVED FROM THE CONSTRUCTION AREA BY MEANS OF PUMPING. THE DEWATERING STRUCTURE SHALL CONFORM TO VDOT STANDARD "EC-8" AS SHOWN ON SHEET C-2.3.

TOPSOILING (SOIL STOCKPILE) - STD. & SPEC. 3.30
SOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED IN SUCH A MANNER THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFFSITE SEDIMENT DAMAGE SHALL RESULT. STABILIZE OR PROTECT STOCKPILES IN ACCORDANCE WITH MS-2 OF THE VESCH. PERIMETER CONTROLS MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY. STOCKPILES SHALL BE SEEDED WITHIN SEVEN (7) DAYS OF THE FORMATION OF THE STOCKPILE, IF IT IS TO REMAIN DORMANT FOR LONGER THAN 14 DAYS. SOIL STOCKPILES SHALL NOT EXCEED 10-FEET IN HEIGHT AND SIDE SLOPES ARE NOT TO EXCEED 3H:1V.

TEMPORARY SEEDING - STD. & SPEC. 3.31
ALL DENUDED AREAS THAT WILL REMAIN DORMANT FOR A PERIOD OF TIME GREATER THAN 14 DAYS SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF VEGETATION WILL BE DEPENDENT ON THE TIME OF YEAR IT IS APPLIED.

PERMANENT SEEDING - STD. & SPEC. 3.32
ALL DENUDED AREAS THAT ARE TO REMAIN DORMANT FOR A PERIOD OF TIME GREATER THAN 1 YEAR OR MORE ARE TO BE PERMANENTLY-SEEDED. ALL AREAS THAT HAVE REACHED FINAL GRADE ARE TO BE PERMANENTLY SEEDED AS SOON AS FINAL GRADE IS REACHED.

MULCHING - STD. & SPEC. 3.35
MULCH WILL BE APPLIED TO ALL SEEDED AREAS TO PROTECT THE SOIL SURFACE FROM RAINDROP IMPACT, REDUCE THE VELOCITY OF OVERLAND FLOW, AND FOSTER THE GROWTH OF VEGETATION.

SOIL STABILIZATION BLANKETS AND MATTING - STD. & SPEC. 3.36
VDOT EC-2 SOIL STABILIZATION MATTING SHALL BE APPLIED TO THE SIDE SLOPES OF THE PERMANENT STOCKPILE TO LIMIT EROSION POTENTIAL.

TREE PRESERVATION AND PROTECTION - STD. & SPEC. 3.38
TREES OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE SAVED. THE CONTRACTOR SHALL INSTALL HIGH-VISIBILITY PLASTIC FENCING AND/OR CHAIN LINK FENCING AROUND THE TREES TO BE SAVED. THE CONTRACTOR SHALL PROTECT THE ROOTS OF ADJACENT TREES TO BE SAVED TO THE MAXIMUM EXTENT PRACTICAL.

DUST CONTROL - STD. & SPEC. 3.39
AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST SHALL BE STABILIZED DURING CONSTRUCTION TO MINIMIZE DUST RELEASE. METHODS INCLUDE BUT ARE NOT LIMITED TO VEGETATIVE COVER, MULCH, OR IRRIGATION.

SPECIFICATIONS FOR E&S MEASURES

SPECIFICATIONS FOR ALL E&S MEASURES USED ON THIS PROJECT CAN BE FOUND IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - 3RD EDITION (VESCH). THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL CONSTRUCTION SPECIFICATIONS, INSTALLATION PROCEDURES, AND MAINTENANCE PROCEDURES AS LISTED IN THE VESCH.

PERMANENT STABILIZATION

AFTER FINAL GRADE IS ACHIEVED THE SITE SHALL BE PERMANENTLY STABILIZED. SEED SHALL BE APPLIED TO ALL GRASS AREAS PER THE STANDARD AND SPECIFICATION PROVIDED ON THE PLAN SHEETS. OTHER AREAS WILL BE CHARACTERIZED BY IMPERVIOUS PAVEMENT OR SIDEWALKS, AS SHOWN ON THE SITE PLANS, OR ENHANCED WITH TREES, SHRUBS, MULCH, ETC. AS SHOWN ON THE LANDSCAPE PLANS.

INITIAL PERMITTING

THIS PROJECT WILL REQUIRE A LAND DISTURBANCE PERMIT AND VSMP (VIRGINIA STORMWATER MANAGEMENT PROGRAM) PERMIT PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITIES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.

E&S MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL EVENT OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL EVENT OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:

1. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PAVED SURFACES AND PUBLIC RIGHTS-OF-WAY. MAINTAIN CONSTRUCTION ENTRANCE IN ACCORDANCE WITH STD. & SPEC. 3.02 OF THE VESCH.
2. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND REPAIRED IMMEDIATELY OR REPLACED AS REQUIRED. MAINTAIN SILT FENCE IN ACCORDANCE WITH STD. & SPEC. 3.05 OF THE VESCH.
3. INLET PROTECTION MEASURES WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP AND CLOGGING. MAINTAIN INLET PROTECTION IN ACCORDANCE WITH STD. & SPEC. 3.07 OF THE VESCH.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AS WELL AS SEDIMENT BUILDUP OR CLOGGING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING IMMEDIATE CORRECTIVE ACTIONS.
5. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE-SEEDED AS NEEDED.
6. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED AND VEGETATION IS ESTABLISHED. FINAL SITE STABILIZATION SHALL BE APPROVED BY THE CITY CIVIL INSPECTOR.

STANDARD E&S NOTE

BASED ON FIELD CONDITIONS DURING THE CITY E&S SITE INSPECTION, ADDITIONAL E&S MEASURES MIGHT BE REQUIRED FOR THIS PROJECT THAT ARE NOT SHOWN ON THIS PLAN. THESE ADDITIONAL E&S MEASURES WILL BE INSTALLED BY THE RESPONSIBLE LAND DISTURBER / CONTRACTOR AT THE EXPENSE OF THE OWNER.

E&S MANAGEMENT STRATEGIES

THE FOLLOWING MANAGEMENT STRATEGIES SHALL BE IMPLEMENTED DURING CONSTRUCTION TO REDUCE THE POTENTIAL FOR SEDIMENT CONTAMINATION OF DOWNSTREAM WATERWAYS AND CONVEYANCE SYSTEMS, AND TO PRESERVE SURROUNDING FEATURES THAT ARE TO REMAIN UNDISTURBED:

1. WHERE CONSTRUCTION VEHICULAR ACCESS ROUTES INTERSECT PAVED ROADWAYS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING AND SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
2. CONSTRUCTION SHALL BE SEQUENCED SO THAT GRADING OPERATIONS AND STORM DRAINAGE INSTALLATION CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
3. AREAS THAT ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FENCING, FLAGS, SIGNS, ETC.
4. DURING CONSTRUCTION, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ONSITE, AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE SITE.
5. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR. TEMPORARY SEEDING SHALL BE IN COMPLIANCE WITH STD. & SPEC. 3.31 OF THE VESCH.
6. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE CITY CIVIL INSPECTOR OR OWNER, IS UNIFORM, MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.
7. CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.
8. PERIODIC INSPECTIONS AND REQUIRED MAINTENANCE MUST BE PROVIDED, ESPECIALLY AFTER EACH SIGNIFICANT STORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
9. ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED WHENEVER WATER SEEPS FROM A SLOPE FACE.

SEQUENCE OF SITE CONSTRUCTION

PHASE 1 - INITIAL PREPARATION AND DEMOLITION

1. SUBMIT AND OBTAIN ALL APPLICABLE PERMITS, INCLUDING BUT NOT LIMITED TO:
   - VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT
   - LAND DISTURBANCE PERMIT
2. HOLD A PRE-CONSTRUCTION CONFERENCE WITH THE CITY AND OWNER.
3. CONTACT APPROPRIATE UTILITY COMPANIES AND COORDINATE UTILITY MARKING, RELOCATION AND/OR REMOVAL.
4. DO NOT INITIATE ANY LAND DISTURBING ACTIVITIES UNTIL AUTHORIZED TO PROCEED BY THE OWNER.
5. INSTALL STORM DRAIN INLET PROTECTION AS SHOWN ON THE PHASE 1 E&S PLANS.
6. INSTALL PERIMETER SILT FENCE AS SHOWN ON THE PHASE 1 E&S PLANS.
7. INSTALL CONSTRUCTION ENTRANCE AS SHOWN ON THE PHASE 1 E&S PLANS.
8. INSTALL TRACK PROTECTION MEASURES AS SHOWN ON THE PHASE 1 E&S PLANS.
9. OBTAIN AN EROSION CONTROL INSPECTION FROM THE CITY. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE INSPECTOR.
10. ONCE ALL EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED, INSPECTED, AND APPROVED BY THE CITY, BEGIN MASS DEMOLITION, STRIPPING, AND CLEARING OPERATIONS. ENSURE RUNOFF IS DIRECTED TOWARDS EROSION CONTROL MEASURES.
11. APPLY TEMPORARY SEEDING IMMEDIATELY TO ALL DISTURBED AREAS NOT TO BE BROUGHT TO FINAL GRADE FOR A PERIOD LONGER THAN 14 CALENDAR DAYS. APPLY SEEDING TO STOCKPILE(S).

PHASE 2 - SITE CONSTRUCTION AND FINAL STABILIZATION

12. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION IN A MANNER THAT DOES NOT BLOCK ACCESS TO OTHER AREAS OF THE SITE AND INHIBIT WORK FROM PROCEEDING IN A TIMELY FASHION. FOR EXAMPLE, THE CONTRACTOR SHALL START WORKING IN THE AREA OPPOSITE THE CONSTRUCTION ENTRANCE AND PROCEED TOWARDS THE ENTRANCE, TO AVOID BLOCKING SITE ACCESS.
13. COMMENCE ROUGH-GRADING OF THE TURF FIELD.
14. AS THE SITE IS ROUGH-GRADED, UNDERCUT AND REMOVE UNSUITABLE MATERIALS AND REPLACE WITH SELECT MATERIAL AS NEEDED UNDER THE DIRECTION OF THE SITE GEOTECHNICAL ENGINEER. FOLLOW EARTHWORK RECOMMENDATIONS FROM GEOTECHNICAL ENGINEER AND SITE GEOTECHNICAL REPORT DURING CONSTRUCTION.
15. EXCAVATE AND INSTALL STONE STORAGE PIT WITH ASSOCIATED PIPING AND THERMOPLASTIC LINER. PROTECT FROM SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION.
16. EXCAVATE AND INSTALL PERIMETER COLLECTOR DRAINS WITH STONE TRENCH.
17. PERFORM FINE GRADING, COMPACT SUBGRADE, AND COMMENCE CONSTRUCTION OF THE FOLLOWING:
   - 12"X8" FIELD PERIMETER CURB
   - 12"X8" HIGH JUMP CURB
   - NEW GOALPOST FOUNDATIONS
   - LONG/TRIPLE JUMP RUNWAY
   - SANDPIT ASSEMBLY WITH UNDERDRAINS
   - CONCRETE CURBING AROUND EXISTING FLAGPOLE
   - QUICK COUPLER VALVE
   - OUTER PERIMETER CURB (ADD ALTERNATE #1)
17. INSTALL MANHOLE TOPS ON EXISTING STORM STRUCTURES ST1.0 AND ST2.0 PER THE DRAINAGE DETAILS.
18. REMOVE EXISTING STORM STRUCTURES AND PIPES AND/OR FILL WITH FLOWABLE FILL PER THE DEMOLITION PLAN.
19. COMMENCE TURF FIELD CONSTRUCTION:
   - FINE GRADE TURF FIELD AND COMPACT SUBGRADE
   - INSTALL FILTER FABRIC AND FLAT PANEL DRAINS
   - PLACE #57 STONE STORAGE LAYER AND FINISHING STONE
   - VACUUM-CLEAN EXISTING STORM DRAINS AND PIPES WITHIN PROJECT SITE.
   - PERFORM REQUIRED INFILTRATION TESTS PER NOTES AND SPECIFICATIONS
   - INSTALL SHOCK PAD
   - INSTALL SYNTHETIC TURF AND INFILL MATERIAL
20. APPLY TOPSOIL, SEED, AND MULCH TO THE LIMITS OF DISTURBANCE.
21. REPAIR ANY SURFACES OR FEATURES THAT WERE DAMAGED DURING CONSTRUCTION.
22. REPAIR ANY INADVERTENT EROSION AND REMOVE ANY INADVERTENT SEDIMENTATION FROM THE SITE.
23. REMOVE TEMPORARY EQUIPMENT, CONSTRUCTION MATERIALS, TRASH, AND DEBRIS FROM THE SITE.
24. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE CITY CIVIL INSPECTOR HAS AGREED THAT E&S MEASURES CAN BE REMOVED. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF FINAL STABILIZATION.

Virginia Erosion and Sediment Control Plan Minimum Standards (MS) Checklist
November 17, 2016

YES	N/A	9VAC25-840-40 Minimum Standards	Describe how MS is addressed on plan
X		MS1: [illegible]	Permanent and temporary seeding have been shown on the Erosion & Sediment Control plan sheets. These items have also been discussed in the Erosion Control Narrative and Sequence of Site Construction.
X		MS2: [illegible]	Soil stockpile stabilization requirements are addressed in the Erosion Control Narrative.
X		MS3: [illegible]	[illegible]
X		MS4: [illegible]	[illegible]
X		MS5: [illegible]	VDOT EC-2 matting shall be applied to the permanent stockpile as shown on the Phase 2 Erosion & Sediment Control Plan.
	X	MS6: [illegible]	Sediment traps are not anticipated nor proposed with this project.
X		MS7: [illegible]	[illegible]
X		MS8: [illegible]	This requirement is discussed in the Erosion Control Narrative.
X		MS9: [illegible]	[illegible]
X		MS10: [illegible]	[illegible]
	X	MS11: [illegible]	[illegible]
	X	MS12: [illegible]	No work in live watercourses will occur.
	X	MS13: [illegible]	No work in live watercourses will occur.
	X	MS14: [illegible]	No work in live watercourses will occur.
	X	MS15: [illegible]	No work in live watercourses will occur.
X		MS16: [illegible]	[illegible]
X		MS17: [illegible]	[illegible]
X		MS18: [illegible]	This requirement is discussed in the Erosion Control Narrative and Sequence of Site Construction.
X		MS19: [illegible]	[illegible]

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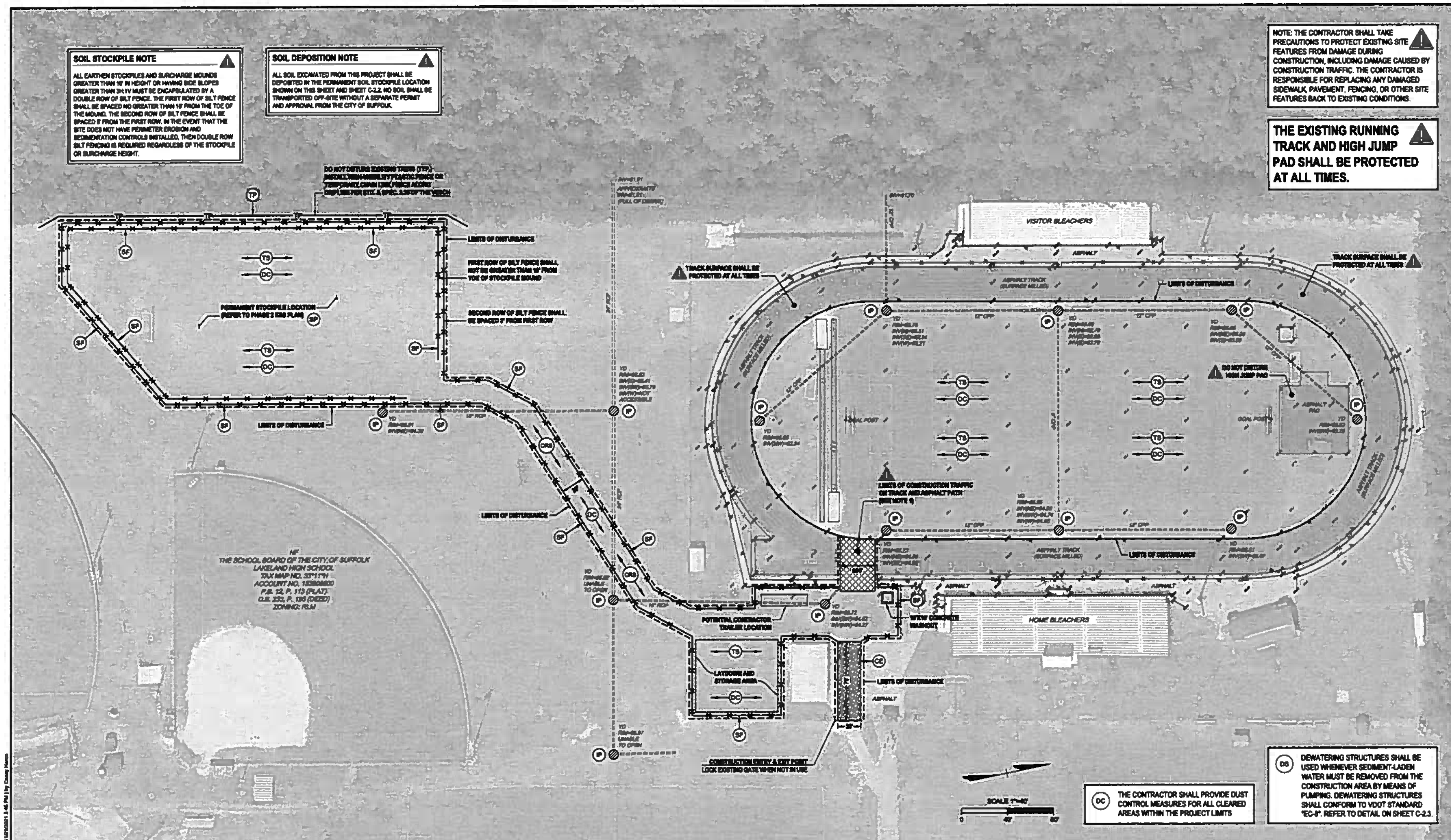
DATE	REVISION DESCRIPTION

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	NO SCALE

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

EROSION & SEDIMENT CONTROL NARRATIVE

JOB NO. 49297
SHEET NO. C-2.0



SOIL STOCKPILE NOTE

ALL EARTHEN STOCKPILES AND SURCHARGE MOUNDS GREATER THAN 10' IN HEIGHT OR HAVING SIDE SLOPES GREATER THAN 3H:1V MUST BE ENCAPSULATED BY A DOUBLE ROW OF SILT FENCE. THE FIRST ROW OF SILT FENCE SHALL BE SPACED NO GREATER THAN 10' FROM THE TOE OF THE MOUND. THE SECOND ROW OF SILT FENCE SHALL BE SPACED 5' FROM THE FIRST ROW. IN THE EVENT THAT THE SITE DOES NOT HAVE PERIMETER EROSION AND SEDIMENTATION CONTROLS INSTALLED, THEN DOUBLE ROW SILT FENCING IS REQUIRED REGARDLESS OF THE STOCKPILE OR SURCHARGE HEIGHT.

SOIL DEPOSITION NOTE

ALL SOIL EXCAVATED FROM THIS PROJECT SHALL BE DEPOSITED IN THE PERMANENT SOIL STOCKPILE LOCATION SHOWN ON THIS SHEET AND SHEET C-2.2. NO SOIL SHALL BE TRANSPORTED OFF-SITE WITHOUT A SEPARATE PERMIT AND APPROVAL FROM THE CITY OF SUFFOLK.

NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.

(DC) THE CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES FOR ALL CLEARED AREAS WITHIN THE PROJECT LIMITS

(DS) DEWATERING STRUCTURES SHALL BE USED WHENEVER SEDIMENT-LADEN WATER MUST BE REMOVED FROM THE CONSTRUCTION AREA BY MEANS OF PUMPING. DEWATERING STRUCTURES SHALL CONFORM TO VDOT STANDARD "EC-8". REFER TO DETAIL ON SHEET C-2.3.

PHASE 1 EROSION & SEDIMENT CONTROL LEGEND

SILT FENCE	(SF)
TREE PROTECTION	(TP)
LIMITS OF DISTURBANCE	
CONSTRUCTION ENTRANCE	(CE)
STORM DRAIN INLET PROTECTION	(IP)
SOIL STOCKPILE LOCATION	(SP)
LIMITS OF CONSTRUCTION TRAFFIC ON EXISTING TRACK AND ASPHALT PATH	
TEMPORARY SEEDING	(TS)
DUST CONTROL	(DC)
CONSTRUCTION ROAD STABILIZATION	(CRS)

PHASE 1 EROSION & SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL PROTECT THE EXISTING RUBBER TRACK PRIOR TO ACCESSING THE STADIUM FIELD AND FOR THE ENTIRE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL USE THEIR OWN MEANS AND METHODS TO BRIDGE THE EXISTING RUBBER TRACK AND ASPHALT PATH SURROUNDING THE TRACK. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY DAMAGES CAUSED DURING CONSTRUCTION.
2. REFER TO SEQUENCE OF CONSTRUCTION ON SHEET C-2.0 DURING ALL STAGES OF CONSTRUCTION.
3. PERIMETER EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND APPROVED BY THE CITY INSPECTOR PRIOR TO COMMENCING MASS CLEARING AND DEMOLITION.
4. MAINTAIN PERIMETER SILT FENCE AND INLET PROTECTION THROUGHOUT THE DURATION OF CONSTRUCTION. PERFORM REGULAR MAINTENANCE AND REPLACE AS NEEDED IN ACCORDANCE WITH THE INSTRUCTIONS ON SHEET C-2.0 AND THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION (VESCH).
5. INLET PROTECTION WITHIN THE FOOTBALL FIELD SHALL BE MAINTAINED UNTIL THE PROPOSED DRAINAGE SYSTEM IS INSTALLED AND THE EXISTING INLETS ARE REMOVED OR CAPPED.
6. TEMPORARY SEEDING SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO ALL AREAS THAT ARE TO REMAIN DORMANT OR DENUDED FOR A PERIOD OF MORE THAN 14 DAYS. PERMANENT SEEDING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS THAT ARE BROUGHT TO FINAL GRADE AND ALL ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE (1) YEAR.
7. SOIL STOCKPILES SHALL BE SEEDED AND STRAWED AS PER THE VESCH. SIDE SLOPES SHALL NOT EXCEED 3H:1V AND SHALL BE COVERED WITH VDOT EC-2 SOIL STABILIZATION MATTING PER THE VESCH.
8. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

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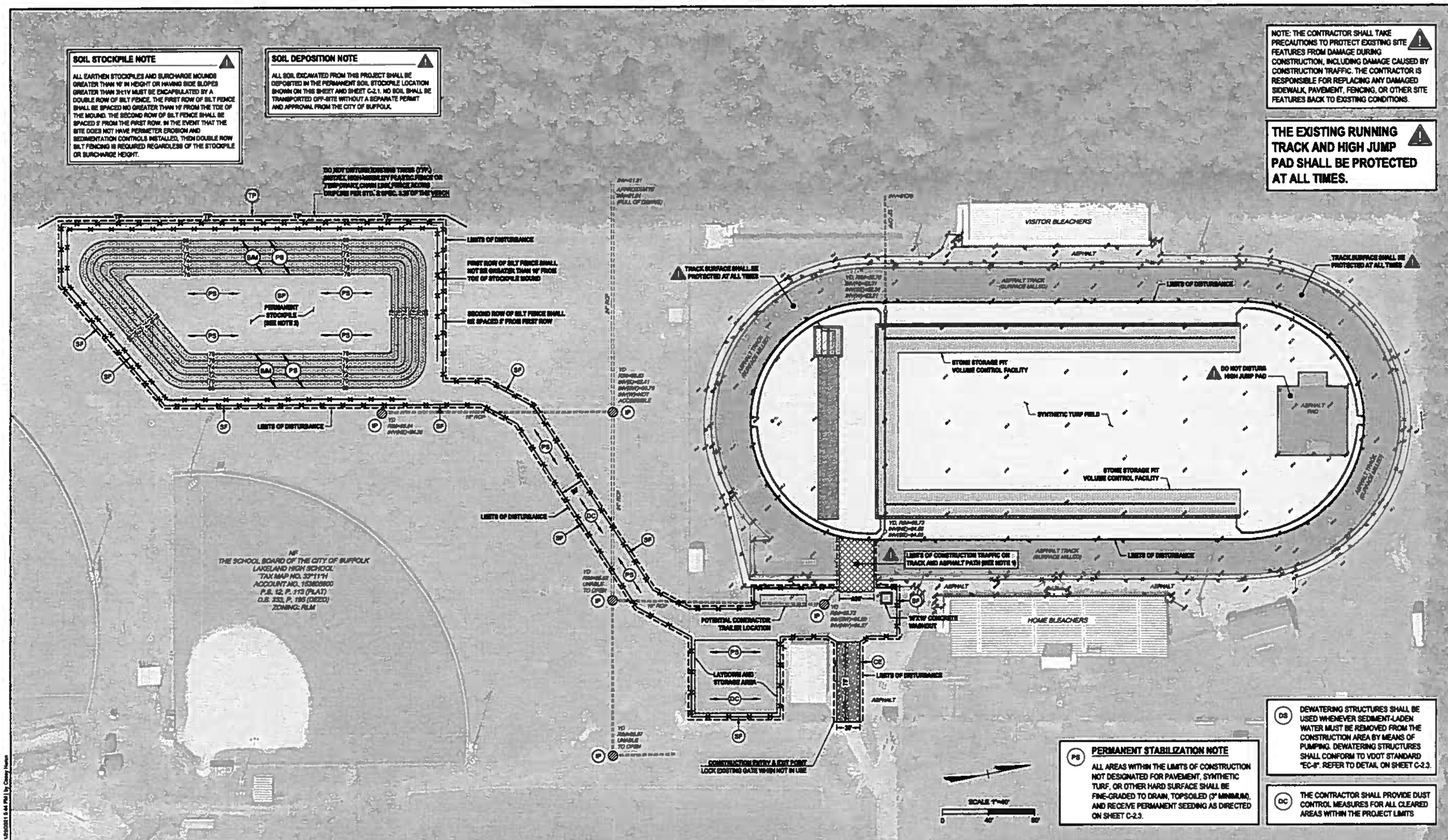
DATE	REVISION DESCRIPTION

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
PHASE 1 EROSION & SEDIMENT CONTROL PLAN

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 40'
JOB NO.	49297
SHEET NO.	C-2.1



SOIL STOCKPILE NOTE

ALL EARTHEN STOCKPILES AND SURCHARGE MOUNDS GREATER THAN 10' IN HEIGHT OR HAVING SIDE SLOPES GREATER THAN 3H:1V MUST BE ENCAPSULATED BY A DOUBLE ROW OF SILT FENCE. THE FIRST ROW OF SILT FENCE SHALL BE SPACED NO GREATER THAN 10' FROM THE TOE OF THE MOUND. THE SECOND ROW OF SILT FENCE SHALL BE SPACED 5' FROM THE FIRST ROW. IN THE EVENT THAT THE SITE DOES NOT HAVE PERIMETER EROSION AND SEDIMENTATION CONTROLS INSTALLED, THEN DOUBLE ROW SILT FENCING IS REQUIRED REGARDLESS OF THE STOCKPILE OR SURCHARGE HEIGHT.

SOIL DEPOSITION NOTE

ALL SOIL EXCAVATED FROM THIS PROJECT SHALL BE DEPOSITED IN THE PERMANENT SOIL STOCKPILE LOCATION SHOWN ON THIS SHEET AND SHEET C-2.1. NO SOIL SHALL BE TRANSPORTED OFF-SITE WITHOUT A SEPARATE PERMIT AND APPROVAL FROM THE CITY OF SUFFOLK.

NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.

(DS) DEWATERING STRUCTURES SHALL BE USED WHENEVER SEDIMENT-LADEN WATER MUST BE REMOVED FROM THE CONSTRUCTION AREA BY MEANS OF PUMPING. DEWATERING STRUCTURES SHALL CONFORM TO VDOT STANDARD "EC-8". REFER TO DETAIL ON SHEET C-2.3.

(PS) **PERMANENT STABILIZATION NOTE**

ALL AREAS WITHIN THE LIMITS OF CONSTRUCTION NOT DESIGNATED FOR PAVEMENT, SYNTHETIC TURF, OR OTHER HARD SURFACE SHALL BE FINE-GRADED TO DRAIN, TOPSOILED (3" MINIMUM), AND RECEIVE PERMANENT SEEDING AS DIRECTED ON SHEET C-2.3.

(DC) THE CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES FOR ALL CLEARED AREAS WITHIN THE PROJECT LIMITS

PHASE 2 EROSION & SEDIMENT CONTROL LEGEND

SILT FENCE	(SF)
TREE PROTECTION	(TP)
LIMITS OF DISTURBANCE	
CONSTRUCTION ENTRANCE	(CE)
SOIL STOCKPILE CONTOURS	(SP)
VDOT EC-2 SOIL STABILIZATION MATTING	(S/M)
LIMITS OF CONSTRUCTION TRAFFIC ON EXISTING TRACK AND ASPHALT PATH	
STORM DRAIN INLET PROTECTION	(IP)
PERMANENT SEEDING	(PS)
DUST CONTROL	(DC)

PHASE 2 EROSION & SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL PROTECT THE EXISTING RUBBER TRACK PRIOR TO ACCESSING THE STADIUM FIELD AND FOR THE ENTIRE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL USE THEIR OWN MEANS AND METHODS TO BRIDGE THE EXISTING RUBBER TRACK AND ASPHALT PATH SURROUNDING THE TRACK. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY DAMAGES CAUSED DURING CONSTRUCTION.
2. THE PERMANENT SOIL STOCKPILE SHALL ADHERE TO THE FOLLOWING CRITERIA:
   - IT SHALL NOT EXCEED THE FOOTPRINT SHOWN.
   - THE SIDES AND TOP SHALL BE PERMANENTLY SEEDED AND STRAWED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION (VESCH).
   - SIDE SLOPES SHALL NOT EXCEED 3H:1V.
   - SIDE SLOPES SHALL BE COVERED WITH VDOT EC-2 SOIL STABILIZATION MATTING IMMEDIATELY AFTER FINAL GRADE IS ESTABLISHED.
   - THE TOP SHALL BE CROWNED WITH A 3% GRADE.
   - TOTAL HEIGHT SHALL NOT EXCEED 10-FEET.
3. MAINTAIN PERIMETER SILT FENCE AND INLET PROTECTION THROUGHOUT THE DURATION OF CONSTRUCTION. PERFORM REGULAR MAINTENANCE AND REPLACE AS NEEDED IN ACCORDANCE WITH THE INSTRUCTIONS ON SHEET C-2.0 AND THE VESCH.
4. INLET PROTECTION WITHIN THE FOOTBALL FIELD SHALL BE MAINTAINED UNTIL THE PROPOSED DRAINAGE SYSTEM IS INSTALLED AND THE EXISTING INLETS ARE REMOVED OR CAPPED.
5. PERMANENT SEEDING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS THAT ARE BROUGHT TO FINAL GRADE AND ALL ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE (1) YEAR.
6. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
7. REFER TO SEQUENCE OF CONSTRUCTION ON SHEET C-2.0 DURING ALL STAGES OF CONSTRUCTION.

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER — 11/29/2021

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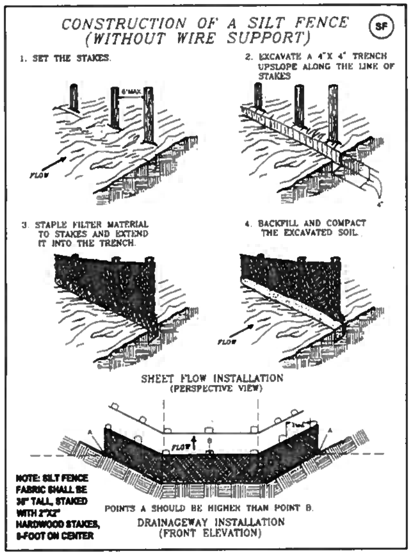
DATE	REVISION DESCRIPTION

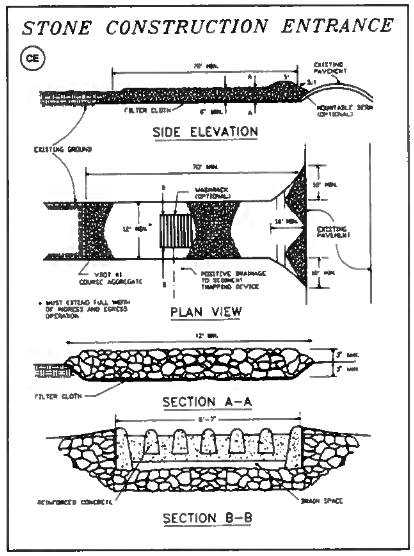
TIMMONS GROUP

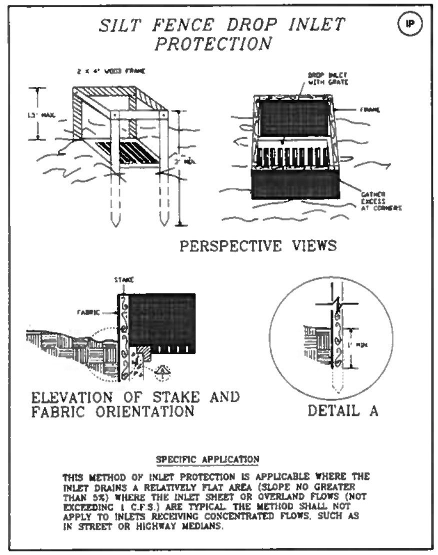
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
PHASE 2 EROSION & SEDIMENT CONTROL PLAN

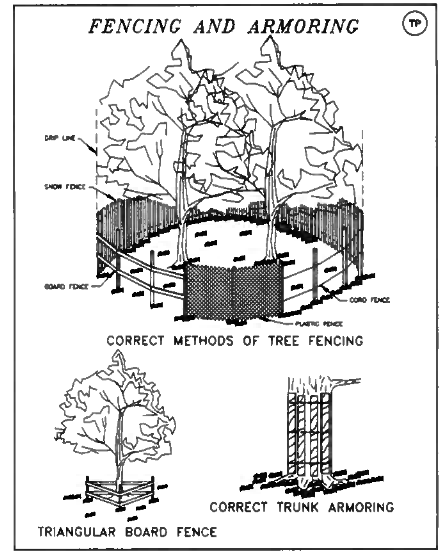
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

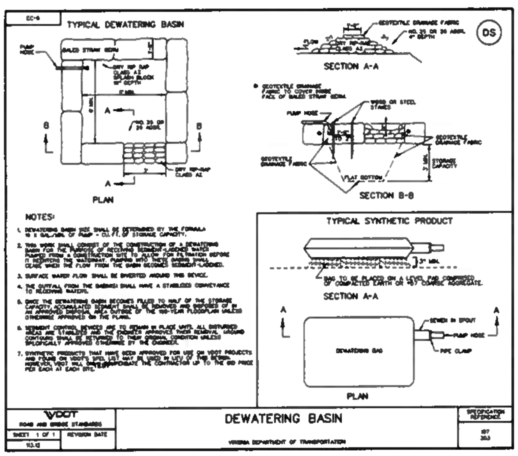
DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 40'
JOB NO.	49297
SHEET NO.	C-2.2

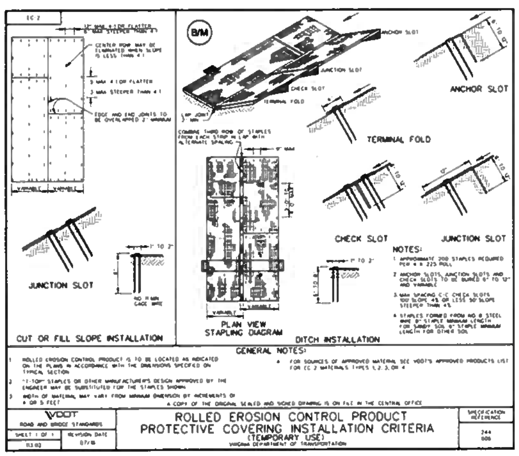












NOTE: THE CONTRACTOR SHALL COORDINATE WITH THE CITY INSPECTOR TO USE ALTERNATIVE PROPRIETARY EROSION AND SEDIMENT CONTROL MEASURES. THE USE OF ALTERNATIVE PROPRIETARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CIVIL INSPECTOR.

(TS)

TABLE 3.31-B
(Revised June 2003)
TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS

SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

FERTILIZER & LIME

- Apply 10-10-10 **fertilizer** at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site
2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

(PS)

TABLE 3.32-E
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

SEED[1]		
LAND USE	SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue[1] or Bermudagrass[1]	175 - 200 lbs 75 lbs
High-Maintenance Lawn	Tall Fescue[1] or Bermudagrass[1] (seed) or Bermudagrass[1] (by other vegetative establishment method, see Std & Spec 3.34)	200-250 lbs 40 lbs (unhulled) 30 lbs (hulled)
General Slope (3:1 or less)	Tall Fescue[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2]	128 lbs 2 lbs 20 lbs TOTAL: 150 lbs
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue[1] Bermudagrass[1] Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop[2] Sericea Lespedeza[3]	93-108 lbs 0-15 lbs 2 lbs 20 lbs 20 lbs TOTAL: 150 lbs

1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html

2 - Use seasonal nurse crop in accordance with seeding dates as stated below

February, March - April	Annual Rye
May 1st - August	Foxtail Millet
September, October - November 15th	Annual Rye
November 16th - January	Winter Rye

3 - May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40 lbs/acre

FERTILIZER & LIME

- Apply 10-20-10 **fertilizer** at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
- Apply **Pulverized Agricultural Limestone** at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site
- Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

TABLE 6-1

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (3RD EDITION) AND THE LATEST VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS (9VAC25-840).

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

EROSION CONTROL (ONLY) SEEDING & FERTILIZING

1. SURFACE SHALL BE RAKED AND SMOOTHED TO ELIMINATE RIDGES AND DEPRESSIONS.
2. SURFACE SHALL THEN BE LIGHTLY RAKED IN ORDER TO COVER SEED NO DEEPER THAN 1/4 INCH AND THEN SPRINKLED WITH WATER. THE SEEDED SURFACE SHALL BE COVERED WITH STRAW OR HAY TO PREVENT EROSION AND TO PROTECT SEEDING. THE ENTIRE SEEDED SURFACE SHALL BE ROLLED WITH A CORRUGATED ROLLER AFTER SEEDING AND BEFORE COVERING WITH STRAW. CONTRACTOR SHALL PROTECT SEEDED SURFACES UNTIL A GOOD STAND OF GRASS IS OBTAINED.
3. THE "HYDRO-SEEDING" METHOD OF SEED APPLICATION MAY BE USED, PROVIDED THE SEED RATE PER SQUARE FOOT IS THE SAME AS HEREIN BEFORE SPECIFIED. THE MULCH RATE SHALL BE SUCH AS TO PROVIDE PROPER SEED PROTECTION AND PREVENT EROSION. IF, IN THE OPINION OF THE INSPECTOR OR ENGINEER, THE MULCH RATE USED (AS EVIDENCED BY SLOPES AFTER SPRAYING) IS NOT SUFFICIENT, THE CONTRACTOR SHALL BE REQUIRED TO INCREASE THE AMOUNT OF MULCH IN THE MIX.

COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER
11/29/2021

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DATE	REVISION DESCRIPTION

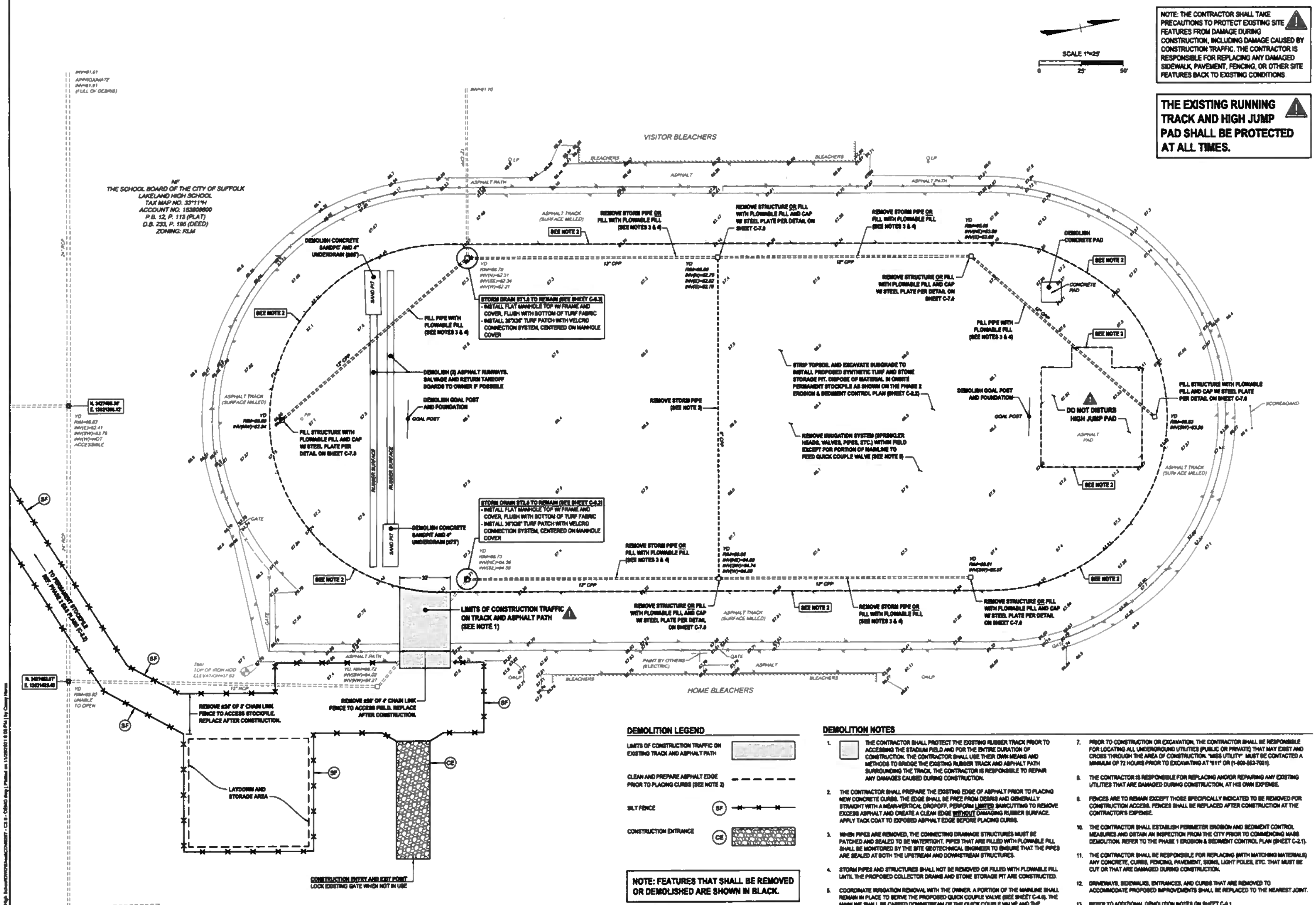
DATE: 11/29/2021
DRAWN BY: C. HERON
DESIGNED BY: C. HERON
CHECKED BY: D. RUBY
SCALE: AS SHOWN

TIMMONS GROUP

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
EROSION & SEDIMENT CONTROL DETAILS

JOB NO. 49297
SHEET NO. C-2.3



NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.

DEMOLITION LEGEND

LIMITS OF CONSTRUCTION TRAFFIC ON EXISTING TRACK AND ASPHALT PATH	(shaded area)
CLEAN AND PREPARE ASPHALT EDGE PRIOR TO PLACING CURBS (SEE NOTE 2)	(dashed line)
SILT FENCE	SF
CONSTRUCTION ENTRANCE	CE

NOTE: FEATURES THAT SHALL BE REMOVED OR DEMOLISHED ARE SHOWN IN BLACK.

DEMOLITION NOTES

1. THE CONTRACTOR SHALL PROTECT THE EXISTING RUBBER TRACK PRIOR TO ACCESSING THE STADIUM FIELD AND FOR THE ENTIRE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL USE THEIR OWN MEANS AND METHODS TO BRIDGE THE EXISTING RUBBER TRACK AND ASPHALT PATH SURROUNDING THE TRACK. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY DAMAGES CAUSED DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL PREPARE THE EXISTING EDGE OF ASPHALT PRIOR TO PLACING NEW CONCRETE CURBS. THE EDGE SHALL BE FREE FROM DEBRIS AND GENERALLY STRAIGHT WITH A NEAR-VERTICAL DROPOFF. PERFORM LIMITED SAWCUTTING TO REMOVE EXCESS ASPHALT AND CREATE A CLEAN EDGE WITHOUT DAMAGING RUBBER SURFACE. APPLY TACK COAT TO EXPOSED ASPHALT EDGE BEFORE PLACING CURBS.
3. WHEN PIPES ARE REMOVED, THE CONNECTING DRAINAGE STRUCTURES MUST BE PATCHED AND SEALED TO BE WATERTIGHT. PIPES THAT ARE FILLED WITH FLOWABLE FILL SHALL BE MONITORED BY THE SITE GEOTECHNICAL ENGINEER TO ENSURE THAT THE PIPES ARE SEALED AT BOTH THE UPSTREAM AND DOWNSTREAM STRUCTURES.
4. STORM PIPES AND STRUCTURES SHALL NOT BE REMOVED OR FILLED WITH FLOWABLE FILL UNTIL THE PROPOSED COLLECTOR DRAINS AND STONE STORAGE PIT ARE CONSTRUCTED.
5. COORDINATE IRRIGATION REMOVAL WITH THE OWNER. A PORTION OF THE MAINLINE SHALL REMAIN IN PLACE TO SERVE THE PROPOSED QUICK COUPLE VALVE (SEE SHEET C-4.0). THE MAINLINE SHALL BE CAPPED DOWNSTREAM OF THE QUICK COUPLE VALVE AND THE REMAINDER OF THE SYSTEM SHALL BE REMOVED.
6. DEMOLITION AND CONSTRUCTION ACTIVITIES ARE NOT TO DISTURB NOR ENCROACH UPON ADJACENT PRIVATE PROPERTIES AT ANY TIME DURING CONSTRUCTION.
7. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST AND CROSS THROUGH THE AREA OF CONSTRUCTION. "MISS UTILITY" MUST BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO EXCAVATING AT "811" OR (1-800-552-7001).
8. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING AND/OR REPAIRING ANY EXISTING UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION, AT HIS OWN EXPENSE.
9. FENCES ARE TO REMAIN EXCEPT THOSE SPECIFICALLY INDICATED TO BE REMOVED FOR CONSTRUCTION ACCESS. FENCES SHALL BE REPLACED AFTER CONSTRUCTION AT THE CONTRACTOR'S EXPENSE.
10. THE CONTRACTOR SHALL ESTABLISH PERIMETER EROSION AND SEDIMENT CONTROL MEASURES AND OBTAIN AN INSPECTION FROM THE CITY PRIOR TO COMMENCING MASS DEMOLITION. REFER TO THE PHASE 1 EROSION & SEDIMENT CONTROL PLAN (SHEET C-2.1).
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING (WITH MATCHING MATERIALS) ANY CONCRETE, CURBS, FENCING, PAVEMENT, SIGNS, LIGHT POLES, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
12. DRIVEWAYS, SIDEWALKS, ENTRANCES, AND CURBS THAT ARE REMOVED TO ACCOMMODATE PROPOSED IMPROVEMENTS SHALL BE REPLACED TO THE NEAREST JOINT.
13. REFER TO ADDITIONAL DEMOLITION NOTES ON SHEET C-0.1.
14. REFER TO SEQUENCE OF CONSTRUCTION ON SHEET C-2.0 DURING ALL STAGES OF CONSTRUCTION.

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER — 11/29/2021

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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION

TIMMONS GROUP

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 25'

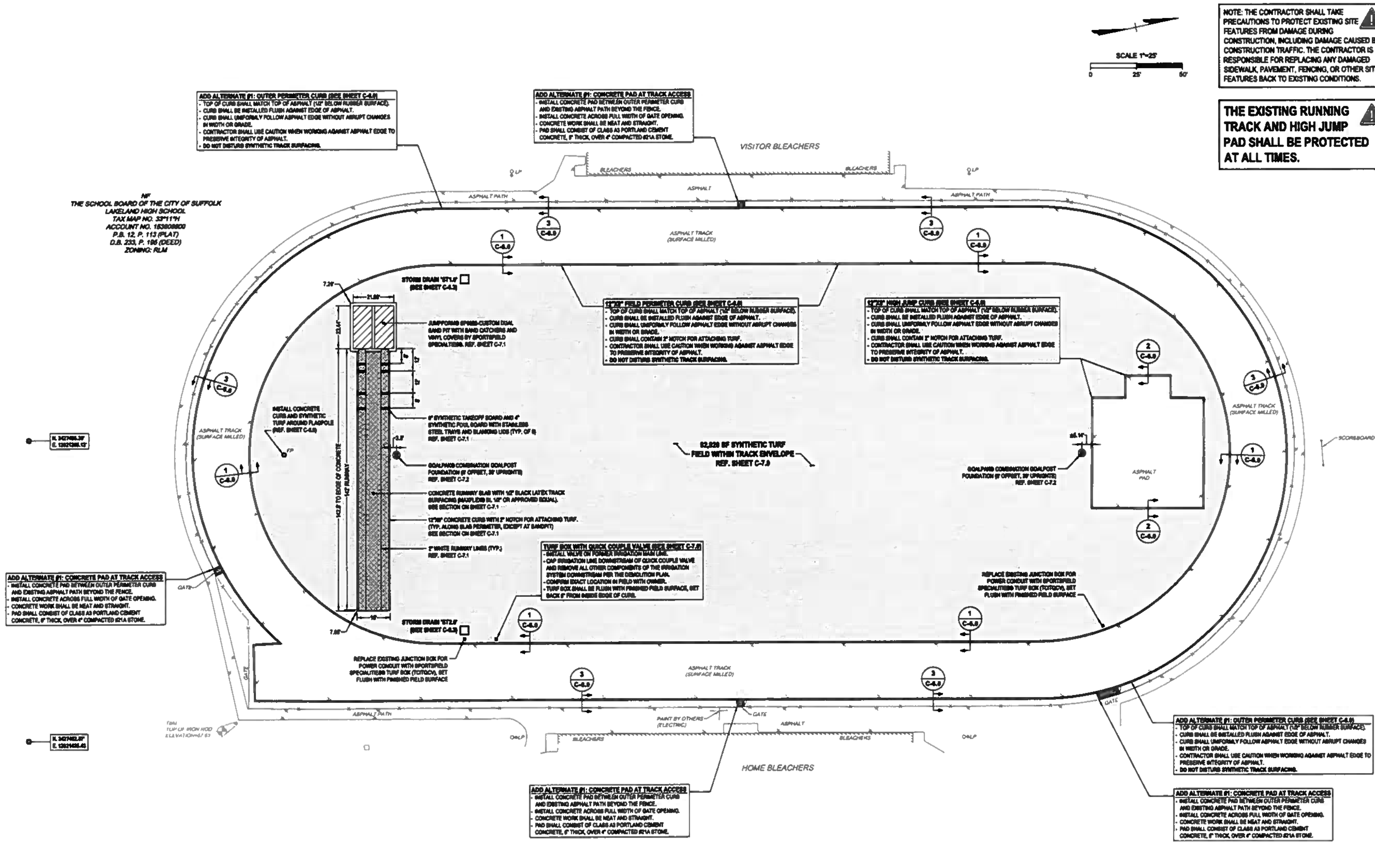
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
DEMOLITION PLAN

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

JOB NO. 49297
SHEET NO. C-3.0

NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.



SITE LAYOUT LEGEND

CONCRETE CURB	
TURF BOX	
FOOTBALL GOALPOST FOUNDATION	

GROUND COVER LEGEND

SYNTHETIC TURF FIELD	
SANDPIT FOR LONG/TRIPLE JUMP	
CONCRETE RUNWAY SLAB WITH LATEX TRACK SURFACING FOR LONG/TRIPLE JUMP	
CONCRETE PAD AT TRACK ACCESS (ADD ALTERNATE #1)	

SITE PLAN NOTES

1. DIMENSIONS ARE MEASURED TO EDGE OF CONCRETE UNLESS OTHERWISE INDICATED.
2. THIS PROJECT IS LOCATED IN FLOOD ZONE "X" (UNSHADED) OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. REFER TO FEMA FLOOD INSURANCE RATE MAP (FIRM) 51015C0210D, EFFECTIVE 11/16/2011.
3. ALL PROPOSED PAVING SURFACES SHALL MEET ADJACENT PAVING SURFACES IN A SMOOTH CONTINUOUS MANNER, FLUSH ALONG ENTIRE COMMON EDGE.
4. ALL RADII AND CURBS INDICATED SHALL HAVE CONTINUOUS AND SMOOTH TRANSITIONS WITHOUT ABRUPT CHANGES, BENDS, OR FACETED EDGES.
5. EXPANSION AND CONTRACTION JOINTS SHALL BE INSTALLED IN ALL CONCRETE SURFACES AND CURBS. REFER TO DETAILS ON SHEET C-6.0.
6. EXPANSION JOINTS IN CONCRETE SHALL BE PROVIDED AS SPECIFIED ON SHEETS C-6.0 AND AROUND ALL JUNCTIONS, STRUCTURES, OR FIXED OBSTRUCTIONS.
7. ALL CONCRETE SIDEWALKS, CURBS, ENTRANCES, AND GUTTERS INDICATED TO BE REMOVED OR REPLACED SHALL BE DONE SO TO THE NEAREST JOINT.
8. THE CONTRACTOR SHALL USE CAUTION WHEN EXCAVATING NEAR UNDERGROUND POWER LINES AND WHEN PERFORMING WORK NEAR OVERHEAD POWER LINES.
9. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH SEPARATE PRICING FOR THE FOLLOWING ADD-ALTERNATE OPTIONS:
   - ADD ALTERNATE #1: PROVIDE CONCRETE CURB ON OUTSIDE PERIMETER OF RUNNING TRACK AND CONCRETE PADS AT ACCESS POINTS. REFER TO SHEET C-6.0.
   - ADD ALTERNATE #2: PROVIDE ALUMINUM SANDPIT COVERS INSTEAD OF VINYL COVERS. REFER TO SHEET C-7.1.
10. THE CONTRACTOR SHALL APPLY TACK COAT TO EXPOSED EDGE OF ASPHALT PRIOR TO PLACING NEW CONCRETE CURBS.

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER — 11/29/2021

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LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
SITE LAYOUT PLAN

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

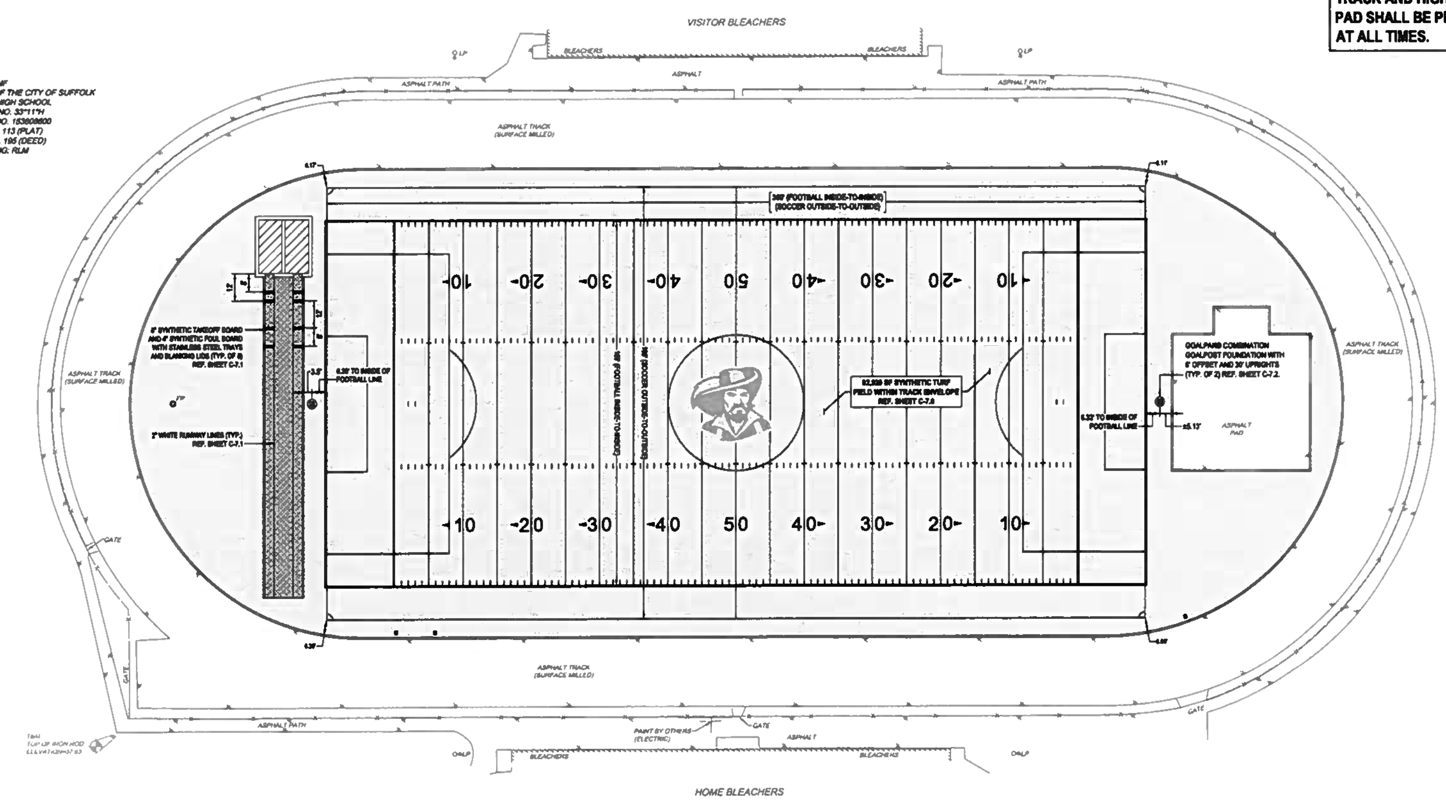
JOB NO. 49297

SHEET NO. C-4.0

NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.

SCALE 1"=25'



N/F
THE SCHOOL BOARD OF THE CITY OF SUFFOLK
LAKELAND HIGH SCHOOL
TAX MAP NO. 33*11*H
ACCOUNT NO. 153608800
P.B. 12, P. 113 (PLAT)
D.B. 233, P. 195 (DEED)
ZONING: RLM

STRIPING PLAN NOTES

1. THE TURF FIELD SHALL BE STRIPED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS ESTABLISHED BY THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFHS) AND VIRGINIA HIGH SCHOOL LEAGUE (VHSL).
2. THE SYNTHETIC TURF FIELD SHALL BE STRIPED FOR FOOTBALL, SOCCER, AND FIELD HOCKEY. ALL LINES SHALL BE INLAID. REFER TO SHEET C-7.3 FOR COLOR SCHEDULE AND FIELD DOMINANCE.
3. LINES SHALL NOT PASS THROUGH CENTERFIELD LOGO OR END ZONE LETTERING (NOT SHOWN).
4. REFER TO ADDITIONAL STRIPING NOTES AND DETAILS PROVIDED ON SHEET C-7.3.

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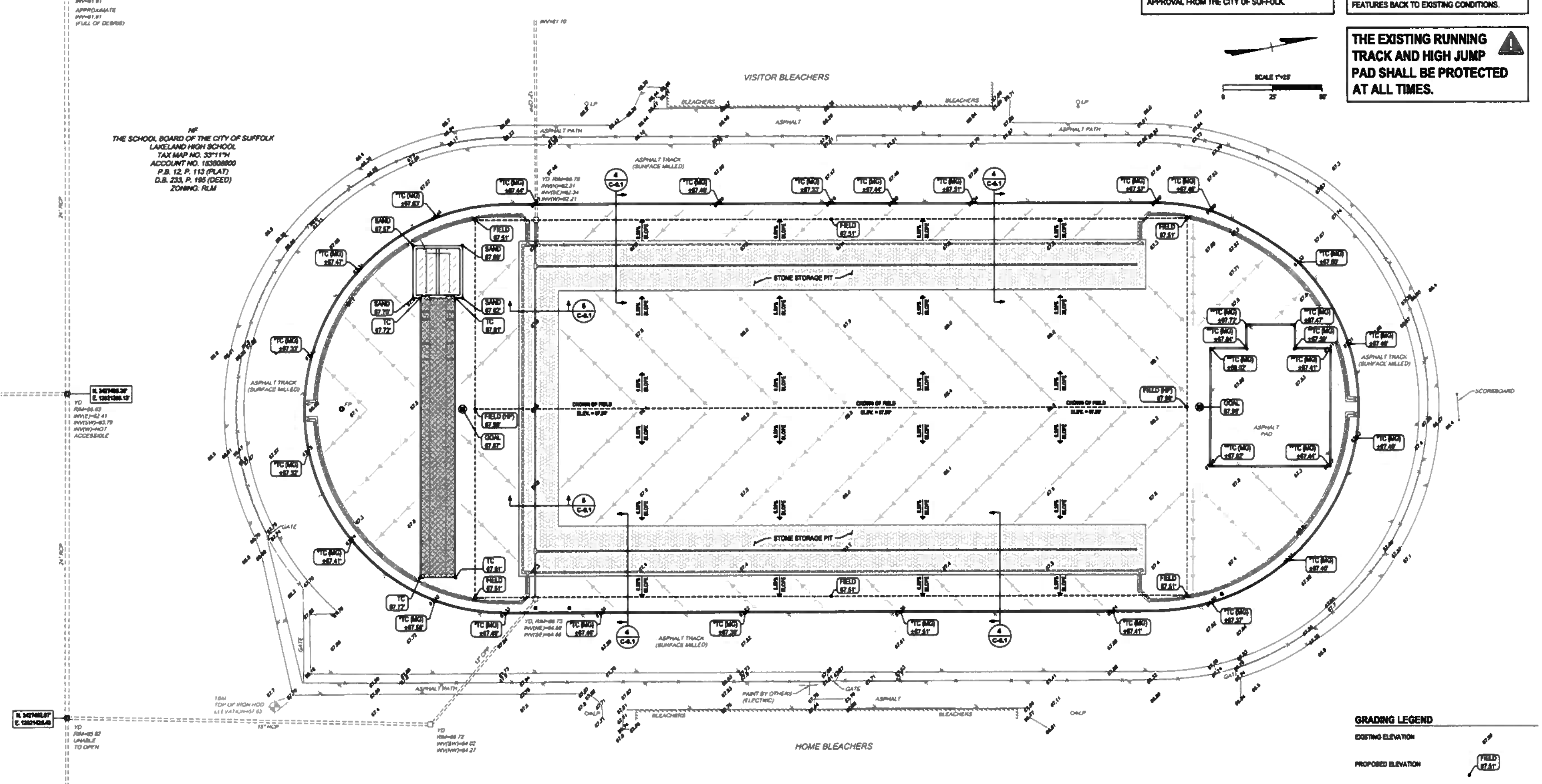
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
FIELD DIMENSION PLAN

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

JOB NO. 49297
SHEET NO. C-4.1



SOIL DEPOSITION NOTE

ALL SOIL EXCAVATED FROM THIS PROJECT SHALL BE DEPOSITED IN THE PERMANENT SOIL STOCKPILE LOCATION SHOWN ON SHEET C-2.1 AND SHEET C-2.2. NO SOIL SHALL BE TRANSPORTED OFF-SITE WITHOUT A SEPARATE PERMIT AND APPROVAL FROM THE CITY OF SUFFOLK.

NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.

GRADING LEGEND

EXISTING ELEVATION

PROPOSED ELEVATION

* NOTES

1. AT THE TIME OF SURVEY, THE RUNNING TRACK WAS BEING RESURFACED AND THE TOP COURSE HAD BEEN MILLED. THE SURVEYED ELEVATIONS ON THE RUNNING TRACK REFER TO THE TOP OF THE MILLED SURFACE.
2. TOP OF CURB ELEVATIONS AT THE RUNNING TRACK (*TC) ARE 2" HIGHER THAN THE SURVEYED EDGE OF ASPHALT. THESE GRADES SHOULD ALIGN WITH THE TOP COURSE OF ASPHALT THAT WAS ADDED AFTER THE SURVEY. THESE GRADES ARE INHERENTLY APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR.
3. THE TOP OF CURB SHALL MATCH THE TOP OF ASPHALT, AND SIT 1/2" BELOW THE RUBBER SURFACE. THIS TAKES PRIORITY OVER SPOT GRADES.

** NOTES

1. AT THE TIME OF SURVEY, THE HIGH JUMP PAD WAS PARTIALLY RESURFACED. THE SURVEYED ELEVATIONS ARE APPROXIMATE.
2. TOP OF CURB ELEVATIONS AT THE HIGH JUMP (**TC) REFLECT THE BEST AVAILABLE INFORMATION FROM THE TOPOGRAPHIC SURVEY AND THE CITY OF SUFFOLK DIGITAL ELEVATION MODEL. THESE GRADES ARE INHERENTLY APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR.
3. THE TOP OF CURB SHALL MATCH THE TOP OF ASPHALT, AND SIT 1/2" BELOW THE RUBBER SURFACE. THIS TAKES PRIORITY OVER SPOT GRADES.

GRADING PLAN NOTES

1. THE TURF FIELD SUBGRADE SHALL BE GRADED TOWARDS THE PROPOSED STONE STORAGE PIT AND COLLECTOR DRAIN TRENCHES. REFER TO SECTIONS ON SHEETS C-6.0, C-6.1, C-6.2, AND C-7.0.
2. THE FINISHED GRADE OF THE FIELD SHALL MATCH THE SPOT ELEVATIONS SHOWN.
3. FINISHED GRADES SHALL SLOPE UNIFORMLY BETWEEN SPOT ELEVATIONS SHOWN.
4. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO COMPLETE THE NEW DRAINAGE SYSTEM AND GRADING OPERATIONS AS SOON AS POSSIBLE AND IN THE SHORTEST TIME POSSIBLE.
5. ALL UNPAVED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE GRADED TO DRAIN, TOPSOILED, SEEDED, MULCHED, AND FERTILIZED.
6. REFER TO ADDITIONAL GRADING AND DRAINAGE NOTES ON SHEET C-0.1.

DRAINAGE SYSTEM LEGEND

- EXISTING STORM PIPE
- EXISTING STORM MANHOLE
- EXISTING YARD DRAIN
- HDPE N-12 STORM SEWER PIPE
- HDPE N-12 UNDERDRAIN
- PVC STORM SEWER PIPE
- FLAT PANEL DRAIN ON SUBGRADE
- ELBOWS, TEES, CROSSES, REDUCERS
- OBSERVATION WELL W/ TURF BOX
- CLEANOUT ON COLLECTOR PIPE
- STONE STORAGE PIT VOLUME CONTROL FACILITY (UNDERGROUND)

GRADING PLAN ABBREVIATIONS

TC	TOP OF CURB
EP	EDGE OF PAVEMENT
FL	FLOW LINE
FIELD	TOP OF SYNTHETIC TURF INFILL MATERIAL
PAD	CONCRETE PAD
G	FINISHED GROUND
MG	MATCH EXISTING GRADE
SAND	TOP OF SAND CATCHER @ SANDPIT
GOAL	TOP OF SYNTHETIC TURF INFILL @ GOALPOST

SYNTHETIC TURF GRADING NOTE

FINAL GRADES ON THE SYNTHETIC TURF FIELD ARE MEASURED TO THE TOP OF TURF INFILL MATERIAL (1-5/8" THICK). REFER TO ATHLETIC FIELD SECTIONS ON SHEET C-7.0.

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LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
GRADING PLAN

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

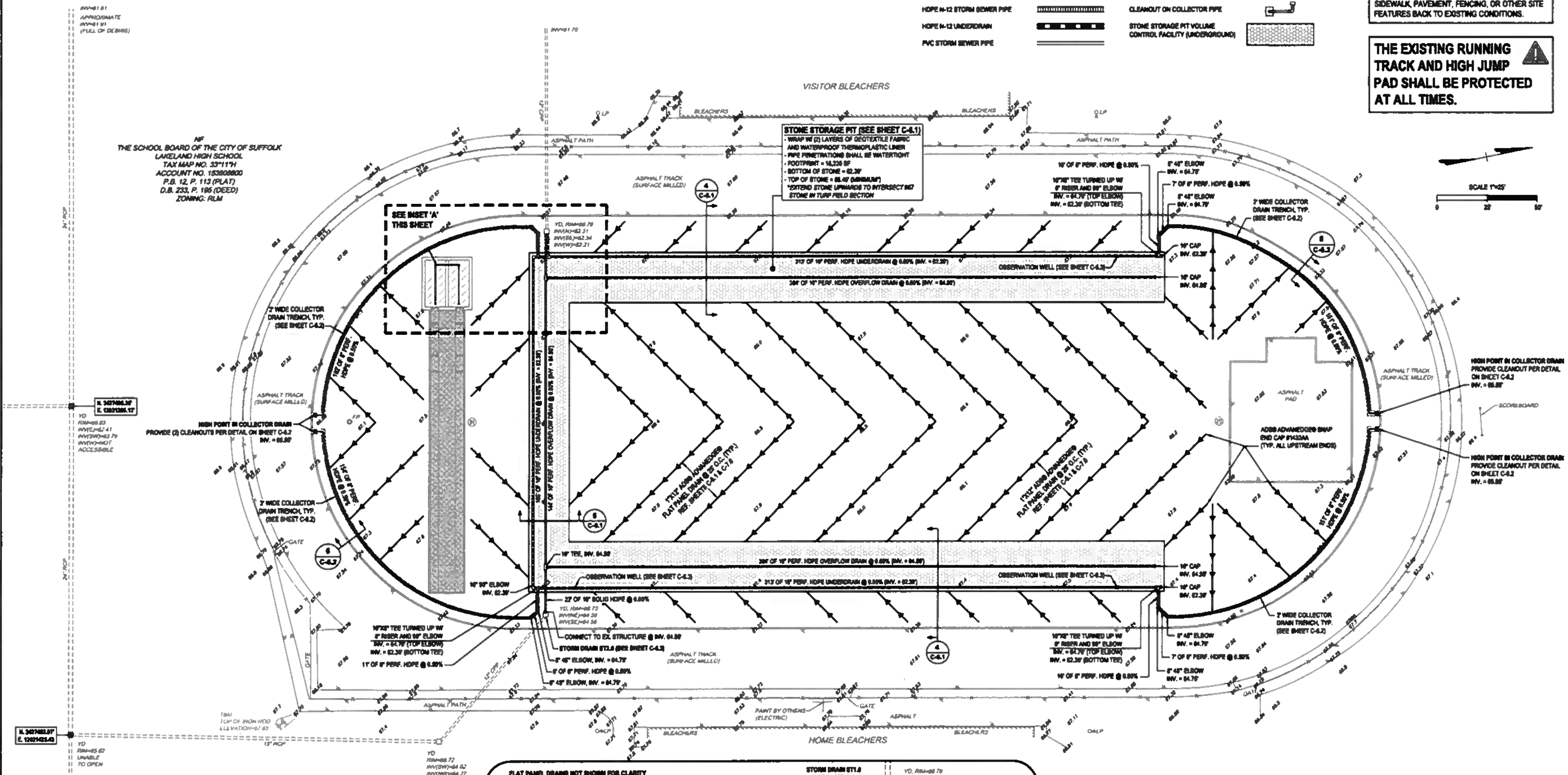
JOB NO. 49297
SHEET NO. C-5.0

DRAINAGE SYSTEM LEGEND

EXISTING STORM PIPE		FLAT PANEL DRAIN ON SUBGRADE	
EXISTING STORM MANHOLE		ELBOWS, TEES, CROSSES, REDUCERS	
EXISTING YARD DRAIN		OBSERVATION WELL W/ TURF BOX	
HDPE N-12 STORM SEWER PIPE		CLEANOUT ON COLLECTOR PIPE	
HDPE N-12 UNDERDRAIN		STONE STORAGE PIT VOLUME CONTROL FACILITY (UNDERGROUND)	
PVC STORM SEWER PIPE			

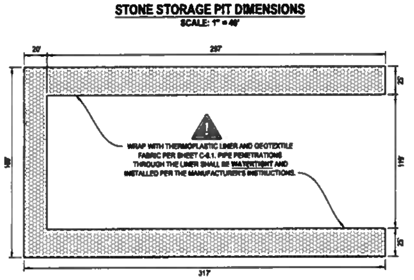
NOTE: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING SITE FEATURES FROM DAMAGE DURING CONSTRUCTION, INCLUDING DAMAGE CAUSED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED SIDEWALK, PAVEMENT, FENCING, OR OTHER SITE FEATURES BACK TO EXISTING CONDITIONS.

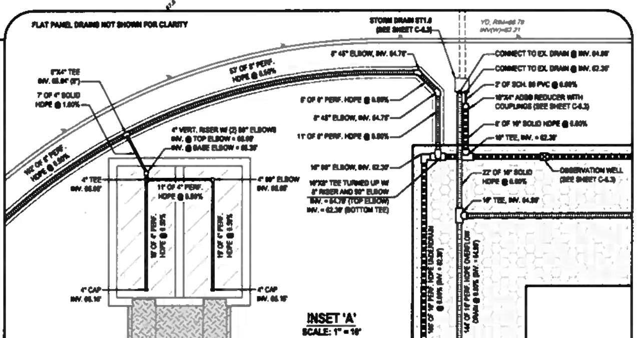
THE EXISTING RUNNING TRACK AND HIGH JUMP PAD SHALL BE PROTECTED AT ALL TIMES.



STONE STORAGE PIT DIMENSIONS

SCALE: 1" = 40'





INSET 'A'
SCALE: 1" = 10'

DRAINAGE PLAN NOTES

1. ALL HIGH-DENSITY-POLYETHYLENE (HDPE) PIPES SHALL BE N-12 DUAL WALL SMOOTH INTERIOR.
2. THIS PROJECT REQUIRES SEVERAL PERFORATED PIPES AS SHOWN ON THE PLANS AND SECTIONS:
   - 2.1. PERFORATED PIPES SHALL BE N-12 DUAL WALL SMOOTH INTERIOR HDPE.
   - 2.2. PERFORATIONS SHALL COMPLY WITH AASHTO CLASS II SPECIFICATIONS.
   - 2.3. CONNECTIONS BETWEEN PERFORATED PIPES SHALL BE SOIL TIGHT.
   - 2.4. PERFORATED PIPES SHALL NOT BE WRAPPED WITH GEOTEXTILE FABRIC. INSTEAD, GEOTEXTILE FABRIC SHALL BE PROVIDED BETWEEN THE SUBGRADE AND BOTTOM & SIDES OF #57 STONE ENCASEMENT.
3. CONNECTIONS TO EXISTING STORM STRUCTURES SHALL BE PERFORMED BY CORE-DRILLING AND SEALING WITH NON-SHRINK GROUT (REF. SHEET C-6.3).
4. ALL DRAINAGE PIPES SHALL BE PROVIDED WITH 4" (MINIMUM) COMPACTED VDOT #57 STONE BEDDING.
5. EXISTING STORM STRUCTURES SHALL NOT BE REMOVED OR FILLED WITH FLOWABLE FILL UNTIL THE PROPOSED COLLECTOR DRAINS AND STONE STORAGE PIT ARE CONSTRUCTED. THE CONTRACTOR SHALL PRESERVE INLET PROTECTION ON EXISTING DRAINS UNTIL THEY ARE NO LONGER ACTIVE.
6. THE CONTRACTOR SHALL PROTECT THE STONE STORAGE PIT AND COLLECTOR DRAIN TRENCHES FROM SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION.
7. FLAT PANEL DRAINS [ ] SHALL BE INSTALLED ON COMPACTED SUBGRADE BELOW THE SYNTHETIC TURF FIELD. PLACE FLAT PANEL DRAINS ON TOP OF GEOTEXTILE FABRIC SEPARATING SUBGRADE FROM #57 STONE. REFER TO DETAILS ON SHEETS C-6.1 AND C-7.0.
8. ALL STORM STRUCTURES AND PIPES WITHIN THE PROJECT LIMITS SHALL BE VACUUMED CLEAN AFTER THE SITE HAS BEEN PERMANENTLY STABILIZED AND PRIOR TO INSTALLING TURF FABRIC.
9. DRAINAGE PIPES SHOWN ARE MEASURED FROM THE CENTER OF FITTINGS AND THE INSIDE EDGE OF EXISTING STORM STRUCTURES.
10. UNDERGROUND DRAINAGE PIPES AND STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH MINIMUM STANDARD #16 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL PROGRAM.
11. DRAINAGE PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES, THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARDS AND SPECIFICATIONS, AND THE CITY OF SUFFOLK PUBLIC FACILITIES MANUAL - VOLUME I (PFM-VI).
12. THE STONE STORAGE PIT SHALL BE WRAPPED WITH A WATERPROOF THERMOPLASTIC LINER AND GEOTEXTILE FABRIC PER SHEET C-6.1. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN INSTALLING THE LINER AND FABRIC TO PREVENT TEARS AND DAMAGE. REFER TO NOTES ON SHEET C-6.1.

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DATE	REVISION DESCRIPTION

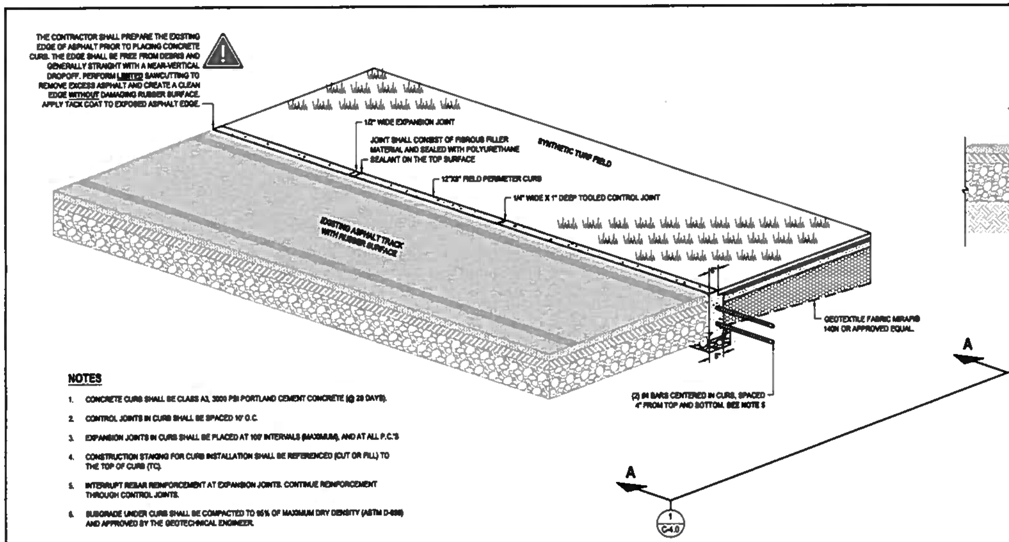
TIMMONS GROUP

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 25'

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
DRAINAGE PLAN

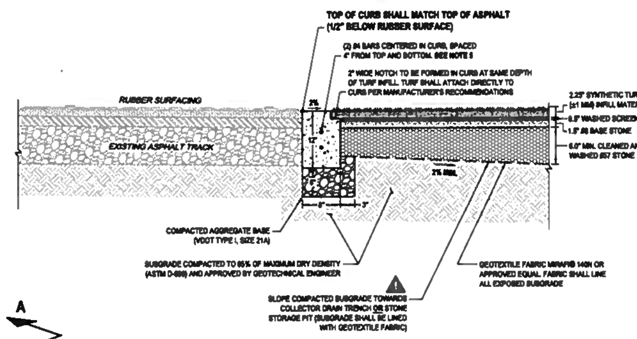
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

JOB NO. 49297
SHEET NO. C-5.1



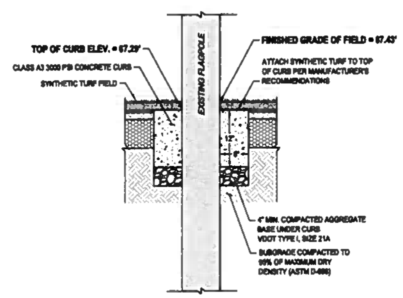
NOTES

1. CONCRETE CURB SHALL BE CLASS A3, 3000 PSI PORTLAND CEMENT CONCRETE (@ 28 DAYS).
2. CONTROL JOINTS IN CURB SHALL BE SPACED 10' O.C.
3. EXPANSION JOINTS IN CURB SHALL BE PLACED AT 100' INTERVALS (MAXIMUM), AND AT ALL P.C.'S
4. CONSTRUCTION STAKING FOR CURB INSTALLATION SHALL BE REFERENCED (CUT OR FILL) TO THE TOP OF CURB (TC).
5. INTERRUPT REBAR REINFORCEMENT AT EXPANSION JOINTS. CONTINUE REINFORCEMENT THROUGH CONTROL JOINTS.
6. SUBGRADE UNDER CURB SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (ASTM D-698) AND APPROVED BY THE GEOTECHNICAL ENGINEER.

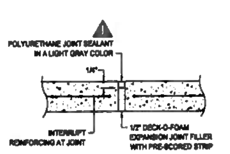


SECTION A-A (1/C-4.0)
SCALE: 1" = 1'

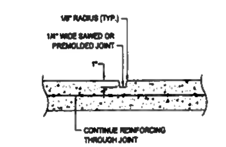
12"X8" FIELD PERIMETER CURB (1/C-4.0)
SCALE: AS SHOWN



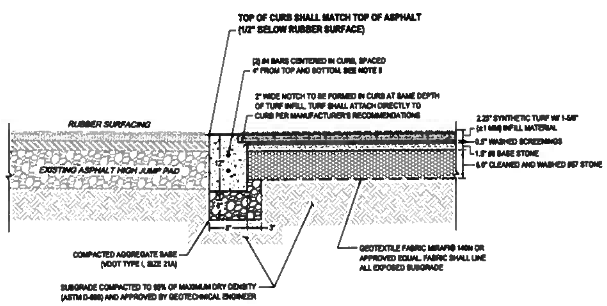
TURF CONNECTION AT EXISTING FLAGPOLE
SCALE: 1" = 1'



CONCRETE EXPANSION JOINT DETAIL
SCALE: NONE



CONCRETE CONTROL JOINT DETAIL
SCALE: NONE

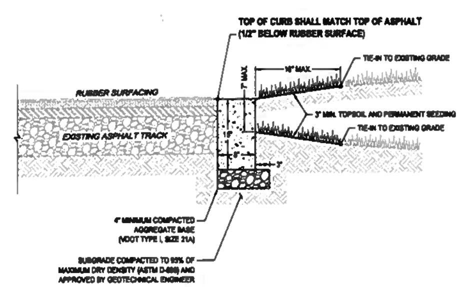


NOTES

1. CONCRETE CURB SHALL BE CLASS A3, 3000 PSI PORTLAND CEMENT CONCRETE (@ 28 DAYS).
2. CONTROL JOINTS IN CURB SHALL BE SPACED 10' O.C. JOINTS SHALL MATCH THOSE IN 12"X8" FIELD PERIMETER CURB.
3. EXPANSION JOINTS IN CURB SHALL BE PLACED AT 100' INTERVALS (MAXIMUM), AND AT ALL P.C.'S. JOINTS SHALL MATCH THOSE IN 12"X8" FIELD PERIMETER CURB.
4. CONSTRUCTION STAKING FOR CURB INSTALLATION SHALL BE REFERENCED (CUT OR FILL) TO THE TOP OF CURB (TC).
5. INTERRUPT REBAR REINFORCEMENT AT EXPANSION JOINTS. CONTINUE REINFORCEMENT THROUGH CONTROL JOINTS.
6. SUBGRADE UNDER CURB SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (ASTM D-698) AND APPROVED BY THE GEOTECHNICAL ENGINEER.

THE CONTRACTOR SHALL PREPARE THE EXISTING EDGE OF ASPHALT PRIOR TO PLACING CONCRETE CURB. THE EDGE SHALL BE FREE FROM DEBRIS AND GENERALLY STRAIGHT WITH A NEAR-VERTICAL DROPOFF. PERFORM LIMITED SAWCUTTING TO REMOVE EXCESS ASPHALT AND CREATE A CLEAN EDGE WITHOUT DAMAGING RUBBER SURFACE. APPLY TACK COAT TO EXPOSED ASPHALT EDGE.

12"X8" HIGH JUMP CURB (2/C-4.0)
SCALE: 1" = 1'



NOTES

1. CONCRETE CURB SHALL BE CLASS A3, 3000 PSI PORTLAND CEMENT CONCRETE (@ 28 DAYS).
2. CONTROL JOINTS IN CURB SHALL BE SPACED 10' O.C. JOINTS SHALL MATCH THOSE IN 12"X8" FIELD PERIMETER CURB.
3. EXPANSION JOINTS IN CURB SHALL BE PLACED AT 100' INTERVALS (MAXIMUM), AND AT ALL P.C.'S. JOINTS SHALL MATCH THOSE IN 12"X8" FIELD PERIMETER CURB.
4. CONSTRUCTION STAKING FOR CURB INSTALLATION SHALL BE REFERENCED (CUT OR FILL) TO THE TOP OF CURB (TC).
5. SUBGRADE UNDER CURB SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (ASTM D-698) AND APPROVED BY THE GEOTECHNICAL ENGINEER.
6. PROVIDE EXPANSION JOINT BETWEEN CONCRETE CURB AND CONCRETE PAD AT TRACK ACCESS POINTS.

THE CONTRACTOR SHALL PREPARE THE EXISTING EDGE OF ASPHALT PRIOR TO PLACING CONCRETE CURB. THE EDGE SHALL BE FREE FROM DEBRIS AND GENERALLY STRAIGHT WITH A NEAR-VERTICAL DROPOFF. PERFORM LIMITED SAWCUTTING TO REMOVE EXCESS ASPHALT AND CREATE A CLEAN EDGE WITHOUT DAMAGING RUBBER SURFACE. APPLY TACK COAT TO EXPOSED ASPHALT EDGE.

ADD ALTERNATE #1: OUTER PERIMETER CURB (3/C-4.0)
SCALE: 1" = 1'

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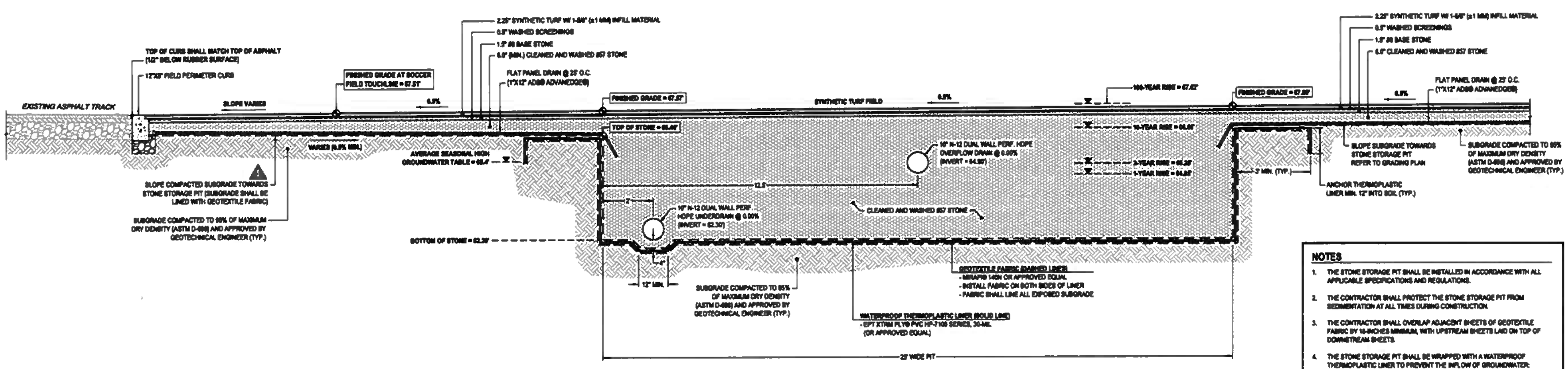
DATE	REVISION DESCRIPTION

DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	AS SHOWN

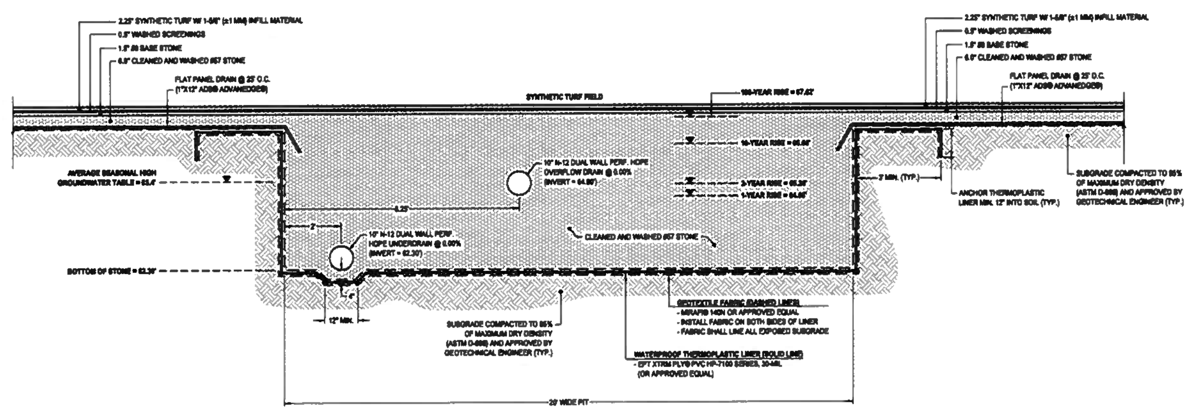
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH
CONSTRUCTION DETAILS

JOB NO. 49297
SHEET NO. C-6.0



TURF FIELD & STONE STORAGE PIT SECTION (NORTH-SOUTH) (4/C-6.0) (4/C-6.1)

SCALE: 1" = 2'



TURF FIELD & STONE STORAGE PIT SECTION (EAST-WEST) (5/C-6.0) (5/C-6.1)

SCALE: 1" = 2'

NOTES

1. THE STONE STORAGE PIT SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SPECIFICATIONS AND REGULATIONS.
2. THE CONTRACTOR SHALL PROTECT THE STONE STORAGE PIT FROM SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL OVERLAP ADJACENT SHEETS OF GEOTEXTILE FABRIC BY 18-INCHES MINIMUM, WITH UPSTREAM SHEETS LAID ON TOP OF DOWNSTREAM SHEETS.
4. THE STONE STORAGE PIT SHALL BE WRAPPED WITH A WATERPROOF THERMOPLASTIC LINER TO PREVENT THE INFLOW OF GROUNDWATER:
   - 4.1. LINER INSTALLATION SHALL BE PERFORMED BY A TRAINED SUBCONTRACTOR WITH EXPERIENCE INSTALLING LINER SYSTEMS IN HAMPTON ROADS.
   - 4.2. LINER INSTALLATION SHALL BE PERFORMED UNDER THE SUPERVISION OF A CITY INSPECTOR AND MANUFACTURER REPRESENTATIVE.
   - 4.3. STONE BACKFILL AND COMPACTION SHALL BE PERFORMED UNDER THE SUPERVISION OF THE LINER MANUFACTURER. STONE SHALL BE PLACED AND COMPACTED IN A MANNER THAT DOES NOT TEAR NOR DAMAGE THE THERMOPLASTIC LINER.
   - 4.4. THE THERMOPLASTIC LINER SHALL BE SANDWICHED BETWEEN TWO LAYERS OF GEOTEXTILE FABRIC AS SHOWN ON THIS SHEET.
   - 4.5. THE LINER/FABRIC SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE CITY OF SUFFOLK PUBLIC FACILITIES MANUAL VOLUME I (PFM-VI).
   - 4.6. PIPE PENETRATIONS THROUGH THE THERMOPLASTIC LINER SHALL BE WATERTIGHT AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
   - 4.7. THE CONTRACTOR SHALL EXERCISE CAUTION TO PREVENT DAMAGE TO THE LINER AND GEOTEXTILE FABRIC DURING CONSTRUCTION.
   - 4.8. ANY AND ALL DAMAGE TO THE THERMOPLASTIC LINER SHALL BE REPAIRED IMMEDIATELY BEFORE PROCEEDING WITH INSTALLATION OR STONE BACKFILL. THE CONTRACTOR SHALL REPAIR TEARS WITH HEAT-WELDED PATCHES OR OTHER METHODS APPROVED BY THE LINER MANUFACTURER.

SYNTHETIC TURF MAINTENANCE SCHEDULE

OVERVIEW

1. THE PROPOSED SYNTHETIC TURF FIELD FUNCTIONS AS A PERMEABLE PAVEMENT STORMWATER MANAGEMENT FACILITY (SWMF). REGULAR INSPECTIONS AND MAINTENANCE WILL PRESERVE THE FUNCTIONALITY OF THE SYSTEM, PREVENT CLOGGING AND PONDING, AND MAXIMIZE THE LIFE CYCLE AND PERFORMANCE OF THE FIELD ITSELF.
2. INSPECTING AND MAINTAINING THE FACILITY IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
3. THE OWNER/DEVELOPER IS RESPONSIBLE FOR RECONSTRUCTING THE STORMWATER MANAGEMENT FACILITY (SWMF) SHOULD IT MALFUNCTION OR CEASE TO OPERATE AT THEIR OWN COST.

SCHEDULED INSPECTIONS & MAINTENANCE

1. THE SYNTHETIC TURF SYSTEM AND ADJACENT RUNNING TRACK SHALL BE INSPECTED MONTHLY AND AFTER MAJOR STORM EVENTS (> 1" RAINFALL) FOR DEBRIS.
2. DURING THE INSPECTION, THE OBSERVATION WELLS SHALL BE CHECKED FOR STANDING WATER. IF STANDING WATER IS OBSERVED 24 HOURS AFTER A STORM EVENT, CLOGGING IS LIKELY. SNAKE AND/OR FLUSH THE CLOGGED DRAIN USING THE CLEANOUTS PROVIDED AROUND THE FIELD PERIMETER AND STORM DRAINS 'ST1.0' AND 'ST2.0' AT THE SOUTH ENDZONE. CONTACT A LICENSED PLUMBER IF NECESSARY.
3. DURING THE INSPECTION, THE FIELD AND RUNNING TRACK SHALL BE CLEANED OF ALL TRASH, DEBRIS, LAWN CLIPPINGS, GRAVEL, SEDIMENT, ETC.
4. AREAS ADJACENT TO THE RUNNING TRACK SHALL BE REGULARLY MAINTAINED SO THAT SEDIMENT, MULCH, GRASS CLIPPINGS, LEAVES, GRAVEL, ETC. DO NOT COME IN CONTACT WITH THE TRACK SURFACE.
5. THE SYNTHETIC TURF FIELD SHALL BE REGULARLY CLEANED AND GROOMED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.
6. THE OWNER/DEVELOPER SHALL KEEP A LOG OF THESE INSPECTIONS ON LOCATION FOR REVIEW BY THE CITY OF SUFFOLK AS REQUIRED.

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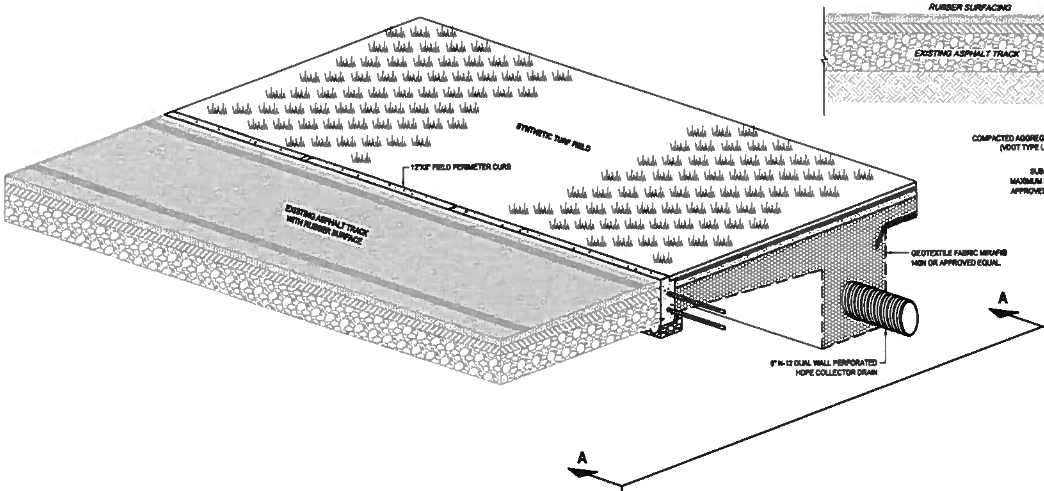
DATE	REVISION DESCRIPTION

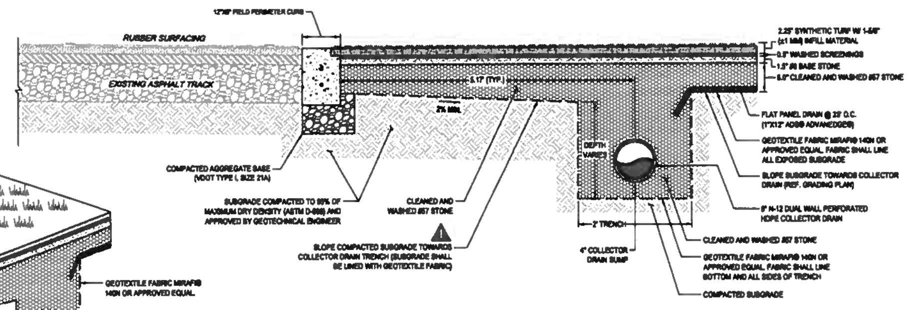
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
DRAINAGE DETAILS

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

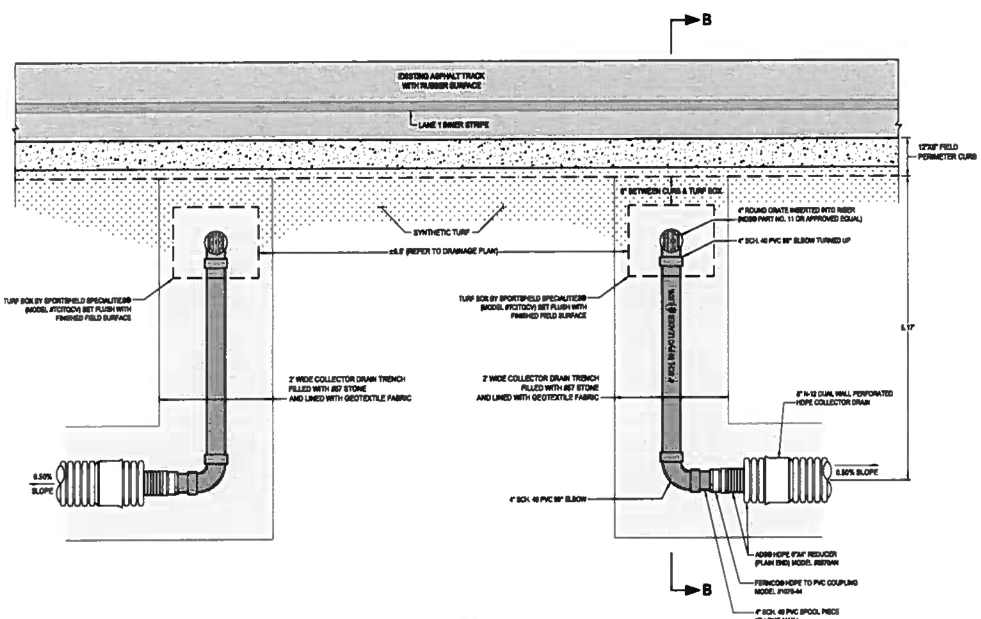
DATE	11/29/2021
DRAWN BY	C. HERON
DESIGNED BY	C. HERON
CHECKED BY	D. RUBY
SCALE	1" = 2'
JOB NO.	49297
SHEET NO.	C-6.1



COLLECTOR DRAIN AND FIELD DETAIL
SCALE: AS SHOWN



SECTION A-A
SCALE: 1" = 1'

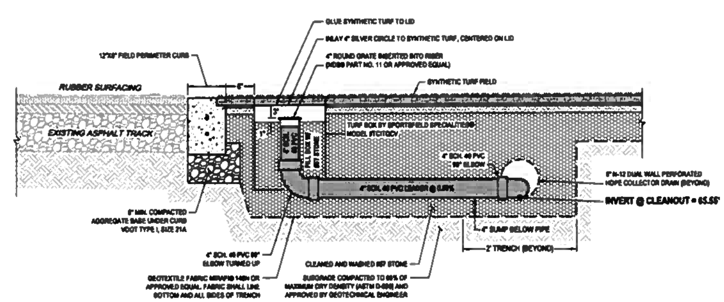


PLAN VIEW
SCALE: 1" = 1'

COLLECTOR DRAIN CLEANOUT DETAIL
SCALE: AS SHOWN

NOTES

1. PVC PIPE CONNECTIONS SHALL BE WATERTIGHT (WT).
2. HDPE PIPE CONNECTIONS SHALL BE SOIL TIGHT (ST).



SECTION B-B
SCALE: 1" = 1'

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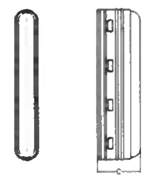
LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
DRAINAGE DETAILS

CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

JOB NO. 49297
SHEET NO. C-6.2

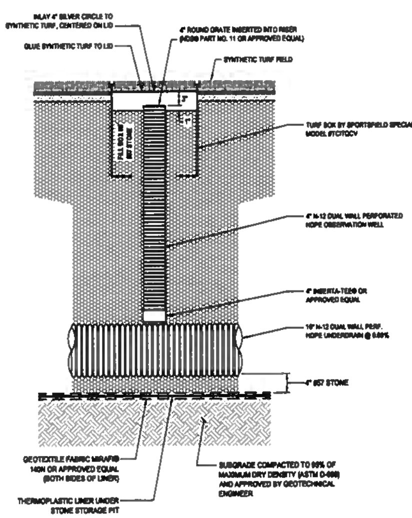
AdvanEDGE™ SNAP END CAP

PART #	PIPE SIZE	C
1432AA	12 in	3.5 in
1632AA	18 in	4.0 in (102 mm)



NOTE: ALL FITTINGS DIMENSIONS ARE FOR REFERENCE ONLY AND MAY VARY

ADS



NOTES

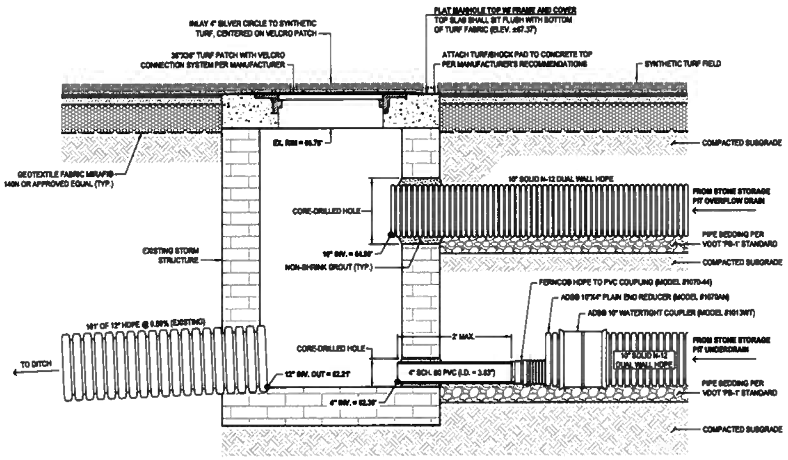
1. OBSERVATION WELLS ARE LOCATED AT THE 5-YARD LINES. USE STAKEOUT SURVEY TO ESTABLISH POSITION OF WELLS IN THE FIELD.
2. ROTATE TURF BOX TO SIT PARALLEL TO FOOTBALL BOUNDARY LINE.
3. OBSERVATION WELLS ARE DENOTED BY [⊠] ON THE DRAINAGE PLAN.

OBSERVATION WELL DETAIL

SCALE: 1" = 1'

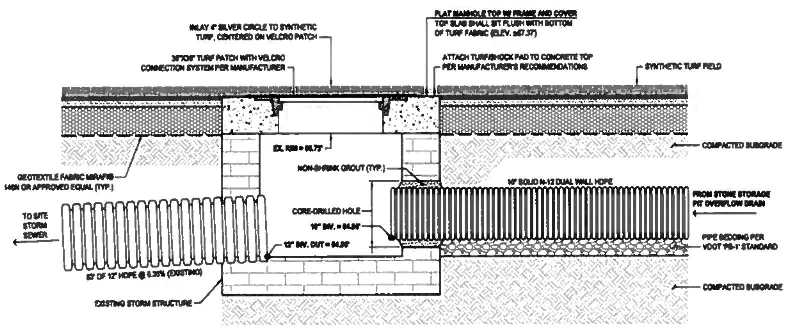
STRUCTURE ST1.0

(SW CORNER OF FIELD)



STRUCTURE ST2.0

(SE CORNER OF FIELD)



NOTES

1. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT, INCLUDING FITTINGS.
2. PIPES SHALL BE INSTALLED IN ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS AND MANUFACTURER'S GUIDELINES.
3. PROVIDE 3" MINIMUM COMPACTED #57 STONE UNDERNEATH LEVELING BRICKS FOR MANHOLE ACCESS FRAME KIT.
4. CONTINUE GEOTEXTILE FABRIC TO OUTER FACE OF DRAINAGE STRUCTURE.

STORM DRAIN CONNECTION DETAILS

SCALE: 1" = 1'

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER — 11/29/2021

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TIMMONS GROUP

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
11/29/2021	C. HERON	C. HERON	D. RUBY	AS SHOWN

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

DRAINAGE DETAILS

JOB NO. 49297
SHEET NO. C-6.3

PB-1

GENERAL

1. METHOD "A" PIPE BEDDING SHALL BE USED FOR ALL TYPES OF PIPE CULVERTS WITHIN THE APPLICABLE HEIGHT OF COVER RANGE NOTED IN THE STANDARD PC-1 TABLES UNLESS OTHERWISE NOTED ON THE PLANS.
2. H = HEIGHT OF COVER MEASURED FROM TOP OF CULVERT TO FINISHED GRADE.
3. b = EXCAVATION DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.

CIRCULAR PIPE

1. D = OUTSIDE DIAMETER OF PIPE.
2. d = INSIDE DIAMETER OF PIPE.
3. X = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   X = 12" WHERE d IS LESS THAN 36".
   X = 18" WHERE d IS 36" AND GREATER.
4. WHERE DIRECTED BY THE ENGINEER, BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE (EXCEPT PLASTIC PIPE) 30" AND LESS IN DIAMETER WITH HEIGHT OF COVER 15' OR LESS.
5. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE (EXCEPT PLASTIC PIPE) 30" AND LESS IN DIAMETER WITH HEIGHT OF COVER 15' OR LESS.
6. BEDDING MATERIAL AND CLASS I BACKFILL MATERIAL MAY BE ELIMINATED FOR SHOULDER SLOT INLET (DI-13) OUTLET PIPES INSTALLATIONS.

ELLIPTICAL PIPE

1. S_1 = OUTSIDE SPAN DIMENSION OF PIPE.
2. S_2 = INSIDE SPAN DIMENSION OF PIPE.
3. R = OUTSIDE RISE DIMENSION OF PIPE.
4. X = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   X = 12" WHERE S_2 IS LESS THAN 36".
   X = 18" WHERE S_2 IS 36" AND GREATER
5. WHERE DIRECTED BY THE ENGINEER, BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.
6. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.

PIPE ARCH

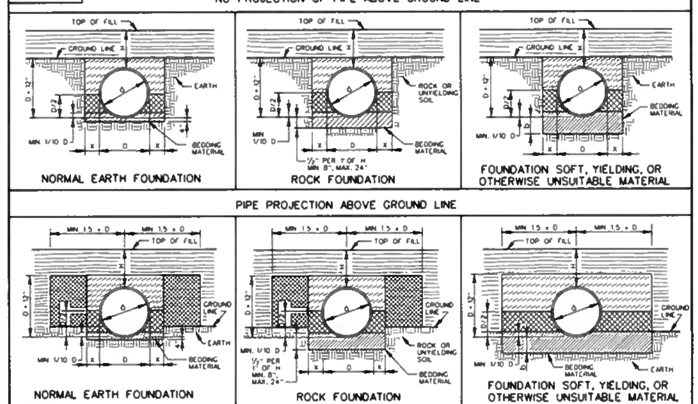
1. S = SPAN DIMENSION OF PIPE.
2. R = RISE DIMENSION OF PIPE.
3. B = SEE PC-1 TABLE FOR APPLICABLE PIPE MATERIAL
4. x = WIDTH OF CLASS I BACKFILL MATERIAL BEYOND THE EXTREMITY OF THE PIPE.
   x = 12" WHERE S_2 IS LESS THAN 36".
   x = 18" WHERE S_2 IS 36" AND GREATER
5. WHERE DIRECTED BY THE ENGINEER, BEDDING MATERIAL MAY BE ELIMINATED FOR NORMAL EARTH FOUNDATIONS UNDER ROUTINE ENTRANCE PIPE WHERE S_2 IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.
6. REGULAR BACKFILL MATERIAL MAY BE USED IN LIEU OF CLASS I BACKFILL MATERIAL FOR ALL FOUNDATION TYPES FOR ROUTINE ENTRANCE PIPE WHERE S IS 36" OR LESS AND HEIGHT OF COVER 15' OR LESS.

SPECIFICATION REFERENCE		VDOT ROAD AND BRIDGE STANDARDS	
302 303	INSTALLATION OF PIPE CULVERTS & STORM SEWERS GENERAL NOTES VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 1 OF 1 107.00

PB-1

NO PROJECTION OF PIPE ABOVE GROUND LINE

PIPE PROJECTION ABOVE GROUND LINE



BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR PLASTIC PIPE : 6" MINIMUM CLASS I BACKFILL MATERIAL PLACED DIRECTLY OVER PIPE AND 6" REGULAR BACKFILL MATERIAL, OR 12" OF CLASS I BACK FILL MATERIAL, IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

EMBANKMENT

REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

FOR ALL OTHER PIPE REGULAR BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

NOTES:

FOR GENERAL NOTES ON PIPE BEDDING, SEE INSTALLATION OF PIPE CULVERTS AND STORM SEWERS GENERAL NOTES ON SHEET 107.00.

CRUSHED GLASS CONFORMING TO THE SIZE REQUIREMENTS FOR CRUSHER RUN AGGREGATE SIZE 25 AND 26 MAY BE USED IN PLACE OF CLASS I BACKFILL.

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

VDOT ROAD AND BRIDGE STANDARDS			SPECIFICATION REFERENCE
SHEET 1 OF 4 107.01	REVISION DATE 07/19	INSTALL. OF PIPE CULVERTS AND STORM SEWERS CIRC. PIPE BEDDING AND BACKFILL - METHOD "A" VIRGINIA DEPARTMENT OF TRANSPORTATION	302 303

COMMONWEALTH OF VIRGINIA
11/29/2021
PROFESSIONAL ENGINEER

THIS DRAWING PREPARED AT THE VIRGINIA BEACH OFFICE
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TEL 757.213.6679 FAX 757.340.1415 www.timmons.com

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DATE	REVISION DESCRIPTION

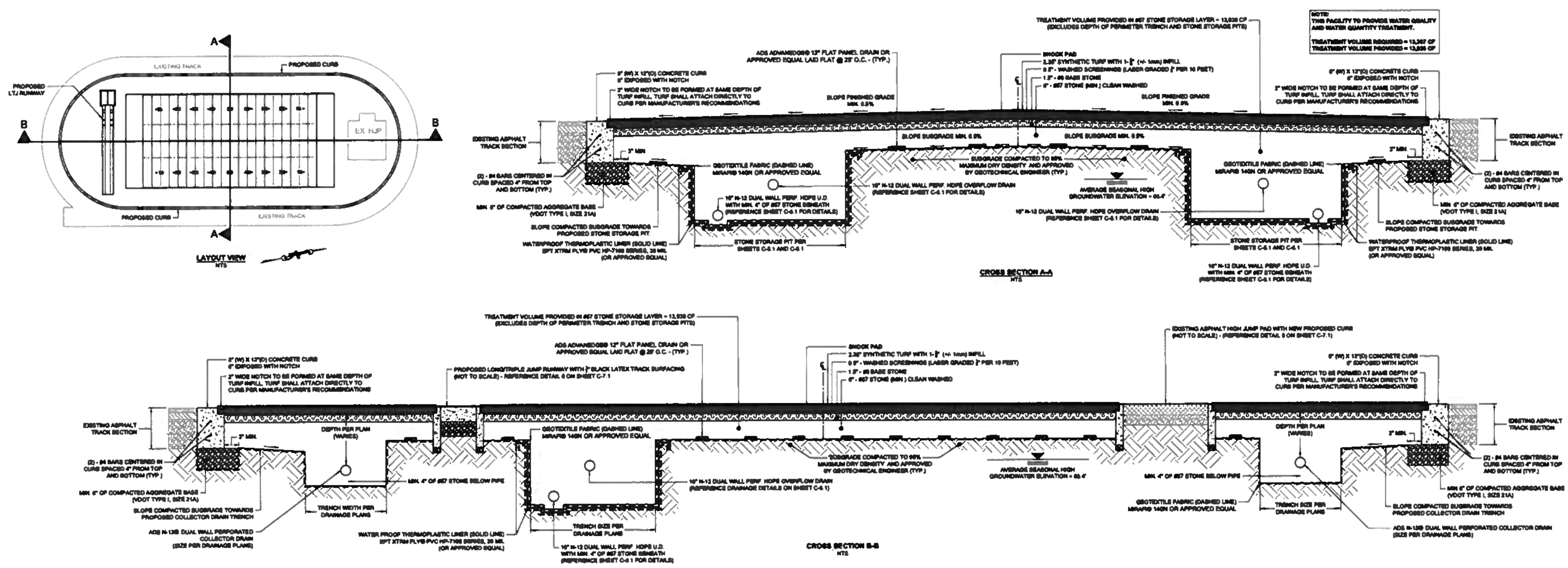
TIMMONS GROUP

DATE	11/29/2021
DRAWN BY	C. HIBRON
DESIGNED BY	C. HIBRON
CHECKED BY	D. RUBY
SCALE	AS SHOWN

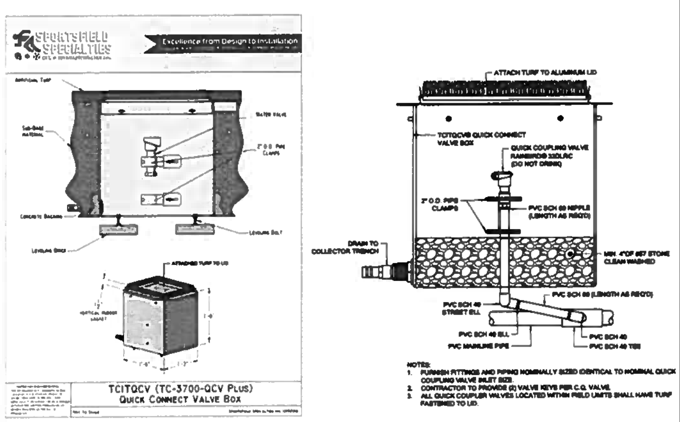
CITY OF SUFFOLK, VIRGINIA
HOLY NECK BOROUGH

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
DRAINAGE DETAILS

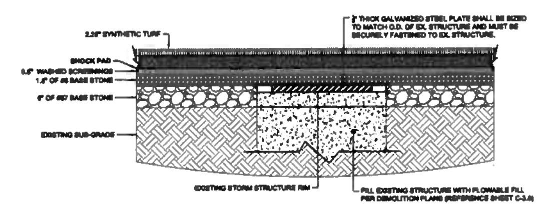
JOB NO. 49297
SHEET NO. C-6.4



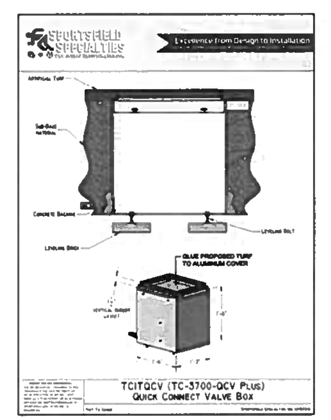
1 **ATHLETIC FIELD SUBGRADE X-SECTIONS**
NOT TO SCALE



2 **QUICK COUPLE VALVE WITH COMM. BOX & ALUMINUM LID**
NOT TO SCALE



3 **EX. STORM STRUCTURE COVER AND TURF MARKER**
NOT TO SCALE



4 **CLEANOUT & COMM TURF BOX (TCITQCV)**
NOT TO SCALE

LDDSPORTS

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COMMONWEALTH OF VIRGINIA
Mathew S. Vetter
Lic. No. 048423
11-29-2021
PROFESSIONAL ENGINEER

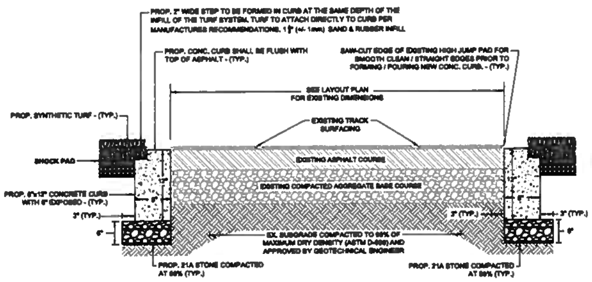
DATE	REVISION DESCRIPTION

DATE	11-29-2021
DRAWN BY	K. GILMER
DESIGNED BY	M. VETTER
CHECKED BY	M. VETTER
SCALE	NO SCALE

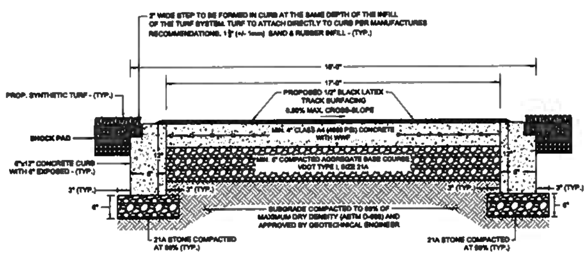
CITY OF SUFFOLK, VIRGINIA

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
ATHLETIC DETAILS

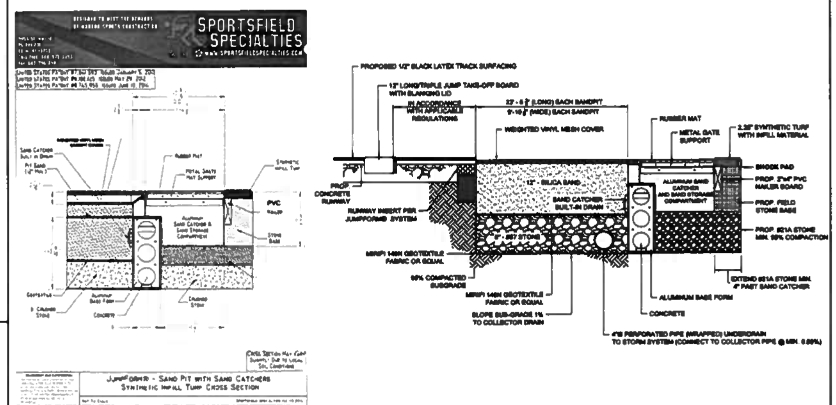
JOB NO. 49297
SHEET NO. C-7.0



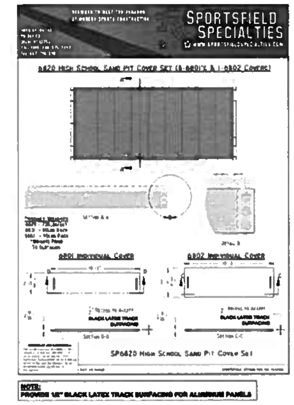
5 **EX. HIGH JUMP PAD DETAIL - WITHIN TRACK ENVELOPE**
NOT TO SCALE



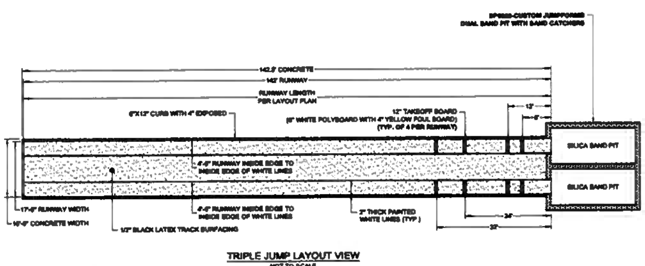
6 **LONG / TRIPLE RUNWAY DETAIL - WITHIN TRACK ENVELOPE**
NOT TO SCALE



8 **SANDPIT SYNTHETIC TURF CROSS SECTION (TYP.)**
NOT TO SCALE



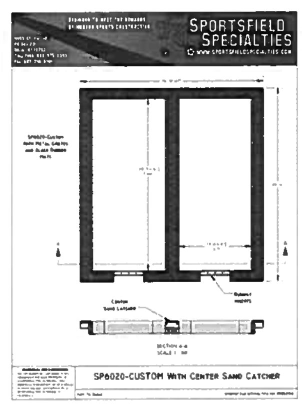
9 **ALUMINUM SAND PIT COVER (ADD ALTERNATE #2)**
NOT TO SCALE



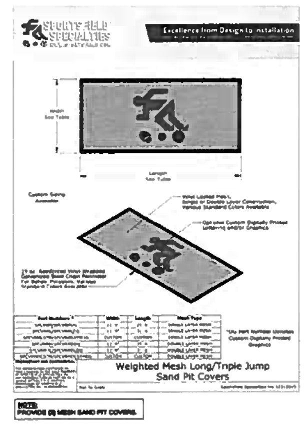
NOTES

1. ALL TAKEOFF BOARDS TO BE PLACED IN ACCORDANCE WITH NFHS STANDARDS.
2. PROVIDE REPLACEMENT BLANKING LID FOR ALL TAKE-OFF BOARDS.
3. PAINTED 2" RUNWAY LINES SHALL BE PLACED TO PROVIDE A 4'-0" RUNNING LANE (INSIDE EDGE TO INSIDE EDGE).

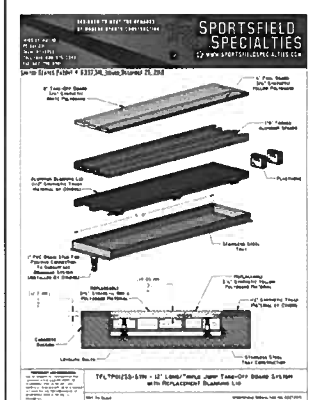
7 **LONG / TRIPLE JUMP RUNWAY LAYOUTS**
NOT TO SCALE



10 **DUAL JUMPFORM SANDPIT WITH SAND CATCHER**
NOT TO SCALE



11 **MESH SAND PIT COVER**
NOT TO SCALE



12 **LTJ TAKE-OFF BOARDS WITH BLANKING LIDS**
NOT TO SCALE

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COMMONWEALTH OF VIRGINIA
Mathew S. Vetter
Lic. No. 048443
11-29-2021
PROFESSIONAL ENGINEER

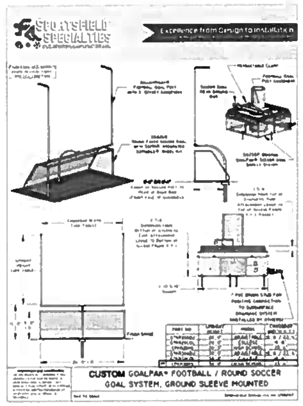
DATE	REVISION DESCRIPTION

DATE	11-29-2021
DRAWN BY	K. GILMER
DESIGNED BY	M. VETTER
CHECKED BY	M. VETTER
SCALE	NO SCALE

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
ATHLETIC DETAILS

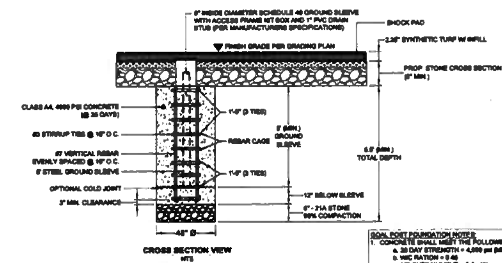
CITY OF SUFFOLK, VIRGINIA

JOB NO. 49297
SHEET NO. C-7.1

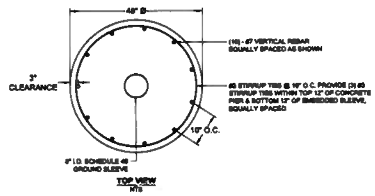


CUSTOM GOAL POST NOTES:
1. CONTRACTOR SHALL DRILL SIDE FRAME HOLES FOR SOCCER GOAL ONSITE DURING ASSEMBLY PROCESS BY SLIDING THE SOCCER GOAL INTO THE CORRECT POSITION AND SET THE SOCCER GROUND BAR IN-PLACE TO MARK BOLT HOLES. CONTRACTOR SHALL CONTACT MANUFACTURER FOR ADDITIONAL ASSEMBLY DIRECTION.

(13) GOALPAK GOAL - 6FT GOOSENECK (GPK-CUSTOM)
NOT TO SCALE



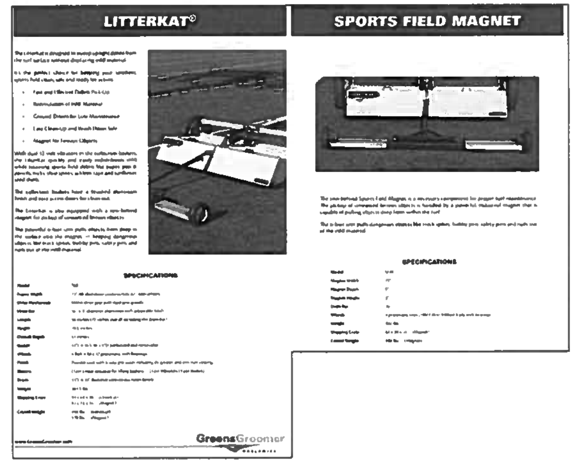
CROSS SECTION VIEW
NTS



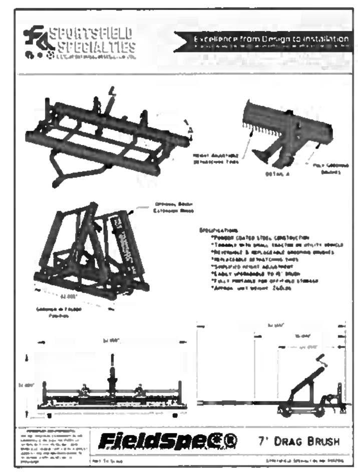
TOP VIEW
NTS

GOAL POST FOUNDATION NOTES:
1. CONCRETE SHALL MEET THE FOLLOWING:
   a. 28 DAY STRENGTH = 4,000 psi (MIN.)
   b. W/C RATION = 0.40
   c. AIR ENTRAINMENT = 6.0 ±1%
2. HSS SECTIONS SHALL MEET ASTM A500, GR.B
3. REINFORCEMENT BARS SHALL MEET ASTM A615 GRADE 60
4. UNIT HEIGHT OF SOIL = 110pcf
5. SOIL INTERNAL ANGLE OF FRICTION USED FOR DESIGN = 30° DEGREES
6. WATER TABLE ASSUMED TO BE BELOW BOTTOM ON FOOTING FOR DESIGN
7. COMPACT SOIL SURROUNDING FOOTING TO 95% MODIFIED PROCTOR
8. CONTRACTOR SHALL VERIFY FOUNDATION MEETS LOCAL CODES AND REGULATIONS PRIOR TO INSTALLATION
9. SITE SOIL PROPERTIES MUST MEET (OR BETTER) THE DESIGN PARAMETERS LISTED ABOVE
10. FROST DEPTH AND/OR WATER TABLE ELEVATION MAY HAVE AND ADVERSE EFFECT ON THE ABOVE DESIGN, SITE SPECIFIC DESIGNS ARE ALWAYS RECOMMENDED

(14) GOALPAK GOAL POST FOUNDATION
NOT TO SCALE



(15) GREENS GROOMER LITTERKAT WITH TOW BEHIND MAGNET
NOT TO SCALE



(16) FIELDSPEC - 7FT DRAG BRUSH
NOT TO SCALE

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Mathew S. Vetter
Lic. No. 048415
11-29-2021
PROFESSIONAL ENGINEER

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DATE	REVISION DESCRIPTION

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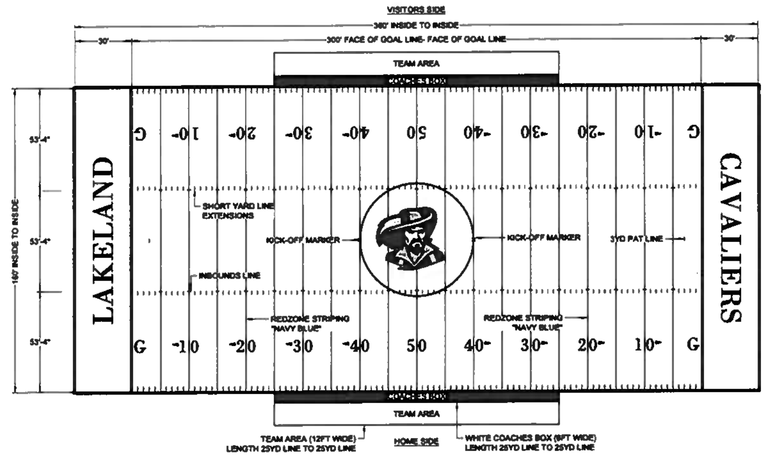
DATE	11-29-2021
DRAWN BY	K. GILMER
DESIGNED BY	M. VETTER
CHECKED BY	M. VETTER
SCALE	NO SCALE

LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
ATHLETIC DETAILS
CITY OF SUFFOLK, VIRGINIA

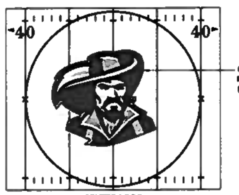
JOB NO. 49297
SHEET NO. C-7.2



FOOTBALL FIELD NOTES:

1. PROVIDE ALL TICK AND HASH MARKS, LINES, NUMBERS AND GOAL LINE "G". NUMBERS AND GOAL LINE LETTER "G" SHALL BE INLAID WHITE. FONT TBD BY OWNER.
2. END ZONE LETTERS SHALL BE LAKELAND IN THE SOUTH END ZONE AND CAVALIERS IN THE NORTH END ZONE IN "NAVY BLUE " OUTLINED IN "WHITE"

   NOTE:
   A. FONT STYLE SHALL BE COLLEGIATE
   B. SOCCER END LINES OR GOAL BOXES SHALL **NOT** GO THROUGH END ZONE LETTERS
3. FIELD COLOR: SOLID GREEN
4. CENTER LOGO SHALL BE A CAVALIER MAN WITH HAT AND FEATHER. COLORS SHALL BE DETERMINED DURING SUBMITTAL REVIEW. LINES SHALL NOT PASS THROUGH LOGO.
5. 20YD-LINES SHALL BE DOUBLE STRIPED "NAVY BLUE" FOR RED ZONE.
6. COACHES BOXES SHALL BE WHITE AT A DEPTH OF 6FT BETWEEN THE 25YD LINE AND 25YD LINE.
7. FOOTBALL BOUNDARY LINE AND GOAL LINES SHALL BE 8" WIDE.
8. LINES SHALL **NOT** GO THROUGH END ZONE LETTERS OR CENTER LOGO.



CENTER LOGO

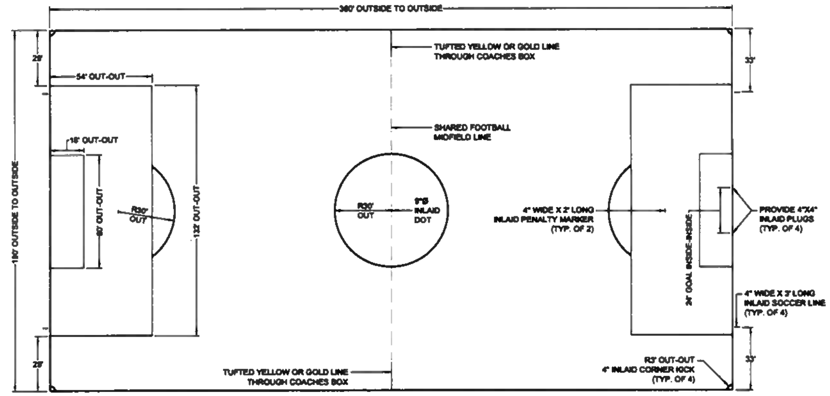
CENTER LOGO SHALL BE A CAVALIER MAN WITH HAT AND FEATHER. (NO LINES SHALL PASS THROUGH LOGO)

STADIUM FIELD FIELD DOMINANCE AND STRIPING SCHEDULE:	
1. FOOTBALL	- WHITE INLAID
2. SOCCER	- YELLOW / GOLD INLAID
3. FIELD HOCKEY	- BABY BLUE (OR EQUAL) INLAID

GENERAL STRIPING NOTES :

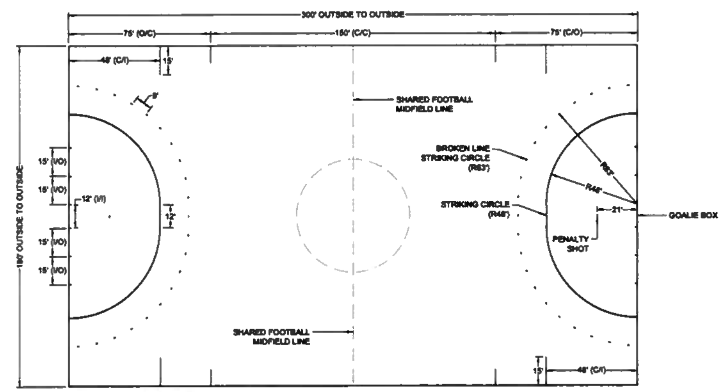
1. ALL ATHLETIC FIELD STRIPING DIMENSIONS SHALL BE BASED ON THE LATEST NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATIONS (NFHS).
2. 4" SILVER CIRCULAR IN-LAYS TO BE PLACED DIRECTLY OVER TOP OF ALL EXISTING STORM STRUCTURES WITHIN FIELD LIMITS.

(17) FIELD STRIPING PLAN
NOT TO SCALE



SOCCER FIELD NOTES:

1. FULL INLAID / TUFTED YELLOW OR GOLD LINES
2. LINES SHALL **NOT** GO THROUGH FOOTBALL END ZONE LETTERS OR CENTER LOGO.



FIELD HOCKEY FIELD STRIPING:

1. FULL INLAID BABY BLUE (OR EQUAL)

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LAKELAND HIGH SCHOOL
TURF FIELD CONVERSION
ATHLETIC DETAILS

CITY OF SUFFOLK, VIRGINIA

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DATE	REVISION DESCRIPTION

DATE	11-29-2021
DRAWN BY	K. GILMER
DESIGNED BY	M. VETTER
CHECKED BY	M. VETTER
SCALE	NO SCALE
JOB NO.	49297
SHEET NO.	C-7.3

COMMONWEALTH OF VIRGINIA
Mathew S. Vetter
Lic. No. 048415
11-29-2021
PROFESSIONAL ENGINEER

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Richmond, VA 23225

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www.timmons.com

September 21, 2021

Mr. Anthony Hinds
Suffolk Public Schools
100 N Main St.
Suffolk, VA 23434

Re:
Seasonal High Water Table Estimates
Lakeland High School
Suffolk, VA

Dear Mr. Hinds,

A field investigation was performed by Timmons Group on September 2, 2021 for a proposed stormwater facility (BMP) associated with the Lakeland High School sports field in Suffolk, VA. Four (4) soil borings were completed within the proposed BMP to evaluate for the presence of a seasonal high-water table (SHWT) or restrictive layers. Locations for the borings are included in Attachment 1: SHWT Estimate Location Map.

Background Information

The purpose of this assessment was to determine the feasibility of an infiltration type BMP for stormwater management at the Lakeland High School (Site). The Site is located along Kenyon Road in Suffolk, VA. The limit of our evaluation was confined to the footprint of the proposed BMP.

Preliminary desktop analysis was conducted for the Site prior to field investigation. Preliminary evaluation utilized the Natural Resource Conservation Service (NRCS) Web Soil Survey desktop application to identify the existing soil series within the footprint of the proposed BMPs. Four (4) distinct soil series were identified: Eunola loamy fine sand, 0 to 2 percent slopes (8A); Eunola loamy fine sand, 2 to 6 percent slopes (8B); Lynchburg fine sandy loam (14); and Suffolk loamy sand, 2 to 6 percent slopes (22B). A full description of each soil series is included as Attachment 2: Soil Series Information.

Preliminary soil evaluation suggested that the native soil series range from "somewhat poorly drained" to "well drained" with a depth to water table ranging from 6 to 30 inches. The native soils have a hydrologic soil group rating that ranges from "C" to "B". The soil series are described as having a "moderately high" to "high" capacity to transmit water in the most limiting layer (Ksat 0.57 – 1.98 in/hr).

Field Investigation

The soil evaluation and seasonal high-water table determination were performed in accordance with Appendix 8-A of the Virginia Department of Environmental Quality (DEQ) Stormwater Design Specifications No. 8. According to specifications, four (4) soil borings were required for the proposed BMP. Exploratory borings were conducted in the vicinity of the borings to determine any limiting layers that may be encountered. No such soil layer was encountered; however, evidence of a shallow SHWT at the Site showed that groundwater is present within two feet of the bottom

of the proposed BMP for at least part of the year. A shallow SHWT will interfere with the proper function of an infiltration BMP.

Soil boring profiles and seasonal high-water table estimates were collected for each boring location. A summary of the soil boring profiles is included in Attachment 3: Soil Boring Profiles and SHWT Estimate Data. SHWT was estimated by observing soil profiles with low chroma matrix colors and redoximorphic concentrations characteristic of anaerobic conditions. Based on soil morphology, SWHT ranged from 20 to 24 inches below ground surface (BGS).

Please feel free to contact Parker Culver at parker.culver@timmons.com or 804-200-5974 if you need any additional information.

Sincerely,
Timmons Group

Parker Culver
Environmental Technician

Enclosure
CC:

- Dan Ruby, Timmons Group
- Hunter Wines, Timmons Group

Attachments:

1. SHWT Estimate Location Map
2. Soil Series Information
3. Soil Boring Profile and SHWT Estimate Data

ATTACHMENT 1
SHWT ESTIMATE LOCATION MAP

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Richmond, VA 23230
TEL 804.200.6500
www.timmons.com

LAKELAND HIGH SCHOOL
TURF REPLACEMENT
City of Suffolk, Virginia

DATE: 09/01/2021
PROJECT NUMBER: 48297
PROJECT NAME:
DESIGNED BY / DRAWN BY: H. WINES

NOTES:
Project Limits are approximate.
NWI from US Fish and Wildlife Service.
Soils data from SSURGO.
National Hydrography Dataset from USGS.
Aerial imagery from VGIN.

REVISIONS

#	MM/DD/YY	DESCRIPTION

DRAWING DESCRIPTION
SHWT LOCATION MAP

SCALE (FEET)
0 30 60
PLANS PRINTED IN SHEET ARE HALF SCALE
SCALE: H:1 " = 33 '
SHEET NUMBER: 1

V:\8048\48297-Lakeland_HS\GIS\BEM Field Map.mxd

ATTACHMENT 2
SOIL SERIES INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for City of Suffolk, Virginia

Lakeland High School Sports Field

September 21, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

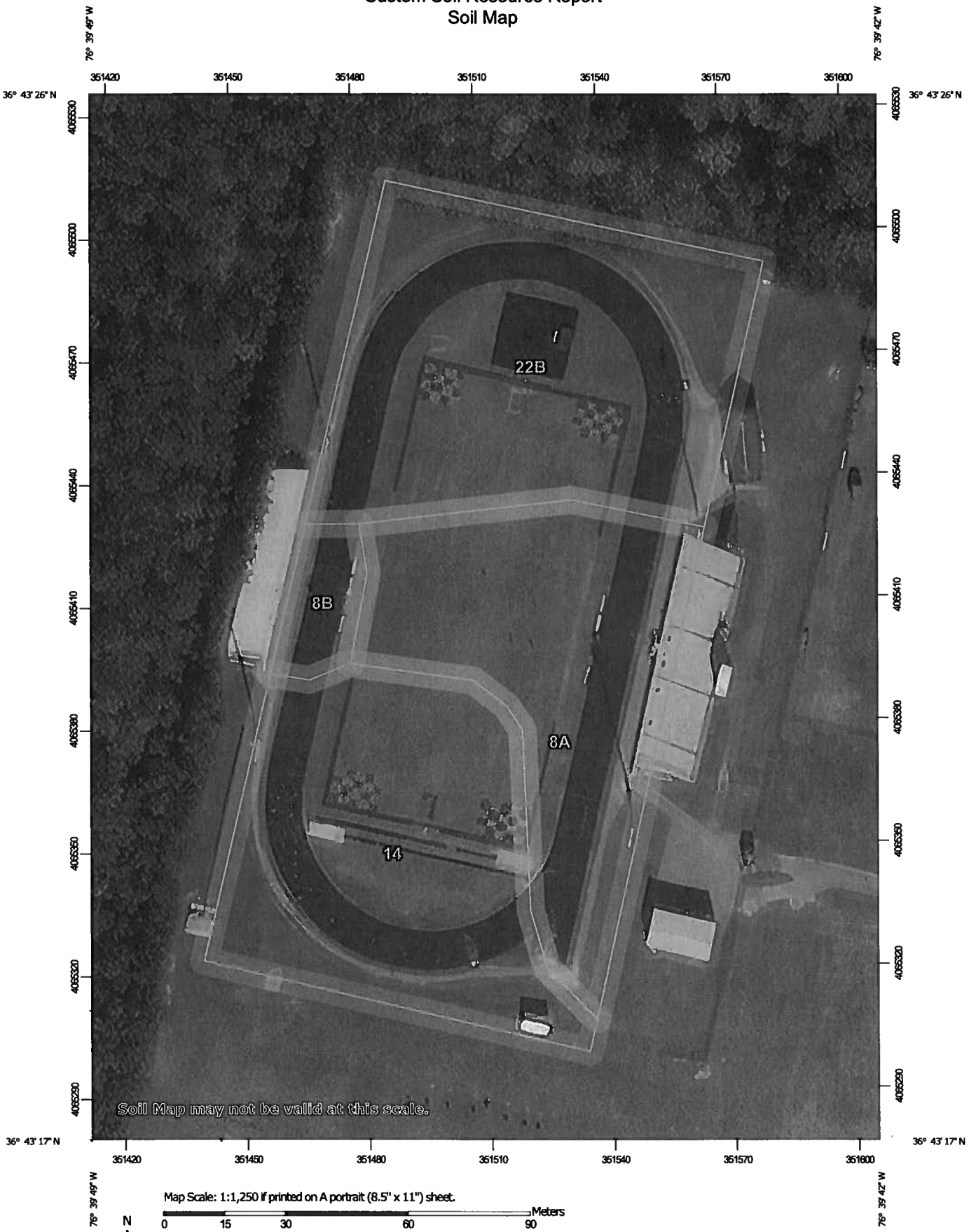
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,250 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: City of Suffolk, Virginia
Survey Area Data: Version 14, Jun 15, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 7, 2016—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8A	Eunola loamy fine sand, 0 to 2 percent slopes	1.3	28.3%
8B	Eunola loamy fine sand, 2 to 6 percent slopes	0.2	3.4%
14	Lynchburg fine sandy loam	1.5	31.2%
22B	Suffolk loamy sand, 2 to 6 percent slopes	1.7	37.1%
Totals for Area of Interest		**4.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

City of Suffolk, Virginia

8A—Eunola loamy fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 41s8
Elevation: 120 to 450 feet
Mean annual precipitation: 43 to 53 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 165 to 192 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eunola and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eunola

Setting

Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 63 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

8B—Eunola loamy fine sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 41s9

Elevation: 120 to 450 feet
Mean annual precipitation: 43 to 53 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 165 to 192 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Eunola and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eunola

Setting
Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile
H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 63 inches: fine sandy loam

Properties and qualities
Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

14—Lynchburg fine sandy loam

Map Unit Setting
National map unit symbol: 41r7
Elevation: 40 to 450 feet
Mean annual precipitation: 43 to 53 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 165 to 192 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lynchburg and similar soils: 80 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lynchburg

Setting

Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

H1 - 0 to 13 inches: fine sandy loam
H2 - 13 to 63 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Rains

Percent of map unit: 8 percent
Landform: Depressions
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

22B—Suffolk loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 41rr

Elevation: 30 to 150 feet
Mean annual precipitation: 43 to 53 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 165 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Suffolk and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suffolk

Setting

Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

H1 - 0 to 11 inches: loamy sand
H2 - 11 to 47 inches: sandy clay loam
H3 - 47 to 65 inches: loamy sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

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ATTACHMENT 3
SOIL BORING PROFILE AND SHWT ESTIMATE DATA

Attachment 3: Soil Boring Profiles & Seasonal High Water Table Estimates

Location: BH-1	Date: 09/02/2021		Evaluator: P. Culver				Surface Elevation: ~ 67 ft. above mean sea level
	Matrix		Mottle				
Depth (inches)	Color	%	Color	%	Type	Texture	Remarks
0-4	10YR 3/2	100				SL	
4-13	2.5Y 5/4	100				SL	
13-20	2.5Y 5/4	87	7.5YR 5/8	10	C	SCL	
			2.5Y 6/3	3	D		
20-30+	2.5Y 6/1	55	7.5YR 5/8	45	C	SCL	SHWT Estimated to occur at 20" BGS based on strong presence of soil redoximorphic features

Comments: bgs = Below Ground Surface; Textures: L = Loam, C = Clay, S = Sand, CL = Clay Loam, SiL = Silt Loam, SC = Sandy Clay, SiCL = Silty Clay Loam, SCL = Sandy Clay Loam, LS = Loamy Sand, FSL = Fine Sandy Loam, SL = Sandy Loam, COS = Coarse Sand, FS = Fine Sand; Mottle Type: C= Concentrations and D = Depletions.

Location: BH-2	Date: 09/02/2021		Evaluator: H. Wines, P. Culver				Surface Elevation: ~ 67.5 ft. above mean sea level
	Matrix		Mottle				
Depth (inches)	Color	%	Color	%	Type	Texture	Remarks
0-6	10YR 2/2	100				SL	
6-14	2.5Y 5/4	100				FSL	
14-21	2.5Y 6/4	88	7.5YR 5/6	12	C	SCL	
21-29+	2.5Y 6/4	70	2.5Y 6/2	20	D	SCL	SHWT Estimated to occur at 21" BGS based on strong presence of soil redoximorphic features
			7.5YR 5/6	10	C		

Comments: bgs = Below Ground Surface; Textures: L = Loam, C = Clay, S = Sand, CL = Clay Loam, SiL = Silt Loam, SC = Sandy Clay, SiCL = Silty Clay Loam, SCL = Sandy Clay Loam, LS = Loamy Sand, FSL = Fine Sandy Loam, SL = Sandy Loam, COS = Coarse Sand, FS = Fine Sand; Mottle Type: C= Concentrations and D = Depletions.

Location: BH-3	Date: 09/02/2021		Evaluator: P. Culver				Surface Elevation: ~ 67..5 ft. above mean sea level
	Matrix		Mottle				
Depth (inches)	Color	%	Color	%	Type	Texture	Remarks
0-8	10YR 2/2	100				SL	
8-24	10YR 5/6	90	7.5YR 6/6	10	C	SCL	
24-32+	10YR 5/6	75	2.5Y 6/2	15	D	SCL	SHWT Estimated to occur at 24" BGS based on strong presence of soil redoximorphic features
			7.5YR 5/6	10	C		

Comments: bgs = Below Ground Surface; Textures: L = Loam, C = Clay, S = Sand, CL = Clay Loam, SiL = Silt Loam, SC = Sandy Clay, SiCL = Silty Clay Loam, SCL = Sandy Clay Loam, LS = Loamy Sand, FSL = Fine Sandy Loam, SL = Sandy Loam, COS = Coarse Sand, FS = Fine Sand; Mottle Type: C= Concentrations and D = Depletions.

Location: BH-4	Date: 09/02/2021		Evaluator: P. Culver				Surface Elevation: ~ 67 ft. above mean sea level
	Matrix		Mottle				
Depth (inches)	Color	%	Color	%	Type	Texture	Remarks
0-9	10YR 3/1	100				SL	
9-20	2.5Y 5/2	75	7.5YR 4/6	25	C	SCL	
20-24	10YR 2/1	100				SCL	
24-33	2.5Y 4/2	100				SL	SHWT Estimated to occur at 24" BGS based on strong presence of soil redoximorphic features; Perched water table noted at 9 inches BGS.
33-42+	2.5Y 5/4	70	2.5Y 6/2	30	D	SCL	

Comments: bgs = Below Ground Surface; Textures: L = Loam, C = Clay, S = Sand, CL = Clay Loam, SiL = Silt Loam, SC = Sandy Clay, SiCL = Silty Clay Loam, SCL = Sandy Clay Loam, LS = Loamy Sand, FSL = Fine Sandy Loam, SL = Sandy Loam, COS = Coarse Sand, FS = Fine Sand; Mottle Type: C= Concentrations and D = Depletions.

Table 1: Soil Series Information				
Soil Series	**Drainage Class**	**Depth to Water Table**	**Depth to Restrictive Layer**	**HSG**
8A	Moderately Well Drained	18-30 inches	>80 inches	C
8B	Moderately Well Drained	18-30 inches	>80 inches	C
14	Somewhat Poorly Drained	6-18 inches	>80 inches	B/D
22	Well Drained	>80 inches	>80 inches	B