



State of Rhode Island
Department of Administration / Division of Purchases
One Capitol Hill, Providence, Rhode Island 02908-5855
Tel: (401) 574-8100 Fax: (401) 574-8387

ADDENDUM # 1

1/12/15

Solicitation #7549150

Title: Provide Site Improvements at the Knight Campus Baseball Field

Submission Deadline: 1/22/15 @ 10:00 AM

Per the issuance of ADDENDUM # 1 the following are noted:

- Pre-Bid Questions, Response to Comments, and Concerns
- Revised Bid –Form

Prospective bidders and all concerned are hereby advised of the attached changes/modifications for the above referenced RFQ and are hereby requested to change their copies accordingly.

Interested Parties should monitor this website on a regular basis, for any additional information that may be posted.

Gary P. Mosca
Senior Buyer



State of Rhode Island
 Division of Purchases
 One Capitol Hill
 Providence, RI 02908

"NON-MANDATORY" PRE-BID CONFERENCE SIGN IN SHEET

BID NUMBER:	7549150
BID TITLE:	Provide Site Improvements at the Knight Campus Baseball Field
PRE-BID DATE AND TIME:	1/7/15 @ 9:00 AM

Purchasing Representative:	Gary P. Mosca
Pre-bid START TIME:	9:00 AM
Pre-bid END TIME:	5:15 PM

COMPANY NAME	COMPANY REPRESENTATIVE	ADDRESS	CONTACT EMAIL	CONTACT PHONE NUMBER	CONTACT FAX NUMBER	PROPOSAL SUBMITTED (for Purchasing Use Only)
1 SHPE OF RI	GARY P. MOSCA	ONE CAPITAL HILL	GARY.MOSCA@PURCHASE.STATE.RI.GOV	401-594-8124	401-594-8387	
2 ROBERT LANNI CONSTRUCTION	ROBERT LANNI	321 TRAIN RIVER RD PROVIDENCE RI 02908	ROBERT.LANNI@YAHOO.COM	401-723-8850		
3 APTIVELY	BILLY BUCKLEY	150 CHESTNUT ST PROVIDENCE RI 02908	BILLYBUCKLEY@APTIVELY.COM	401-438-2071		
4 WILSON ANTHONY CONSTRUCTION	SIM MORSE	3666 QUINCE LN N. PROVIDENCE RI 02908	JIM@WILSONCONSTRUCTION.COM	401-294-2320	401-294-2391	
5 C C REE	MARK LIBITTI	WARWICK, RI		401-825-2380		
6 CARL	KRISTY TORRES	WARWICK RI		825-2444		
7 SITE TECH CORP	MIKE LESARO	184 BUTTWHOLE DR PROVIDENCE, RI 02909	MESARO@SITE-TECH.COM	401-490-7483	401-490-7629	
8 BB INC	SCOTT BEASLEY	330 STATION ST CRANSTON, RI 02906	SCOTT@BBINC.COM	401-781-7350		
9 CCR I	MICHAEL HARRIS	WARWICK RI	MICHAEL@CCR1.COM	401-825-1177	401-825-2248	
10 CCR I	STEVE ROONEY	WARWICK RI	STEVE@CCR1.COM	825-2204		
11 CCR I	JOE PAURO	WARWICK RI	JOE@CCR1.COM	825-1123		
12 BELLOSCOP, LLC	JOE CONSO	CRANSTON RI	JOE@BELLOSCOP.COM	825-5027		
13 CCR I	KEN MCGASS	WARWICK		825-2111		
14						
15						

1/12/15

Pre-Bid Questions, Response to Comments, and Concerns

Solicitation No. 7549150

Provide Site Improvements at the Knight Campus Baseball Field

DETAILS/PLANS:

- 1.0 **ADD:** SKL-001 and SKL-002 which indicate new black vinyl chain link fence, posts and foundations directly in front of both dugouts as part of the scope of this contract.
- 2.0 **ADD:** SKL – 003 which indicates loam and seed in areas outside of baseball field fence.

SPECIFICATIONS:

- 1.0 **REMOVE:** Specification Document 2014-12 in its entirety.
REPLACE WITH: Specification Document 2014-12-R1 as attached to this addendum.
- 2.0 **REMOVE:** Specification 00 70 01 – AIA A101 – 2007 in its entirety.
REPLACE WITH: Specification 00 70 01 – AIA A101-2007-R1 as attached to this addendum.
- 3.0 **REMOVE:** Specification 00 31 32 Geotechnical Data in its entirety.
REPLACE WITH: Specification 00 31 32 Geotechnical Data as attached to this addendum as attached to this addendum.
- 4.0 **ADD:** Add to specification 11 68 00 Section 2.4:
“ 2.4 BALLFIELD PROTECTION EQUIPMENT
A. Protective Fence Guard: Protective Fence Guard shall be heavy-duty UV resistant polyethylene, 2 5/8” x 4” x 8’ long and have heavy-duty UV resistant ties. Color shall be yellow.”
- 5.0 **REMOVE:** Specification 32 92 30 – 4 Section 3.2 B line item 1: “The contractor shall keep all sodded areas watered and in good condition, resodding if and when necessary for an 8 week period or until a good, healthy uniform growth is established over the entire area.”

REPLACE WITH: “The contractor shall keep all sodded area watered and in good condition, resodding if and when necessary for a minimum of one growing seasons as outlined in Section 1.6 D of this specification or until a good, healthy uniform growth is established over the entire area.”

6.0 **REMOVE:** Specification 32 92 30 – 4 Section 3.3 A line item 1: “The contractor shall keep all sodded areas maintained in an approved condition for an 8 week period, including mowing.”

REPLACE WITH: “The contractor shall keep all sodded areas maintained in an approved condition for a minimum of one growing season as outlined in Section 1.6 D of this specification or until a good, healthy uniform growth is established over the entire area.

7.0 **REMOVE:** Specification 32 92 30 – 4 Section 3.4 D line item 1: “Final acceptance will not be given for a minimum of 8 weeks after provisional acceptance, and only upon written statement from the landscape architect verifying that sod is satisfactory.”

REPLACE WITH: “Final acceptance will not be given for a minimum of one growing seasons as outlined in Section 1.6D of this specification or until a good healthy uniform growth is established over the entire area.”

8.0 **ADD:** Add the following line to 32 92 30 in regards to fertilization during maintenance:

“3.7 APPLICATION OF FERTILIZER:

A. Complete fertilizer in granular form shall be applied per Specification 329210 – Soil Preparation for Athletic Fields.”

CLARIFICATIONS:

1.0 The numbering on the pages do not match with the numbers in the drawings set.

Response: All plans in the set are included in the online submission. For you reference the following plans are outlined below:

Cover	Cover	1 of 8
GN-1	Legend and General Notes	2 of 8
D-1	Existing Conditions & Demolition Plan 1	3 of 8
S-1	Site Improvement Plan 1	4 of 8
G-1	Grading Plan 1	5 of 8
U-1	Drainage and Erosion Control Plan 1	6 of 8
C-1	Civil Details	7 of 8

- 3.0 The Geo-tech report does not include the additional information and notes that it can be provided upon request. Is there information that in the geo-tech report that should be relayed to the contractor?
Response: Included in this addendum, the additional information regarding geo-tech is added to the specifications (See Specifications in this Addendum).
- 4.0 What is the extent of the irrigation work within the project?
Response: It is the intent of the irrigation to replace the existing system damaged during the construction process in kind. It is the owner's desire to include in the bid the replacement of the zone valves.
- 5.0 Will the contractor have access to the irrigation system during the period to final acceptance?
Response: During the installation and during the time of provisional acceptance to final acceptance the contractor will have access to the irrigation system. To the point of final acceptance, the contractor will be responsible for the irrigation of the field. At that time the field will be turned over to the owner.
- 6.0 Is there a specified clay mix?
Response: See Specification 32 18 17 Special Surfaces for the clay mix. Please note that there is a different clay mix for the infield (See 2.2) versus the warning track surface (See 2.3). Also note that there will be strict adherence to Section 1.4 Minimum Requirements.
- 7.0 Is the warning track in the outfield being addressed?
Response: The warning track will be addressed in this contract per Plan Sheet S-1 "Overall Site Improvement plan" and associated details and specifications.
- 8.0 The contract documents indicate the sanitization of the water line, is this required?
Response: The water line and the irrigation line is connected to the water line feeding the drinking fountains within the dugout. It is the owner's desire that the sanitization of the lines is included in this bid price.
- 9.0 There is language in the specification regarding mandrel drilling, is this a requirement.
Response: Mandrel drilling is not a requirement of this project.
- 10.0 The documents indicate a detail for sod, can you clarify if this detail is to be used for all areas including areas outside of the baseball field fence.

Response: All disturbed areas inside of the baseball field fence will include the sod detail as provided on 6/LD-1. All areas outside of the fence will use the detail provided SKL-003 of this addendum.

11.0 It is the owners desire to include protective fence guard to all fence areas around the field including the additional fence in front of the dugout. The backstop will not receive protective fence guard.

12.0 The Contract Time has changed due to the Owner's Baseball scheduling conflicts. The new dates are as follows:

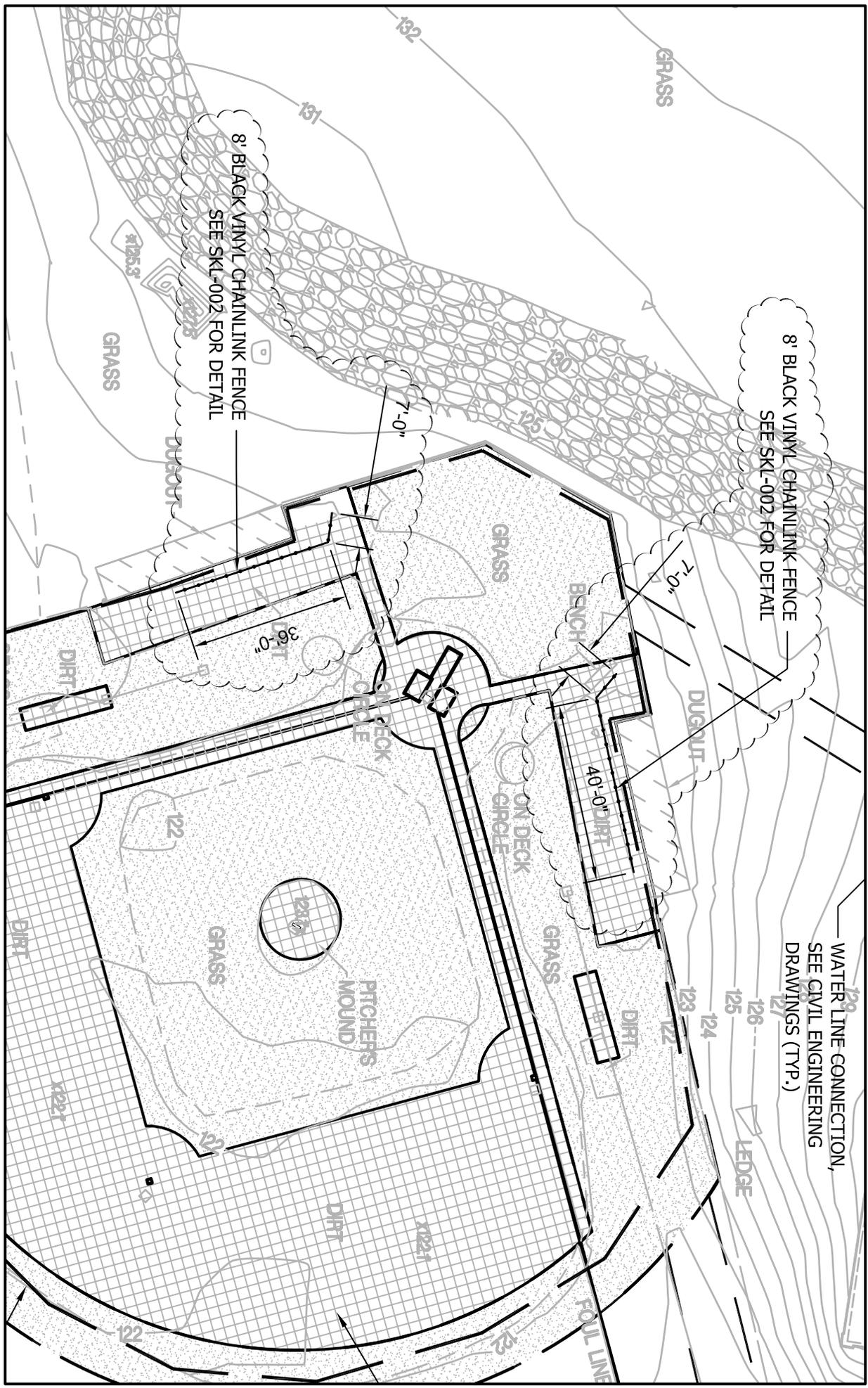
Start of construction:	6/01/2015
Substantial completion:	8/10/2015
Final completion:	8/24/201

See attached new bid form as attached to this addendum.

13.0 The owner has requested that as part of this contract that the contractor is responsible for mowing, fertilizing, and watering the sod for a minimum of one growing season as outlined in Specification 32 92 30

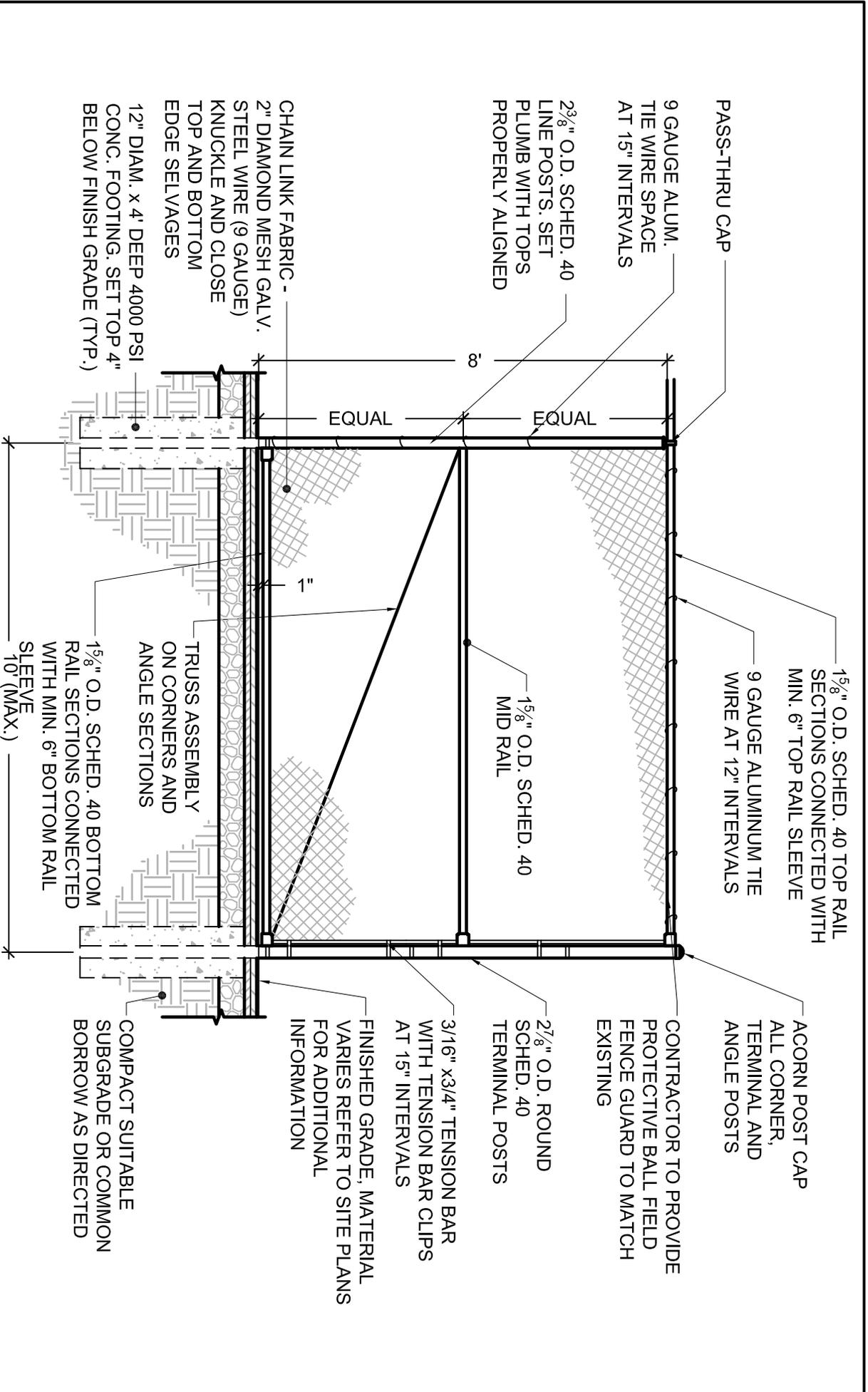
CCRI: KNIGHT BASEBALL FIELD

WARWICK, RI



DRAWN BY:	AJE
SCALE:	1"=30'-0"
JOB NO.:	PI027
DATE:	

REF DWG:	SKL-001	S-1
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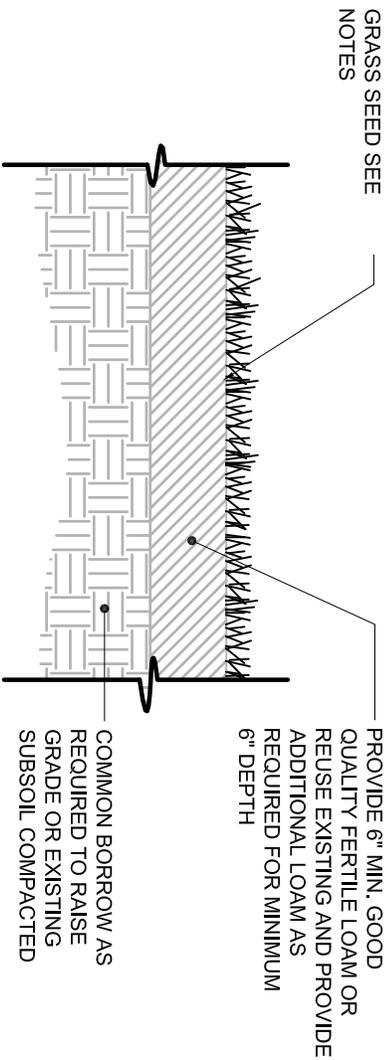
CCRI: KNIGHT BASEBALL FIELD

WARWICK, RI

**BIRCHWOOD
DESIGN GROUP**

DRAWN BY:	AJE
SCALE:	3/8" = 1'0"
JOB NO.:	P1027
DATE:	

SKL-002	
REF DWG:	N/A



LOAM AND SEED

SCALE: NOT TO SCALE

NOTE:

1.0 SEED MIX: PURE, LIVE FRESH SEED FROM COMMERCIAL SOURCES MEETING AND LABELED IN ACCORDANCE WITH STATE AND FEDERAL LAWS, RULES AND REGULATIONS. ALL SEED TO HAVE A MINIMUM GERMINATION OF 85%.

SEED MIX SHALL CONFORM TO THE FOLLOWING GRASS TYPES AND PERCENTAGES:

IMPROVED PERENNIAL RYE	25%
IMPROVED ANNUAL CREEPING RED FESCUE	25%
TURF TYPE TALL FESCUE	18.5%
KENTUCKY BLUEGRASS 98/85	5%
RED TOP	1%
COLONIAL BENTGRASS	0.5%

SOWING RATE: 5 TO 7 POUNDS PER 1,000 SQ. FT.
OVERSEED SOWING RATE: 2 TO 3 POUND FOR 1,000 SQ. FT.

**BIRCHWOOD
DESIGN GROUP**

150 CHESTNUT STREET, 4TH FLOOR PROVIDENCE, RI 02903 401.353.4850 •

**CCRI: KNIGHT BASEBALL FIELD
WARWICK, RI**

DRAWN BY:	AJE
SCALE:	NTS
JOB NO.:	P1027
DATE:	

REF DWG:	N/A
SKL-003	

Solicitation #:7548863

Solicitation Title: Provide Site Improvements at the Knight Campus
Baseball Field

BID FORM

To: The State of Rhode Island Department of Administration
Division of Purchases, 2nd Floor
One Capitol Hill, Providence, RI 02908-5855

Bidder:

Legal name of entity

Address (street/city/state/zip)

Contact name Contact email

Contact telephone Contact fax

1. BASE BID PRICE

The Bidder submits this bid proposal to perform all of the work (including labor and materials) described in the solicitation for this Base Bid Price (*including the costs for all Allowances, Bonds, and Addenda*):

\$ _____

(base bid price *in figures* printed electronically, typed, or handwritten legibly in ink)

(base bid price *in words* printed electronically, typed, or handwritten legibly in ink)

• **Allowances**

The Base Bid Price ***includes*** the costs for the following Allowances:

No. 1: **Ledge/Rock Removal** \$ **35,000** _____

No. 2: _____ \$ _____

No. 3: _____ \$ _____

Solicitation #:7548863

Solicitation Title: Provide Site Improvements at the Knight Campus
Baseball Field

Total Allowances: \$ 35,000

- **Bonds**

The Base Bid Price ***includes*** the costs for all Bid and Payment and Performance Bonds required by the solicitation.

- **Addenda**

The Bidder has examined the entire solicitation (including the following Addenda), and the Base Bid Price ***includes*** the costs of any modifications required by the Addenda.

All Addenda must be acknowledged.

Addendum No. 1 dated: _____

Addendum No. 2 dated: _____

Addendum No. 3 dated: _____

2. ALTERNATES (Additions/Subtractions to Base Bid Price)

The Bidder offers to: (i) perform the work described in these Alternates as selected by the State in the order of priority specified below, based on the availability of funds and the best interest of the State; and (ii) increase or reduce the Base Bid Price by the amount set forth below for each Alternate selected.

Solicitation #:7548863

Solicitation Title: Provide Site Improvements at the Knight Campus
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Check "Add" or "Subtract."

____ Add ____ Subtract Alternate No. 1:

\$ _____
(amount *in figures* printed electronically, typed, or handwritten legibly in ink)

(amount *in words* printed electronically, typed, or handwritten legibly in ink)

____ Add ____ Subtract Alternate No. 2: _____

\$ _____
(amount *in figures* printed electronically, typed, or handwritten legibly in ink)

(amount *in words* printed electronically, typed, or handwritten legibly in ink)

____ Add ____ Subtract Alternate No. 3: _____

\$ _____
(alternate amount *in figures* printed electronically, typed, or handwritten legibly in ink)

(alternate amount *in words* printed electronically, typed, or handwritten legibly in ink)

3. UNIT PRICES

The Bidder submits these predetermined Unit Prices as the basis for any change orders approved in advance by the State. These Unit Prices include **all** costs, including labor, materials, services, regulatory compliance, overhead, and profit.

Unit Price No. 1: **Sod** _____ \$ _____

Solicitation #:7548863
Solicitation Title: Provide Site Improvements at the Knight Campus
Baseball Field

Unit Price No. 2: Infield Mix \$ _____

4. CONTRACT TIME

The Bidder offers to perform the work in accordance with the timeline specified below:

- Start of construction: 6/01/2015
-
- Substantial completion: 8/10/2015
- Final completion: 8/24/2015

5. LIQUIDATED DAMAGES

The successful bidder awarded a contract pursuant to this solicitation shall be liable for and pay the State, as liquidated damages and not as a penalty, the following amount for each calendar day of delay beyond the date for substantial completion, as determined in the sole discretion of the State: \$ 500.00/Day

This bid proposal is irrevocable for 60 days from the bid proposal submission deadline.

If the Bidder is determined to be the successful bidder pursuant to this solicitation, the Bidder will promptly: (i) comply with each of the requirements of the Tentative Letter of Award; and (ii) commence and diligently pursue the work upon issuance and receipt of the purchase order from the State and authorization from the user agency.

The person signing below certifies that he or she has been duly authorized to execute and submit this bid proposal on behalf of the Bidder.

Solicitation #:7548863

Solicitation Title: Provide Site Improvements at the Knight Campus
Baseball Field

BIDDER

Date: _____

Name of Bidder

Signature in ink

Printed name and title of person signing on behalf of Bidder
#

Bidder's Contractor Registration Number



AIA[®] Document A101[™] – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of _____ (Date of issuance of Owner's Purchase Order)

BETWEEN the Owner:

The State of Rhode Island, acting by and through the Department of Administration
Division of Purchases, on behalf of the User Agency
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855
(401) 574-8100 (telephone)
(401) 574-8387 (facsimile)
www.purchasing.ri.gov

and the Contractor:

(Name, legal status, address, telephone and facsimile numbers, and web address)

for the following Project: (Name, location, and detailed description)

The User Agency:

(Name of user agency, address, telephone and facsimile numbers, and web address)

The Design Agent:

(Name, legal status, address, telephone and facsimile numbers, and web address)

The Owner and Contractor agree as follows.

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201[™]-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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User Notes:

(1800875889)

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
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5	PAYMENTS
6	DISPUTE RESOLUTION
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8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS
10	INSURANCE AND BONDS
11	BENEFITS OF AGREEMENT

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General Conditions, Supplementary, if any, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. No part of the Work shall be performed by Subcontractors without the Owner's prior written consent.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work

(Paragraphs deleted)

will be stipulated by the User Agency. The Contractor shall be authorized to commence the Work *only* upon the issuance of the Purchase Order by the Owner *and* an authorization from the User Agency.

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Init.

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Paragraphs deleted)

§ 3.4 The Contractor and the Contractor's surety shall be liable for and shall pay the Owner the sums stipulated herein as liquidated damages, and not as penalty, for each calendar day of delay until the Work is substantially complete: _____ (\$ _____) Dollars.

§ 3.5 The Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be _____ Dollars (\$ _____), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates)

§ 4.3 Unit

(Paragraphs deleted)

prices are specified in the Bid Form.

§ 4.4 Allowances

(Paragraphs deleted)

are specified in the Bid Form.

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Design Agent by the Contractor and Certificates for Payment issued by the Design Agent and approved by the Owner in writing, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents, and in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq..

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 The Owner shall make payment of the certified amount to the Contractor not later than the 30th working day following written approval by the Owner.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and Owner may require.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

Init.

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of five percent (5 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5 %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Design Agent has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Design Agent shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8

(Paragraphs deleted)

Intentionally omitted.

§ 5.1.9 Except with the Owner's prior written approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 a final Certificate for Payment has been issued by the Design Agent and approved in writing by the Owner; and
- .3 the Contractor has submitted its final waiver of lien and final waivers of lien from all of its Subcontractors and suppliers in a form acceptable to the Owner; and
- .4 the Contractor has submitted to the Owner all close-out documents, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 working days after the issuance of the Design Agent's final Certificate for Payment and written approval by the Owner, and in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq..

§ 5.3 OWNER'S RIGHTS

§ 5.3.1 The Owner shall have the right to deduct from any payments due to the Contractor the amount of any unpaid obligations owed to the State of Rhode Island by the Contractor, including without limitation, any and all unpaid taxes, and to pay the amount of such deductions to the Controller of the State of Rhode Island.

§ 5.3.2 The Owner shall have the right to deduct from any payments due to the Contractor the amount of any claim against the Contractor arising out of this Agreement or on account of any other reason.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

§ 6.1.1 The Purchasing Agent appointed pursuant to the provisions of the "State Purchases Act," R.I. Gen. Laws §§ 37-2-1 et seq., will serve as Initial Decision Maker in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and Section 15.2 of AIA Document A201-2007.

§ 6.1.2 For any Claim (as defined in Section 15.1.1 of AIA Document A201-2007) not resolved by the procedures set forth in § 6.1.1, the parties shall use their best efforts to resolve such Claim by mediation in Providence, Rhode Island. Any party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other parties, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by all of the parties. In the event that the parties are unable to resolve any and all Claims through mediation, then any party may pursue the legal remedies provided in § 6.2

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim not resolved by the Initial Decision Maker procedures set forth in § 6.1.1 or the mediation procedures pursuant to § 6.1.2, the method of binding dispute resolution shall be

(Paragraphs deleted)

determined in accordance with the provisions of the State Purchases Act, R.I. Gen. Laws §§ 37-2-1 et seq., the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq., the "Administrative Procedures Act," R.I. Gen. Laws §§ 45-35-1 et seq., and the State of Rhode Island Procurement Regulations.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007. The Contract may also be terminated by the Owner: (i) in the event of the unavailability of appropriated funds; (ii) in the absence of a determination of continued need; or (iii) as otherwise provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase or other applicable law.

§ 7.2 The Work may be suspended by the Owner as provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase and/or Article 14 of AIA Document A201-2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2

(Paragraphs deleted)

No interest shall be due or payable on account of any payment due or unpaid except in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

§ 8.3 State of Rhode Island Representatives.

§ 8.3.1 The Owner's representative:

(Name, title, address, and other information for the preferred methods of contact)

§ 8.3.2 The User Agency's representative:
(Name, title, address, and other information for the preferred methods of contact)

§ 8.4 The Contractor's representative.
(Name, title, address, and other information for the preferred methods of contact)

§ 8.5 The Design Agent's representative.
(Name, title, address, and other information for the preferred methods of contact)

§ 8.6 Neither the Owner's, nor the Contractor's, nor the Design Agent's representative shall be changed without ten days written notice to the other parties.

§ 8.7 Other provisions.

§8.6.1 The Contractor represents and warrants to the Owner, in addition to any other representations and warranties of the Contractor elsewhere in the Contract Documents:

.1 The Contractor and its Subcontractors are each financially solvent, able to pay their debts as they mature, and possessed of sufficient working capital to perform their obligations under the Contract Documents.

.2 The Contractor and its Subcontractors are each able to furnish the materials, equipment, and labor required to complete the Project as required under the Contract Documents.

.3 The Contractor has visited the site of the Project, familiarized itself with the local and special conditions under which the Work is to be performed, and correlated its observations with the requirements of the Contract Documents.

.4 The Contractor possesses the requisite level of experience and expertise in the business administration, construction, and superintendence of projects of the size, complexity, and nature of the Project, and it will perform the Work with the care, skill, and diligence of such a contractor.

§8.6.2 The representations and warranties of the Contractor in the Contract Documents will survive the execution and delivery of this Agreement, any termination of the Agreement, and the final completion of the Work.

§8.6.3 Any Change Orders or other Modifications must be approved in writing by the Owner.

§8.6.4 The Owner is the State of Rhode Island, acting by and through its Department of Administration Division of Purchases, and therefore, pursuant to the provisions of R.I. Gen. Laws § 34-28-31, mechanics liens may not be placed against the Project.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

(Row deleted)

Document

State of Rhode Island

Procurement

Regulations

§ 9.1.4 The Specifications:

(Paragraphs deleted)

The Specifications are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

§ 9.1.5 The Drawings:

(Paragraphs deleted)

The Drawings are included in the Solicitation and are available on the Division of Purchases website at www.purchasing.ri.gov.

§ 9.1.6 The

(Paragraphs deleted)

Addenda issued pursuant to the Solicitation are available on the Division of Purchases website at www.purchasing.ri.gov

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1

(Paragraphs deleted)

The Solicitation issued by the Owner, including without limitation, the Invitation to Bid, the Instructions to Bidders, the Specifications and Drawings, any Addenda, and the Bid Checklist (with applicable forms)

.2 The Bid Proposal, including without limitation, the Bid Form and the Bidder Certification Cover Form

3. The Purchase Order issued by the Owner.

§ 9.1.8 This Agreement and the Contract Documents are subject to, and governed by, the laws of the State of Rhode Island, including all procurement statutes and regulations (available at www.purchasing.ri.gov), and applicable federal

Init.

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User Notes:

(1800875889)

and local law, all of which are incorporated into this Agreement by this reference.

§ 9.1.9 In the event of any conflict between the State of Rhode Island Procurement Regulations or any provision of the Rhode Island General Laws and the Supplementary and other Conditions of the Contract or other Contract Documents, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in the Solicitation and Article 11 of AIA Document A201-2007.

ARTICLE 11 BENEFITS OF AGREEMENT

§ 11.1 **Third-party Beneficiary.** The User Agency is a disclosed third-party beneficiary of this Agreement and shall have all of the rights and benefits to which such a party is entitled hereunder.

(Table deleted)

§ 11.2 **Assignment.** This Agreement shall be binding on the Contractor and its successors and assigns; provided, however, that the Contractor may not assign its rights nor delegate its responsibilities under this Agreement without the Owner's prior written consent.

This Agreement is dated as of the day and year first written above; provided, however, that this Agreement shall not become a binding contract until the Owner has issued a Purchase Order pursuant to § 3.1. The person signing for the Contractor below represents that he or she has been duly authorized to execute this Agreement on behalf of the Contractor.

**THE STATE OF RHODE ISLAND, acting
by and through its Department of Administration
Division of Purchases**

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Document 00 31 32
GEOTECHNICAL DATA

SUMMARY

- A. Subsurface soil investigations have been made and findings are indicated on the following pages. The locations of the tests are indicated on the Exploration Location Plan. This report entitled "Geotechnical Report for CCRI Baseball Field", dated December 2013, prepared by Paul B. Aldinger & Associates, Inc.
- B. The data contained herein is for general information. The Contractor is required to read the soils report and visit the site to determine the character of the materials to be encountered. The Engineer and Owner will not assume responsibility for variations in subsoil quality or condition.

CONTENTS

- A. Included as part of this document are the following 37 pages:
 - 1. Written Report
 - 2. Figure 1: Locus Plan
 - 3. Figure 2: Exploration Location Plan
 - 4. Appendix A: Limitations
 - 5. Appendix B: Test Boring Logs
 - 6. Appendix C: Laboratory Analysis

END OF DOCUMENT

**GEOTECHNICAL INVESTIGATION REPORT
FOR
CCRI BASEBALL FIELD
WARWICK, RHODE ISLAND**

Prepared for:

Birchwood Design Group
46 Dike Street
Providence, RI 02909

Prepared by:

Paul B. Aldinger & Associates, Inc.
860A Waterman Avenue, Suite 9
East Providence, Rhode Island 02914

December 2013
PBA Project No. 13034

PAUL B. ALDINGER & ASSOCIATES, INC.
Consulting in Geotechnical Engineering & Groundwater Hydrology
860A Waterman Avenue, Suite 9 East Providence, R.I. 02914 (401) 435-5570

December 13, 2013

Mr. Arthur J. Eddy, Principal
Birchwood Design Group
46 Dike Street
Providence, RI 02909

Re: Geotechnical Evaluation & Report
Varsity Baseball Field Rehabilitation Project
Community College of Rhode Island
Warwick, RI
PBA No. 13034

Dear Mr. Eddy:

Paul B. Aldinger & Associates, Inc. (PBA) has completed this geotechnical engineering report for the above-referenced project in accordance with our proposal dated July 3, 2013. Our investigation and report are subject to the limitations that are outlined in Appendix A.

1.00 PROJECT DESCRIPTION

The project site is located on the Knight Campus of the Community College of Rhode Island (CCRI) in Warwick, Rhode Island. Figure 1, Site Vicinity Plan, provides the approximate site location of the project. The proposed project will consist of rehabilitation and upgrade of the existing baseball field. The existing field is located southeast of the main building and is bordered by an access roadway and parking area to the north and a soccer field to the south. It is our understanding the existing field is poorly draining, particularly within the infield area, and the proposed rehabilitation will help provide adequate drainage and as well as include additional field improvements.

We have reviewed the preliminary site plan, (undated) for the project which we received in electronic format. The plan provides the existing and proposed new field layout. It is anticipated that the outfield fences will be extended outward which will require a significant amount of fill as well as a retaining wall system considering the existing steep slope from the outfield to the adjacent lower soccer field. In addition to improving the drainage and expanding the field, improvements to the field are anticipated to include the installation of field lighting and potentially the construction of a new raised press box area behind home plate.

The objectives of our engineering services were to plan and monitor a subsurface exploration program, perform geotechnical engineering analyses, and develop an engineering report with specific earthwork and foundation design recommendations addressing the issues of field drainage and the proposed field improvements.

2.00 GEOLOGY

Surficial Geology - Based on a review of the *Surficial Geology Map of the East Greenwich Quadrangle, Rhode Island*, the surficial geology at the site location is designated as a ground moraine consisting of irregular layers of till of variable thickness deposited over bedrock with many boulders scattered on the surface.

Bedrock - We also reviewed the *Bedrock Geologic Map of Rhode Island*, to determine possible bedrock type and location in the area of the site. The bedrock beneath the site is reported to be a gray to dark gray, fine to coarse-grained quartz arenite, litharenite, shale, and conglomerate, part of the Rhode Island Formation.

3.00 SUBSURFACE EXPLORATION PROGRAM

PBA completed a subsurface exploration program that consisted of 11 test borings which were drilled by New Hampshire Boring, Inc. of Brockton, MA to approximate depths of 4 to 13 feet below the ground surface. The test borings were laid out in the field by taping from existing site features. The approximate locations of the borings are presented on Figure 2 and the logs are attached in Appendix B. Elevations provided on the test boring logs were approximated based on the project site plan.

Split spoon soil samples were taken continuously in the test borings conducted within the footprint of the playing field using a 2-foot long, 1³/₈-inch inside diameter split spoon sampler in substantial conformance with ASTM D1586, the Standard Penetration Test (SPT). Split spoon samples in the test borings along the perimeter of the field were taken at 5-foot intervals or at stratum changes. The standard ASTM method of driving the sampler was employed using a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler for each 6 inches of penetration was recorded. The number of blows required to drive the sampler from 6 to 18 inches of penetration is the SPT blow count (N-value), a commonly-used indicator of soil density.

4.00 SUBSURFACE CONDITIONS

4.10 Subsurface Conditions

- Topsoil - Approximately 3 to 7 inches of topsoil was typically encountered at the ground

surface in the explorations. Where encountered, this layer was underlain by;

- **Granular Fill** - Medium dense to dense granular fill consisting of fine to coarse sand with varying amounts of gravel and trace to some silt was encountered from approximately 1 to 6 feet below the ground surface. Within test boring B-11 performed near the homeplate area, the granular fill was very dense and contained as much as 32 percent silt. Samples collected within the outfield indicate a cleaner granular fill with much less fines (less than 10 percent). Given the nature of the granular fill and wide spacing between the test borings, the actual quantity of granular fill will likely vary across the site and we would expect deeper deposits along the southern portion of the field where the site was likely backfilled to level the playing surface. Where encountered, this stratum was underlain by;
- **Glacial Till** - Medium dense to very dense glacial till consisting of an unsorted mixture of fine to coarse sand with varying amounts of gravel and silt was encountered in all the test borings. The stratum is very compact and is know to consist of numerous cobbles and boulders. This stratum was underlain by;
- **Probable Bedrock** - Bedrock outcrops and possible large boulders are visible in the vicinity of the site primarily near the north and eastern side of the field. Although no bedrock was cored as part of this investigation, refusal on the split-spoon and/or auger within the test borings was encountered at approximate depths between 6 to 13 feet below the ground surface. Boring refusal is often indicative of either a large boulder or bedrock. Provided in Table 1 below is a summary of the bedrock and refusal information.

Table 1 Granular Fill and Refusal Depths

Boring Number	Approx. GS Elevation (ft)	Depth of Granular Fill (ft)	Depth to Refusal/Bedrock (ft)
B-1	+132	4 (El. +128)	6 (El. +126)
B-2	+120.5	4 (El. +116.5)	10.5 (El. +110.5)
B-3	+117.5	6 (El. +111.5)	13 (El. +104.5)
B-4	+129	1.5 (El. +127.5)	6.5 (E.l+122.5)
B-5	+120	1.0 (El. +119)	7 (El. +113)

Boring Number	Approx. GS Elevation (ft)	Depth of Granular Fill (ft)	Depth to Refusal/Bedrock (ft)
B-6	+105	3.5 (El. +101.5)	8 (+97)
B-7	+118.5	2 (El. +116.5)	8 (+110.5)
B-8	+119.5	4 (El. +115.5)	Not encountered to 4 feet
B-9	+119.5	3.5 (El. +116.5)	Not Encountered to 4 feet
B-10	+119.5	>4 (El. +115.5)	Not Encountered to 4 feet
B-11	+122	3.5 (El. +118.5)	Not Encountered to 4 feet

4.20 Groundwater Conditions

Groundwater was not encountered in the explorations at the time of completion. It should be noted that fluctuations in the levels of the groundwater, will likely occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made. It is not uncommon for groundwater levels to rise to near the surface of the glacial till during the spring season.

5.00 LABORATORY TESTING

Three grain size analyses were conducted to further characterize the site soils and to assess their reusability. The results of the grain size analyses are attached in Appendix C.

Boring No.	Sample No.	Soil Stratum	Percent Gravel	Percent Sand	Percent finer than #200 sieve	Soil Description with USCS Classification
B-9	S-1A & S-2 1.5 & 2 to 4'	Granular Fill	9.3	84.6	6.1	Brown fine to coarse SAND, trace Gravel and Silt (SP)
B-11	S-2 2'-4'	Granular Fill	2.7	65.1	32.2	Brown fine to medium SAND, some Silt, trace coarse Sand and Gravel (SM)
B-11	S-4 6'-8'	Granular Fill	5.0	75.8	19.2	Brown fine to medium SAND, little Silt, trace coarse Sand and Gravel (SM)

6.00 GEOTECHNICAL EVALUATION & RECOMMENDATIONS

It is anticipated that the new field project will include the following:

- Improvements to the overall field drainage particularly within the infield playing surface,
- Installation of new field lighting around the perimeter of the existing field,
- Expansion of the outfield area which would include moving the outfield fence outward and construction of an earth retaining system adjacent to the nearby soccer field, and,
- Possible construction of a raised press box structure directly behind the backstop area.

The results of the subsurface exploration program indicate that the soil underlying the site generally consists of granular fill overlying dense glacial till and bedrock. The thickness of the granular fill was generally greater along the outfield area which was likely a result of leveling the site grades for the playing field. The grade in the outfield varies from approximately elevation +119 to +120 and slopes steeply beyond the outfield fencing to an elevation of approximately elevation +105 near the adjacent soccer field. As a result, as much as 15 feet of granular fill may have been placed in this area. Along the infield area, the field was cut into the natural slope and only approximately 3.5 feet of granular fill was encountered. The grainsize analyses of the granular fill indicated two types of fill. A fairly well draining granular fill was encountered along the outfield while a silty material possibly excavated from the onsite glacial till was encountered within the infield area.

The underlying glacial till stratum is characterized as an unsorted mixture of sand, gravel, silt, cobbles and boulders. This stratum is known for being very compact as well as poorly draining. Bedrock appears relatively shallow in the vicinity of the infield and bedrock outcrops or possible large boulders are visible behind the home plate area as well as along the eastern side of the field. It is anticipated that bedrock varies from approximately elevation +97 to +126 across the site based on the refusal depths encountered within the explorations.

Based on our understanding of the subsurface conditions, we completed a geotechnical evaluation and have provided the following design recommendations.

6.10 Field Drainage

It is our understanding that the existing infield area is poorly draining and is prone to significant

ponding. The infield area which varies in grade from approximately +122 to +123 appears to have been cut into the existing site slope. Grades north and east of the site vary from approximately +133 to +140 and slopes toward the field which tends to direct surface water toward the field.

Soil samples taken within test boring B-11 near home plate indicate the field is directly supported on silty granular fill (approximately 3.5 feet) overlying dense glacial till. These strata have a high percentage of fines and do not allow rapid infiltration nor provide adequate drainage for the field.

Along the outfield area, several feet of granular fill was encountered consisted of relatively clean and well draining sand. The presence of this layer should allow the outfield to have much better drainage than the infield where the silty granular fill and glacial till strata are relatively close to the surface.

Based on the results of the grain size analyses, PBA estimated values of hydraulic conductivity (permeability) for the samples collected in the vicinity of the field which are provided in table below. The estimates were formed by three independent methods, including the Hazen formula, a method from the Army Corps of Engineers, and the Kozeny-Carmen equation. Hydraulic conductivity (permeability) typically can vary as much as 13 orders of magnitude for different soil types, and can vary over more than an order of magnitude within a soil type.

Estimate of Hydraulic Conductivity (Permeability)

Test Boring No. (Sample Depth)	Soil Stratum & Location	Hydraulic Conductivity (Permeability) cm/sec		
		USACE	Hazen	Kozeny-Carmen
B-9 S-1A & 2 (1.5' to 4')	Granular Fill Outfield	1.0×10^{-1}	4.0×10^{-2}	2.5×10^{-2}
B-11 S-1A (1'-2')	Granular Fill Infield	5.0×10^{-4}	4.0×10^{-4}	2.54×10^{-4}
B-11 S-2 (2'-4')	Granular Fill Infield	7.5×10^{-4}	1.2×10^{-3}	7.7×10^{-4}

The samples collected within the infield indicate a poorly draining soil with an average hydraulic conductivity varying from 2.8 to 9.2×10^{-4} cm/sec as compared to the outfield area which had an average value of 5.5×10^{-2} cm/sec. In order to improve the drainage of the field, we would recommend consideration of the following:

- 1.) Given the infield appears to be underlain by silty poorly draining granular fill and the close proximity of the glacial till stratum, we would recommend over-excavation of the infield area and replacement with a drainage layer consisting of a minimum of 18 inches of structural fill.
- 2.) In order to supplement the drainage layer, we would also recommend installation of field subdrains consisting of 4-inch diameter pvc pipes enveloped in filter fabric and crushed stone. Considering the site grades, the subdrain can likely be discharged by gravity to an area south of the site.
- 3.) The grade north and east of the ball field is currently steeply sloped toward the field which tends to direct surface water toward the field. Construction of a drain or drainage swale should be considered along the perimeter of the field fencing in order to help divert surface water away from the field.

6.20 Foundation Recommendations

6.21 Light Pole Pier Design

At this time, it is not known the extent or exact locations of the lighting system, however we anticipate that the new field light poles will likely be supported on concrete pier foundations (drilled shafts). Drilled shafts derive their vertical support from a combination of skin friction resistance along the shaft and from end bearing of the base of the shaft. Ultimate skin friction values are highly dependent on the construction methods used and the quality control practiced during construction.

Although we have not reviewed any loadings for the proposed light poles, considering that these structures are typically lightly loaded, the design and required embedment are usually more dependent on the lateral resistance and allowable deflection criteria. Once the locations and loading of the new light poles are finalized, we would recommend that PBA conduct a geotechnical lateral load analyses to ensure that the pile foundation is sufficiently embedded to resist the required loads. Given the depth to bedrock, some light pole locations may require drilling into bedrock. Considering the variation of amount of granular fill and typical undulation of the bedrock across the site, the foundation for each pole location will likely need to be adjusted to provide adequate lateral resistance. We would recommend that the shafts be supported in glacial till or bedrock layers and that all topsoil, subsoil, non-engineered granular fill, and any unsuitable deleterious material should be removed from below the foundation.

Recommended preliminary properties of the soil underlying the site for the design of the

piers are listed below:

Soil Friction Angle (f) Granular Fill Medium Dense Glacial Till	30 degrees 34 degrees
Rankine Passive Pressure Coefficient (Kp) Non-Engineered Granular Fill Glacial Till	3.00 3.40
Saturated/Buoyant Unit Weights (g) Granular Fill Glacial Outwash	120 / 58 lbs per cubic foot 130/ 68 lbs per cubic foot
Allowable Bearing of Base of Shaft Glacial Till	4 kips per square foot

6.22 Press Box Footing Design

It is our understanding that a raised press box structure is being considered behind the backstop of the field. In this area, the site grades from the playing field elevation of approximately +122 to approximately +132 at the top of the slope. Refusal indicative of bedrock was encountered at approximately +126.

We recommend that the structure be supported on spread footings supported on structural fill overlying the natural glacial till or bedrock following removal of all non-engineered fill. All topsoil, subsoil, non-engineered granular fill, and any unsuitable deleterious material should be removed beneath the footings and the building footprint. We would recommend that the footings be supported on a minimum 6-inches of compacted structural fill. All exterior footings supported on soil should be a minimum of three feet four inches below finished grade for protection from frost, as specified by the Rhode Island State Building Code. Minimum footing dimensions regardless of loads or embedment depths should not be less than 24 inches for either continuous wall footings or individual column footings.

We have not reviewed the geometry or footprint of the proposed structure, however based on computed ultimate bearing capacities with appropriate factors of safety, we would recommend a preliminary allowable soil bearing pressure for design of the foundation supported on soil should not exceed 4 kips per square foot. Footings supported on rock will likely have a higher ultimate capacity however, given that the explorations did not core

rock to assess amount of fracturing and weathering, we would recommend utilizing the allowable bearing capacity for soil (4 ksf). Estimated total settlement of the footings is anticipated to be less than one inch, and it is expected that this settlement will occur rapidly as the building is constructed. Long term consolidation of the underlying soils is not anticipated. Once the building footprint and invert is finalized, we would recommend that PBA review the plans to confirm our geotechnical design assumptions.

6.30 Bedrock Removal and Construction Considerations

Based on the results of the subsurface program, bedrock removal may be required for construction of the press box area. If bedrock removal was necessary, the auger refusals and split spoon sampling indicate that the bedrock is likely relatively hard and competent and only it appears only a limited amount of weathered bedrock along the surface could be excavated through the use of an excavator bucket. The remaining bedrock may be able to be broken through the use of a hydraulic hammer or a rock ripper, which is a single tooth claw that is attached to the arm of an excavator, in lieu of a bucket. The force of the excavator is concentrated in the one claw which may allow for the fractured and weathered rock to be broken. It is also likely that large sized boulders may be an issue as well and the contractor should be prepared for large sized boulder removal which may also require use of a hydraulic hammer to break up the boulders for removal. Generally, rock quantities are assumed for boulders larger than 1 cubic yard.

If the surface of the bedrock extends above the proposed invert of the footing at any location, then there would be a transition from rock-supported footings to soil supported footings. The transition from a very stiff to a moderately stiff foundation bearing material can result in a high stress point and cracking of the foundation. If this occurs, one or more of the following options is typically recommended to mitigate this issue.

- A construction joint should be created in the foundation; or
- A gradual increase in the thickness of soil beneath footings should be implemented (0 to 2 feet soil thickness over a distance of 20 feet); or
- Additional steel reinforcing within the footing and foundation wall should be placed at the transition.

Where the surface of the rock slopes more than 15 degrees from the horizontal, level benches should be cut into the rock or the footing should be doweled into the rock. Doweling may be accomplished with No. 5 reinforcing bars at 3 feet on center, extending a minimum of 2 feet into rock, and grouted in place prior to placement of concrete

footings.

6.40 Site Retaining Walls

As part of the expansion of the outfield, it is our understanding that construction of retaining walls may be required with a height in the range 12 to 15 feet. Retaining wall systems feasible for this area consist of either cast-in-place concrete, mechanically stabilized earth (MSE) walls or steeply reinforced soil sloped fill (RSS). Cast-in-place concrete walls would be supported on a shallow spread footing supported on structural fill overlying the natural glacial till. The primary disadvantage of cast-in-place concrete walls is generally cost.

Mechanically Stabilized Earth (MSE) retaining walls typically consist of a facing of concrete blocks or panels attached to horizontal layers of geogrids that reinforce the compacted soil used for the wall backfill. The reinforced soil and facing together act as a gravity retaining wall. MSE walls are typically more economical than other wall types due to their ease of construction. The design of these walls is based on external stability considerations (i.e. sliding, overturning, and bearing capacity) in a manner similar to all gravity retaining walls. Additionally, internal stability design calculations are performed to ensure that the facing is adequately anchored into the soil behind the failure wedge, that the wall will not bulge, and that the internal shearing stresses are not sufficiently high to cause wall failure.

In addition, another option would be to utilize a reinforced fill on moderately steep slopes (RSS) which can offer an economical alternative to walls, and can be adapted to site conditions. Many alternate low cost earth reinforced retaining structures have been constructed using on-site, often marginal backfill material.

A global stability of the wall design is also required for each option and is typically accomplished using computer-aided slope stability analyses. Once the selection and geometry of the retaining wall is finalized, we would recommend that PBA review the plans to ensure the allowable bearing capacity is sufficient for the proposed loadings and to complete the slope stability analyses.

6.50 Site Preparation

We recommend that all topsoil, subsoil, non-engineered granular fill, and any unsuitable deleterious material be removed from the footprint of the proposed retaining walls or building foundations. We recommend that the retaining wall and building foundation be supported on a minimum of 12-inches of compacted structural fill and be a minimum of three feet four inches below finished grade for protection from frost. Special care should be taken when preparing the subgrade for the footings to ensure that all the non-engineered fill and any unsuitable material is excavated and replaced with compacted structural fill under slabs and footings. Boulders that extend within the

limits of the excavation should be removed and the resulting voids filled with compacted structural fill. Compacted structural fill should be placed below footing locations as soon as possible after being excavated and surface compacted. In no case should this work be completed during a precipitation event nor when the excavation cannot be backfilled the same day.

6.60 Liquefaction Potential and Seismic Design Requirements

We have considered seismic design requirements in accordance with the requirements of the 2010 International Building Code which has been adopted as the basis for the Rhode Island State Building Code. Based on the subsurface data collected, it is our opinion that the site soils are not susceptible to earthquake liquefaction. Based on our interpretation of the site classification provided in Table 1613.5.2 of the 2010 International Building Code, we recommend a site class of C be utilized for design.

6.70 Temporary Excavation Support & Dewatering

Based on our understanding of the project, it appears there is sufficient room to open cut for removal of non-engineered granular fill and preparation of the building and retaining wall foundations. All temporary excavation slopes in soil should be constructed not steeper than 1.5 horizontal to 1 vertical and in accordance with the requirements of the latest OSHA standards. Temporary excavation support will be required for steeper slopes. A fabric placed on the slope may be required to prevent soil erosion. Surface water should be diverted away from these slopes.

All excavations and backfilling for foundation construction should be conducted in the dry. Based on the results of the subsurface exploration program, significant dewatering is not anticipated. It should be noted that groundwater levels may change due to seasonal variations of precipitation and temperature. If dewatering becomes necessary during the excavation and construction, we anticipate the use of sump pumps and pits in combination with ditching should provide adequate dewatering.

6.80 Subgrade Protection, Backfill & Compaction Requirements

The exposed surface of the glacial till and weathered bedrock should be protected by placing compacted structural fill on the exposed surface immediately following excavation. All structural fill should be placed in horizontal lifts and compacted. Where foundations or footings rest on insitu soil or intact bedrock, it is recommended that a minimum of six inches of compacted structural fill be placed below the footings. It is also recommended that a minimum of 12-inches of compacted structural fill be placed below the slabs. Filling of the site should be accomplished with structural fill beneath all roadways and parking areas. Within building areas, structural fill should be placed and compacted in lifts to the elevation of the bottom of the foundations and slabs. Compacted

structural fill or crushed stone placed beneath footings and/or slabs-on-grade should be bank-run gravel conforming to the gradation requirements presented in the table below:

U.S. Standard Sieve Size	Crushed Stone Percent Passing, by Weight	Structural Fill Percent Passing, by Weight
3-inch		100
1-inch	100	
3/4-inch	75-85	
1/2-inch	10-40	50-85
3/8-inch	0-20	45-80
No. 4	0-5	40-75
No. 40		0-45
No. 200		0-8

Compaction of all fill within the proposed footprint of the structures should be to a minimum of 95 percent of the maximum dry density as determined by ASTM D-1557, the modified Proctor density test. Under paved areas, fill and backfill should be compacted to 90 percent of the maximum material dry density, except the top foot supporting pavement, which should be compacted to 95 percent. For other areas not supporting buildings or other structures, compaction should be 85 percent of maximum dry density. Lift thickness should be appropriate for the compaction equipment being utilized. Specifications should require that the Contractor adjust lift thickness to meet required compaction. In no case should lift thickness exceed 12 inches.

6.90 Reuse of On-Site Soils

Based on the results of the sieve analyses and the descriptions of other soil samples, portions of the granular fill along the outfield does not meet the specification for structural fill but is a relatively clean sand with a limited number of fines (less than 8%) and can likely be reused onsite. The granular fill encountered in the infield area and the natural glacial till will likely contain high percentages of fines (material finer than the No. 200 sieve) and is not recommended for reuse. We typically recommend that the percentage of fines contained in soils to be considered for reuse as structural fill be limited to 10 percent or less. The reason for this recommendation is for drainage considerations as well as that the control of the water content and compaction become increasingly difficult when the fines content of the soil exceeds 10 percent. During cooler or cold wet weather, soils with elevated percentages of fines tend to remain saturated or near saturated for long periods of time, and adequate compaction when saturated is not possible.

On-site granular soil and the glacial till soil which does not meet the recommended gradation requirement for use as structural fill, could be considered for reuse in areas not intended for the

support of buildings, pavements, retaining walls or other structures. A geotechnical engineer familiar with the site geotechnical conditions should be onsite during the earthwork phase to verify the suitability of fill reuse and confirm adequacy of compaction.

7.00 FINAL DESIGN & CONSTRUCTION MONITORING

It is recommended that PBA be provided the opportunity to review foundation and field design plans and prepare or review project earthwork specifications to ensure that our recommendations have been properly interpreted. We also recommend that a geotechnical engineer be present during earthwork construction to monitor excavations prior to foundation construction to ensure that all unsuitable material is removed, observe the base of excavations, and to monitor the placement and compaction of fill materials. The Rhode State Island Building Code requires that the subgrade preparation and fill compaction be monitored and tested for compliance within its special inspections requirements.

We appreciate the opportunity to have been of service to Birchwood Design Group and we trust that this letter is sufficient for your needs at this time. Please contact the undersigned if there are questions on these recommendations or if you need additional information.

Very truly yours,

PAUL B. ALDINGER & ASSOCIATES, INC.

Paul B. Aldinger, Ph.D.,P.E.
Chief Engineer

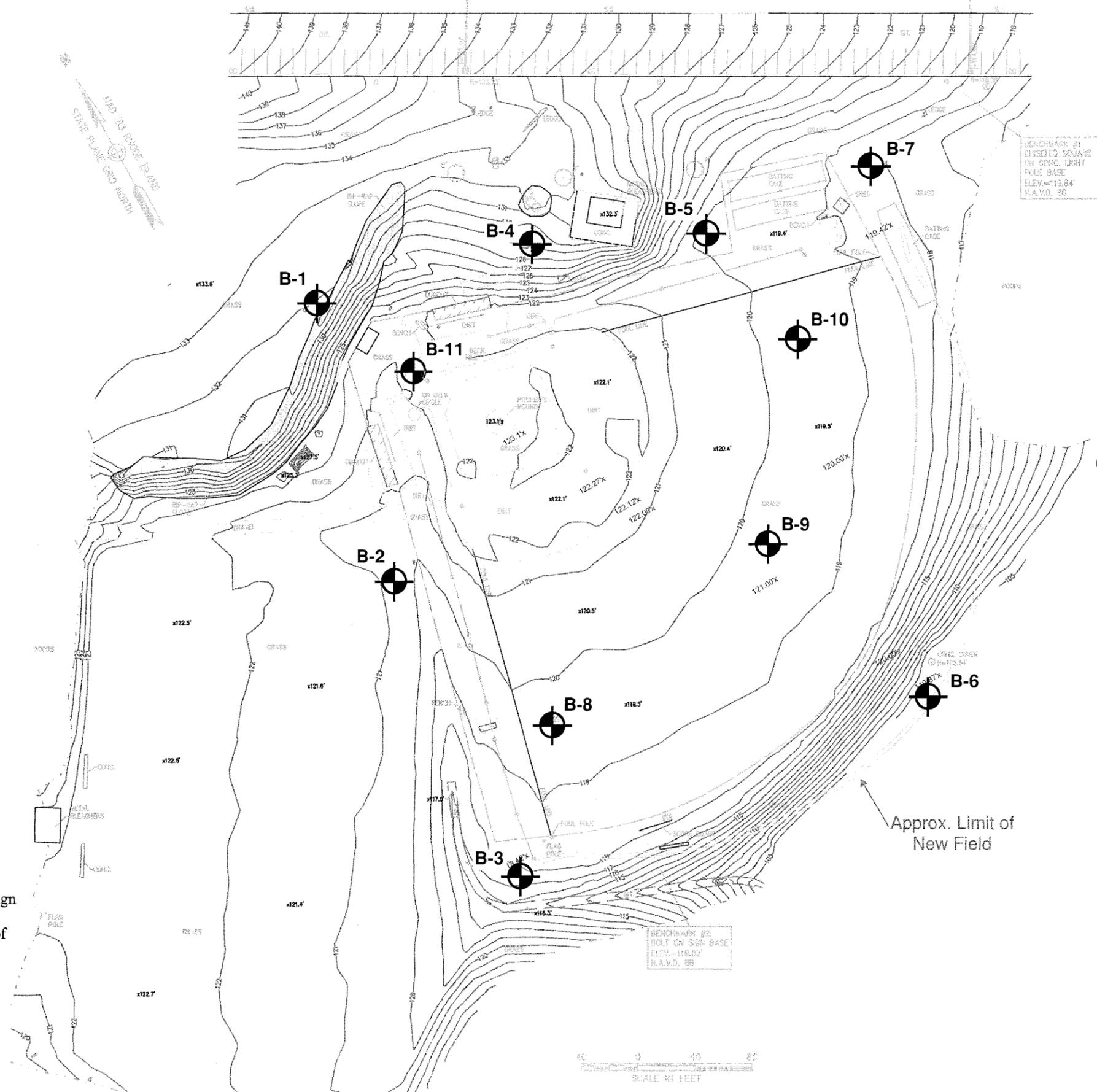
FIGURES

NOTES

1. This plan was developed from site plan received in digital format from Birchwood Design Group in October 2013.
2. Test borings completed by New Hampshire of Brockton, MA on November 7, 2013.

LEGEND

 APPROXIMATE LOCATION OF TEST BORING



Paul B. Aldinger & Associates, Inc.
Geotechnical/Structural Engineering and Geohydrology
 860A Waterman Avenue, Suite 9
 East Providence, RI 02914
 Phone: (401) 435-5570 Fax: (401) 435-5569

**CCRI BASEBALL FIELD
 WARWICK, RI**

SUBSURFACE EXPLORATION PLAN		
PBA JOB NO.: 13034	DRAWN BY: JSR	CHECKED BY:
DATE: Nov 2013	DESIGNED BY:	
SCALE: AS NOTED		

Figure No: 2

APPENDIX A LIMITATIONS

A. Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
2. The generalized soil profiles described in the text and shown on the figures are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report; however, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tide and other factors occurring since the time measurements were made.

B. Review

In the event that any changes in the nature, design, or location of the proposed structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report are modified or verified in writing by Paul B. Aldinger & Associates, Inc. It is recommended that this firm be provided the opportunity for a general review of final design and specifications, in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

C. Construction

It is recommended that this firm be retained to provide soil engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

D. Use of Report

1. This report has been prepared for the exclusive use of Birchwood Design Group for specific application to the CCRI Baseball Field in Warwick, Rhode Island in accordance

with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

2. This geotechnical engineering report has been prepared for this project by Paul B. Aldinger & Associates, Inc. This report is for design purposes only and is not sufficient to prepare an accurate bid.
3. This report may contain comparative cost estimates for the purpose of evaluating alternative construction schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates may not be accurate enough for construction bids. Since Paul B. Aldinger & Associates, Inc. has no control over labor and materials cost and design, the estimates of construction costs have been made on the basis of experience. We cannot guarantee the accuracy of cost estimates as compared to contractors' bids for construction costs.

APPENDIX B
TEST BORING LOGS

Client Name	New Hampshire Boring, Inc. 1215 W. Chestnut Street Brockton, MA	Sheet 1 of 1	Boring No. B-2
P.B. Aldinger & Assoc Inc.	02301	NHB JOB NUMBER:	

City/Town: Warwick, RI	PROJECT NAME: CCRI Baseball Field
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Location: CCRI	Date & Time Started	Date & Time Completed	Total Hours Worked
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Groundwater Depth (Feet): Dry	Date & Time: 11/7/2013	11/7/2013	11/7/2013
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DRILLER:	HELPER:
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Ground Elevation: +120.5	Inspector's Name (Print): Bryan Deely	Inspector's Company: P.B. Aldinger & Assoc
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Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			
S-1	0 - 2	5	7	10	10	12	Medium dense, brown, fine to coarse SAND, some Gravel some Silt (Fill) 4'	7" Topsoil
S-2	5 - 7	34	44	43	23	12	Very dense, brown, fine to coarse SAND & GRAVEL some Silt (Glacial Till)	
S-3	10 - 10'6"	100/6"					Very dense, gray, fine to coarse SAND a& GRAVEL, some Silt (Glacial Till) BOE 10.5'	

Remarks:	AUGER SIZE:
----------	-------------

Penetration Resistance (N) Guide			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

CASING SIZE: 4"
SPLIT SPOON SIZE: 2"
DRILL RIG TYPE:

Client Name	New Hampshire Boring, Inc. 1215 W. Chestnut Street Brockton, MA	Sheet 1 of 1	Boring No. B-3
P.B. Aldinger & Assoc Inc.	02301	NHB JOB NUMBER:	

City/Town: Warwick, RI	PROJECT NAME: CCRI Baseball Field
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Location: CCRI	Date & Time Started	Date & Time Completed	Total Hours Worked
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Groundwater Depth (Feet): Dry	Date & Time: 11/7/2013	11/7/2013	11/7/2013
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DRILLER:	HELPER:
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Ground Elevation: +117.5	Inspector's Name (Print): Bryan Deely	Inspector's Company: P.B. Aldinger & Assoc
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Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			
S-1	0 - 2	3	5	8	14	15	Medium dense, brown, fine to coarse SAND & GRAVEL little Silt (Fill)	5" Topsoil
S-2	5 - 7	6	4	19	28	17	Medium dense, gray, fine SAND, some Silt (Fill) Medium dense, brown, fine to coarse SAND & GRAVEL some Silt (Glacial Till)	6'
S-3	10 - 12	19	24	35	58	15	Very dense, gray, fine to coarse SAND some Gravel, some Silt (Glacial Till) BOE 13' - Auger Refusal	

Remarks:	AUGER SIZE:
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Penetration Resistance (N) Guide			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

CASING SIZE:	4"
SPLIT SPOON SIZE:	2"
DRILL RIG TYPE:	

Client Name: P.B. Aldinger & Assoc Inc. New Hampshire Boring, Inc.
 1215 W. Chestnut Street
 Brockton, MA 02301 Sheet 1 of 1 Boring No. B-4

City/Town: Warwick, RI PROJECT NAME: CCRI Baseball Field

Location: CCRI Date & Time Started: 11/7/2013 Date & Time Completed: 11/7/2013 Total Hours Worked:

Groundwater Depth (Feet): Dry Date & Time: 11/7/2013

DRILLER: HELPER:

Ground Elevation: Inspector's Name (Print): Bryan Deely Inspector's Company: P.B. Aldinger & Assoc

Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			

S-1	0 - 2	9	14	20	50	18	1.5' Granular Fill	
							Dense, gray, fine to coarse SAND, some Gravel, some Silt (Glacial Till)	

S-2	5 - 5' 5"	100/5"				5	Very dense, gray, fine to coarse SAND, some Silt little Gravel (Glacial Till)	
							BOE 6.5' - Auger Refusal	

Remarks:

AUGER SIZE:
 CASING SIZE: 4"
 SPLIT SPOON SIZE: 2"
 DRILL RIG TYPE:

Penetration Resistance (N) Guide			
Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

Client Name P.B. Aldinger & Assoc Inc.		New Hampshire Boring, Inc. 1215 W. Chestnut Street Brockton, MA 02301			Sheet 1 of 1		Boring No. B-11	
City/Town: Warwick, RI				PROJECT NAME: CCRI Baseball Field				
Location: CCRI			Date & Time Started		Date & Time Completed		Total Hours Worked	
Groundwater Depth (Feet): Dry			Date & Time: 11/7/2013		11/7/2013		11/7/2013	
DRILLER:				HELPER:				
Ground Elevation: 118.5			Inspector's Name (Print): Bryan Deely			Inspector's Company: P.B. Aldinger & Assoc		
Sample Number	Depth Range (Feet)	Blow Counts per 6 Inches				Recovery (inches)	Field Description	Strata Changes
		0-6	6-12	12-18	18-24			
S-1	0 - 2	3	7	40	34	16	Very dense, brown fine to medium SAND, some Silt little Gravel (Fill)	4" Topsoil
S-2	2 - 4	29	23	44	37	14	Very dense, brown fine to medium SAND, some Silt little Gravel (Fill)	3.5'
							Gray, fine to coarse SAND, some Gravel, some Silt (Till)	
							BOE 4'	

Remarks: _____

AUGER SIZE:
 CASING SIZE: 4"
 SPLIT SPOON SIZE: 2"
 DRILL RIG TYPE:

Penetration Resistance (N) Guide

Cohesionless Soils (Sands, Gravels)		Cohesive Soils (Silts, Clays)	
Relative Density	Penetration Resistance	Consistency	Penetration Resistance
Very Loose	0 - 4	Very Soft	0 - 2
Loose	4 - 10	Soft	2 - 4
Medium Dense	10 - 30	Medium Stiff	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Over 50	Very Stiff	15 - 30
		Hard	Over 30

N = Sum of Second and Third 6" Blow Counts

Terms Used for Second Entry of Descriptions: and = 40-50%, some = 10-40%, trace = 10% or less

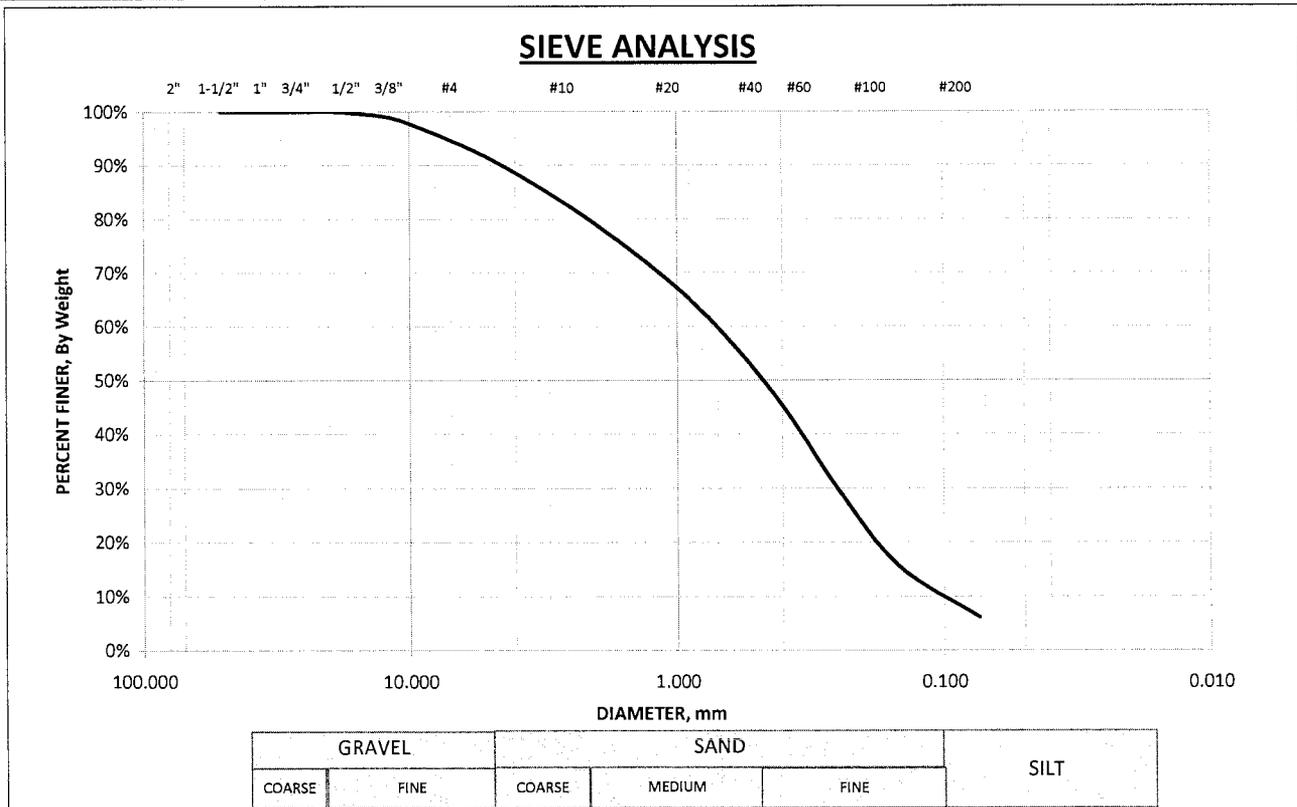
APPENDIX C
LABORATORY ANALYSIS

SIEVE ANALYSIS

DESCRIPTION:	Fine to coarse SAND, trace Gravel, trace Silt	PROJ:	CCRI Field
		LOCATION:	Warwick, RI
Sample Location:	Outfield Area Granular Fill	JOB #:	13034
USCS:	SP	DATE:	11/13/2013
TEST BORING NO.:	B-9	CONTAINER #:	102.44
DEPTH:	1.5 & 2 to 4 ft	CONT.+ WET SOIL:	587.63
SAMPLE #:	S-1A & S-2	CONT.+ DRY SOIL:	574.64
WASH SIEVE	YES	WGT WATER:	12.99
		CONT WGT:	102.44
		DRY SOIL:	472.2
		% MOIST:	2.75%

SIEVE	OPENING (MM)	WEIGHT RETAINED	ACCUM. RETAINED	PERCENT RETAINED	TOTAL % FINER/WGT	PROJECT SPEC.
2"	50.800	0.00	0.00	0.00%	100.00%	
1 1/2"	37.500	0.00	0.00	0.00%	100.00%	
1"	25.400	0.00	0.00	0.00%	100.00%	
3/4"	19.100	0.00	0.00	0.00%	100.00%	
1/2"	12.700	3.93	3.93	0.83%	99.17%	
3/8"	9.525	8.38	12.31	2.61%	97.39%	
4	4.750	31.77	44.08	9.34%	90.66%	
10	2.000	55.19	99.27	21.02%	78.98%	
20	0.840	71.80	171.07	36.23%	63.77%	
40	0.420	80.27	251.34	53.23%	46.77%	
60	0.250	79.28	330.62	70.02%	29.98%	
100	0.149	67.19	397.81	84.25%	15.75%	
200	0.074	45.55	443.36	93.89%	6.11%	
Pan	0.000	28.84	472.20	100.00%	0.00%	
TOTAL DRY WT.			472.2			

	% GRAVEL	% SAND	% SILT & CLAY
TOTAL	9.3%	84.6%	6.1%
COARSE	0.0%	11.7%	
MEDIUM		32.2%	
FINE	9.3%	40.7%	

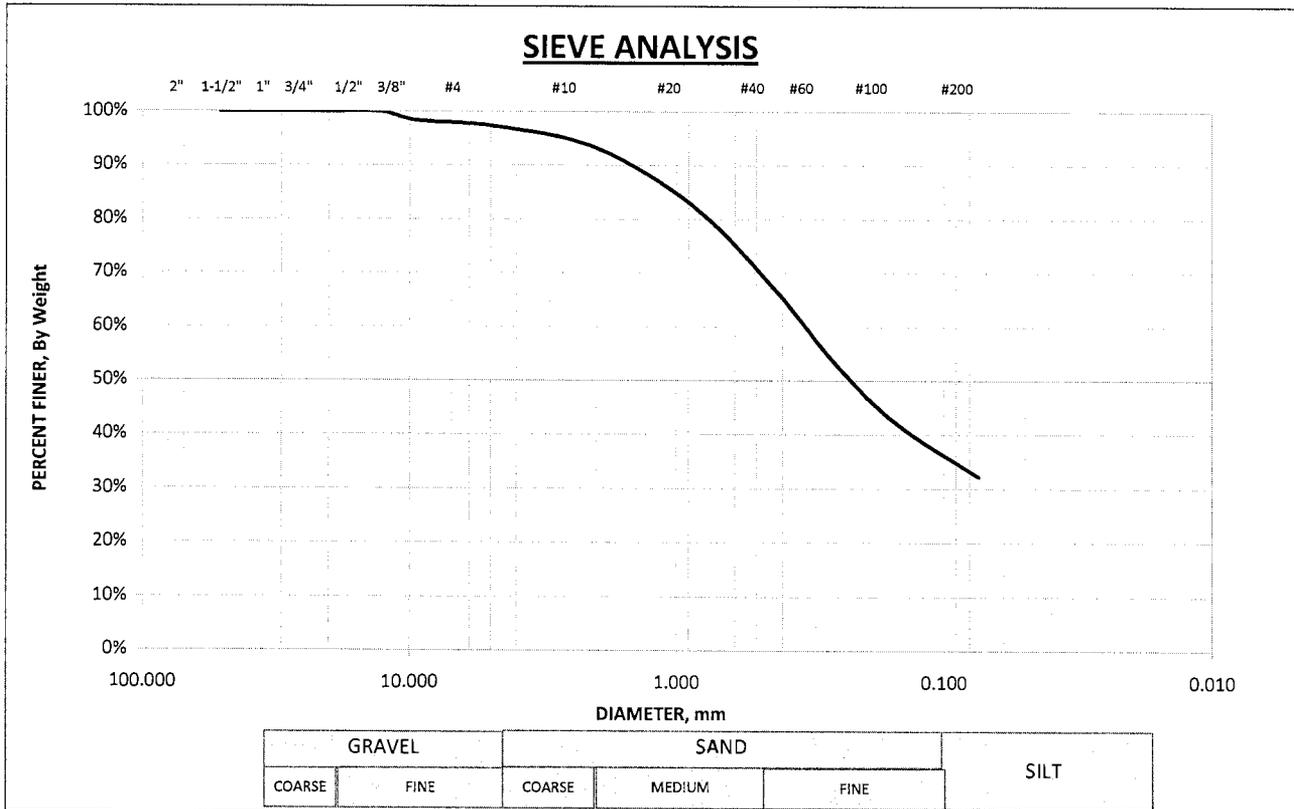


SIEVE ANALYSIS

DESCRIPTION: Fine to medium SAND, some Silt trace Coarse Sand, Gravel Sample Location: Home Plate Area Granular Fill USCS: SM TEST BORING NO.: B-11 DEPTH: 1-2' SAMPLE #: S-1A WASH SIEVE: YES	PROJ: CCRI Field LOCATION: Warwick, RI JOB #: 13034 DATE: 11/13/2013 CONTAINER #: 54 CONT.+ WET SOIL: 264.62 CONT.+ DRY SOIL: 247.67 WGT WATER: 16.95 CONT WGT: 84.66 DRY SOIL: 163.01 % MOIST: 10.40%
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SIEVE	OPENING (MM)	WEIGHT RETAINED	ACCUM. RETAINED	PERCENT RETAINED	TOTAL % FINER/WGT	PROJECT SPEC.
2"	50.800	0.00	0.00	0.00%	100.00%	
1 1/2"	37.500	0.00	0.00	0.00%	100.00%	
1"	25.400	0.00	0.00	0.00%	100.00%	
3/4"	19.100	0.00	0.00	0.00%	100.00%	
1/2"	12.700	0.00	0.00	0.00%	100.00%	
3/8"	9.525	2.65	2.65	1.63%	98.37%	
4	4.750	1.79	4.44	2.72%	97.28%	
10	2.000	6.58	11.02	6.76%	93.24%	
20	0.840	18.32	29.34	18.00%	82.00%	
40	0.420	25.16	54.50	33.43%	66.57%	
60	0.250	22.44	76.94	47.20%	52.80%	
100	0.149	17.66	94.60	58.03%	41.97%	
200	0.074	15.88	110.48	67.77%	32.23%	
Pan	0.000	52.53	163.01	100.00%	0.00%	
TOTAL DRY WT.			163.01			

	% GRAVEL	% SAND	% SILT & CLAY
TOTAL	2.7%	65.1%	32.2%
COARSE	0.0%	4.0%	
MEDIUM		26.7%	
FINE	2.7%	34.3%	



SIEVE ANALYSIS

DESCRIPTION: Fine to medium SAND, little Silt trace Coarse Sand, Gravel Sample Location: Home Plate Area Granular Fill USCS: SM TEST BORING NO.: B-11 DEPTH: 2-4' SAMPLE #: S-2 WASH SIEVE YES	PROJ: CCRI Field LOCATION: Warwick, RI JOB #: 13034 DATE: 11/13/2013 CONTAINER #: 102 CONT.+ WET SOIL: 344.18 CONT.+ DRY SOIL: 322.39 WGT WATER: 21.79 CONT WGT: 108.62 DRY SOIL: 213.77 % MOIST: 10.19%
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SIEVE	OPENING (MM)	WEIGHT RETAINED	ACCUM. RETAINED	PERCENT RETAINED	TOTAL % FINER/WGT	PROJECT SPEC.
2"	50.800	0.00	0.00	0.00%	100.00%	
1 1/2"	37.500	0.00	0.00	0.00%	100.00%	
1"	25.400	0.00	0.00	0.00%	100.00%	
3/4"	19.100	0.00	0.00	0.00%	100.00%	
1/2"	12.700	0.00	0.00	0.00%	100.00%	
3/8"	9.525	1.74	1.74	0.81%	99.19%	
4	4.750	8.87	10.61	4.96%	95.04%	
10	2.000	15.15	25.76	12.05%	87.95%	
20	0.840	19.63	45.39	21.23%	78.77%	
40	0.420	34.24	79.63	37.25%	62.75%	
60	0.250	41.61	121.24	56.72%	43.28%	
100	0.149	30.25	151.49	70.87%	29.13%	
200	0.074	21.15	172.64	80.76%	19.24%	
Pan	0.000	41.13	213.77	100.00%	0.00%	
TOTAL DRY WT.			213.77			

	% GRAVEL	% SAND	% SILT & CLAY
TOTAL	5.0%	75.8%	19.2%
COARSE	0.0%	7.1%	
MEDIUM		25.2%	
FINE	5.0%	43.5%	

