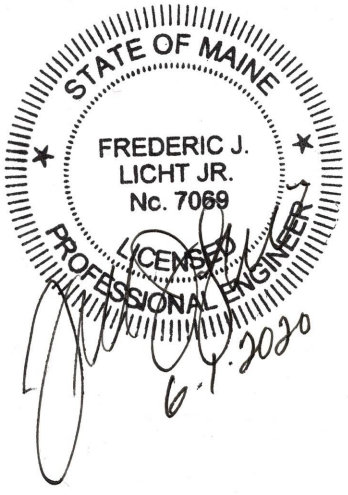
YORK HIGH SCHOOL

Tennis Courts Demolition and Reconstruction Project (South Courts)

Prepared For:
York School Department
469 U.S. Route One
York, Maine 03909

Project Manual

June 01, 2020



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NOTICE TO SITE CONTRACTORS
(PUBLIC SCHOOL PROJECTS)

YORK SCHOOL DEPARTMENT, York, Maine Notice to Bidders: Sealed proposals in envelopes marked:

Proposal for: **York High School Tennis Courts Demolition and Reconstruction**

Brief Job Description: The work consists of the demolition of three tennis courts and reconstruction of three tennis courts located at the York High School, 1 Robert Stevens Drive, York, Maine.

Addressed to: Mr. Chris Rynne
York School Department
469 US Route 1
York, Maine 03909

Email: crynne@yorkschools.org

Phone: (207) 363-3403 ext. 10033

Proposals will be opened and read aloud at 2:00 on Tuesday, June 16th 2020 at the office of the Superintendent of Schools. Bids received after 2:00 pm will not be considered and will be returned unopened. Due to the Covid-19 pandemic, a call-in conferencing number will be provided in advance of the bid opening to all registered bidders to listen in remotely.

A mandatory pre-bid conference for contractors to review project scope and bid requirements will be held at the location of the existing three-court complex located on the south side of the York High School on Monday June 8th, 2020 at 9:00 am. Attendance is required by Contractors to bid on the project. All pre-bid conference attendees shall be considered as registered bidders for the purposes of bid notifications.

General contract proposals must be accompanied by a certified or cashier's check for 5% of the proposal or a satisfactory bid bond in a similar amount. The owner reserves the right to waive all formalities and reject any and all proposals or to accept any proposal. Proposals shall be submitted on the form provided by the Engineer.

The selected contractor will be required to furnish a 100% contract performance bond and a 100% contract payment bond to cover the execution of the work in conformity with the form of bonds contained in the project specifications and for the contract amount.

Bid Documents will be available to contractors and subcontractors for downloading from the BGS website at: https://www.maine.gov/dafs/brem/business-opportunities on or about June 3rd, 2020.

(00030)

GENERAL PROVISIONS

A. SCOPE:

These Standard Specifications and Addenda, if any, are to govern all work related to the York High School Tennis Courts Reconstruction project and they shall become part of any contract with the York School Department for the construction of said Work. Provisions of these Specifications shall be modified or changed only in writing. These Standard Specifications will be amended with Supplemental Specifications as necessary, and with Contract Drawings or Construction Sketches (SK'S) as required.

****The" General Conditions" as referenced herein refers to the "EJCDC C-700 Engineers Joint Contract Document Committee (EJCDC) Standard General Conditions of the Construction Contract", Document C-700 National Society of Professional Engineers for EJCDC. A copy of the General Conditions is not included within this Contract Document but shall be included by reference only. An electronic (PDF) copy of the General Conditions may be obtained by request to the OWNER's REPRESENTATIVE if required.****

B. DEFINITIONS:

a) Contract Documents: Whenever the term Contract Documents, or a pronoun in its stead, is used, it shall mean and include, but not necessarily limited to, these items: The Notice to Contractors, the Proposal, the Contract, the Supplemental Specifications, the Standard Specifications, any other documents included with these Specifications and attached thereto, and any Addenda including Construction Sketches (SK'S) to the above issued prior to the date of this Contract.

b) Contractor: Whenever the term Contractor, or a pronoun in its stead, is used, it shall mean the person or persons, or co-partnership or corporation, which has entered into this agreement, or their legal representative.

c) Owner or Owner's Representative: Whenever the term Owner, or Owner's Representative, or a pronoun in its stead, is used, it shall mean the York School Department, acting through its designated officials and/or employees.

d) City Engineer or Engineer: Whenever the term City Engineer, Engineer, or a pronoun in their stead, is used, it shall mean the City Engineer of the Town of York or his assistants or inspector acting under him, or an Engineer or Agent engaged by the Owner or his duly authorized representatives acting for him, limited to the particular duties entrusted to them.

e) Inspector: Whenever the term Inspector, or a pronoun in its stead, is used, it shall mean the Inspector for the Town of York or his assistants or inspectors acting under him, an Inspector for the Department of Environmental Protection, or Inspector engaged by the Owner, limited to the particular duties entrusted to them.

f) ASTM: Whenever the abbreviation ASTM is used, it shall mean the American Society for Testing Materials; and unless otherwise stated, shall refer to the latest revision of the particular standard.

g) Specification: Whenever the term Specifications, or a pronoun in its stead, is used, it shall mean and include the Standard Specifications as herein set forth, and any Supplemental Specifications included in the Contract Documents.

h) Contract Drawings: Whenever the term Contract Drawings, Drawings, Plans, or a pronoun in their stead is used, it shall mean and include all drawings, graphic representation, diagrams, and any notes or explanations thereon, supplied to the Contractor before the date of this Contract and any Addenda issued subsequently including associated Constructions Sketches (SK's).

i) Lump Sum Bid Price: Whenever the term Lump Sum Bid Price, Lump Sum Bid, Lump Sum, or a pronoun in their stead is used, it shall mean the amount of money mutually agreed to by the Contractor for providing the labor, machinery, tools, apparatus and other means of construction, and for doing all the Work and furnishing all material called for by the Contract Documents, excepting rock excavation and those items specifically stated as being considered extra Work, or for which Unit Bid Prices have been established in the Contract and Proposal.

j) Unit Bid Price: Whenever the term Unit Bid Price, Unit Bid, Unit Price, or a pronoun in their stead is used, it shall mean the amount of money mutually agreed to by the Contractor and the Owner, as full payment to the Contractor for furnishing all necessary labor, materials, and equipment (except that which is specifically excluded in the Supplemental and Standard Specifications, and the Contract Drawings) necessary to do one unit of Work; i.e., the unit price for one cubic yard of excavation multiplied by the actual number of cubic yards excavated, yields the total payment for the Work done.

C. INSURANCE AND LIABILITY:

The Contractor shall take all responsibility for the Work, and shall take all precautions for preventing injuries to persons and property in or about the Work; shall bear all losses resulting to him on account of the amount or character of the Work, or because the nature of the land in or on which the Work is done is different from what was estimated or expected, or on account of the weather, elements or other cause; and he shall assume the defense of, and indemnify and save harmless, the York School Department and it's officers, agents and servants, from all claims relating to labor and materials furnished for the Work; to inventions, patents and patent rights used in doing the Work; to injuries to any person or corporation received or sustained by or from the Contractor and his employees in doing the Work, or in consequence of any improper materials, implements or labor used therein; and to any act, omission or neglect of the Contractor and his employees therein.

The Contractor shall procure and maintain for the life of this Contract insurance of the types and to the limits specified below. Certificates of such insurance showing policies and adequacy of protection shall be filed with the York School Department for approval, before permission to commence Work will be granted.

INSURANCE REQUIREMENTS

1. **Workmen's Compensation Insurance** for all employees employed at the site of the project; and, in case any Work is sublet, the Contractor shall require the sub-Contractor similarly to provide coverage for the latter's employees unless such employees are covered by the protection afforded the Contractor; all coverages to be in accordance with State of Maine laws in effect and the requirements of the Industrial Accident Commission.

2. **General Liability Insurance** with minimum limits of liability for bodily injury in the amount of $1,000,000 for each occurrence and minimum limits of liability for property damage in the amount of $1,000,000 for each occurrence. General liability coverage shall include: Owners' or Contractors' Protective, Product and Completed Operations, Comprehensive, Explosion (X), Collapse (C), and Underground (U) coverages.

3. **Automotive Liability Insurance** with minimum limits of liability for bodily injury in the amount of 1,000,000 for each occurrence and minimum limits of liability for property damage in the amount of $1,000,000. Automobile liability coverage shall include owned, hired and non-owned vehicles.

4. **Performance Bond and Labor and Material Payment Bond** in the sum of the total amount of the Contractor's proposal, with a surety company satisfactory to the Owner, will be required as surety for the faithful performance of the Contract by the successful Bidder. The bonds will be required prior to the execution of the Contract.

D. LAWS AND REGULATIONS:

The Contractor shall keep informed of all existing and future State and Federal laws, and municipal ordinances and regulations which in any way affect those engaged or employed in the Work, or the materials used in the Work; or in any way affect the conduct of the Work, and of all orders and decrees of bodies or tribunals having any jurisdiction is discovered in the Drawings or Specifications or Contract for this Work in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same to the Director in writing. He shall at all times himself observe and comply with all such existing and applicable future laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the Owner and its officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or degree, whether by himself or his employees.

E. PERMITS:

The Contractor shall, at his own expense, obtain all necessary permits from the State, County, Municipal, or other public authorities, shall give all notices required by law or ordinances, and shall post all bonds and pay fees and charges incident to the due and lawful prosecution of the Work covered by this Contract.

F. ESTIMATES AND PAYMENTS:

The Engineer will, each month, make an approximate estimate of the amount of Work done since the last preceding estimate and of the value thereof, and upon such estimate being made, the York School Department will pay to the Contractor ninety (90%) per cent of the estimate; provided, however, that no such estimate or payment shall be required to be made when, in the judgment of the Engineer, the total value of the Work done since the last estimate or payment amounts to less than three hundred ($300.00) dollars. Payment may at any time be withheld if the Work is not proceeding in accordance with the provisions of this Contract. The Engineer may, if he deems it expedient to do so, cause estimates to be made more frequently than once in each month, and he may approve payments to be made more frequently to the Contractor. The Engineer may at his option retain, temporarily or permanently, a smaller amount than aforesaid, and may approve payment to the Contractor, either temporarily or permanently, from time to time during the progress of the Work, of such portion of the retained amount as he may deem prudent.

The Owner may keep any money which would otherwise be payable at any time hereunder, apply the same, or so much as may be necessary therefore, to the payment of any expenses, losses, or damage incurred by the Owner and determined as specified herein; and may retain, until all claims are settled, so much of such money as the Owner shall be of the opinion will be required to settle all claims against the Owner, its employees, agents or servants.

G. FINAL ESTIMATE AND PAYMENT:

It is further mutually agreed that whenever, in the opinion of the Engineer and Owner, the Contractor shall have completely performed all the Work embraced in this Contract, the Owner shall proceed with all reasonable diligence to measure up the Work, and approve the final requisition for the same, and shall certify the same in writing; and his certificate shall state the whole amount of the payments previously paid, and the amount retained in all previous estimates. Within the term of thirty (30) days after the date of such final estimate, the Owner will pay to the said Contractor the amount due. All prior partial estimates and payments shall be subject to correction in the final estimate and payment, provided that nothing herein contained shall be construed to affect the right of the Owner, by its Engineer or Representative hereby reserved, to reject the whole or any portion of the aforesaid Work, should the said certificate or certificates be found or known to be inconsistent with the terms of this Agreement of otherwise improperly given.

H. LAST PAYMENT TO TERMINATE LIABILITY OF THE OWNER:

The making and acceptance of final payment will constitute a waiver of all claims by the Owner against the Contractor except as otherwise noted in Article 14.09 of the General Conditions.

I. SITE INVESTIGATION:

The Contractor shall examine the Specifications and Site of the Work, and from his own investigation determine the nature and location of the Work, the general and local conditions, particularly those bearing on access, transportation, quality and quantity of surface and

sub-surface materials to be encountered, and all other aspects of the Work, and machinery and services required to complete the project as required by the Contract Documents. The Owner will not be responsible for any understanding or representation made by any of the Owner's employees, or representatives, during or prior to negotiation and execution of the Contract, unless such understanding or representation shall be in writing and become a part of the Contract documents.

END OF SECTION

(00100)

INSTRUCTIONS TO BIDDERS

ARTICLE 1-DEFINED TERMS:

Terms used in these Instructions to Bidders which are defined in the Standard General Provisions of the Construction Contract have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to the Owner, as distinct from a sub-bidder, who submits a Bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom the Owner (on the basis of the Owner's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

ARTICLE 2-COPIES OF BIDDING DOCUMENTS:

2.1 A complete set of the Bidding Documents will be available from the Main BGS Website in PDF Format only: https://www.maine.gov/dafs/brem/business-opportunities.

2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither the Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

ARTICLE 3-QUALIFICATIONS OF BIDDERS: - (Refer to Article 16 of the General Conditions & Specifications Section 02863, 1.03; B1)

ARTICLE 4-EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

4.1 It is the responsibility of each Bidder before submitting a Bid to:

a. Examine the Contract Documents thoroughly;

b. Visit the site to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work;

c. Consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the Work;

d. Study and carefully correlate Bidder's observations with the Contract Documents, and;

e. Notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.

The Bidding Documents contain the provisions required for construction of the project. Information obtained from an officer, agent or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the Conditions of the Contract.

4.2 Reference is made in the Supplementary Conditions and General Conditions for identification of Insurance and Bonding requirements

4.3 Information and data reflected in the Contract Documents with respect to underground facilities at or contiguous to the site is based upon information and data furnished to the Owner and Engineer by owners of such underground facilities or others, and the Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

4.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.

4.5 Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine it’s Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.6 Upon Bidder's written request in advance, Owner will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former conditions upon completion of such explorations.

4.7 The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.

4.8 The submission of a Bid will constitute an incontrovertible representation by Bidder that the Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are

sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 5-INTERPRETATIONS AND ADDENDA:

5.1 **All questions about the meaning or intent of the Contract Documents are to be directed to the Engineer by email only. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by Addenda sent to all Bidders by email only.** Bidders will be required to provide an email address at the Pre-Bid Conference to be held on June 8th, 200 at 9:00 am. Questions received after issue of the Addenda will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by the Owner or Engineer.

ARTICLE 6-BID SECURITY:

A Bid Bond in the amount of the Contract price is required.

ARTICLE 7-CONTRACT TIME:

The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement.

ARTICLE 8-LIQUIDATED DAMAGES: - Refer to Section 00800 Supplemental Conditions for Liquidated Damages.

ARTICLE 9-SUBSTITUTE OR "OR-EQUAL" ITEMS:

The Contract, if awarded, will be on the basis of materials and equipment described in the Contract Documents without consideration of possible substitute or "or-equal" items. Whenever it is indicated or specified in the Specifications, that a substitute or "or equal" item of material or equipment may be furnished or used by the Contractor if acceptable to the Engineer, application for such acceptance will not be considered by the Engineer until after the effective date of the Agreement. The procedure for submission of any such application by Contractor and consideration by the Engineer is set forth in Paragraphs 6.05 of the General Conditions and may be supplemented in the General Requirements.

ARTICLE 10- SUBCONTRACTORS, SUPPLIERS AND OTHERS:

Insurance is required of all subcontractors, suppliers and others who enter the Contract Site. The requirements are referenced within the Supplementary Conditions.

ARTICLE 11-BID FORM:

11.1 The Bid Form is included with the Bidding Documents.

11.2 All blanks on the Bid Form must be completed in ink or by typewriter.

11.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and the state of incorporation must be shown below the signature.

11.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5 All names must be typed or printed below the signature.

11.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

11.7 The address, telephone number and email address for communications regarding the Bid must be shown.

ARTICLE 12-SUBMISSION OF BIDS:

Bids shall be submitted at the time and place indicated in the Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title **York High School Tennis Courts Demolition and Reconstruction**, name and address of the Bidder, and accompanied by all other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "**BID ENCLOSED**" on the face of it.

ARTICLE 13-MODIFICATION AND WITHDRAWAL OF BIDS:

13.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening, of Bids.

13.2 If, within twenty-four hours after Bids are opened, any Bidder files a duly signed, written notice with the Owner and promptly thereafter demonstrates to the reasonable satisfaction of the Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

ARTICLE 14-OPENING OF BIDS:

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of the Base Bids and major Alternates (if any) will be made available to Bidders after the opening of Bids.

ARTICLE 15-BIDS TO REMAIN SUBJECT TO ACCEPTANCE:

All Bids will remain subject to acceptance for ninety days after the day of the Bid opening, but the Owner may, in its sole discretion, release any Bid prior to that date.

ARTICLE 16-AWARD OF CONTRACT:

16.1 Owner reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate Contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Bids. Also, the Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the Owner. Discrepancies in the multiplication of units of Work and Unit Prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor or the correct sum. Discrepancies between the amounts written in words and amounts written in numerals will be resolved in favor of the amounts written in words.

16.2 In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such Alternates, Unit Prices and other data, as may be requested in the Bid Form or prior to the Notice of Award. Evaluation of the Bids will be on the basis of the total amount of each Bid.

16.3 If he Contract is to be awarded, it will be awarded to the lowest Bidder whose evaluation by the Owner indicated to the Owner that the award will be in the best interests of the Project.

16.4 If the Contract is to be awarded, the Owner will give the Successful Bidder a Letter of Intent to Award within sixty days after the day of the Bid opening and a Notice of Award within ninety days after the day of the Bid opening, provided Bid prices are within the Owner's budgetary constraints. Should there be any reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and Bidder.

ARTICLE 17-CONTRACT SECURITY:

Refer to Section 00800 –Supplementary Conditions.

ARTICLE 18-SIGNING OF AGREEMENT:

When the Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within fifteen days thereafter the Contractor shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds and certificates of insurance. Within ten days thereafter the Owner shall deliver one fully signed counterpart to the Contractor.

ARTICLE 19-START OF CONSTRUCTION:

If Contract is to be awarded, start of construction will be no later than 14 days after Contract signing.

END OF SECTION

(00120)

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

ARTICLE 1-SALES AND USE TAXES:

Owner is exempt from Maine State Sales and Use Taxes on materials and equipment to be incorporated in the Work. Said Taxes shall not be included in the Contract Price. Refer to General Conditions Paragraph 6.10 for additional information.

ARTICLE 2-RETAINAGE:

Provisions concerning Retainage are set forth in the Agreement.

ARTICLE 3-ENVIRONMENTAL REQUIREMENTS:

The Contractor shall include in the appropriate Contract Bid items his costs for compliance with State, Local and other Regulatory Agencies covering environmental protection requirements in accordance with Paragraphs 6.09 of the General Conditions and Article 19 of the Supplemental Conditions.

(00300)

BID FORM

PROJECT IDENTIFICATION:	York High School Tennis Courts Demolition and Reconstruction
CONTRACT IDENTIFICATION:	York High School Tennis Courts Demolition and Reconstruction
THIS BID IS SUBMITTED TO:	York School Department 469 U.S. Route One York, Maine 03909 C/O Chris Rynnes
NAME/ADDRESS OF OWNER:	York School Department 469 U.S. Route One York, Maine 03909

1. The undersigned BIDDER proposes and agrees, if this BID is accepted, to enter into an agreement with the OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this BID and in accordance with the other terms and conditions of the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders. This BID will remain subject to acceptance for ninety (90) days after the day of BID opening. BIDDER will sign and submit the Agreement with the Certificate of Insurance as required by the Bidding Requirements within fourteen (14) days after the date of OWNER'S Notice of Award.

3. In submitting this BID, BIDDER represents, as more fully set forth in the Agreement, that:

   a. BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt by email of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____

   b. BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

c. BIDDER has studied carefully all Contract Documents and has reviewed the on-site physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.1 of the Supplementary Conditions of the extent of the technical data contained in such Drawings upon which BIDDER is entitled to rely.

d. BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies if available, (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as the BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.02 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by the BIDDER for such purposes.

e. BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said underground facilities are or will be required by the BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time, and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.

f. BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

g. BIDDER had given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by the ENGINEER is acceptable to the BIDDER.

h. This BID is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham BID;

i. BIDDER has not solicited or induced any person, firm or corporation to refrain from Bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER over OWNER.

4. BIDDER will complete the Work for the prices set forth in the following Bid Schedule:

The **Bidder**, in accordance with the terms and conditions set forth herein, having carefully examined the Contract Documents and Specifications prepared by Licht Environmental Design, LLC and Walsh Engineering Associates, Inc (Engineer) for the demolition and reconstruction of three (3) Tennis Courts including but not limited to: removals of existing tennis courts and appurtances, site preparation, earthwork, erosion control and site improvements, having personally examined the site of the Work, hereby propose to furnish all labor, materials, and equipment necessary for the performance of such Work, according to the following schedule of prices. Each price given is the final price to the **Owner** and includes all taxes, overhead and profit to the **Bidder**, unless otherwise negotiated between the **Bidder** and **Owner**.

BASE BID ITEMS:

ITEM	DESCRIPTION	SPEC.	UNIT	AMOUNT
1.	LAYOUT OF WORK, SELECTIVE DEMOLITION,	02000, 2030, 02070,	LUMP SUM	$_____
2.	GRADING, EXCAVATION,BACKFILL, GRAVEL BASE COURSES.BITUMINOUS PAVING,	02210, 02220, 02230, 02510	LUMP SUM	$_____
3.	TENNIS COURTS SURFACE,STRIPING, ATHLETIC FACILITY FENCING AND GATES, SITE IMPROVEMENTS	02700. 02800, 02875	LUMP SUM	$_____

TOTAL AMOUNT IN WORDS:**$**_____

ADD ALTERNATES:

ALTERNATE 1 - Section 02700-2.01.L –Rebound Wall: LUMP SUM $_____

UNIT PRICE ITEMS:

The **Bidder** shall provide a Unit Price Bid to include the following items for Additional Work where required and/or as directed by **Engineer**. Unit Prices as provided below shall not apply to Work within required work limits or limits of required excavation and or items of Work indicated Project Specifications, all as necessary to provide a complete project, as required by the Contract Documents and included in the Base Bid. The following Unit Prices shall apply only to additional Work only as directed or required and approved by **Engineer** and **Owner**, unless otherwise specified. Unit Prices included herein for additional Work shall apply to Base Bid items and Alternate Bid items.

ITEM	DESCRIPTION	SPEC.	UNIT	AMOUNT
1.	UNSUITABLE SOIL EXCAVATION & BACKFILL	02000, 02220	C.Y.	$_____
2.	GEOTEXTILE FOR SUBGRADE	02510	S.Y.	$_____
3.	SUBBASE GRAVEL	02230	C.Y.	$_____
4.	BASE GRAVEL	02230	C.Y.	$_____

Submitted on _____, 2020.

If BIDDER is:

An Individual:

By _____
(Individual's Name)

(SEAL)

doing business as_____

Business Address: _____

_____
_____

Phone No.: _____License No.: _____
(If applicable)

A Partnership:

By _____
(Firm Name)

_____
(General Partner)

(SEAL)

doing business as _____

Business Address: _____

Phone No.: _____ License No.: _____
(If applicable)

A Corporation:

By _____
(Corporation Name)

_____
(State of Corporation)

By_____
(Name of Person Authorized to Sign)

_____
(Title)

(Corporate Seal)

Attest: _____
(Secretary)

Business Address: _____
_____
_____

Phone No.: _____ License No.: _____
(If applicable)

A Joint Venture:

By _____
(Name)

_____
_____
(Address)

By _____
(Name)

_____
(Address)

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

(00500)

FORM OF AGREEMENT

THIS AGREEMENT is dated as of the _____day of _____in the year 2020 by and between The York School Department (hereinafter called OWNER) and _____, (hereinafter called CONTRACTOR):

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE I – WORK:

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents:

for

Demolition and Reconstruction of Three (3) Tennis Courts

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Demolition of three (3) existing tennis courts, fencing and appurtances and reconstructon of three (3)new tennis courts in place including all posts, fencing, appurtances and incidental work.

ARTICLE 2 – ENGINEER AND OWNER'S REPRESENTATIVE:

The OWNER'S REPRESENTATIVE for this Project shall be Mr. Chris Rynne, Building and Grounds Manager, in all matters affecting this AGREEMENT and Contract Documents in connection with the Work as specified or described therein, whether acting alone on behalf of the OWNER or acting by way of duly designated and authorized assistants or inspectors acting under him. The Project has been designed by Licht Environmental Design, LLC (LED) of Gray, Maine, who is hereinafter called ENGINEER and who is to act as the OWNER'S REPRESENTATIVE, when so designated by Mr. Harding.

ARTICLE 3 - CONTRACT TIME:

3.1 The Work will be substantially completed as negotiated with the Owner to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within (to be negotiated with Owner) 5 days after the punch list is provided to the CONTRACTOR by the OWNER'S REPRESENTATIVE.

3.2 Once started, the CONTRACTOR agrees to continuously prosecute the Work in an orderly progression to completion within the Contract time stated above. The rate of progress shall be at least that shown on the progress schedule submitted by the CONTRACTOR in accordance with the General Conditions and General Provisions.

ARTICLE 4 - CONTRACT PRICE:

4.1 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents in current funds in accordance with the CONTRACTOR'S Bid Form.

ARTICLE 5 - PAYMENT PROCEDURES:

CONTRACTOR shall submit Application for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the OWNER'S REPRESENTATIVE as provided in the General Conditions.

5.1 Progress Payments: OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by the OWNER'S REPRESENTATIVE, on or about a date agreed to during the pre-construction conference each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in Paragraph 2.07 of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

5.1.1 Prior to substantial completion, progress payments will be made in an amount equal to (**the percentage indicated below**)*, but, in each case, less the aggregate of payments previously made and less such amounts as the OWNER'S REPRESENTATIVE shall determine, or the OWNER may withhold, in accordance with Paragraph 14.02 of the General Conditions.

***90% of work value completed**. If Work, has been 75% completed as determined by the OWNER'S REPRESENTATIVE, and if the character and progress of the Work have been satisfactory to the OWNER and OWNER'S REPRESENTATIVE, OWNER on recommendation of the OWNER'S REPRESENTATIVE, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage on account of Work completed in which case the remaining progress payments prior to substantial completion will be in an amount equal to 100% of the Work value completed.

***90% of materials and equipment value not incorporated in the Work** (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in Paragraph 14.02 of the General Conditions).

5.1.2 Upon substantial completion, the amount of retainage will be reduced to 5% or less of the Work value completed, plus such amounts as the OWNER'S REPRESENTATIVE shall determine, or the OWNER may withhold, in accordance with Paragraph 14.02 of the General Conditions.

5.2 Final Payment: Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, the OWNER shall pay the remainder of the Work value completed as recommended by the OWNER'S REPRESENTATIVE as provided in said paragraph 14.07.

ARTICLE 6 – INTEREST:

All monies not paid within 30 days after payment becomes due as provided in Article 14 of the General Conditions shall bear interest at a maximum annual rate of 18 percent commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

ARTICLE 7 - CONTRACTOR'S REPRESENTATIVE:

In order to induce OWNER to enter into this Agreement, CONTRACTOR'S REPRESENTATIVE, hereinafter referred to as CONTRACTOR, makes the following representations:

7.1 CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

7.2 CONTRACTOR has studied carefully all Drawings including Drawings (if any) which are identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02.1 of the Supplementary General Conditions of the extent of the technical data contained in such drawings upon which the CONTRACTOR is entitled to rely.

7.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all information referred to in Paragraph 7.2 above which pertains to the conditions at, or contiguous to, the site or otherwise may affect the cost, progress, performance or furnishing of the Work as the CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.02 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are, or will be, required by the CONTRACTOR for such purposes.

7.4 CONTRACTOR has reviewed and checked all information and data shown, or indicated, on the Contract Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said underground facilities are, or will be, required by the CONTRACTOR in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.04 of the General Conditions.

7.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

7.6 CONTRACTOR has given the OWNER'S REPRESENTATIVE written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by the OWNER'S REPRESENTATIVE is acceptable by the CONTRACTOR.

ARTICLE 8 - CONTRACT DOCUMENTS:

The Contract Documents which comprise the entire agreement between the OWNER and CONTRACTOR concerning the Work consisting of the following:

8.1 Form of Agreement (as provided herein).

8.2 Instructions to Bidders.

8.3 Supplementary Instructions to Bidders.

8.4 Notice of Award.

8.5 Notice to Proceed.

8.6 Exhibits to this Agreement.

8.7 Performance, Payment and Bid Bonds.

8.8 General Conditions (By reference only)

8.9 Supplementary Conditions.

8.10 Specifications bearing the title York High School Tennis Courts Demolition and Reconstruction; and consisting of two Divisions, as listed in the Table of Contents thereof.

8.11 Addenda (Numbers to be issued)

8.12 CONTRACTOR'S Bid.

8.13 Documentation submitted by CONTRACTOR prior to Notice of Award.

8.14 The following which may be delivered or issued after the effective date of theAgreement and are not attached hereto. All written amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to Paragraphs 3.04 of the General Conditions.

There are no Contract Documents other than those listed above in this Article 8. The Contract Documents may only be amended, modified or supplemented as provided in Paragraphs 3.04 of the General Conditions.

ARTICLE 9-MISCELLANEOUS:

9.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

9.2.1 No assignment by a party hereto of any rights under, or interests in, the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

ARTICLE 10 - OTHER PROVISIONS:

IN WITNESS THEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR, OWNER'S REPRESENTATIVE and a reproduced copy to ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by OWNER'S REPRESENTATIVE on their behalf.

This Agreement will be effective on _____, 2020.

OWNER: York School Department_____ CONTRACTOR: _____

By: _____ _ By: _____

(Corporate Seal)

Attest: _____ Attest: _____

Address for giving notices:

York School Department
469 U.S Route One
York, Maine 03909

(00510)

NOTICE OF AWARD

Dated_____, 2020

TO:

ADDRESS:

OWNER'S PROJECT NO: LED 18.103

PROJECT: YORK HIGH SCHOOL TENNIS COURTS DEMOLITION AND RECONSTRUCTION

OWNER'S CONTRACT NO:

CONTRACT FOR: YORK HIGH SCHOOL TENNIS COURTS DEMOLITION AND RECONSTRUCTION

You are notified that your Bid_____ 2020 for the above Contract has been considered.

You are the apparent successful Bidder and have been awarded a Contract for:

- Removal of three (3) existing tennis courts and appurtances and reconstruction in-place of three (3) new tennis courts, posts, nets, fencing and appurtances.

_____

The Contract Price of your Contract is _____Dollars

($ _____).

Two (2) copies of each of the proposed Contract Documents accompany this Notice of Award or will be mailed to you.

You must comply with the following conditions precedent within fourteen (14) days of the date of this Notice of Award, that is by _____, 2020.

1. You must deliver to the OWNER or OWNER'S REPRESENTATIVE, three (3) fully executed copies of the Agreement. Each of the Contract Documents must bear your signature on the cover of each Document.

2. You must deliver with the executed Agreement, Certificates of Insurance (with copies to OWNER'S REPRESENTATIVE) which you are required to purchase and maintain in accordance with Contract Documents.

3. (List other conditions precedent).

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid abandoned, to annul this Notice of Award and to declare your Bid Security (if any) forfeited.

Within ten days after you comply with those conditions, OWNER will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

York School Department
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

_____
(TITLE)

(Copy to OWNER'S REPRESENTATIVE VIA EMAIL OR U.S. MAIL)

(00520)

NOTICE TO PROCEED

Dated_____, 2020

TO:

ADDRESS:

OWNER'S PROJECT NO: 18.103

PROJECT: YORK HIGH SCHOOL TENNIS COURTS DEMOLITION AND RECONSTRUCTION

OWNER'S CONTRACT NO:

CONTRACT FOR: YORK HIGH SCHOOL TENNIS COURTS DEMOLITION AND RECONSTRUCTION

You are notified that the Contract Time under the above Contract will commence to run on _____, 2020. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 3 of the Form of Agreement, the Dates of Substantial Completion and Final Completion are _____, 2020 and _____, 2020, respectively.

In addition, before you may start any Work at the site, you must:

_Provide proof of insurance prior to entering site.

York School Department___
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

_____
(TITLE)

(Copy to OWNER'S REPRESENTATIVE via EMAIL or U.S. MAIL)

(00550)

CONTRACTOR'S AFFIDAVIT

STATE OF MAINE
COUNTY OF YORK

Before me, the undersigned, a _____
(Notary Public, Justice of the Peace or Alderman)

in and for said County and State personally appeared _____
(individual, partner, or who being duly sworn duly

_____
authorized representative of Corporate Contractor)

according to law, deposes and says that the cost of all labor, materials and equipment and outstanding claims and indebtedness of whatever nature arising out of the performance of the Contract between York School Department and _____
(Contractor)
_____ of _____

DATED _____, 2020, for the construction of York High School Tennis Courts Demolition and Reconstruction

have been paid in full.

_____
(Individual, Partner or duly authorized representative of Corporate Contractor)

Sworn to and subscribed before me

This _____day of _____, 2020.

_____

(00800)

SUPPLEMENTARY CONDITIONS

1. The "Standard General Conditions of the Construction Contract" (herein referred to as General Conditions) EJCDC Document No. C-700, Articles I through 17 inclusive, is part of this Contract.

2. The following Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 1 – DEFINITIONS:

Add the following:

The terms used in these Supplementary Conditions which are defined in "The Standard General Conditions of the Construction Contract" (No C-700) have the meanings assigned to them in the General Conditions.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE:

Intent:

SC3.01B Add the following language at the end of Paragraph 3.01B of the General Conditions:

If there is any conflict between the provisions of the Contract Documents and any such referenced provisions, the language of the Contract Documents will take precedence over that of any Standard Specification, Manual or Code.

SC3.01.1 Sections of Division I - General Requirements, govern the execution of all section of the Specifications.

SC3.01.2 The Owner has adopted certain portions of the Standard Specifications of the Maine Department of Transportation, entitled "STANDARD SPECIFICATIONS, HIGHWAYS AND BRIDGES, REVISION OF APRIL 1995".

Whenever, in the Standard Specifications and Contract Drawings, the Commission; Maine Department of Transportation (MDOT), State Highway Commission of the State of Maine, or any reference to the State Highway Commission or its engineers is mentioned, the intent and meaning shall mean the Owner.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS:

Physical Conditions:

SC4.02.1 Add the following language at the end of Paragraph 4.02.A of the General Conditions:

In the preparation of Drawings and Specifications, the Engineer has relied upon the surface observations only.

ARTICLE 5 - BONDS AND INSURANCE:

Contractor's Liability Insurance:

SC5.04 Add the following language at the end of Paragraph 5.04 of the General Conditions:

The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by laws and regulations:

SC5.04.1 and SCS.04.2 Workers' Compensation, etc., under Paragraphs 5.04A. I and 5.04A.2 of the General Conditions:

(1) State: Statutory

(2) Applicable Federal (e.g. Longshoreman's): Statutory

(1) Employer's Liability: $1,000,000

SC5.04.3, SCS.04.4, SC5.04.5, and SC5.04.6 Comprehensive General Liability (under Paragraphs 5.04A.3 through 5.04A.7 of the General Conditions):

(1) Bodily Injury (including completed operations and products liability):
$1,000,000 Each Occurrence
$1,000,000 Annual Aggregate

Property Damage:
$1,000,000 Each Occurrence
$1,000,000 Annual Aggregate or a combined single limit of $1,000,000

(2) Property Damage liability insurance will provide, explosion, collapse and underground coverages where applicable.

(3) Personal Injury, with employment exclusion deleted
$1,000,000 Annual Aggregate

SC5.04.7 Comprehensive Automobile Liability:

Bodily Injury:
$1,000,000 Each Person

$1,000,000 Each Occurrence

Property Damage:
$1,000,000 Each Occurrence or combined single limit of
$1,000,000

SC5.04.8 Excessive Liability Insurance: Contractor shall provide excess liability insurance in the amount of $2,000,000 in the umbrella form.

Contractual Liability Insurance:

SC5.05 Add the following language at the end of Paragraph 5.04B.4 of the General Conditions:

The Contractual Liability required by Paragraph 5.04B.4 of the General Conditions shall provide coverage for not less than the following amounts:

SC5.05.1 Bodily Injury:
$1,000,000 Each Occurrence

SC5.05.2 Property Damage:
$1,000,000 Each Occurrence
$1,000,000 Annual Aggregate

SC5.06 Delete Paragraph 5.06D of the General Conditions in its entirety and insert the following in its place:

5.06D Owner shall not be responsible for purchasing and maintaining of any property insurance to protect the interests of Contractor, Subcontractors or others in the Work.

Acceptance of Insurance:

SCS.09 Delete Paragraph 5.09 of the General Conditions in its entirety and insert the following in its place:

5.09 If the Owner has any objections to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by the Contractor in accordance with Paragraphs 5.04 and 5.06 on the basis of its not complying with the Contract Documents, Owner shall notify Contractor in writing thereof within ten days of the date of delivery of such certificates to Owner in accordance with Paragraph 2.05C. Contractor shall provide to Owner such additional information in respect of insurance provided as the Owner may reasonably request. Failure by Owner to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by Contractor as complying with the Contract Documents.

ARTICLE 6-CONTRACTOR'S RESPONSIBILITIES:

Labor, Materials and Equipment:

SC6.04 Add the following language at the end of Paragraph 6.04 of the General Conditions:

If, in the opinion of the Director/Engineer, the progress of the Work is such that the completion date of the Contract cannot be met for causes other than those provided in Article 12, he may request the Contractor to work additional men, additional hours, or both. The cost of all such overtime shall be born by the Contractor.

Permits:

SC6.08 Add the following language at the end of Paragraph 6.08 of the General Conditions:

Contractor shall be responsible for application for street opening permits. The Town will waive associated fees.

Laws and Regulations:

SC6.09 Add the following language at the end of Paragraph 6.09 of the General Conditions:

Town ordinances specify that no construction equipment shall be operated or started before 7:00 a.m., therefore, Contractor's work hours shall be limited to the hours between 7:00 a.m. and dusk.

Safety and Protection:

SC6.13 Add the following language at the end of the first sentence of Paragraph 6.13A of the General Conditions:

This project is subject to all of the safety and health regulations (Sec. 29 CFR 1518 as amended), Occupational Safety and Health Act (OSHA) as promulgated by the U.S. Department of Labor, April 1971. The Contractor is directly responsible for adhering to all requirements of this act.

SC6.13A.3 Delete Paragraph 6.13A.3 of the General Conditions in its entirety and insert the following in its place:

Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, land monuments, property markers, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

SC6.13A.4 Add the following paragraph immediately after Paragraph 6.13A.3:

SC6.13A.4 The Contractor shall not enter upon private property for any purpose without first obtaining the permission of the Owner.

ARTICLE 7 - OTHER WORK:

Coordination:

SC7.02 Add the following language at the end of Paragraph 7.02 of the General Conditions which is to read as follows:

Contractor shall be responsible for cost of additional engineering and construction Work as a result of incorporating substitute material or equipment in compliance with Contract Documents.

ARTICLE 11-COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK:

Unit Price Work:

SC11.03 Delete Paragraph 11.03C of the General Conditions in its entirety and insert the following in its place:

The Unit Price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

SC11.03.C.1 If there is no corresponding adjustment with respect to any other item of Work; and

SC11.03.C.2 If Contractor believes that it has incurred additional expense as a result thereof; or

SC11.03.C.4 If Owner believes that the quantity variation entitles it to an adjustment in the Unit Price, either Owner or Contractor may make a claim for an adjustment in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC11.04 Add a new paragraph immediately after Paragraph 11.03.C.4 of the General Conditions which is to read as follows:

Paragraph SC l 1.03.C shall not be applicable to unbalanced unit prices or lump sums.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION:

Application for Payments:

SC 14.02.A.1 Add a new paragraph immediately after Paragraph 14.02.A.3 of the General Conditions which is to read as follows:

Applications for progress payments shall be accompanied by supporting documentation required by Paragraph 14.02.A including:

SC14.02.A.1.1 Proof of insurance coverage required by the Contract Documents.

SC,14.02.A.1.2 Provide list of locations of stored equipment and materials.

SC14.02.A.1.3 Proof of payment to suppliers within 30 calendar days of applications for payment.

Review of Applications:

SC14.02.B Add new paragraphs immediately after paragraph 14.02.B.5.d of the General Conditions which are to read as follows:

SC14.02.B.5.e Failure to make payment to subcontractors or suppliers or for labor.

SC14.02.B.5.f Damage to another Contractor.

Substantial Completion:

SC14.04 Add the following language at the end of Paragraph 14.04 of the General Conditions:

The amount of retainage with respect to Substantial Completion will be as stipulated in the Agreement.

Review of Application and Acceptance:

SC14.07.B Add the following language at the end of Paragraph 14.07.B of the General Conditions:

The amount of retainage with respect to substantial completion will be as stipulated in the Agreement.

ARTICLE 16 - DISPUTE RESOLUTION:

Delete Article 16 of the General Conditions in its entirety and insert the following in its place:

ARTICLE 16-LITIGATION:

SC16.01 All claims, disputes, and other matters arising out of, or relating to, the Contract Documents or breach thereof, except for claims which have been waived by the

making and acceptance of final payment as provided by Paragraph 14.09 shall be subject to litigation in accordance with the American Bar Association and laws of the State of Maine.

SC16.02 Notice of the demand for litigation shall be filed in writing with the other party to the Contract Documents and with the appropriate legal entities, and a copy shall be filed with the Director. Litigation shall in no event be made on any claim, dispute, or other matter in question which would be barred by the applicable statue of limitations.

SC16.03 The Contractor will carry on the Work and maintain progress schedule during any litigation proceedings unless otherwise mutually agreed in writing.

ARTICLE 18-BLASTING:

SC18.01 Blasting, if required, shall be performed only after approval has been given by the Owner for such operation.

SC 1 8.02 All blasting shall be performed in accordance with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., of the "Construction Safety Rules and Regulations", as adopted by the State Board of Construction Safety, Augusta, Maine and Maine Department of Transportation "Standard Specifications" Section 107.12, Use of Explosives. Blasting through the overburden will be allowed provided suitable arrangement can be agreed upon to measure the rock profile prior to blasting.

SC18.03 Store explosives in accordance with the laws and ordinances relating thereto, and in accordance with and to the satisfaction of the Chief of the Fire Department.

SC 1 8.04 Bring explosives upon the Work only as needed and in small quantities.

SC 1 8.05 Ledge which has been drilled for blasting shall be adequately covered with mats and heavy timbers or earth backfill, and every precaution taken for the protection of the Work, traffic, adjacent buildings, and other property.

SC18.06 No blasting shall be done except by those authorized and in a manner to comply with all State and municipal regulations relating thereto.

SC18.07 Any site where electric blasting caps are located or where explosive charges are being placed or have been placed shall be designated as a "Blasting Area".

SC18.08 A "Blasting Area" within three hundred (300) feet of any traveled way shall be marked by approved signs with information similar to the following:

"BLASTING AREA. TURN OFF RADIO TRANSMITTERS"

and on the reverse side:

"END OF BLASTING AREA".

SC18.09 Notify each public utility company having structures in proximity to the site of the Work, of the impending use of explosives and give such notice sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury.

SC18.10 Such notice shall not relieve the Contractor of responsibility for damage resulting from his blasting operations.

SC18.11 The Contractor shall be liable for all damages to persons or property caused by blasting or explosions or arising from neglect to properly guard and protect the excavations and all portions of the Work, and he shall wholly indemnify the Owner and Engineer against claims on such account

SC18.12 No compensation will be allowed the Contractor in any event, or under any circumstances, for loss incurred by him or arising from his neglect to fully comply with these requirements.

SC18.13 Conduct a Pre-Blast Survey of all structures within the Blasting Area and provide the Director/Engineer a written report of the Pre-Blast Survey.

SC 1 8.14 Provide the Director/Engineer with a Blasting Log for the Work containing the following information:

1. Location.
2. Time and date.
3. Number of holes.
4. Amount and type of explosives used per hole.
5. The names of persons, companies, corporations or public utilities contacted, owning, leasing, or occupying property or structures in proximity to the site of the Work of the Contractor's intention to use explosives.

ARTICLE 19 - ENVIRONMENTAL REQUIREMENTS:

SC19.1 The Contractor shall comply with State and local environmental protection requirements including, but not limited to, the following:

SC19.1.1 Control of dust from excavations and spillage of materials on highways and dust from rock drilling operations.

SC19.1.2 Compliance with local ordinances on burning.

SC19.1.3 Control of erosion and washing of materials from excavated slopes and embankments.

SC19.1.4 Prevention of stream turbidity from dewatering and general earthwork operation.

SC19.1.5 In general, construction of necessary temporary erosion and sedimentation control devices will be in conformance with the Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices.

SC19.1.6 The Contractor shall not dispose of excess materials on lands designated or classified as wetlands by the U.S. Dept. of Fish and Wildlife. The Contractor is advised to contact the Corps of Engineers, the State Department of Environmental Protection and related agencies prior to selecting any or all sites for disposal of excess materials.

ARTICLE 20 - NON-RESIDENT CONTRACTORS

SC20.1 The successful Bidder, if a corporation established under laws other than the State in which the proposed construction is located, shall file, at the time of the execution of the Contract with the Owner, notice of the name of its resident attorney, appointed as required by the laws of the State in which the proposed construction is located. (In the State of Maine, Section 121 of Chapter 53 of the Revised Statutes).

The successful Bidder, if a resident of another state other than that which the proposed construction is located and not a corporation, shall file, at the time of the execution of the Contract, with the Owner a written appointment of a resident of the State in which the construction is located, having an office or place of business therein, to be his true and lawful attorney upon whom all lawful processes in any actions or proceedings against him may be served; and in such writing, which shall set forth said attorney's place of residence, shall agree that any lawful process against him which is served on said attorney shall be of the same legal force and validity as if served on him, and that the authority shall continue in force so long as any liability remains outstanding against him in said State. The power of attorney shall be filed in the office: of the Secretary of State if required, and copies certified by the Secretary shall be sufficient evidence thereof. Such appointment shall continue in force until removed by an instrument in writing, designating in a like manner some other persons upon whom such process may be served, which instrument shall be filed in the manner provided herein for the original appointment.

A non-resident Contractor shall be deemed to be:

1. A person who is not a resident in the State where the proposed construction is to be located.

2. Any partnership that has no member thereof resident in the State where the proposed construction is to be located.

3. Any corporation established under laws other than those of the State in which the proposed construction is to be located.

ARTICLE 21 - ADDTIONAL INSTRUCTIONS AND DETAIL DRAWINGS:

SC21.1 The Contractor may be furnished additional instructions and detail Drawings, by the Director/Engineer, as necessary to carry out the Work required by the Contract Documents.

SC21.2 The additional Drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail Drawings and instructions.

ARNCLE 22 - MAINTENANCE OF TRAFFIC:

SC22.1 Contractor shall be responsible for scheduling and performing Work in such a manner to provide safe passage for public traffic at all times with a minimum of obstruction to traffic.

SC22.2 Contractor shall maintain at least one-way traffic over the area during the workday and shall provide necessary warning signs, flags and flagmen to accomplish this. Further, the Contractor shall leave the area in a satisfactory state, acceptable to the Director/Engineer, at the end of each day so as to provide two-way (i.e., two lane) traffic during the night and over the weekend. Access to all driveways must be provided at the close of each workday.

Contractor shall keep the Owner, Police Department and the Fire Department continually aware of the status of any street closings during the term of construction. Contractor shall maintain safe pedestrian access to buildings at all times.

ARTICLE 23 - SPECIFICATIONS SENTENCE STRUCTURE:

SC23.1 These Specifications are written in imperative and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “the Contractor shall" shall be included by inference at the beginning of each paragraph, subparagraph and phrase.

SECTION 02000

SITE SPECIAL CONDITIONS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. **The Contract Documents include the Project Specifications and Plans entitled "York Tennis Courts Demolition and Reconstruction" prepared by Walsh Engineering Associates and Licht Environmental Design, LLC dated June 01, 2020.** The Contractor shall perform the scope of work as defined herein based on the Contract Documents, information provided by the Owner or Owner's Representative at the Pre-Bid Conference; and from field measurements taken by the Contractor.

C. The contractor may request AutoCAD DWG drawings in electronic format and survey control from the ENGINEER for layout and construction, however, the printed drawings shall govern and serve as the official Contract Documents in all instances.

D. Installation of Erosion and Sedimentation controls as shown on Drawings and Details.

1.02 SPECIAL INSTRUCTIONS:

A. Reference is made in this Section to MDOT Specifications, which shall mean the latest Standard Specifications, Highways and Bridges by the State of Maine Department of Transportation, Supplemental Specifications in Force and any amendment thereto.

B. Contractor shall direct and control construction traffic so as to minimize disruption of local traffic flows, and to keep designated fire lanes open at all times.

C. Comply with governing regulations pertaining to environmental protection, including DEP and EPA NPDES permit requirements. Take adequate measures to minimize adverse environmental impacts during construction, i.e. erosion control, dust control and noise control. Specific measures are directed for erosion control; see Specifications (S02270). Furnish and spread calcium chloride or apply water as appropriate for dust control during construction, as directed by the Architect/Engineer. Noise-generating heavy equipment shall not commence Work before 7:00 A.M. or continue past 7:00 P.M.

D. Bidders should visit the site and acquaint themselves with existing conditions. Attendance at the Pre-Bid Conference is mandatory for a bid to be accepted for the project.

E. The Contractor shall secure all necessary permits for work operations shown on the Drawings.

F. Prior to the start of construction, the Contractor shall secure a final disposal site for all construction and demolition debris, and submit to the Owner, as applicable, (with a copy to the Engineer) for review and approval.

G. Existing topography and Conditions: The performance of the Contract shall be based on these Specifications, field measurements of existing conditions by the Contractor and from information provided by the Owner or Owner's Representative at the Pre-Bid Conference and as referenced in S. 02000 1.01 B., above.

H. "Limit of Work" lines where indicated are an approximate indication of area requiring Work under Contract, and are not absolute limits of scope of Work required under Contract.

I. Contractor shall comply with all aspects of P.L. 437, the Maine "Dig Safe" Law, which requires location, pre-notification and protection of all utility companies who have underground utility lines in the vicinity of any proposed excavation Work.

1.03 TREE PROTECTION:

1. 4' barrier fence, with steel fence stakes.

2. 2"X6" planks and steel wire, with burlap

1.04 SUBSURFACE INVESTIGATION

A. Contractor shall comply with Section 02010 of the Specifications.

B. Subsurface Investigations: Refer to Geotechnical Report, Appendix A. This information provides information for Bidders' information and convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations and are not a warranty of existing conditions. The Geotecnhical Report, Appendix A are not a part of the Contract Documents.

1.05 FEDERAL, STATE AND LOCAL PERMITS:

A. The Contractor should be familiar with the EPA National Pollutant Discharge Elimination System (NPDES) Permit Requirements enacted October 1992. The Contractor and the Owner are jointly responsible for proper notification to the EPA, if necessary, under the conditions of the NPDES program.

B. Removal of trees is not anticipated. However, removal of any stumps if encountered are to be hauled offsite. Refer to DEP Site Location Order (where applicable) for further conditions relating to waste disposal.

1.06 EXISTING UTILITIES:

A. Locate and clearly mark all existing above ground and underground utilities prior to any excavations, in all areas of Work. By law, Contractor must contact "Dig-Safe" (1-800 225-4977) prior to any excavation Work.

1.07 PARKING AND WORK AREA PROTECTION

A. Contractor shall be responsible for providing a designated employee parking area and equipment storage area within the limits of Work to be coordinated with the Owner. Employee parking, equipment and materials delivery shall not block pedestrian or vehicular access to the existing facilities.

B. Contractor shall take all necessary precautions to safely enclose the work areas and prevent pedestrian entry into work zones. Install barrier fencing, signs, banners or other means as required to protect the work areas from unauthorized access or use, and to safely protect pedestrians and public or private properties from harm or damage.

1.08 ALTERNATES

A. In addition to the Base Bid, the Contractor shall submit Add Alternate (Alternate) Bid amounts with each of the following additional Work Items included:

NO ADD ALTERNATES PROPOSED.

END OF SECTION

SECTION 02030

LAYOUT OF WORK

PART 1 – GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, The Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2 are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

1.02 DESCRIPTION OF WORK:

A. Alternates: Refer to Section 02000 – Site Special Conditions to determine extent of work of this Section that may be affected by any Alternates or Additives, if accepted. (No Alternates proposed.)

B. The Contractor shall lay out the Work from the established dimensions, base lines, bench marks and coordinate system based on the location of the existing Tennis Courts and as directed by the Architect/ Engineer, and shall be responsible for all measurements or elevations in connection with the layout. Refer to Section 02000.101.C for use of electronic DWG/CAD files for layout and grading.

C. The Contractor shall establish in the field, a Limit of Work line, as indicated on the Drawings, and shall be responsible for maintaining this line throughout the construction of the project.

D. The Contractor shall establish a local benchmark for vertical control throughout the construction of the project.

PART 2 – PRODUCTS

2.01 SURVEY LAYOUT MATERIALS:

A. The Contractor shall furnish, at Contractor's own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any and all parts of the Work. The Contractor shall be responsible for executing the Work to the lines and grades indicated on Drawings, Contract Documents and Specifications. The Contractor shall also be responsible for maintaining and preserving all layout stakes and other marks established by the Owner until authorized to remove them. If such marks are destroyed by the Contractor or through Contractor's negligence before their removal is authorized by Owner or his representative, Contractor shall replace all damaged or disturbed marks at no additional cost to Owner.

PART 3 – EXECUTION

3.01 LAYOUT & CONTROL:

A. Establish and plainly mark center lines or layout lines for each item of Work, and such lines and grades that are reasonably necessary to properly assure that location, orientation, and elevations established the project are in conformance with *USTA and USTC &TBA* standards and the Project Specifications.

B. During progress of Work, and particularly as Work progresses from item to item, Contractor shall have lines, grades, plumbness etc. of all major Work inspected by the Architect/Engineer, or checked and certified by a Registered Land Surveyor as requested, for compliance with Drawings and Specifications. Notify Owner before any major Work items are placed. In addition, Contractor shall furnish to the Architect/Engineer certificates from a Registered Land Surveyor or Civil Engineer, where requested, that the following Work is complete and correct in every respect as required by the Contract Drawings:

1. Dimensions, Slopes and Elevations of Tennis Courts.

END OF SECTION

SECTION 02070

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY:

A. In accordance with pertinent provisions of this Section, carefully demolish and remove from the site those items scheduled to be so demolished and removed. Work shall be limited to such work included, related to, or affecting work generally to be performed by the Site Contractor under Divisions 1 and 2 Specifications herein.

B. Related Work:

1. Documents affecting Work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and all Sections in Divisions 1 and 2 of these Specifications.

2. Do not remove, demolish, alter items or interfere with work performed by others under separate contracts or work by other trades not included in this Section without the Engineer's written permission.

3. Coordinate Work with work performed by other trades not included in this Section. Contractor shall carefully coordinate other demolition and removals such as existing buildings, foundations, etc.

1.02 SAFETY:

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

1.03 REMOVALS, STORAGE AND DISPOSAL:

A. Safety shall be the primary consideration for demolition Work, including removal, storage and disposal of all waste materials for Work required under this Section. The Owner's Representative or Engineer must approve locations for storage and disposal of materials.

B. Any hazardous or regulated materials encountered in the regular performance of required Work shall be reported to the Engineer immediately upon discovery and shall be handled and disposed of in accordance with applicable local, state and federal regulations. Contractor shall request Engineers approval prior to storage or disposal of materials onsite.

PART 2 – PRODUCTS

(No products are required in this Section)

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct any conditions detrimental to timely and proper completion of the Work. Do not proceed until such unsatisfactory conditions are corrected.

3.02 DEMOLITION:

A. By careful study of the Contract Documents and from an existing conditions review at the Pre-Bid Site Meeting, determine the location and extent of selective demolition to be performed. Demolition to include:

1. Removal of all Tennis Court fencing. Posts, gates, footing and appurtances. Disposal to be the responsibility of the Contractor. (Note – temporary removal and replacement of parking lot guardrail may be required to access the site. Refer to Drawings.)

2. Removal of tennis court line posts, benches, or appurtances. Final disposition to be coordinated with Owner's Representative. Existing nets to be removed by Owner unless otherwise indicated.

3. Removal and proper disposal of existing bituminous pavement surfaces. Reclaiming of bituminous pavement for re-use as base material for the project is not permitted.

4. Removal and proper disposal of all unsuitable base, subbase or subgrade materials. Determination of unsuitable materials shall be made based on on-site investigation by the Owner's Representative or Engineer and results from Geotechnical Soils testing**. Refer also to Section 02230 Gravel Base Courses – for instructions on potential stockpiling and re-use of top 1 to 2 feet of existing subbase gravels.**

5. Removal of any tree limbs or overhanging branches in the work area, removal of soil and/or turf within work area.

6. Removal and proper disposal of any underground or overhead utilities or drains as directed by the Engineer or as otherwise specified in the Specifications.

B. In company with the Engineer, or his Representative, visit the site and verify the extent and location of selective demolition required.

1. Carefully identify and mark limits of selective demolition to be included in this Work.

2. Mark interface surfaces or items as required to enable Workmen also to identify items to be removed and items to be left intact.

C. Prepare and follow an organized plan for demolition, removal, storage and disposal of items.

1. Shut off, cap, plug and otherwise protect existing public or private utility lines in accordance with the requirements of the Owner, public agency or utility having jurisdiction.

2. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere. Where required place clean compacted fill in voids or holes resulting from removal of items.

3. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

D. Demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site.

3.03 REPLACEMENTS:

A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Engineer and at no additional cost to he Owner.

END OF SECTION

SECTION 02210

GRADING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. The Conditions of the Contract and all Sections of Division 1 and 2 are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. All subgrade, base and subbase gravel and finish pavement grades shall comply with the United States Tennis Association (USTA) standards for 78 foot – three court construction.

D. The Standard Specifications referred to herein is the book entitled "*Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995 and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index Of Payment Items Included In Each Section.

Those Sections of the aforementioned *Standard Specifications* which are cited herein, are applicable to the Work of this Contract as they may be modified, amplified, or added to by this Section.

E. Contractor to install and maintain all necessary erosion controls to comply with the Department of Environmental Protection (DEP) Best Management Practices and to prevent off-site erosion or sedimentation including tracking of material on travel or parking surfaces.

l.02 DESCRIPTION OF WORK:

A. Provide all labor, material, equipment and services required to complete the following:

1. All rough grading and finish grading as required and as indicated for Tennis Courts, walks or lawn areas.

l.03 QUALITY ASSURANCE; SUBMITTALS:

A. General: Comply with requirements of Divisions 1 and 2 Sections for Submittals and Quality Control.

B. Inspection:

1. The Geotechnical Engineer may inspect critical phases of site grading as directed by the Engineer, prior to placement of fill materials or pavement.

2. Allow for and coordinate all local code inspections as required.

3. Tolerances:

   a) Construct rough-graded surfaces to plus or minus 1.0 inch of elevations indicated, creating smooth, even surfaces.

   b) Construct fine-graded surfaces to plus or minus 3/8 inch of elevations indicated, creating smooth, even surfaces.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.01 ROUGH GRADING:

A. Rough grading of all areas within the project, including excavated and filled 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 skilled blade bulldozer or scraper operations except as otherwise specified. The finished subgrade surface generally shall be not more than 0.1 feet above or below the established grade or approved cross-section, with due allowance for topsoil, sod, gravel bases and pavement depths; the subgrade tolerance for all areas to be paved shall not exceed l.0 inch above or below the established subgrade. All ditches, swales and gutters shall be finished to drain readily. Provide roundings at top and bottom of banks and at other breaks in grade.

B. Protection: Protect newly graded areas from the action of the elements. Any settlement or erosion that occurs prior to Acceptance of the work shall be repaired, and grades re-established to the required elevations and slopes. Fill to required subgrade levels and recompact any areas where settlement occurs.

3.02 SUBGRADE PREPARATION FOR PAVEMENTS AND WALKS:

A. Contractor shall perform test pit or pits as directed by the Engineer or Geotechnical Engineer to evaluate subgrade conditions under the existing tennis courts following removal of pavement surfaces. Based on this evaluation the determination of any removal of base and subbase gravels or removal and filling of any unsuitable subgrade material shall be made.

A. Form, shape and roll subgrade to conform to cross-section of finished pavement. Roller: ten-ton minimum weight in all open areas; suitable equipment in confined spaces.

B. Remove stones greater than 2/3 lift thickness (8") from subgrade to 12" depth from subgrade elevation. Fill depressions with Subbase Gravel or Granular Borrow (Section 02230). Filling of subgrade where required may contain cobbles up to 2/3 the lift thickness (12 inch max. lifts) before compaction. When surface areas become impervious due to concentrations of fines,

lightly scarify and re-compact. In severe cases, remove such material and replace with suitable soil as directed. (Refer to Sections 02220 and 02230.)

3.03 FINE GRADING:

A. Fine grading of gravel bases in areas to receive pavement shall be accomplished by the use of a suitable motor-grader, or by hand-raking in areas too small to allow machine grading. Finish grading shall be carried out after the base material has been thoroughly compacted as specified. Use screeds, grade stakes, string-lines, etc. as necessary to maintain specified finish sub-grades and tolerances.

B. Finish-tolerance for all areas to receive pavements or slab-on-grade shall not exceed 3/8 inch above or below the required finished subgrade of the gravel base material.

C. Loamed areas shall be fine-graded using hand raking and/or tractor-mounted rakes, in conjunction with removal of stones and debris, etc. Finish-tolerance for lawn and play field areas shall not exceed 5/8 inch above or below specified finished grades. Tolerance on slopes, embankments, open areas, etc. shall be within ±1-1/4 inches of specified finished grades. Lawn areas adjacent to the Tennis Courts required to be Loamed and Seeded shall not exceed 3H;1V slopes. The top of any such fill slopes shall not begin within a minimum of two (2) feet from the edge of the new Tennis Courts or Fencing.

D. Protection and Restoration: Protect finish-graded areas from the action of the elements. Any settlement or erosion that occurs prior to Acceptance of the Work shall be repaired, and grades re-established to the required elevations and slopes. Fill to required finish-grade levels and re-compact any areas where settlement occurs.

END OF SECTION

SECTION 02220

EXCAVATION, BACKFILL, AND COMPACTION

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, The Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. All subgrade, base and subbase gravel and finish pavement grades shall comply with the United States Tennis Association (USTA) standards for 78 foot – three (3) court construction.

D. The Standard Specifications referred to herein is the book entitled *"Standard Specifications, Highways and Bridges"* published by the State of Maine Department of Transportation dated April, 1995 and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index Of Payment Items Included In Each Section.

Those Sections of the aforementioned *Standard Specifications* which are cited herein are applicable to the Work of this Contract as they may be modified, amplified, or added to by this Section.

E. Reference is made to OSHA Safety and Health Standards for the Construction Industry, 29 CFR 1926/1910, 1991 Revision.

l.02 DESCRIPTION OF WORK:

A. Provide all labor, material, equipment and services required to complete the following:

1. Excavation, trenching, filling, backfilling and compaction as required, for the Tennis courts and landscaping, etc., including removal and replacement of unsuitable subsurface materials.

2. Provide all necessary sheeting, shoring and bracing to protect the Work and assure safety of Workmen, adjacent property and the public.

3. Maintenance of all excavations free from water.

4. Removal and proper disposal of all loose or disturbed marine deposits, glacial till, or other unsuitable material within the pavement areas, or other subgrade areas, as directed by the

Engineer, and replacement with suitable compacted fill (Subbase Gravel or Granular Borrow.)

5. Pre-compact undisturbed original soil or existing fill as appropriate and as specified, prior to construction and placement of new fill and backfill.

6. Perform field density tests as required herein and as directed by the Engineer.

I.03 QUALITY ASSURANCE; SUBMITTALS:

A. General: Comply with requirements of Division 1 Sections for submittals and quality control.

B. Field Measurements:

1. Verify that survey horizontal and vertical control reference points are present and correct as indicated. Protect from disturbance during the course of the work, or correctly re-establish as necessary. Refer to Section 02000 – Site Special Conditions.

2. During construction, provide all necessary line and grade staking to properly control the Work, as specified in Section 02000 – Site Special Conditions.

C. Testing and Inspection:

1. The Owner may engage a testing and inspection service for excavation classification, materials testing and quality control testing during earthwork operations.

2. Allow for and coordinate all local inspections as required.

3. The Contractor shall assist Testing Agency as required and shall deliver samples of all materials required to the Testing Agency at Contractor's expense. Coordinate testing with Owner and Engineer.

4. Tests for Proposed Soil Materials:

a) Test soil materials proposed for use in the Work and promptly submit test reports to Engineer.

b) For granular fill materials, perform a mechanical analysis (ASTM D421) and moisture-density curve (ASTM D-1557 modified). Submit samples and test results to Engineer prior to placement of fill for laboratory tests.

c) Test existing Subbase materials removed under S. 02220-3.02 C. for determination that it meets specification requirements for Subbase Gravel or Granular Borrow.

5. Tolerances:

   a) Maintain the moisture content of fill material as it is being placed within plus or minus two percent of the optimum moisture content of the material as determined by the laboratory tests herein specified.

   b) Grading - See Section 02210-Grading.

D. Submittals:

1. Soils material test results for compacted granular fill, compacted structural fill, stone bedding material, and sand bedding material.

2. Field density test results.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Fill Material from On-Site Excavations:

1. Suitable excavated material may be used for general filling and rough grading of the site, provided the soil can be compacted to required density. On-site material shall not be used as fill beneath or adjacent to Tennis Courts unless it meets the appropriate requirements for granular borrow or structural fill, as outlined below.

2. Unsuitable soils include materials that cannot be compacted to required density or contain organic material, peat, muck, coal, ash or debris.

3. Excavated bedrock may not be used as fill material, except as general site fill outside pavement or structure limits.

B. Granular Borrow (MDOT Section 703.19):: Granular borrow shall be used as fill to raise site grades to sub-grade below pavement areas. Granular borrow shall be suitable sand or gravel, free of organic materials, loam, lumps or balls of clay, trash, snow, ice, frozen soil, stumps, stones over 5-inch diameter, or other objectionable material. The gradation of that portion of the material passing a 3-inch sieve shall meet the following limits

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
No. 40	0-70
No. 200	0-7.0

Material encountered during on-site excavation, which falls within the above specification, may be stored in segregated stockpiles for reuse as Granular Borrow.

C. Stone Bedding Material: Crushed drainage stone for all perimeter drains, underdrains, sub-drainage, building slab capillary break material, and pipe or structure bedding material shall conform to MDOT *Standard Specification* 703.22, Type C, for underdrain backfill material, as presented below:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1 in.	100
3/4 in.	90-100
3/8 in.	0-75
No. 4	0-25
No. 10	0-5

D. Underdrain Backfill Material: Backfill material above underdrain stone & wrap up to Subbase Gravels at subgrade elevation shall conform to MDOT *Standard Specification* 703.22 Type B Underdrain Backfill Material as presented below:

Sieve Designation	Percent by Weight Passing Square Mesh Sieve
1 in.	95-100
½ in.	75-100
No.4	50-100
No. 20	15-80
No. 50	0-15
No. 200	0-5

PART 3 – EXECUTION

3.01 PREPARATION:

A. Be sure that all required erosion and sedimentation controls are in place and properly maintained, prior to and during any earthwork.

B. Locate and mark any and all existing underground and aboveground utilities before beginning any earthwork. Notify "Dig-Safe" (1-800-225-4977) at least 3 days prior to beginning any excavation Work.

C. Remove and properly dispose of any pavement, structures, fences, etc. scheduled for removal (See Section 02070 Selective Demolition). Save and properly store any materials scheduled for re-use.

D. In conjunction with the Engineer, designate acceptable spoil and waste areas as necessary, for on-site storage and/or disposal of stumps, waste, mulch, demolition material, loam, earth, etc. Properly store or dispose of materials in designated areas throughout the course of the Work, and maintain all such areas as specified.

E. Contractor shall secure any necessary sources of borrow materials promptly, so that earthwork may proceed expeditiously once started. Complete all earthwork activities in a given area as

soon as possible once the area is stripped and grubbed. Completed areas should be loamed, seeded or stabilized as soon as possible after final grade is established.

F. Bring each area to final grade, and install loaming and seeding (either temporary or permanent) as soon as possible, and no longer than 15 days, after completing final grading. Maintain all necessary erosion controls as required until grass and plant growth is firmly established. Temporary erosion controls, shall remain in place until Acceptance of related Work and shall be removed by the Contractor within 30 days of Acceptance unless otherwise approved by Engineer.

3.02 EARTH EXCAVATION:

A. Excavation consists of the removal, reuse as site fill, and/or satisfactory stockpiling or disposal of all materials encountered, to establish subgrades. Maintain surface drainage to prevent ponding or erosion. Do not excavate extremely wet or frozen material. In wet areas, provide pumping equipment or grade the area so that water drains from the soil to allow proper excavation or drilling operations. Provide any special equipment necessary to perform earthwork operations. When excavating near trees to be saved, provide adequate tree protection and prune roots when exposed to minimize injury to same.

1. Mass excavation - removal of soil materials in open areas where equipment with blade or bucket, such as bulldozer, front-end loader, or earth scraper is used.

2. Trench excavation - removal of soil materials in confined areas, such as trenches or pits, where equipment such as backhoe, shovel, clamshell or trencher is used.

B. Contractor shall remove all existing material, including but not necessarily limited to soil, rubble, debris, trash, existing stone or masonry walls, minor structures, unsuitable material and soils of all types. If the Contractor uncovers material of a suspicious or hazardous nature, regulated material, unhealthful or contaminated soils or other unanticipated conditions, immediately inform the Engineer.

C. Contractor shall remove existing site materials as follows:
Removal of existing pavement, base, subbase and subgrade materials under courts and for minimum distance of 1 foot outside footprint of new courts to required subgrade elevation as shown on Drawings. (Refer to Appendix A for Geotechnical information on existing subsurface conditions**.). Care shall be taken to remove materials sequentially as follows to be able to evaluate possible re-use of top layers of existing subbase materials, based on meeting Material Requirements of Section 02220-2.01.**

a. Remove/excavate existing pavement and base materials (approximately 1 foot depth+/- and dispose of offsite. Review conditions with Engineer to determine depth of unsuitable base material below pavement.
b. Excavate top layer of Subbase materials (Sand and Gravel with some silt) to approximate depth of 2-2.5 feet to top of existing geotextile as directed by Engineer. Stockpile onsite for testing to determine if suitable for re-use as Subbase material (Section 02220-2.D.) or Granular Borrow (Section 0220-2.B).
    (i) If materials are found to be unsuitable, remove materials from site.

(ii) If materials are found to meet Subbase or Granular Borrow material, at the direction of the Engineer, they may be used directly on top of the subgrade in the lower section of the proposed Subbase Gravels following removal of lower levels of existing Subbase materials (See S. 02220-1.02.5.c. below).

c. Excavate the lower elevations of the existing subbase/subgrade to required subgrade elevations and remove materials from site.

D. Subgrade preparation: Review subgrade for any unsuitable soils and remove as directed by the Engineer per S. 02220-1.02.A.4. and 3.04 and replace and compact with Subbase Gravel or Granular Borrow to the required density.

a. Compact subgrade with several passes with a 10-ton sheepsfoot drum roller. Soft spots, unsatisfactory soils, areas of excessive pumping, or rutting over on inch in depth should be excavate and replaced with suitable compacted fill as noted.

b. Subgrade shall be graded at 2% from the center of the courts along the net lines and extending to the outer edge of the courts to the west and east, respectively to facilitate subsurface drainage to underdrains. Contractor shall take care to maintain minimum depths for placement of gravels and pavement in conformance with plans and specifications.

D. Excavations carried below the depths indicated or as required for construction, without written authorization from the Engineer, shall be filled with compacted structural fill, where requested by the Engineer, at the Contractor's expense.

E. When excavating and filling in tree areas, protect root systems of trees to be saved. Prune roots as directed.

3.03 DEWATERING:

A. Control surface runoff and sub-surface infiltration so as not to allow water to enter or accumulate in excavations or areas to be filled. Remove water from excavations continuously to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades, foundations and undisturbed bearing surfaces. Control water level to at least 12 inches below subgrade elevation to reduce disturbance of the subgrade soils and provide a more stable working surface during construction. Provide and maintain sumps, pumps, well points, suction and discharge lines and other dewatering systems and components necessary to convey water away from the work area. Discharge water in a safe, legal manner into temporary sedimentation ponds or prepared outlet areas before discharging to existing waterways or drainage systems, as required. Do not allow water carrying excessive soil particles to be discharged directly to existing waterways or drainage systems. Under no conditions shall surface water or groundwater be discharged into sanitary sewer systems.

B. Install underdrains and outfall as shown on plans into subgrade. Stone underdrain stone shall connect in all cases with the Subbase Gravel course to facilitate underdrainage of courts.

3.04 UNSUITABLE SOILS:

A. Refer to Appendix A for general subsurface soil information. The Contractor is responsible for doing his own on-site investigation to determine the extent of unsuitable subsurface material or conditions. Should unforeseen unsuitable materials or conditions be encountered notify the Engineer before proceeding.

B. Field locate the limits of and properly remove and dispose of all encountered unsuitable subsurface materials when so directed by the Engineer. All such materials shall become the property of the Contractor and shall be properly disposed of off-site.

C. Secure all required state and local permits necessary for removal and disposal of any sewerage, toxins, or any other such classified materials that may be encountered on-site.

D. Unsuitable material such as peat, muck, soils with high organic content, or junk fill which underlies the subgrade or the bottom of excavations, outside the normal limits of excavation shall be removed and replaced with suitable material when directed by the Engineer. The "Contract Price" will be adjusted in accordance with the General Conditions and Supplementary General Conditions to compensate for the cost of additional excavation and suitable replacement materials.

E. Unsuitable material, which lies within the limits of required excavation, will be removed as part of the Work, without change in the "Contract Price". Contractor shall not reuse unsuitable excavated materials on-site unless approved by Engineer**. (Refer to S. 02220-3.02.C. for further information on possible re-user of top layer of existing Subbase material.)**

F. Soil rendered unsuitable for bearing by the Contractor's operations shall be removed at the Contractor's expense, and replaced with compacted gravel, crushed stone or concrete when so directed by the Engineer, at no expense to the Owner.

G. Unsuitable soils shall be legally disposed of off-site at the Contractor's expense.

3.05 FILL AND BACKFILL:

A. Filling is the placement of satisfactory soil materials, whether originating from on-site or off-site, in areas where existing grade is to be raised in elevation. Where the existing ground or subgrade has a density less than that specified herein (see SS 3.09- "Compaction"), compact the soil to the required density. Where unsatisfactory soils occur in areas to be filled, remove same before filling and dispose of these soils in areas designated by the Specifications (see SS 3.04).

B. Backfilling is the placement, or replacement, of satisfactory excavated soil materials, or borrow, whether originating from on-site or off-site, in areas where existing grade is to be generally restored to original elevation, in trenches, pits, against structures or other areas previously excavated, or as shown on the Drawings.

C. Place fill and backfill in not over 12” layers (loose measure), except where thinner layers are specified herein, and compact each layer to required density (see SS 3.09 - "Compaction"). Areas

to be filled and backfilled must be free of standing water. Do not place fill or backfill on surfaces that are muddy, frozen, or contain frost or ice.

D. On existing slopes of 4:l or steeper, excavate horizontal benches 6' wide every 2' vertically to eliminate shear planes before placing any fill.

E. Filling and backfilling of trenches shall not commence until all piping, conduit, etc., has been installed, tested, inspected and approved and the locations of all pipe, fittings, and underground structures have been measured and recorded. Fill and/or backfill shall be carefully placed in layers, as specified herein, by hand methods around the pipe or conduit to a depth of one foot above the top of the pipe and shall be carefully tamped and compacted with hand rammers or mechanical tampers so as not to damage the completed pipe.

F. The Contractor shall assume responsibility for surface and subsurface drainage onto, or from, the site and shall maintain such drainage during the life of the Contract, and shall at all times protect adjacent property, structures and utilities.

3.06 PLACEMENT OF COMPACTED GRANULAR BORROW:

A. Under pavement surfaces, compacted Granular Borrow or Subbase Gravel shall be used for all filling and backfilling to subgrade.

B. Compacted Granular Borrow should be placed in maximum 12" thick lifts and compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D1557. Before placing the first lift of compacted granular fill, all disturbed soil, loose rock, organic matter, asphalt, concrete, trash, rubble or other deleterious or compressible material shall be removed from the subgrade. The granular fill shall be spread evenly by mechanical equipment or by manual means above the approved (compacted) subgrade, and shall be built up in horizontal layers as nearly even as practicable to prevent the thickness of lift from exceeding that specified.

C. If in the opinion of the Engineer, the Granular Borrow material becomes too wet for the required compaction, the fill shall be dried by a method approved by the Engineer prior to commencing or continuing compaction operations. Likewise, if in the opinion of the Engineer, the fill material becomes too dry for the required compaction, the fill shall be moistened by a method approved by the Engineer prior to commencing or continuing compaction operations.

D. Puddling methods of compaction will not be permitted.

3.07 PLACEMENT OF COMPACTED SUBBASE AND BASE MATERIALS:

A. Compacted Subbase and Base Gravels shall be placed in maximum 12" thick lifts and compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D1557. Before placing the first lift of compacted Subbase Gravel, all disturbed soil, loose rock, organic matter, asphalt, concrete, trash, rubble or other deleterious or compressible material shall be removed from the subgrade. The gravel shall be spread evenly by mechanical equipment or by manual means above the approved (compacted) subgrade, and shall be built up in horizontal layers as nearly even as practicable, to prevent the thickness of lift from exceeding that specified.

B. Prior to start of paving, the surface of the pavement section base course material should be proof-rolled. The evaluation should include proof-rolling with a loaded temdem axle dump truck weighing not less than 15 tons to aid in identifying soft pockets an areas of excess yielding. Soft spots, unsatisfactory soils, areas of excessive pumping, or rutting over ½ inch deep shall be excavated and replaced with suitable compacted fill per specifications.

C. If in the opinion of the Engineer, the Structural Fill material becomes too wet for the required compaction, the fill shall be dried by a method approved by the Engineer prior to commencing or continuing compaction operations. Likewise, if in the opinion of the Engineer, the fill material becomes too dry for the required compaction, the fill shall be moistened by a method approved by the Engineer prior to commencing or continuing compaction operations.

D. Puddling methods of compaction will not be permitted.

3.08 PLACEMENT OF COMPACTED STONE FILL:

A. Compacted Stone Fill should be placed in maximum 8-inch thick lifts and compacted with hand compaction equipment. The Compacted Stone Fill shall be spread evenly by mechanical equipment or by manual means, and shall be built up in horizontal layers as nearly even as practicable to prevent the thickness of lift from exceeding that specified. Care shall be taken during compaction not to damage perforated drainpipe, pipes, conduits or other utilities.

3.09 COMPACTION:

A. All fill and backfill shall be placed in maximum 8-inch lifts and compacted in accordance with the following unless otherwise specified:

1)	Gravel Subbase and Aggregate Base Courses (refer to Section 02230)	95%
2)	Utility and Pipe Trench, Underdrains.	95%
3)	Unclassified General Fill, Embankment and Landscaped Areas	92%

B. The in-place density and the degree of compaction shall be determined in accordance with ASTM D 2922 (nuclear in-place density) as work progresses. Each layer of fill shall be placed and tested and where directed by Engineer succeeding layers shall not be placed until approval of the previous layer has been given. Any corrective work required, as a result of the testing and the expense of re-testing shall be borne by the Contractor, at no additional cost to the Owner.

3.10 FIELD QUALITY CONTROL:

A. All of the material testing shall be performed by a testing laboratory experienced in performing the required tests, and shall be approved by the Engineer. The Owner shall employ the testing laboratory and pay for all of the tests, except for re-testing as specified below.

B. Materials test reports and in-place field density test reports shall be submitted by the testing laboratory directly to the Engineer, or designated representative, with a copy to the Contractor.

C. The standards for all tests shall be as follows:

1) Mechanical Analysis: ASTM D421.
2) Modified Proctor Method: ASTM Dl557M.
3) In-place Field Density: ASTM D2922.

D. The actual locations of all tests shall be determined in the field by the Engineer, or his representative.

3.11 DISPOSAL OF EXCESS AND WASTE MATERIALS:

A. Transport waste material, including unsuitable subsurface materials, trash, stumps and debris, to off-site disposal area in accordance with these Specifications, DEP Site Location Order and local regulations, at Contractor's expense.

3.12 MAINTENANCE AND RESTORATION:

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion, and keep free of trash and debris.

B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances, until final project Acceptance.

C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and recompact to required density before proceeding with other affected Work at no additional cost to the Owner.

D. Restore new or existing lawns, pavement, walks and curbs, or other exterior surfaces displaced or marked by the work of this Contract, to their original or finished conditions, to the satisfaction of the Engineer or his representative at no additional cost to the Owner.

E. Restore areas affected by settlement, due to the work of the Contractor, to original lines, grades or levels. Correct conditions contributing in any way to such settlement in a manner approved by the Engineer. Remove and replace any improperly placed or compacted fill material at no additional cost to the Owner.

F. Restore damaged lawn areas by topsoiling and seeding. Water as directed by Engineer until final project Acceptance.

END OF SECTION

SECTION 02230

GRAVEL BASE COURSES

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate work with that of other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. All subgrade, base and subbase gravel and finish pavement grades shall comply with the United States Tennis Association (USTA) standards for 78 foot – three (3) court construction.

D. The "Standard Specifications" referred to herein is the book entitled *"Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index of Payment Items Included in Each Section.

Those Sections of the aforementioned *Standard Specifications,* which are cited herein are applicable to the work of this Contract as they may be modified, amplified or added to by this Section.

1.02 DESCRIPTION OF WORK:

A. Provide labor, materials, equipment and services necessary for proper and complete installation of the Tennis Court Gravel Subbase and Base courses as herein specified:

1. Preparation of subgrade (incl. Geotextile installation, if required). (See Section 02210 and 02220.)

2. Gravel Subbase course.

3. Gravel Base course.

4. Aggregate Leveling course.

5. Materials and compaction testing as required.

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 and 2 Sections for submittals and quality control.

B. Codes and Standards: The work under this Section shall conform to the following, except as may be modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Latest Edition.

3. United States Tennis Association (USTA) Design Standards and Specifications.

1.04 SUBMITTALS:

A. Furnish samples, test reports, and materials certifications as required for gravel base and subbase.

B. Test Results:

1. Mechanical analysis (ASTM D421) and moisture-density curve (ASTM D1557M) test results for gravel Subbase, Base and Aggregate Leveling courses.

2. Field Density test results (ASTM D2922).

1.05 PRODUCT HANDLING:

A. Store materials properly to prevent damage, deterioration and inclusion of foreign matter. Aggregates shall be stockpiled in a well-drained location.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Geotextile for Subgrade: Heavy-duty woven polypropylene stabilization fabric, Mirafi 600X or equal.

B. Gravel Subbase: Clean gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3-inch sieve shall meet the grading requirements of MDOT Specifications Section 703.06(b), Type D, as presented below:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1/4 in.	25-70
No. 40	0-30
No. 200	0-7.0

Aggregate for subbase shall not contain particles of rock which will not pass the 3-inch square mesh sieve.

C. Crushed Aggregate Base: Screened or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 1-inch sieve shall meet the grading requirement of Maine DOT Specification, Section 703.06(a), Type A, as presented below:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1/2 in.	45-70
1/4 in.	30-55
No. 40	0-20
No. 200	0-5.0

Type A aggregate for base shall not contain particles of rock which will not pass the 1-inch square mesh sieve.

D. Aggregate Leveling Course: Aggregate course of screened or crushed gravel consisting of hard durable particles which are free from vegetable matter, limps or balls of clay and other deleterious substances. It must have a Micro-Deval value of 20.0 under paved surfaces as determined by AASHTO T 327. The gradation shall have a maximum stone size of ¾ inch and no more than 6 percent No. 200 sieve size.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
I in.	100
¾ in.	90-100
No. 4	10-45
No. 10	10-35
No. 200	0-6.0

D. Reclaimed Asphalt may NOT be used as a substitute for crushed aggregate base.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION FOR GRAVEL BASE COURSES:

A. Form, shape and roll subgrade to conform to subgrade elevations and cross-section of finished pavement. Roller: ten-ton minimum weight in all open areas; suitable equipment in confined spaces. Refer to S. 02220-3.02 for subgrade preparation procedure.

B. Remove stones greater than 6" from subgrade to l2" depth. Fill depressions with Subbase Gravel or Granular Borrow. When surface areas become impervious due to concentrations of

fines, lightly scarify and recompact. In severe cases, remove such over compacted material and replace with suitable soil as directed.

C. Compact subgrade to 95% of maximum laboratory density (ASTM-D 2922). Shape to smooth surface free of irregularities. Protect from damage by proper construction of drainage swales as indicated on Drawings and directed by Engineer, prior to placement of gravel subbase.

D. Geotextile Reinforcement for Subgrade: Install geotextile stabilization fabric on prepared and compacted subgrade in all areas indicated on Drawings, or as designated by the Engineer. Install in accordance with manufacturer's instructions.

3.02 INSPECTION AND TESTING:

A. Prior to placement of any subbase gravel, the Engineer shall inspect and approve the subgrade.

B. Allow for and coordinate for required local inspections.

C. See SS 1.04 of this Section for required tests and test reports.

D. Refer to Section 02220- Excavation, Backfill and Compaction, SS 3.10 for general standards and locations for testing. The Engineer or his representative may designate specific locations for testing.

3.03 GRAVEL SUBBASE:

A. On prepared and approved subgrade, construct Gravel Subbase to conform to Details and Drawings and these Specifications. Gravel shall consist of sound gravel particles free of thin shale, clay or organic material, with no stone over 3" in size, as specified in SS 2.01 B.

B. Construct subbase in one course when depth required is 8" or less and two or more courses when depth required is over 8". Compact each course to 95% of maximum laboratory density. Course thicknesses required are after compaction.

C. Conform construction methods to MDOT *Standard Specifications*, *Sections 304.03, 304.04 and 304.05*, and these Specifications.

3.04 CRUSHED AGGREGATE BASE and AGGREGATE LEVELLING COURSE:

A. On approved compacted subbase, construct crushed aggregate base to lines and grades to conform to Details and Drawings and these Specifications. Material shall consist of sound gravel particles free of thin shale, clay or organic material, with no stone over 1" in size, as specified in SS 2.01 C. Coordinate base course construction with prefabricated granite or concrete curb installation when required.

B. Construct base in one course when depth required is 6" or less and two or more courses when depth required is over 6". Compact each course to 95% of maximum laboratory density. Thickness required is after final compaction.

C. Construct Aggregate Leveling course in one course. Compact to 95% of maximum laboratory density. Thickness required is after compaction.

D. Construction methods shall conform to MDOT *Standard Specifications, Sections 304.03, 304.04 and 304.05*, and these Specifications.

END OF SECTION

SECTION 02510

BITUMINOUS PAVING & CURBING

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate work with that of other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. All finish pavement and grades shall comply with the *United States Tennis Association (USTA)* and *USTC&TBA* standards for 78 foot – two (2) court construction.

D. The "Standard Specifications" referred to herein is the book entitled *"Standard Specifications, Highways and Bridges"* published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109; Numerical Index of Payment Items Included in Each Section.

Those Sections of the aforementioned *Standard Specifications,* which are cited herein are applicable to the work of this Contract as they may be modified, amplified or added to by this Section.

1.02 DESCRIPTION OF WORK:

A. Provide labor, materials, equipment and services necessary for proper and complete installation of all bituminous paving and related items, as herein specified:

1. Bituminous Concrete Pavement for:

Tennis Courts.	Sidewalks:
Base Course -2.5 inches depth	**Base Course -2.0 inches depth**
Top Course – 1.0 inches depth	**Top Course – 1.0 inches depth**

2. Testing as required.

3. Pavement Repair.

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 and 2 Section for submittals and quality control.

B. Codes and Standards: The work under this Section shall conform to the following, except as may be modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, *Standard Specifications*, Highways and Bridges, Latest Edition.

1.04 SUBMITTALS:

A. Furnish samples of manufacturer's product data, test reports, and materials certifications as required for bituminous concrete mixes.

B. Test Results:

1. Mechanical analysis (ASTM D421), asphalt content (ASTM D2172), and in-place density (ASTM D2041 & D2726) test results for bituminous concrete pavement.

1.05 PRODUCT HANDLING:

A. All asphalt materials and mixes shall be applied at temperatures within their optimum range as defined by MDOT *Standard Specifications*.

1.06 JOB CONDITIONS:

A. Weather Limitations for Bituminous Placement: Apply asphalt tack coats when ambient temperature is above 50 degrees F (10 degrees C), and when temperature has not been below 40 degrees F (1 degree C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

B. Construct asphalt concrete surface course or leveling course when atmospheric temperature is above 50 degrees F (4 degrees C) and when base is dry. Base course may be placed when air temperature is above 40 degrees F (4 degrees C) and rising. Do not place pavement on frozen gravel base.

C. Grade Control: Contractor shall be responsible for establishment and maintenance of required lines, grades, and surface tolerances.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Base Course Bituminous Concrete Paving: Bituminous material shall conform to Maine DOT *Standard Specifications*, Section 702.01, Viscosity Grade AC-20. Nominal asphalt content shall be 6%. Aggregates shall conform to MDOT *Standard Specifications*, Section 703.09, Grading Type 19 mm.

B. Top Course (Surface Course) Bituminous Concrete Paving: Bituminous material shall conform to Maine DOT *Standard Specifications*, Section 702.01, Viscosity Grade AC-20. Nominal asphalt content shall be 6%. Aggregates shall conform to MDOT *Standard Specifications*, Section 703.09, Type 9.5 mm.

PART 3 - EXECUTION

3.01 TESTING:

A. See SS 1.04 B for specified tests and test reports.

B. The Engineer or his representative will designate test frequencies and locations.

3.02 BITUMINOUS CONCRETE PAVEMENT:

A. Scope:

1. Construct base course of bituminous concrete pavement on prepared gravel base, to lines, grades per USTA requirements for each specific area.

2. Construct top/surface course of bituminous concrete pavement on prepared bituminous base, to lines, grades per USTA requriements for each specific area.

B. Construction Methods:

1. Conform to MDOT *Standard Specifications*, Section 401.16, 401.17, 401.18 and 401.20

2. Submit certificate of compliance to the Specifications from the pavement vendor to the Engineer).

3. Edge of pavement shall be clean and true. Raveled edges not accepted. Hand-tamp edges and bevel if forms or screed strips are not used.

4. Place asphalt concrete mixture on prepared surface, spread and strike-off, by means of self-propelled paver. Spread mixture at minimum temperature of 225 degrees F (107 degrees C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, compacted thickness, and surface tolerance (see Item 3.04).

5. Make joints between old and new pavements, or between successive days Work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

6. Rolling:

a) After the mix has been spread, struck off, and surface irregularities adjusted on each course, it shall be thoroughly compacted by rolling with a powered steel wheel tandem

roller weighing not less than 2 or more than 10 tons. Begin rolling as soon as mixture will bear roller weight without excessive displacement.

b) Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

c) Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

d) Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

e) Any displacement or irregularities occurring as the result of the reversing of the direction of a roller, or from other causes, shall be corrected at once by the use of rakes or lutes and addition of fresh mixture when required. Care shall be exercised in rolling not to displace the line and grade of the edges of the bituminous mixture.

f) Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

7. Compaction Tests: After construction, the Engineer will designate locations for removal of pavement cores to determine compaction and thickness. Remove and properly replace pavement in any areas showing deficiencies in required compaction or thickness, with new material properly laid.

8. Patching: Remove and replace paving areas that become loose, broken or mixed with foreign materials, and any defective or substandard areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

9. Protections: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.03 FIELD QUALITY CONTROL:

A. General: Test in-place asphalt concrete courses for compliance with requirements for compaction, thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Engineer.

B. Thickness: After construction, the Engineer will designate locations for removal of pavement cores to determine compaction and thickness. In-place compaction will not be acceptable if less than 93% of theoretical maximum density as determined by ASTM D-2041 and D-2726. In-place compacted thickness will not be acceptable if less than the required thickness, as shown on Drawings for that particular Section, within a tolerance of minus 1/4 inch, as determined by ASTM D-3549.

C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using a **l0-foot straightedge applied parallel with and at right angles to centerline of paved area, and by flooding.** Surfaces will not be acceptable if exceeding the following tolerances for smoothness:

Any irregularities, which vary l/4 of an inch from a true surface in the finished surface course, shall be corrected. Any irregularities, which vary 3/8 of an inch from a true surface in base or binder course, shall be corrected. Irregularities, which may develop before the completion of rolling and while the material is still workable, may be remedied by loosening the surface mixture and removing or adding material as necessary. Any unsatisfactory irregularities or defects remaining after final compaction shall be corrected by removing and replacing with new materials, as specified, to form a true and even surface. All minor surface projections, joints and minor honeycombed surfaces shall be ironed out smoothly to grade, as directed. Adequate and approved straight edges shall be furnished and used by the Contractor. Engineer or his representative shall inspect and approve compacted surfaces.

If, at any time before the final Acceptance of the Work, any damaged, soft, or imperfect places, or spots shall develop in the surface, all such places shall be removed and replaced with new materials and then compacted until the edges at which the new work connects with the old become invisible at no cost to the Owner. No surface ponding shall be allowed.

3.05 PAVEMENT REPAIR:

A. Repair any existing bituminous pavement damaged during construction activities, including pavement on abutting public streets and highways.

B. Meet the original subgrade, gravel base and finished grade specifications and elevations.

C. Match the existing pavement in materials, course thickness, and finishes.

END OF SECTION

SECTION 02700

TENNIS COURTS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate work with that of other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. The "Standard Specifications" referred to herein is the book entitled *"Standard Specifications, Highways and Bridges"* published by the State of Maine Department of Transportation dated April, l995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100 Sections 102 Through 109, Numerical Index of Payment Items Included in Each Section.

Those Sections of the aforementioned *Standard Specifications,* which are cited herein are applicable to the Work of this Contract as they may be modified, amplified or added to by this Section.

D. All work shall comply with applicable requirements and conditions of the Town of York, Maine Department of Environmental Protection (DEP) regulations, and, if applicable, U. S. Environmental Protection Agency (EPA) NPDES Permit requirements, to prevent adverse environmental impacts.

E. Comply with all standards and specifications of the *United States Tennis Association (USTA), U. S. Tennis Court and Track Builders Association*, the *National Federation of State High School Associations* (NFSHA), and these Specifications.

F. The Contractor for the acrylic tennis court surface and markings will be required to meet the minimum requirements and qualifications.

1.02 DESCRIPTION:

A. Provide all labor, materials, equipment and services necessary for proper and complete installation of the base and finish courses bituminous paving, finished tennis court surface, court markings, and related items as indicated herein for:

Three (3) - 78 foot Tennis Courts striped with blended two (2) Pickelball (20 by 44 foot) courts per each Tennis Court (6 Pickleball Courts) as shown on the Drawings.

1. All layout and control for Tennis Courts and markings.

2. Concrete or other approved bases/sleeves for net posts and center anchor strap.

3. Bituminous Concrete Pavement base and top courses for tennis courts.

4. Prime coat pavement filler.

5. Acrylic Latex Synthetic Court Surface.

6. Court line marking (Three - 78 foot courts and Pickleball Courts)

7. Net and post installation.

8. 6-footFoot Fence Windscreen on East Side towards Field Hockey Field only. (See Section 02875 for Fencing and Gates).

9. Testing as required.

10. Pavement and surface repair as necessary.

11. Rebounding Wall (See Drawings for location).

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 and 2, Sections for Submittals and Quality Control.

B. Special Requirements/Qualifications of the Acrylic Latex Synthetic Court Surface Contractor: The installer of the Acrylic Latex Synthetic Court Surface and Tennis Court markings shall meet the following requirements:

1. **Submit history of Previous Tennis Court experience for review. Contractor shall provide references, including location, project name, client and contact information for a minimum of three (3) Tennis Court projects completed in Northern New England within the past 5 years.**

1.04 SUBMITTALS:

A. Furnish Samples, manufacturer's product data, test reports, and materials certifications as required in referenced Sections for Bituminous Concrete Pavement mix, Acrylic Latex Synthetic Court Surface, acrylic line-marking paint, and net and line posts assembly.

B. Test Results:

1. Mechanical analysis (ASTM D421), moisture-density curve (ASTM D1557M), and in-place field density (ASTM D2922) test results for Gravel Subbase and Crushed Aggregate Base courses.

2. Mechanical analysis (ASTM D421), asphalt content (ASTM D2172), and in-place density (ASTM D2041 & D2726) test results for Bituminous Concrete Pavement.

1.05 PRODUCT HANDLING:

A. Store materials properly to prevent damage, deterioration and inclusion of foreign matter. Aggregates shall be stockpiled in a well-drained location.

B. All asphalt materials and bituminous mixes shall be applied at temperatures within their optimum range as defined by MDOT *Standard Specifications* 702.

1.06 JOB CONDITIONS:

A. Weather Limitations for Bituminous Concrete Pavement: Comply with the provisions of Section 02510-Bituminous Paving and Curbing, SS 1.06 C & D, for Bituminous Concrete Pavement weather limitations.

B. Weather Limitations for Acrylic Latex Synthetic Court Surface: The acrylic latex surface and line markings shall be installed between the dates of May 15 and September 25th only, unless frost conditions exist. These materials shall not be installed on wet surfaces or during wet weather, or when the ambient temperature is less than 50 degrees F. with daily predictions of no temperature drop below 50 degrees F.

C. Layout & Grade Control: The Contractor shall be responsible for establishment and maintenance of required lines, grades, and finish tolerances.

1.07 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

A. The Work under this Section shall conform to the following, except as modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, *Standard Specifications*.

3. Comply with Construction Guide Specifications published by the *U.S. Tennis Association (USTA) and U. S. Tennis Court and Track Builders Association* and the Project Specifications.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Base Course Bituminous Concrete Paving: Refer to Section 02510-Bituminous Paving and Curbing, SS 2.01 A .

B. Top Course Bituminous Concrete Paving: Refer to Section 02510-Bituminous Paving and Curbing, SS 2.01 B.

C. Filler/Prime Coat: Apply one coat of *ELITE fill as manufactured by A.D. Rossi Corp* or equal prior to applying Color Finish Surfacing System of Acrylic Latex.

D. Acrylic Resurfacing System: 100 percent acrylic emulsion designed for on-site mixing with water and silica sand, manufactured as asphalt surface preparation for a color finish system. Applied at the rate of .10 gallons per square yard or as per manufacturer's recommendations. Apply two (2) coats. Top coat to be lightly textured. (*ELITE Color as manufactured by CCR Sport,* Inc. or equal).

Colors: Two –Tone: Blue Outer Court Area
Dark Green Court Play Area

E. Court Line Markings: 100 percent acrylic emulsion manufactured as a final coating for asphalt athletic surfaces as manufactured *by California Products of Andover, MA, or Nova Sports USA of Milford, MA*, or an equivalent. Applied at the rate of .06 gallons per square yard per coat or as per manufacturers recommendations.

Colors: 78 foot court markings – regulation white textured
Pickleball court markings - color by owner.

Lines shall conform to USTA specifications for width, measurement and provide for 3 inch "gaps" between the blended 60 foot lines and 78 foot court regulation lines.

Line Width: 78 foot court – Center Service Lines – 2 inches
Baseline 2-4 inches
Other Lines – 1-2 inches
60 foot (blended) court – 1.5 inches

F. Concrete for Footings: All concrete shall be certified 4,000 psi at 28 days. Use 6% air-entrained concrete when exposed to weather; Air-entraining agent shall conform to ASTM-C260. Ready mixed concrete shall conform to ASTM-C-94.

G. Tennis Posts and Nets, Straps & Anchors: Supply and install two (2) sets of :

1. Line Posts – *Edwards* wind net posts or equal
2. Nets: *Court-1 TN50* nets with straps and anchors.

a) The net, when erected, shall be suspended from its top binding upon a vinyl-coated wire cable having a diameter of 7/37 inch, a length of 47 feet, and having a tensile strength of not less than 1,300 lbs.

I. Fencing: As Specified in Section 02875–Athletic Facility Fencing & Gates.

J. Mesh Windscreens: Supply and Install 6 foot high closed mesh polypropylene wind screen to be installed along west fenceline (at field hockey field) only at 2 ft. off the ground. Windscreen by *N.J.P. Sports, Inc.* or equal. Color – Dark Green.

K. Pickleball Nets: To be supplied by Owner. Moveable nets.

L. Rebounding Wall: **ALTERNATE 1**: Provide and install at location on court fencing directed by OWNER: a 10 foot high by 12 foot wide solid core backboard, by Rally Master® or approved equal. Color by Owner.

PART 3 - EXECUTION

3.01 TESTING:

A. Refer to SS 1.04 B of this Section for required tests and test reports.

3.02 BITUMINOUS CONCRETE PAVEMENT:

A. Courts - Construct 2.5 inch Base Course Bituminous Concrete Pavement and 1 inch Top Course Bituminous Concrete Pavement, as Specified in Section 02510-Bituminous Paving and Curbing.

B. Walks – Construct 2 inch Base Course Bituminous Concrete Pavement and 1 inch Top Course Bituminous Concrete Pavement, as Specified in Section -02510 –Bituminous Paving and Curbing.

3.03 ACRYLIC LATEX SYNTHETIC COURT SURFACE FINISH:

Note: The Bituminous Pavement shall be allowed to cure for a period of time recommended by the surfacing manufacturer, but in no case less than one week.

A. Prior to surfacing the courts, the pavement shall be thoroughly cleaned of all objectionable material, including small stones, soil, etc., and the pavement flooded with water and checked for depressions.

B. Any depressions greater than 1/16 inch and less than ¼ inch shall be filled according to the Acrylic Latex Synthetic Court Surface manufacturer's recommendations, or as approved by the Owner.

C. Courts having depressions greater than ¼ inch shall not be sealed without the knowledge and consent of the Owner or his representative. The filling of depressions up to ¼ inch shall be considered incidental to the sealing.

D. The first coat shall be applied lengthwise to each court, and the second coat crosswise to each court or as per manufacturer's recommendations.

E. Care shall be taken to prevent soil from being tracked onto the surface during sealing operations. Spills and drips shall be cleaned up to prevent variations in the surface.

F. Prior to applying the surface coat, a final, careful inspection of the entire surface shall be made, and any ridges and loose or foreign particles shall be removed.

G. The materials shall arrive on the job site in original unopened containers, clearly labeled with the trade name and the name of the manufacturer.

H. The materials shall be stirred as necessary to create a homogeneous mixture and to assure retention of that condition throughout the application.

I. Application shall be in the manner and with the equipment recommended in the manufacturer's standard printed instructions; however, no work shall be performed when rain is imminent, or when the ambient temperature is less than 50 degrees Fahrenheit.

3.04 COURT LINE MARKING:

Note: All lines shall be accurately located and marked by the Contractor, in accordance with the rules of the *United States Tennis Association* (*USTA*).

A. The layout and painting shall be done by skilled mechanics in a workmanlike manner, in accordance with *USTA and U.S.T.C. & T.B.A*. and the manufacturer's standards.

3.05 MAINTENANCE/WARRANTY:

A. The Contractor shall guarantee the surface finish for one year from the date of finished application, against chalking, checking, fading, discoloration, or other adverse effects from ultra violet rays of the sun, from weather moisture, or from weather temperature.

3.06 NETS AND POSTS:

A. Net Posts: Net posts shall be set true and plumb in concrete bases, and at the locations and elevations indicated on the Drawings.

B. The net post foundation and net posts or sleeves if used, shall be cast in concrete directly into a hand-dug or auger-dug hole, prior to installation of the Bituminous Concrete Pavement, with the top of the concrete below pavement grade as indicated on the Drawings. Net post installation and fencing work shall be closely coordinated with the paving.

C. It shall be the responsibility of the fencing and net post Contractors to schedule their Work so as not to conflict with the bituminous paving, and to repair any bituminous surface damaged in the course of their Work at their expense.

3.07 CONCRETE FOUNDATION:

A. Construct post foundations so as not to cause cracking or other damage to the court surfaces. The sides of the hole, used as a form shall be smooth, vertical and without excessive enlargement at the top.

B. Set concrete top elevations as indicated on the net post detail on the Drawings. Slope tops for drainage, to conform to finish subgrade for paving.

3.08 FENCING:

A. Install fencing around perimeter of tennis courts as Specified in Section 02875-Tennis Fencing and Gates.

B. Windscreen: Install wind fence per manufacturer's recommendations using brass grommets at 1 foot spacing and at corners on west (field hockey) side of courts.

END OF SECTION

SECTION 02710

SUBDRAINAGE SYSTEMS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. Documents affecting the Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. The Standard Specifications referred to herein is the book entitled "*Standard Specifications, Highways and Bridges*" published by the State of Maine Department of Transportation dated April, 1995, and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections 102 Through 109 Numerical Index of Payment Items Included in Each Section.

Those Sections of the aforementioned Standard Specifications which are cited herein are applicable to the Work of this contract as they may be modified, amplified, or added to by this section.

D. Reference is made to the latest Erosion and Sedimentation Control Plan (report) and erosion controls and Details included in the Drawing set for this project. Strict adherence to this plan and Drawings is required in order to prevent adverse downstream impacts from erosion and sedimentation, originating from on-site construction activity.

E. The terms “Subdrainage” and “Underdrainage” shall have the same meaning herein and within the project drawings.

l.02 DESCRIPTION OF WORK:

A. Provide all labor, material, equipment and services required to complete the following:

1. Install court underdrains, cleanouts and outfall all as indicated on the Drawings.

l.03 QUALITY ASSURANCE; SUBMITTALS:

A. General: Comply with requirements of Division 1 Sections for submittals and quality control.

B. Submittals:

1. Product specification literature for underdrain piping and fabric.

1.04 AS-BUILT DRAWINGS:

A. Submit as-built drawings for all underdrainage piping and structures; accurately show locations and inverts of piping and cleanouts, fittings, etc.

PART 2 - PRODUCTS

2.01 MATERIALS;

A. Underdrainage Pipe And Fittings: Tennis Court underdrainage pipe and fittings shall be perforated SDR 35 or Schedule 40 PVC pipe. 4 inch min. diameter as indicated on the Drawings.

B. Stone Bedding Material: 3/4" Crushed stone, as Specified in Section 02220-Excavation, Backfill and Compaction, S.S. 2.01 C.

C. Underdrain Trench Backfill Material: Backfill material above drainage stone and/or underdrains, to subgrade, as Specified in Section 02220-Excavation, Backfill and Compaction, SS 2.01 D. shall conform to MDOT 703.22 Type B.

D. Drainage Filter Fabric: Non woven, continuous filament fibers:

1. Filter fabric for use in trenches for encasement or wrapping of Stone Bedding Material, Compacted Structural Fill, sand or other approved granular drainage material shall be full width, continuous rolls of non-woven polypropylene; Mirafi 140N, or approved equal.

PART 3 - EXECUTION

3.01 TRENCH EXCAVATION (subdrains):

A. Excavate trenches for underground lines and structures where indicated on the Drawings. Make trench walls as near vertical as practical, consistent with OSHA requirements and safe working practices. Shore and brace as necessary. Keep excavations free from water in order to carry on Work properly; begin trenching at outlet end of subdrainage system.

B. Excavation shall be made to such a point as to allow a minimum of six inches (6") of 3/4" crushed stone bedding to be placed beneath the bottom of all barrels, bells or couplings of all pipes installed. The maximum clear width of trench at the top of the pipe shall be not more than the outside diameter of the pipe plus two feet. The bottom of the trench shall be accurately graded to provide a uniform layer of bedding material for each section of pipe. Safety shall be the controlling factor in determining minimum trench widths.

C. Install Drainage Filter Fabric in trench, where required, as indicated on Drawings and Details.

D. Before installation of any underdrain pipe, the Contractor shall first place and consolidate a minimum six inch (6") layer of Stone Bedding Material, or approved granular drainage material, on the trench bottom. After the underdrain pipe has been laid, additional crushed stone, or approved granular drainage material, shall be placed and consolidated to a depth of 6" above the top of the pipe. When installing flexible pipe, particular care shall be taken when grading

stone and laying pipe, to assure a uniform and consistent invert slope. Provide protective pipe wrap envelope, where required, as indicated on Drawings and Details.

E. Complete Drainage Filter Fabric wrap, where required, providing complete enclosure or encasement of Stone Bedding Material, or approved granular drainage material, allowing for overlap of at least one foot or one half of trench width (whichever is greater). Cover fabric with thin layer of stone or backfill, placed by hand, to anchor fabric before commencing trench backfill.

F. The remainder of the trench shall be backfilled as follows:

1. In Tennis Courts, Roads, Walks:

a) The area between a line 6 inches over the top of the pipe and a line at subgrade elevation below finished pavement (see pavement details on Drawings), shall be carefully backfilled in not over twelve (12) inch compacted layers using Underdrain Trench Backfill Material.

b) The trench shall be consolidated by tamping, rolling, or other mechanical means, as proposed by the Contractor subject to the approval of the Architect/Engineer. The approval by the Architect/Engineer of the proposed method of compaction of the backfill shall in no way be construed as relieving the Contractor of responsibility for settlement of trenches, and any settlement shall be repaired by him at his own cost and expense. If the pipe is displaced from alignment, it shall be relaid at the Contractor's expense.

c) The remaining distance to the top of the trench shall be filled with Gravel Subbase and Crushed Aggregate Base gravel as specified, hauled in for the purpose and furnished by the Contractor. This gravel shall be placed, graded and compacted in maximum 8-inch layers to the finished surface as Specified in Section 02230-Gravel Base Courses.

G. After the completion of all underdrain trench backfilling operations, the Contractor shall grade the site to the lines, grades and elevations indicated on the Contract Drawings, taking into account any subsequent topsoil, slab and paving requirements. Finished grading shall not be done until the installation of all related subdrains, etc., has been completed for any area.

3.02 SUBDRAINAGE LINES:

A. Install underdrains, subdrainage lines and connector pipes to locations and grades indicated on Drawings and as Detailed.

B. Install pipe in straight lines and with evenly sloping invert. Allow no sags or rises in pipe to interfere with water flow. This is particularly important when laying flexible pipe on flat slopes.

C. Where two lines connect, provide proper prefabricated fittings (tee, wye and specials) and match crowns of pipes unless otherwise directed. Field made connections and fittings are unacceptable.

D. Installation of the subdrains for foundations shall be fully coordinated with the pouring of concrete, location of sleeves for subdrain pipe, placement and compaction of structural fill and floor slab drain material, and as follows:

1. Verify that trench cuts and excavated subgrades are ready to receive Work, and excavations, dimensions, and elevations are as indicated on Drawings and Details.

2. Begin pipe installation only after Acceptance of existing conditions and compacted subgrade.

3. Hand trim excavations to achieve required trench subgrade elevations. Correct over excavations with compacted Granular Borrow or Compacted Structural Fill, as required.

4. Remove large stones or other hard matter which could damage drainage pipe or impede consistent backfilling or compaction.

5. The bottom of the excavation shall be smooth, free from loose earth and accurately graded.

6. Install Drainage filter Fabric or Protective Pipe Wrap as required.

7. Install pipe and pipe fittings in accordance with manufacturer's recommendations and instructions.

8. After placing the initial layer of crushed stone, place the subdrain pipe with the holes down, true to the alignment and gradient indicated. All joints shall be properly made-up. Place sufficient amount of crushed stone over reach length of pipe by hand to hold in place and prevent lateral movement or displacement of pipe invert during installation.

9. Make connections to Foundation Drainage Medium or connector pipes as required.

E. Protect pipe from damage or displacement until backfilling operation begins. Backfill immediately after the subdrain pipe is placed, including cover stone or granular material and Drainage Filter Fabric.

F. Backfill and compact carefully to hold the subdrain securely in place. Avoid disturbing the alignment and gradient of the subdrain pipe.

END OF SECTION

SECTION 02800

SITE IMPROVEMENTS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the work.

C. All Work shall comply with applicable requirements and conditions of the Town of York, Maine Department of Environmental Protection (DEP) regulations, York County Soil and Water Conservation District standards and, if applicable, U. S. Environmental Protection Agency (EPA) NPDES Permit requirements, to prevent adverse environmental impacts.

D. Hydroseeding may be utilized complying with all applicable requirements.

1.02 DESCRIPTION:

A. Provide all labor, materials, equipment and services necessary for proper and complete installation of the following as indicated on the Drawings and herein Specified:

1. Loaming and Seeding disturbed areas.
2. Moving & Resetting Shed and Benches

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 and 2 Sections for Submittals and Quality Control.

PART 2 - PRODUCTS

2.01 LOAM AND SEEDING:

A. Grass Seed Mixtures: the following seed mixtures shall be used as Specified herein, unless otherwise indicated on Drawings: Seed shall be delivered pre-mixed to the site in standard size sealed containers, bearing the vendor's guaranteed statement attesting to the composition of the mixture and to the percentages of purity and germination of each variety. Seed shall be stored in such a manner that its effectiveness is not impaired. Samples of seed shall be taken as directed by the Engineer and shall be submitted to the State Agricultural Station for analysis upon request.

1. Park Mixture: Parks, playgrounds, campus areas, and other high traffic areas requiring high levels of maintenance and frequent mowing shall be seeded at the rate of 3 lbs/1,000 sq. ft. with fresh, clean, new crop seed, conforming to MDOT *Standard Specifications* 618.01 (a) and 717.03 (a), Method Number 1, and shall be composed of the following varieties:

PARK MIXTURE:

Seed Name	%Mix (by weight)	Germination	Purity
Creeping Red Fescue	50 %	80 %	87 %
Kentucky Bluegrass	30 %	80 %	87 %
Perennial Rye	20 %	80 %	92 %

B. Mulch:

1. Clean hay free of weed seed (or hydroseed mix).

PART 3 – EXECUTION

3.01 SEEDING:

A. Hydroseeding: Upon completion of topsoil preparation and fine grading as Specified in Section 02920-Topsoil, hydroseed all prepared areas with a seed, lime and mulch slurry. Rates of mix as follows:

Seed: 250 lbs. per acre
Lime: 450 - 500 lbs. per acre
Mulch: 1,200 lbs. per acre

1. Hydroseeding equipment shall maintain the slurry in an agitated condition and distribution shall be uniform in all areas. Furnish a certified statement prior to this Work, as to the number of pounds of lime, seed and mulch per 100-gallon unit of water. This statement should specify the number of square yards of seeding that can be covered per unit of the solution.

2. Hydroseeding shall be done with suitable standard equipment capable of spreading at the above rates. Exercise care in hydroseeding. Do not perform hydroseeding operations on a windy day; keep mixture off all equipment, structures, vehicles, pedestrians and pavement. Protect newly seeded areas from erosion, traffic, etc.

B. Mechanical Seeding: Mechanical seeding shall be done on dry or moderately dry soil, and at a time when wind does not exceed a velocity of five (5) miles per hour. Seeding shall be done in two directions, at right angles, in such a manner that a uniform stand shall result without bare spots. Seed shall be sown evenly by hand, or with an approved mechanical spreader, to a depth not exceeding one-fourth (1/4) inch, at the rate of five (5) pounds per one thousand (l000) square feet of area.

1. After seeding, the surface shall be evenly and lightly raked with a fine wood-toothed rake or other approved method, and rolled in both directions with a hand roller weighing not more

than one hundred (l00) pounds per foot of width, and then watered thoroughly with a fine spray.

2. Maintain a moist seedbed until a thick stand of grass is produced. Furnish sufficient watering equipment to apply water to a minimum 2 in. depth in a 24-hour period, to assure continued growth of germinated grass. Watering shall be done to provide uniform coverage, prevent erosion, and prevent damage from watering equipment to the finished surface.

3.02 SHED AND BENCHES:

A. Move and store existing shed and benches as required to perform work. Coordinate location to store with Owner. Replace/re-set shed and benches to original or other designated location upon completion of project.

3.03 MAINTENANCE:

A. Upon completion of Seeding and Sodding and prior to Acceptance, remove from the site excess soil and debris, and repair all damage resulting from landscaping operations.

B. Seed maintenance shall begin immediately after each area is planted. Areas shall be watered, mowed, weeded, replanted, fertilized, cultivated, and otherwise maintained and protected as necessary to establish a uniform stand of the Specified grasses, until Acceptance. Coordinate access to water with Owner or Owner's Representative.

C. Owner shall be responsible for mowing when grass reaches acceptable height and catch.

END OF SECTION

SECTION 02875

TENNIS COURT FENCING AND GATES

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, the Conditions of the Contract, General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1 and 2, which are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

D. Contractor shall work in close cooperation with the paving and grading operations as well as all other trades, to the end that all Work is constructed in accordance with their standard practices and Specifications.

1.02 DESCRIPTION OF WORK:

A. Provide all labor, materials, equipment and services necessary for proper and complete installation of the following, as indicated on the Drawings and herein Specified:

1. Tennis Court Fencing, gates and appurtenances. Fencing to enclose new Tennis Courts.
2. Gates: Provide for one (1) four foot wide swing gate with latches. Locations to be at shown on plans
3. Tennis Court Posts and Net: Provide and install three (3) tennis court net and post systems.

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 and 2 Sections for Submittals and Quality Control.

B. Shop Drawings: Submit manufacturer's or supplier's specifications on all products to be used for Fencing.

1.04 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

A. All materials and workmanship shall conform to the following:

1. American Society for Testing and Materials (ASTM) specifications and Methods of Testing.

2. Comply with construction guidelines and specifications contained in the *USTA* and U.S.T.C. & T.B.A. *Tennis Court and Track Construction Guide Specification.*

PART 2 - PRODUCTS

2.01 TENNIS COURT FENCE & GATES:

A. Fabric: Galvanized steel chain link woven in a 2-in. mesh; no. 9-gauge wire (2 oz. coating) with top and bottom selvage knuckled. The wire pickets of which this fabric is made shall stand a minimum tensile strength test of 80,000 lbs. per square inch, based on the cross sectional area of the wire conforming to ASHTO M181 requirements for fabric.

B. Bottom Tension wire: 7-gauge spring coil tension wire. Tension wire attached to fabric with hog rings, on approximately 24 in. centers.

C. Posts, Rails and other Appurtenances: Shall be hot dipped galvanized, with a minimum zinc coating of 2.0 ounces per square foot of surface (Schedule 40 pipe).

1. Corner and End Posts: 2½-in. nom., 2.875-in. o.d. (5.79 lbs./foot).

2. Intermediate Posts: 2-in. nom., 2.375-in. o.d. (3.65 lbs./foot).

D. Top Rail: 1¼-in. o.d. Schedule 40 pipe, 2.27 lbs. per linear foot. Top rail to form a continuous brace end-to-end for each stretch of Fence. Securely fasten top rail to terminal posts, by heavy galvanized pressed steel connections.

E. Truss rods and Braces: Schedule 40 galvanized pipe/rod and galvanized turnbuckles at all corners and terminal posts.

F. Post tops: Heavy galvanized dome caps.

G. Hardware: Shall be industrial-grade; hinges shall be secured to posts by through-bolts or other approved methods, to prevent slippage. Gates shall be fabricated by welding. All exposed cuts or welds will be painted with special zinc field coating, or approved substitute.

H. Fence System Coating: Vinyl Coated chain link fence system as manufactured by Brighton Company. All fencing, posts, gates, hardware and appurtances (above ground) shall have a coating of pressure bonded and 7-MIL thermally fused PVC as specified in the Brighton ColorBond ™ system, or equal: color – Black.

PART 3 - EXECUTION

3.01 TENNIS COURT FENCE AND GATES:

A. The elevation of the bottom of the Fence shall be level with or slightly above the finish grade of the bituminous pavement. Posts shall be set plumb and true, and spaced a maximum distance of 10 feet on-center.

B. Posts shall extend a minimum of 48” into the ground with corner and pull posts set in concrete footings as shown and detailed on plans.

C. The top rail shall be installed with standard cast post caps, fabricated to provide for the rail. Top and middle rails shall be provided. Gates shall be installed as shown on the Drawings.

D. Chain-link fabric shall be attached on the inside of posts.

E. The bottom tension wire shall be attached to the Fence fabric 6 inches above the grade line, and securely fastened to each post.

F. Installation shall be by skilled mechanics experienced in the erection of Fencing. End, corner, pull and gate posts shall be braced with the same material as top rail, and trussed to line posts with 3/8 inch rods and tighteners. The fabric shall be stretched to proper tension between terminal posts, and securely fastened to framework members as Specified. The bottom of the fabric shall be held as uniformly as possible to ½ inch above finished pavement grade.

END OF SECTION

APPENDIX A
GEOTEHNICAL REPORT
R.W. GILLESPIE & ASSOCIATES

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Environmental Consulting • Materials Testing Services

17 April 2020

Zak Harding, Facilities Director
York School Department
49 U.S. Route 1
York, Maine 30909
Via email: zharding@yorkschools.org

Subject: Geotechnical Engineering Evaluation
Proposed Tennis Court Reconstruction
York High School
York, Maine
RWG&A Project No. 1017-007

Dear Mr. Harding:

R. W. Gillespie & Associates, Inc., (RWG&A) is pleased to present this geotechnical evaluation for the proposed tennis court reconstruction at York High School in York, Maine. The purpose of this geotechnical evaluation was to obtain subsurface information on which to base recommendations for design and construction of the tennis court pavement section.

This report presents the results of subsurface explorations, laboratory testing, engineering evaluations, and provides geotechnical design recommendations. Refer to Appendix A for limitations and use of this report. This geotechnical evaluation was performed in general accordance with RWG&A Proposal No. P-10414GI, dated 04 March 2020.

Background

The tennis courts are located at the southwest side of the York High School campus as shown in Figure 1, *Locus Map*. The three tennis courts were constructed circa 2002. The plan dimensions of the paved court area are about 140 feet by 180 feet. In 2006 and 2007 RWG&A evaluated a depression that had formed in the south end of the middle court and suspect frost action (RWG&A Project No. 1017-001) in the south part of the courts and near the southeast entrance gate. The depression was attributed to the backfill near a former light post and/or frost action. RWG&A visited the site periodically from December 2006 to March 2007 and observed frost heaving of up to 1-1/4 inches. Cracks observed in March of 2020 were up to about 1 inch wide and were observed throughout the courts. It is understood that full-depth reconstruction of the tennis court pavement section is planned.

RWG&A's understanding of the proposed construction is based on information provided in the emails from Licht Environmental Design, LLC dated 04 February 2020; 12:29 PM. The email included:

- Drawing Sheet 1 titled *Layout and Grading Plan*, from the plan set titled *York High School: Tennis Courts & Skateboard Park*, dated 24 September 2001.

- Drawing sheet titled *Lidar Plan (South Side)* from the plan set *Tennis Courts & Parking Lot Improvements: York High School* dated 16 July 2018

Existing and proposed site grades were unavailable when this report was prepared. It is understood that the court location and final surface grades would remain similar to existing conditions.

Subsurface Explorations

RWG&A conducted soil explorations at the site in October 2006 and in March 2020, and details of the explorations are summarized below. Figure 2, *Exploration Location Plan*, shows the approximate exploration locations. Explorations locations were located in the field by RWG&A using tape and survey methods from features shown on the provided plan. Exploration locations should be considered accurate only to the degree implied by the methods used to locate them.

2006 Explorations: The subsurface exploration program consisted of four test borings, designated B-1 through B-4, advanced to refusal surfaces encountered at depths ranging from 7.1 to 10 feet below local ground surface in the south part of the middle tennis court (note: area of a depression). Explorations were drilled on 04 October 2006 by Great Works Pump & Test Boring, Inc., of Rollinsford, New Hampshire, using a truck-mounted drill rig. Split-barrel sampling with standard penetration testing *(ASTM D1586, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils)* was performed at about 5-foot intervals. The explorations were advanced with hollow stem augers.

2020 Explorations: Test borings B-101 through B-204 were drilled at four locations near the perimeter of the tennis courts and advanced to refusal surfaces encountered at depths of about 4.2 to 7.8 feet below local ground surface. The borings were drilled on 27 March 2020 by Northern Test Boring, Inc. of Gorham, Maine using a track-mounted drill rig. Split-barrel sampling with a 3-inch barrel was performed in the upper 4 feet. Split-barrel sampling with standard penetration testing (*ASTM D1586, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils*) was generally performed at five-foot intervals thereafter. The borings were advanced with solid-stem augers. Free water was observed in boring B-103 at a depth of 4 feet below local ground surface.

The 2006 and 2020 test boring activities were coordinated and monitored by an RWG&A representative who prepared the exploration logs. The soils were described in general accordance with *ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).* Logs of the explorations are included in Appendix B. Stratification lines shown on the exploration logs represent the estimated boundaries between the different soil units encountered; the actual transitions will be more gradual and vary over short distances. Subsurface information should only be considered representative of subsurface conditions encountered within the vertical reach of the explorations on the date the explorations were made.

Laboratory Testing

Laboratory testing was performed to assist in soil description and estimation of engineering properties of encountered soils. The laboratory testing program included three particle-size distribution analyses with moisture content determinations. The tests were performed in general accordance with the following methods and procedures:

- *ASTM D2216 – 19, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*
- *ASTM D6913/6913M – 17, Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis*
- *ASTM D1140 – 17, Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing*

Moisture content test results are presented on the soil boring logs. Results of the other above laboratory tests are presented in Appendix C, *Laboratory Test Results*. The above tests were conducted at the RWG&A soil and materials testing laboratory in Biddeford, Maine, which is accredited by the American Association of State Highway and Transportation Officials (AASHTO) for the tests performed.

Subsurface Conditions

Pavement Surface: The bituminous concrete surface at the boring locations ranged from about 1-3/4 to 3-1/2 inches thick. The asphalt surface had cracks up to about 1-inch wide that were located throughout the court area. Evidence of past crack sealing was observed.

Soils: Subsurface conditions encountered below the bituminous concrete generally consisted of gravelly sand fill on a woven geotextile that was underlain with fill composed of silty sand with gravel. Silty sand with gravel glacial till deposits were encountered at borings B-1 and B-2. The gravelly sand fill above the geotextile was interpreted to be asphalt pavement section base and subbase material. The thickness of the base/subbase material ranging from about 0.5 feet below local ground surface in the northeast part to about 4 feet thick in the west and southwest part of the courts. Refusal surfaces encountered were interpreted to be possible bedrock. Please refer to the exploration logs in Appendix B for descriptions of subsurface conditions encountered at specific locations.

Groundwater: Free water was observed in the 2006 explorations at depths ranging from about 8.5 to 9 feet below current ground surface, and was observed in soil boring B-103 at a depth of about 4.2 feet. Water levels observed during the subsurface exploration program might have been influenced by the exploration methods and soil condition (e.g., slow groundwater response due to low soil permeability) and may not be representative of stabilized groundwater levels.

The absence of groundwater data on the logs implies water was not observed when the borings were drilled but does not necessarily mean that groundwater will not be encountered at these locations or within the vertical reach of the borings. Groundwater from time to time likely perches on less pervious layers within fills and naturally deposited soils. Groundwater levels at the site will fluctuate due to season, temperature, rainfall and construction activity in the area; therefore, water levels during and following construction will vary from those observed in the explorations

Evaluation of Geotechnical Information

Engineering evaluations for this project are based on the subsurface explorations, laboratory tests, and conceptual construction information currently available to RWG&A. The engineering evaluations that follow should be reviewed by RWG&A to confirm their continued applicability after design grading of the tennis courts has been finalized.

Pavement Sections

Bituminous concrete pavement, regardless of their design or construction, is prone to cracking due to their inherent properties. For a tennis court which is not subject to concentrated wheel loads, cracks, in general, are more likely to form due to frost and/or freeze-thaw action, asphalt shrinkage, brittleness of pavement due to aging and/or absence of traffic, and thermal expansion and contraction.

The potential for frost-heaving due to the presence of frost-susceptible materials, water from infiltration and/or groundwater, and exposure to freezing temperatures is a design consideration for the tennis courts. The 10-year return period design freezing index for the project site is approximately 1,100 Fahrenheit degree - days. The calculated depth of freezing for snow-free conditions is 38 inches for a pavement section over silty sand with gravel and is about 46 inches if non-frost susceptible material is used below the pavement section. RWG&A recommends full depth frost protection to reduce effects of frost and/or freeze-thaw action. Alternatives to full depth frost protection include the use of ground heaters and/or insulation. RWG&A can assist in evaluating alternatives if requested.

It should be noted that heaving can occur due in the presence of non-frost susceptible materials due to the formation of ice lenses; water expands about 9 percent from its liquid state when frozen. In general, the greater the depth of ice lense formation below ground surface the less likely that ice lense formation would be expressed at the ground surface. Perimeter underdrainage is recommended to reduce external sources of groundwater from accumulating closer to ground surface below the tennis courts.

Court maintenance should include sealing of cracks in the asphalt shortly after they occur to reduce the infiltration of water into the pavement section where ice lenses could form near ground surface. Measures to reduce cracking in asphalt also include adequate asphalt compaction to reduce air-voids in the asphalt to reduce exposure to air and resulting oxidation, and temperature control during asphalt transport, placement, and compaction.

Construction Considerations

Construction Dewatering: To reduce disturbance of exposed subgrade soils, it will be important to divert runoff, provide positive grading to shed seepage and runoff from flat areas, and compact exposed soils to reduce rutting, ponding, and surface water infiltration. Permanent and temporary under pavement drainage should be installed as soon as cuts to required elevations are achieved. Permanent drainage will need to be protected from siltation and damage from equipment traffic and utility installation during construction. Temporary detention ponds, trenches, ditches, and dewatering sumps should not be made within or near areas to be filled.

Protection of Subgrades and Pavement Section Fill: Construction means and methods are the responsibility of the contractor and the contractor should anticipate the need to evaluate and employ methods to prevent subgrade softening, rutting, or impairment of overlaying fill materials as a result of construction traffic. Measures that should be considered by the contractor may include but not limited to the use of lighter weight equipment, dispersion of construction traffic, constructing haul roads and construction traffic paths designed to support construction traffic, and the use of geotextiles and/or sacrificial overlays.

Use of On-site Soils: The gravelly sand fill encountered above the geotextile fabric might be suitable for pavement section subbase material (*Maine Department of Transportation Standard Specification Section, November 2014 Edition*, Section 703.06.c Type D (MaineDOT 703.06 Type D)), but appears unsuitable for pavement section base MaineDOT 703.06 Type A. Fill material encountered below the geotextile fabric is considered unsuitable for re-use of pavement section base or subbase materials. For planning and budgeting purposes it should be anticipated that all pavement section based and subbase material needed for construction will need to be imported.

Moisture-density relationships should be established during construction to provide guidance for appropriate working moisture contents. Working moisture content for moisture sensitive soils typically ranges from about minus three to plus one percent of optimum moisture content. The construction schedule should allow time for drying and moisture conditioning of excavated soils proposed for reuse. If on-site soil is proposed for use other than common borrow, the soil should be stockpiled separately and tested to determine if it meets specification requirements for its intended use.

RECOMMENDATIONS

Subgrade Preparation

1. Surface grading should provide positive drainage away from the courts both during and after construction. Dewatering requirements will vary across the site based on groundwater levels encountered during construction and subgrade conditions. In general, it should be practicable to accomplish construction dewatering by open pumping methods. Surface runoff and infiltration of groundwater should be controlled so that excavation, filling and compaction can be completed in-the-dry.

2. All topsoil, organic material, debris, rubbish, frozen soils, muck, loose or disturbed soils, and other unsuitable materials should be removed down to naturally deposited inorganic soil from areas receiving new fill. Unsuitable materials include existing uncontrolled fills (i.e., fills placed without systematic densification and moisture control to acceptable percent compaction, including backfilled test pits and deleterious substances).

Site Filling

3. On-site soil proposed during construction for reuse other than as common fill should be stockpiled separately and tested to determine if it meets specification requirements for its intended use.

4. Common fill composed of on-site excavated inorganic fills may be placed as fill below pavement section subgrade. Common fill should consist of inorganic mineral soil free of ice, loam, organic, or other unsuitable materials. Common fill may contain cobbles up to 2/3 of the lift thicknesses used to place and compact it; recommended maximum lift thickness for common fill before compaction is 12 inches.

5. Imported fill proposed for use below pavement sections should meet the material requirements of MaineDOT Section 703.19, Granular Borrow.

6. In open areas, fill should be placed in level, uniform lifts not exceeding 12 inches in uncompacted thickness and be compacted with self-propelled compaction equipment. All fill and pavement section materials should be compacted to at least 95 percent of the maximum dry density as determined by *ASTM Standard D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).*

Pavement Section

7. It is recommended that exposed pavement section subgrade (i.e., naturally deposited or sandy gravel with silt fill) be compacted by several passes with a 10-ton sheepsfoot drum roller. Soft spots, unsatisfactory soils, areas of excessive pumping, or rutting over one inch in depth should be excavated and replaced with suitable compacted fill.

8. Before the start of paving, the surface of the pavement section base course material should be proof-rolled. The evaluation should include proof-rolling with a loaded tandem axle dump truck weighing not less than 15 tons to aid in identifying soft pockets and areas of excess yielding. Wet or saturated subgrades should not be proof-rolled. Soft spots, unsatisfactory soils, areas of excessive pumping, or rutting over ½- inch deep should be excavated and replaced with suitable compacted fill.

9. The proposed tennis court reconstruction should be constructed with the following pavement sections. Materials and placement methods should meet the current *Maine Department of Transportation Standard Specifications (November 2014 edition)* requirements. It's anticipated that the tennis court contractor will apply surface treatments compatible with the recommended pavement surface course.

Component	Thickness in Inches
Surface Course (MaineDOT Type 9.5 mm)	1
Binder Course (MaineDOT Type 19 mm)	2.5
Gravel Base (MaineDOT 703.06 Type A)	8
Subbase (MaineDOT 703.06 Type D)	35
Total	**46.5**

Underdrains should be provided at the perimeter of paved areas where final grades adjacent to the pavement section are less than one foot below the bottom of the design pavement section. The pavement section subgrade surface should be pitched at a minimum of 2 percent slope to drain into the underdrains. The invert of the underdrains or ditches should be a minimum of 1 foot below the pavement section.

10. Underdrains should consist of 2 cubic feet of *MaineDOT 703.22 Underdrain Backfill Material Type C* per linear foot, wrapped in filter fabric, and located a minimum of 1 foot beneath the pavement section. The trench above the geotextile wrapped underdrain stone should be backfilled with *MaineDOT Underdrain Backfill Material Type B.* The top of the underdrain trench backfill should be in direct contact with the pavement subbase.

11. Each pavement underdrain pipe should be provided with multiple outlet pipes so as not to be reliant upon a single flow path. Drains should be outlet by gravity to surface drainage features or storm drains that will be free-flowing under all conditions.

12. Pavement will crack over its service life due to shrinkage, frost action, oxidation, thermal expansion and contraction, and/or other environmental factors. To lengthen the lifespan of the proposed construction a maintenance schedule should be made and implemented to observe for and repair cracks as they form. Proactive maintenance will slow the widening and propagation of cracks, and reduce infiltration of water into the pavement section.

Closure

This report has been prepared for specific application to the proposed tennis court reconstruction at York High School in York, Maine, for the exclusive use of the York School Department. This work has been completed in accordance with generally accepted soil engineering practices. No other warranty, expressed or implied, is made. In the event any changes are made in the nature, design, or location of the proposed construction, the conclusions and recommendations of this report should be reviewed by RWG&A.

The recommendations presented are based on the results of widely spaced explorations. The nature of variations between the explorations may not become evident until construction has begun. If variations are encountered, it will be necessary for RWG&A to re-evaluate the recommendations presented in this report. RWG&A requests an opportunity for a general review of the final design

and specifications to determine that earthwork recommendations have been interpreted in the manner in which they were intended.

RWG&A appreciates the opportunity to be of service to the York School Department on this project. If we may be of further service, or if you have any questions, please do not hesitate to contact us.

Sincerely,
R. W. GILLESPIE & ASSOCIATES, INC.

FOR Serena N. Pape, E.I.
Geotechnical Engineer

STATE OF MAINE
ERIK J. WIBERG
No. 9178
4/17/2020
LICENSED PROFESSIONAL ENGINEER

Erik J. Wiberg, P.E.
Principal Geotechnical Engineer

SNP/EJW:sf
In duplicate

Attachments:

- Figure 1. Locus Map
- Figure 2. Exploration Location Plan
- Appendix A. Limitations
- Appendix B. Test Boring Logs
- Appendix C. Laboratory Test Results

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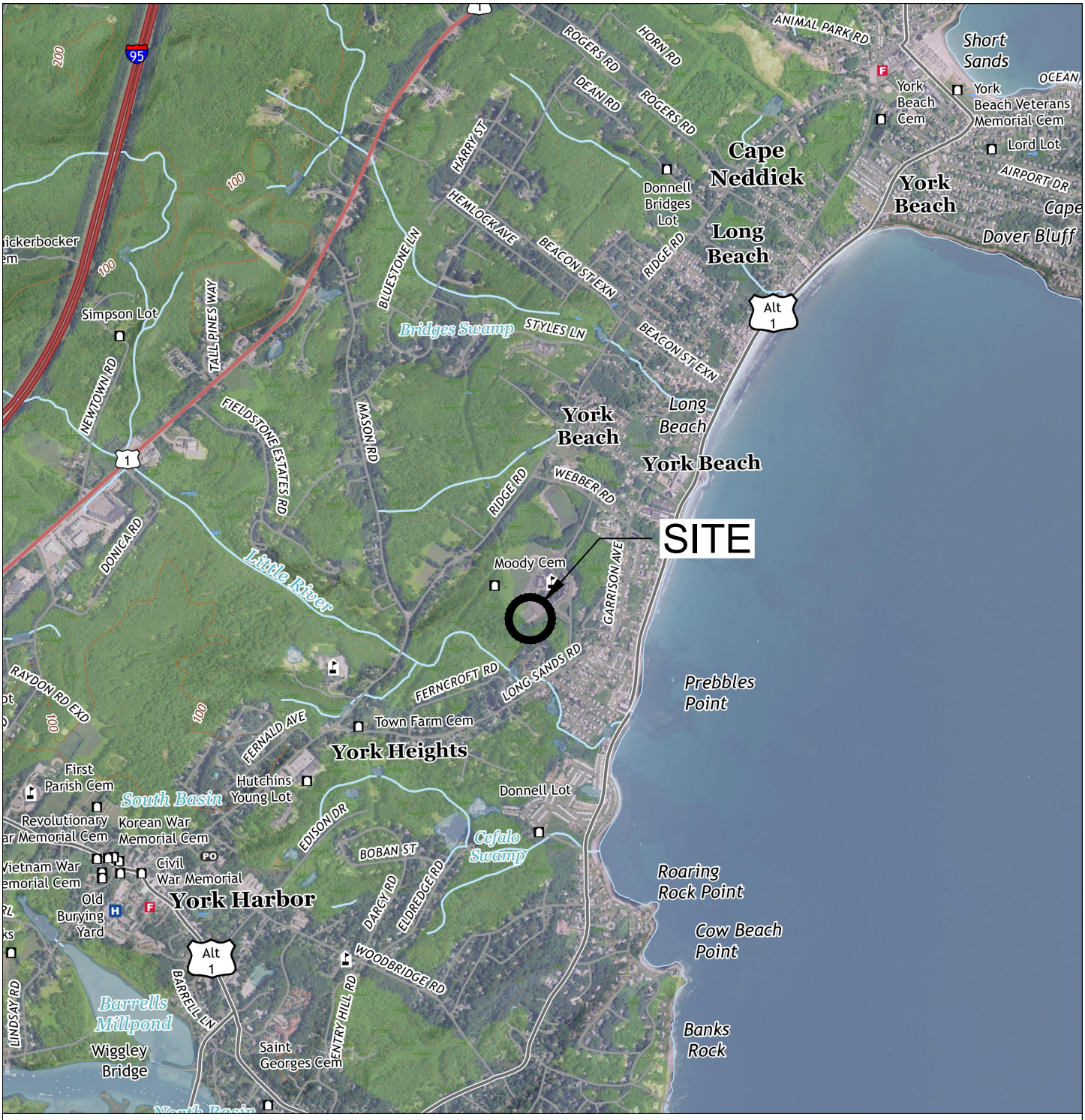

FIGURE 1
LOCUS MAP
GEOTECHNICAL EVALUATION
PROPOSED TENNIS COURT RECONSTRUCTION
YORK HIGH SCHOOL
YORK, MAINE

APRIL 2020 PROJECT NO. 1017-007

SOURCE:
USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE OF YORK HARBOR, ME, DATED 2018, AND YORK BEACH, ME, DATED 2018.

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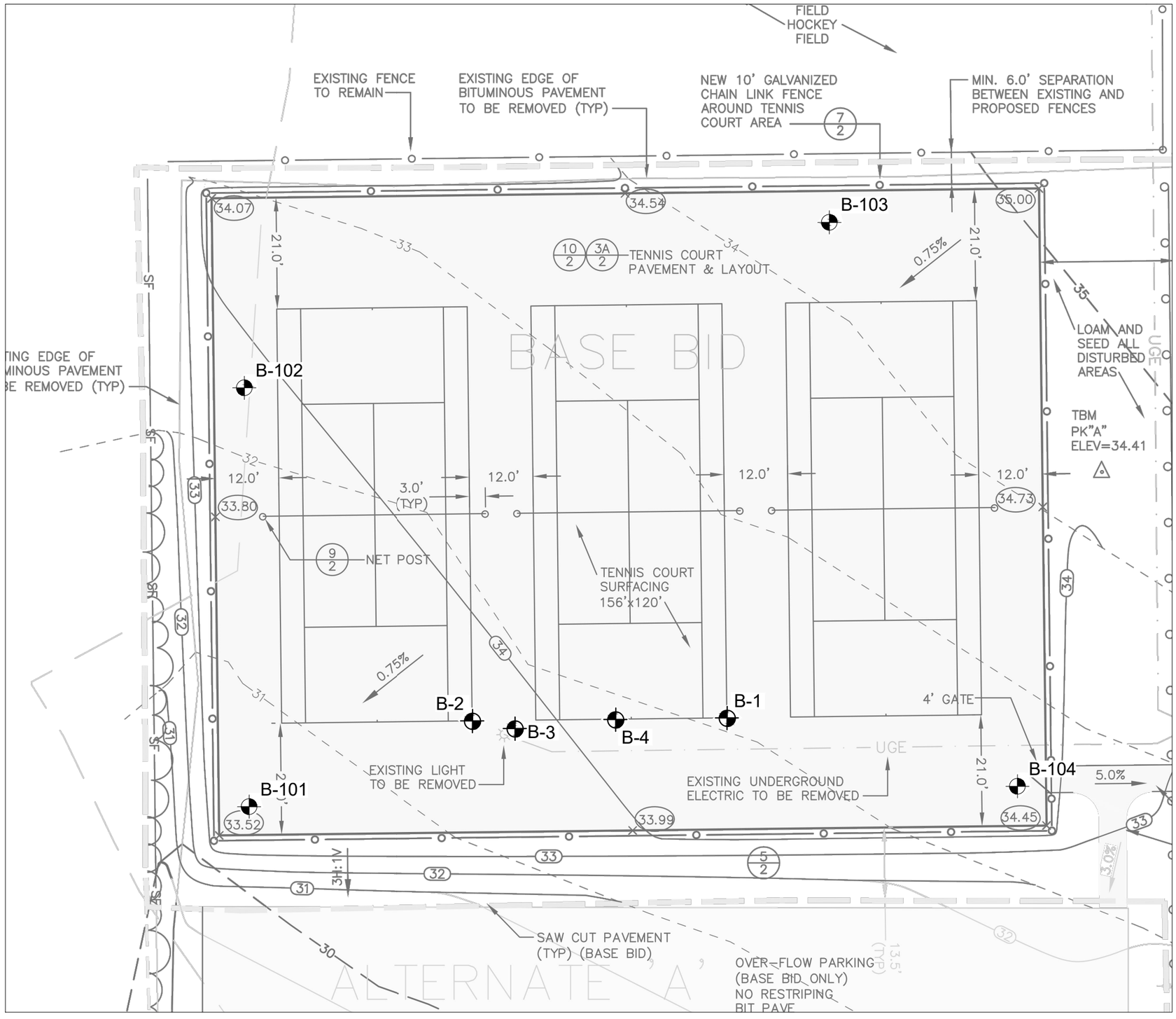
Environmental Consulting • www.rwgillespie.com

G:\Autocad\1000\1017\1017-07\FIG 1, LOCUS MAP 1017-007.dwg, 04/16/2020 1:28:14 PM



LEGEND:

B-101 — APPROXIMATE LOCATION OF SOIL BORING DRILLED 27 MARCH 2020.

B-1 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING BY GREAT WORKS PUMP AND TEST BORING, INC., OF ROLLINSFORD, NEW HAMPSHIRE ON 04 OCTOBER 2006.

SOURCE:
DRAWING NO. 1, TITLED "LAYOUT AND GRADING PLAN", PREPARED BY LAND USE CONSULTANTS, INC., DATED 09/14/01.

N

0 20 30 40
SCALE, FEET

FIGURE 2
EXPLORATION LOCATION PLAN
GEOTECHNICAL EVALUATION
PROPOSED TENNIS COURT RECONSTRUCTION
YORK HIGH SCHOOL
YORK, MAINE

APRIL 2020 PROJECT NO. 1017-007

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APPENDIX A

LIMITATIONS

Geotechnical Engineering Evaluation
Proposed Tennis Court Reconstruction
York High School
York, Maine

LIMITATIONS

This geotechnical evaluation has been limited to consideration of the geotechnical aspects of the current subsurface conditions with respect to design of the proposed pavement section. The primary purpose of R.W. Gillespie & Associates, Inc.'s (RWG&A's) services was to obtain subsurface information on which to base recommendations for design and construction of the tennis court pavement section. This report identifies construction considerations intended to solely assist engineers that will design the project and monitor its construction, and not to the benefit of others including but not limited to the Contractor. This report is not a technical specification nor is it intended to be used as a specification for bidding or building the project.

This geotechnical evaluation report might also aid the Contractor responsible for construction, but reliance is not extended to the Contractor for the purposes of bidding and/or building the project. The recommendations and comments provided herein are not intended to be instructions or directives to the project Contractor. The project Contractor must evaluate construction issues encountered in the work on the basis of their experience with similar projects taking into account their own methods and procedures.

This report has not considered the construction from a safety perspective. Construction safety is the responsibility of the project Contractor, who is also solely responsible for the means, methods, and sequencing of construction operations. RWG&A is providing this information as a service to York School Department. Under no circumstances should this information be interpreted to mean that RWG&A or York School Department are assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

RWG&A's proposed scope of services did not include an environmental site assessment relative to oil and hazardous materials or evidence of a potential release or threat of oil or hazardous materials on, below, or around the site. Any statement in this report, or on the exploration logs, regarding odors, hazardous materials and/or oil, and unusual/suspicious conditions is provided for informational purposes only and is not intended to constitute on environmental assessment.

APPENDIX B

EXPLORATION LOGS

Geotechnical Engineering Evaluation
Proposed Tennis Court Reconstruction
York High School
York, Maine

RWG&A, Inc. soil descriptions are based on the following criteria. Descriptive terminology is used to denote the grain size and percentage of each component. The soil descriptions are based on visual-manual classification procedures, Standard Penetration Test results, and the results of laboratory testing on selected soil samples, where available. The Unified Soil Classification Group Symbol will be indicated in capital letters.

COMPONENT DEFINITIONS BY GRADATION SIEVE LIMITS

Materials	Definitions	Fractions	Upper	Lower
Boulders	Material too large to pass through an opening 12 in. square.			
Cobbles	Material passing through a 12 in. opening and retained on the 3 in. sieve.			
Gravel	Material passing the 3 in. sieve and retained on 1/4" (No. 4 sieve).	Coarse Fine	3 in. 3/4 in.	3/4 in. 1/4 in.
Sand	Material passing the No. 4 sieve and retained on the No. 200 sieve.	Coarse Medium Fine	No. 4 (1/4") No. 10 (1/8") No. 40 (1/32")	No. 10 (1/8") No. 40 (1/32") No. 200
Silt	Material passing the No. 200 sieve which is usually non-plastic in character and exhibits little or no strength when air dried.		No. 200	
Clay	Material passing the No. 200 sieve which can also be made to exhibit plasticity within a certain range of moisture contents and which exhibits considerable strength when air dried.		No. 200	

SOIL DESCRIPTION

General

Soils are described as to the Unified Soil Classification Systems Group Symbol, density or consistency, color, grain size distribution and other pertinent properties such as plasticity and dry strength. The RWG&A order of descriptors is as follows:

1. USCS Group Name and Symbol, or Fill
2. Density or Consistency
3. Moisture
4. Grain Size & Constituent percentages
5. Other pertinent descriptors
6. Color

DESCRIPTIVE TERMINOLOGY DENOTING COMPONENT PROPORTIONS

Descriptive Terms	Range of Proportions
Noun (major component)	∃50%
Adjective (secondary component)	20 - 50%
Some (third component)	25 - 45%
Little (second or third component)	15 - 25%
Few (second or third component)	5 - 15%
Trace	0 - 5%
With	Amount of component not determined. Used as a conjunction only. Does not indicate component percentile

OTHER DESCRIPTIVE TERMS

Where appropriate, geological classifications are also used (Glacial Till, etc.)

TYPICAL DESCRIPTIONS

SAND WITH SILT (SP-SM): Medium dense, moist, coarse to medium sand, few silt, brown.
FILL; Loose, dry, fine sand, some gravel and silt, with brick and concrete fragments, dark brown.
SILTY CLAY (CL); Very stiff, moist, silty clay, olive-brown.

DENSITY OR CONSISTENCY OF SOILS

COHESIVE SOILS

Consistency of Cohesive Soils	Standard Penetration Test (Blows Per Foot) (N)	Undrained Shear Strength (TSF)
Very Soft	0 - 2	Below 0.13 (250 psf)
Soft	2 - 4	0.13 to 0.25 (to 500 psf)
Medium	4 - 8	0.25 to 0.5 (to 1,000 psf)
Stiff	8 - 15	0.5 to 1.0 (to 2,000 psf)
Very Stiff	15 - 30	1.0 to 2.0 (to 4,000 psf)
Hard	Over 30	over 2.0 (over 4,000 psf)

Consistency of cohesive soils is based upon field vane shear, torvane, or pocket penetrometer, or laboratory vane shear or Unconsolidated-Undrained Triaxial Compression tests. Consistency of cohesive soils is based upon the Standard Penetration test when no other data is available.

COHESIONLESS SOILS

Density of Cohesionless Soils	Standard Penetration Test (Blows per Foot) (in)
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	over 50

PENETRATION RESISTANCE

STANDARD PENETRATION TEST (ASTM D1586) - a 2.0-inch diameter, 1-3/8 inch inside diameter split barrel sample is driven into soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The total number of blows required for penetration from 6 to 18 inches is the Standard Penetration Resistance (N).

COBBLES AND BOULDERS

The percentage of cobbles and boulders is estimated visually where possible.

Descriptive Term	Estimated Percentage
Very Few	0 - 10%
Few	10 - 25%
Common	25 - 40%
Numerous	40 - 50%

If the percentage cannot be determined, as in a typical test boring, then use "with" to indicate the presence of cobbles and/or boulders. (i.e., gravelly sand with cobbles and boulders).

FILLS

The following terminology is used to denote size range of man-made materials within fill deposits:

Size Range	Comparative Soil Terms
<No. 200 Sieve	Silt - size
No. 200 to 1/4 in.	Sand - size
1/4 in. to 3 in.	Gravel - size
3 in. to 12 in.	Cobble - size
>12 in.	Boulder - size

SUPPLEMENTAL SOIL DESCRIPTION TERMINOLOGY

Term	Example	
Seam	Typically 1/16 to 1/2 inch thick	1/4 inch sand seams
Layer	Greater than 1/2 inch thick	2-inch sand layers
Occasional	One or less per foot of thickness	
Frequent	More than one per foot of thickness	
Interbedded	Alternating soil layers of different composition	
Varved	Alternating thin seams of silt and clay	
Mottled	Variations in color	

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Boring Log: B-101

Total Depth (ft): 7.8

Sheet 1 of 1

Project Name: Proposed Tennis Court Reconstruction
RWG&A Project No. 1017-007
Location: York, Maine
Client: York School Department
RWG&A Representative: Serena Pape
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfill and cold patch
Observed Water Depth: Not Obs.

Drilling Co.: Northern Test Boring
Drill Rig: Diedrich D50
Driller Rep.: Mike Nadeau
Date Started: 03/27/2020
Date Completed: 03/27/2020
Surface Elevation:
Drilling Method: 4 1/4" OD SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (2 inches).	15	10 11 16	N/A		
			S-2	FILL; Sand with gravel, coarse to fine sand, moist, some coarse to fine gravel, trace silt, orange-brown.	10	21 13	N/A		
				Becomes more moist.		20 11			
5			S-3		8	11 3	17		
						8 9			
				Weathered Rock.		15			
				Bottom of Exploration at 7.8'; SSA Refusal.					
10									
15									
20									
25									
30									

Notes: S-1 and S-2 were collected with a 3-inch split barrel sampler. Borehole collapsed at 6' upon removal of SSA.

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- Environmental Consulting
- Materials Testing Services

Boring Log: B-102

Total Depth (ft): 4.2

Sheet 1 of 1

Project Name: Proposed Tennis Court Reconstruction
RWG&A Project No. 1017-007
Location: York, Maine
Client: York School Department
RWG&A Representative: Serena Pape
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfill and cold patch
Observed Water Depth: Not Obs.

Drilling Co.: Northern Test Boring
Drill Rig: Diedrich D50
Driller Rep.: Mike Nadeau
Date Started: 03/27/2020
Date Completed: 03/27/2020
Surface Elevation:
Drilling Method: 4 1/4" OD SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (2 inches).	13	9 10 10	N/A		
			S-2	FILL; Sand with gravel, coarse to fine sand, moist, some coarse to fine gravel, trace silt, orange-brown. Becomes more moist.	18	11 11	N/A		
				Fabric, black, woven.		12			
5				FILL; Silty sand with gravel, moist, coarse to fine sand, some silt, little coarse to fine gravel , brown.		27			
				Weathered Rock.		50/4"			
				Bottom of Exploration at 4.2'; SSA Refusal.					
10									
15									
20									
25									
30									

Notes: S-1 and S-2 were collected with a 3-inch split barrel sampler. Borehole collapsed at 3.8' upon removal of SSA.

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- Environmental Consulting
- Materials Testing Services

Boring Log: B-103

Total Depth (ft): 6.8

Sheet 1 of 1

Project Name: Proposed Tennis Court Reconstruction
RWG&A Project No. 1017-007
Location: York, Maine
Client: York School Department
RWG&A Representative: Serena Pape
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfill and cold patch
Observed Water Depth: 4.2'

Drilling Co.: Northern Test Boring
Drill Rig: Diedrich D50
Driller Rep.: Mike Nadeau
Date Started: 03/27/2020
Date Completed: 03/27/2020
Surface Elevation:
Drilling Method: 4 1/4" OD SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (1.75 inches).	12	6 8 11	N/A		
			S-2	FILL; Sand with gravel, coarse to fine sand, moist, some coarse to fine gravel, trace silt, orange-brown.	24	15 12	N/A		
				Fabric, black, woven.					
				FILL; Silty sand with gravel, moist, coarse to fine sand, some silt, little coarse to fine gravel , brown.		19 25			
5			S-3	Becomes wet.	12	26 16 26 39	65		
				Bottom of Exploration at 6.8'; Auger refusal.		50/2"			
10									
15									
20									
25									
30									

Notes: S-1 and S-2 were collected with a 3-inch split barrel sampler.

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- Environmental Consulting
- Materials Testing Services

Boring Log: B-104

Total Depth (ft): 5.9

Sheet 1 of 1

Project Name: Proposed Tennis Court Reconstruction
RWG&A Project No. 1017-007
Location: York, Maine
Client: York School Department
RWG&A Representative: Serena Pape
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfill and cold patch
Observed Water Depth: Not Obs.

Drilling Co.: Northern Test Boring
Drill Rig: Diedrich D50
Driller Rep.: Mike Nadeau
Date Started: 03/27/2020
Date Completed: 03/27/2020
Surface Elevation:
Drilling Method: 4 1/4" OD SSA
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (2 inches).	11	11 12 18	N/A		
			S-2	FILL; Sand with gravel, coarse to fine sand, moist, some coarse to fine gravel, trace silt, orange-brown.	9	16 11	69		
				Fabric, black, woven.		19 50/1"			
5			S-3	FILL; Silty sand with gravel, moist, coarse to fine sand, some silt, little coarse to fine gravel , brown.	10	19 34 50/5"	84		
				Weathered rock.					
				Bottom of Exploration at 5.9'; SPT-N refusal.					
10									
15									
20									
25									
30									

Notes: S-1 and S-2 were collected with a 3-inch split barrel sampler.

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Geotechnical Engineering•Geohydrology•Materials Testing Services

Project Name:	Tennis Court Subsidence - York High School	Log:	B-1
Location:	York, Maine	Surface Elevation:	34
Client:	York School Department	Observed Water Depth:	8.5
RWG&A Project No.	1017-01	Date Completed:	10/04/06

Depth (ft.)	Symbol	Samples	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0				ASPHALTIC PAVEMENT (3.5 inches).					
			S-1	FILL; Gravelly sand, dense, medium to fine sand, little gravel, trace silt, moist, brown (note: geotextile fabric at base of fill).	24	10 15 31 41	46		
			S-2	FILL; Silty sand with gravel, dense, coarse to fine sand, some silt, little gravel, moist, brown. (Glacial till fill)	24	8 14 20 10	34	12	GS
5			S-3		24	15 20 10 9	30		
				FILL; Gravelly sand with silt and bituminous pavement, dense, coarse to fine sand, some gravel, little silt, occasional cobble, moist, black to brown. (Reclaim asphalt and subbase)					
			S-4	GRAVELLY SAND WITH SILT (SM); Dense, coarse to fine sand, some gravel, little silt, moist then wet, brown. (Glacial till)	18	11 12 30 50/0"	42		
				Weathered rock.					
10			S-5	Bottom of Exploration at 10'; Auger and spoon refusal, possible bedrock.	NR	50/0"	100+		
15									

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project Name:	Tennis Court Subsidence - York High School	Log:	B-2
Location:	York, Maine	Surface Elevation:	34
Client:	York School Department	Observed Water Depth:	9.0
RWG&A Project No.	1017-01	Date Completed:	10/04/06

Depth (ft.)	Symbol	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0			ASPHALTIC PAVEMENT (3.5 inches).					
		S-1	FILL; Gravelly sand, medium dense, medium to fine sand, some gravel, trace silt, moist, brown. (note: geotextile fabric at base of fill)	24	8 10 17 16	27		
		S-2	FILL; Gravelly sand with silt, very dense, coarse to fine sand, some gravel, trace silt, occasional cobble, moist, brown. (Glacial till fill)	12	50 25 25/0"	100	4	GS
		S-3	FILL; Gravelly sand with silt and bituminous pavement, medium dense to dense, coarse to fine sand, some gravel, little silt, occasional cobble, moist, black to brown. (Reclaim asphalt and subbase)	24	15 16 16 20	32		
5		S-4		24	11 11 10 30	21		
		S-5	SILTY SAND WITH GRAVEL (SM); Dense, coarse to fine sand, some silt, little gravel, moist then wet, brown. (Glacial till)	14	12 30 50/5"	80+		
			Weathered bedrock.					
10		S-6	Bottom of Exploration at 10'; Auger and spoon refusal, possible bedrock.	NR	50/0"	100+		
15								

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Project Name:	Tennis Court Subsidence - York High School	Log:	B-3
Location:	York, Maine	Surface Elevation:	34
Client:	York School Department	Observed Water Depth:	Not Obs.
RWG&A Project No.	1017-01	Date Completed:	10/04/06

Depth (ft.)	Symbol	Samples	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0				ASPHALTIC PAVEMENT (3.0 inches).					
			S-1	FILL; Gravelly sand, dense, medium to fine sand, some gravel, trace silt, moist, brown. (note: geotextile fabric at base of fill)	24	8 11 28 22	39		
			S-2	FILL; Gravelly sand with silt, medium dense, coarse to fine sand, some gravel, trace silt, moist, brown. (Glacial till fill)	24	15 12 13 16	25	6	GS
5			S-3	FILL; Gravelly sand with silt and bituminous pavement, dense, coarse to fine sand, some gravel, little silt, frequent cobbles, moist, brown to black. (Reclaim asphalt and subbase)	24	12 31 16 16	47		
			S-4		9	29 50/3"	100+		
				Bottom of Exploration at 7.8'; Auger and spoon refusal.					
10									
15									

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering•Geohydrology•Materials Testing Services

Project Name:	Tennis Court Subsidence - York High School	Log:	B-4
Location:	York, Maine	Surface Elevation:	34
Client:	York School Department	Observed Water Depth:	Not Obs.
RWG&A Project No.	1017-01	Date Completed:	10/04/06

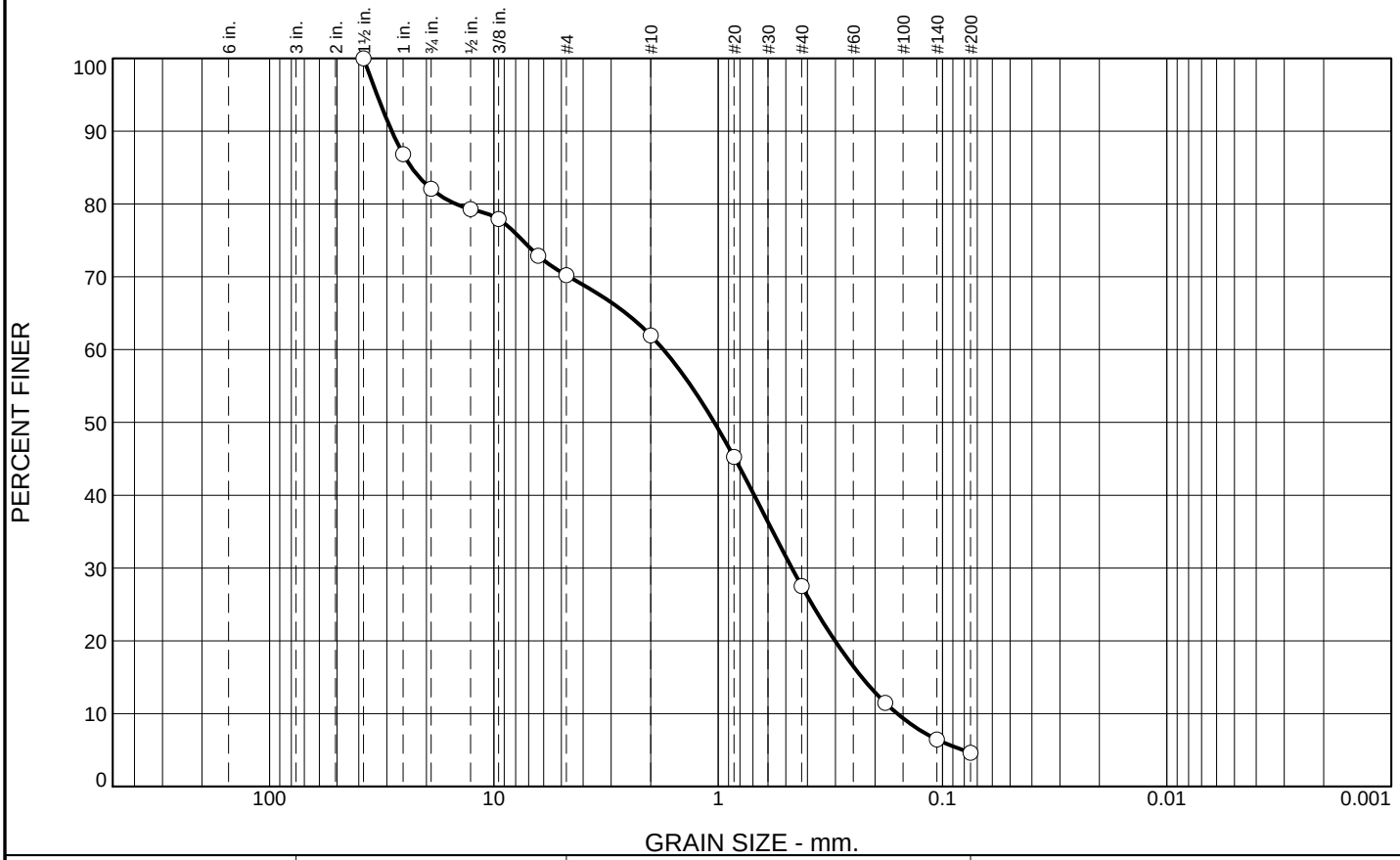
Depth (ft.)	Symbol Samples	Sample No.	Description of Material	Sample Recovery (in.)	Blows per 6"	SPT-N Blows per foot	Moisture Content (%)	Lab Tests
0			ASPHALTIC PAVEMENT (3.5 inches).					
		S-1	FILL; Gravelly sand, dense, medium to fine sand, little to some gravel, trace silt, brown. (note: geotextile fabric at base of fill)	24	25 13 18 30	31		
		S-2	FILL; Dense, coarse to fine sand, trace silt, some gravel, brown. (Glacial till fill)	24	7 19 26 34	45	7	GS
5		S-3	FILL; Gravelly sand with silt and bituminous pavement, dense, coarse to fine sand, some gravel, little silt, occasional cobble, moist, black to brown.	24	10 15 16 21	31		
		S-4	Bottom of Exploration at 7.1'; Auger refusal, possible bedrock.	1	50/1"	100+		
10								
15								

APPENDIX C

LABORATORY TEST RESULTS

Geotechnical Engineering Evaluation
Proposed Tennis Court Reconstruction
York High School
York, Maine

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	17.9	11.9	8.3	34.4	22.9	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	86.8		
3/4"	82.1		
1/2"	79.3		
3/8"	77.9		
1/4"	72.9		
#4	70.2		
#10	61.9		
#20	45.3		
#40	27.5		
#80	11.5		
#140	6.4		
#200	4.6		

* (no specification provided)

Soil Description

poorly graded sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 28.5317 D_{85}= 23.2903 D_{60}= 1.7529
D_{50}= 1.0404 D_{30}= 0.4700 D_{15}= 0.2290
D_{10}= 0.1592 C_u= 11.01 C_c= 0.79

Classification

USCS= SP AASHTO= A-1-b

Remarks

Moisture Content: 6.6%

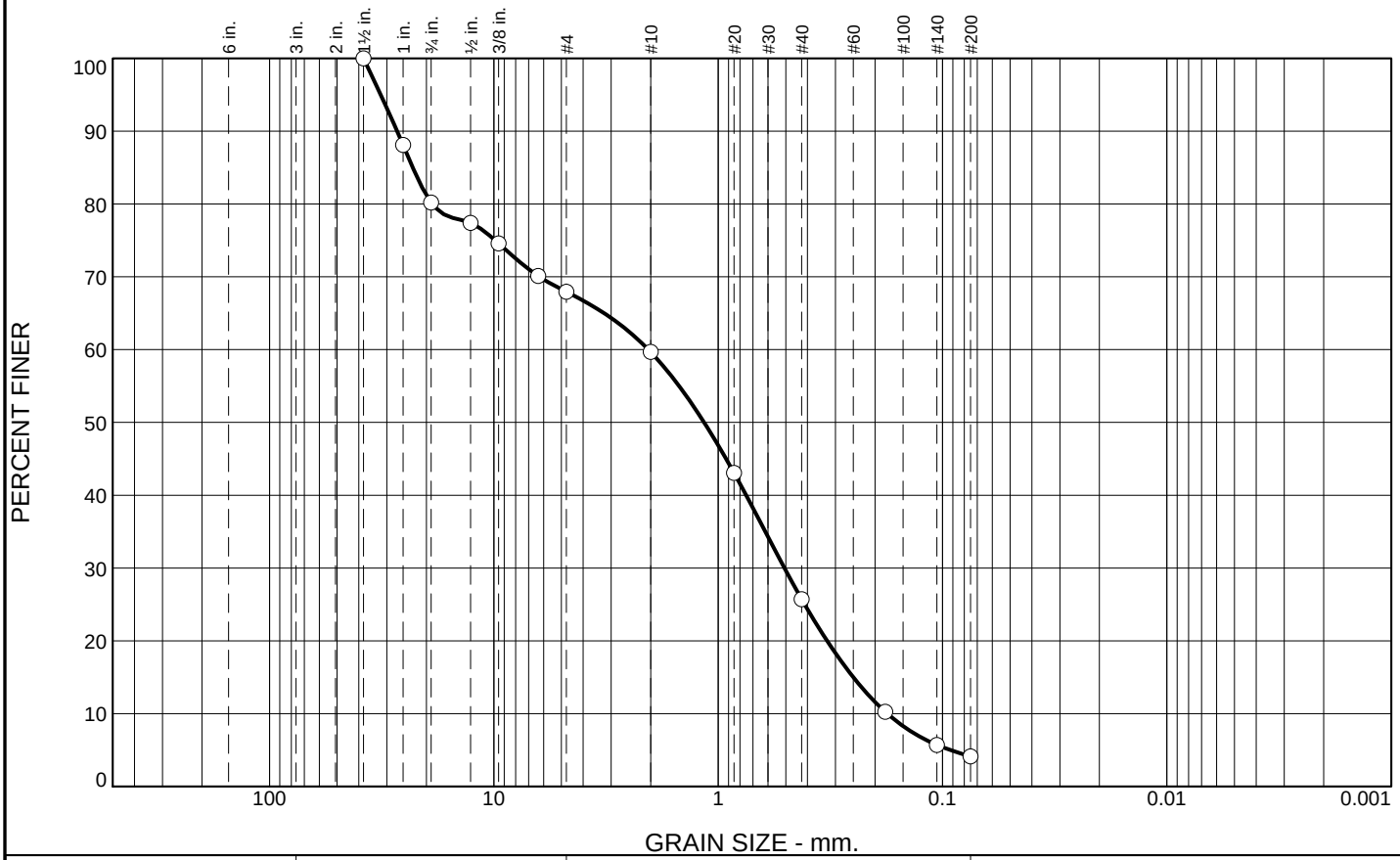
Location: B-101
Sample Number: S-2 **Depth:** 2.2'-4.2' **Date:** 4/8/20

R.W. Gillespie & Associates, Inc.
Biddeford, Maine

Client: York School Department
Project: Proposed Tennis Court Construction
Yok, ME
Project No: 1017-007 **Lab** 15948-01

Tested By: JCR **Checked By:** JRF JRF

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	19.8	12.2	8.3	34.0	21.6	4.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	88.1		
3/4"	80.2		
1/2"	77.4		
3/8"	74.6		
1/4"	70.1		
#4	68.0		
#10	59.7		
#20	43.1		
#40	25.7		
#80	10.2		
#140	5.7		
#200	4.1		

* (no specification provided)

Soil Description

poorly graded sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 26.9969 D_{85}= 22.9844 D_{60}= 2.0472
D_{50}= 1.1553 D_{30}= 0.5070 D_{15}= 0.2501
D_{10}= 0.1763 C_u= 11.61 C_c= 0.71

Classification

USCS= SP AASHTO= A-1-b

Remarks

Moisture Content: 8.3%

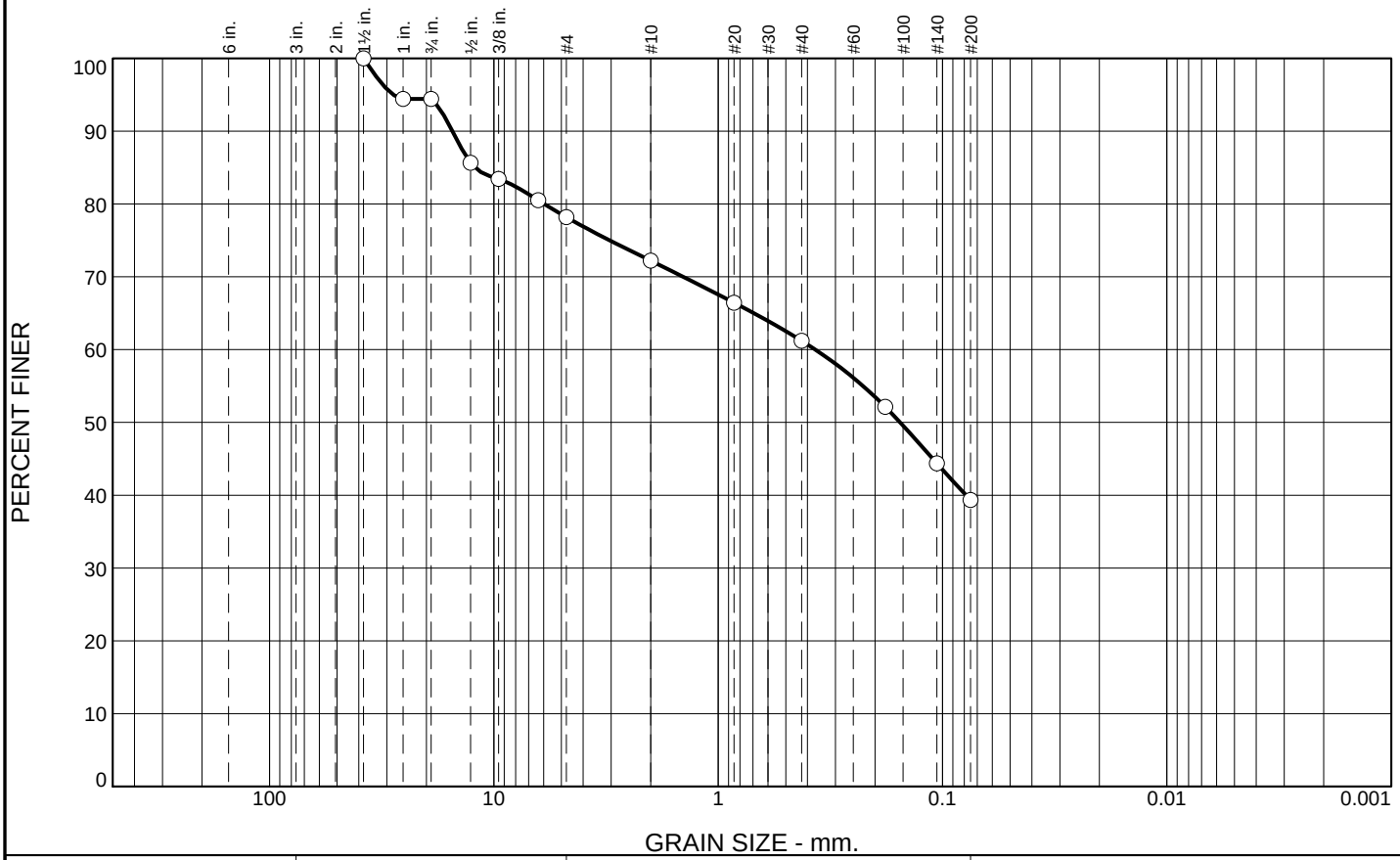
Location: B-102
Sample Number: S-1 **Depth:** 0.2'-2.2' **Date:** 4/8/20

R.W. Gillespie & Associates, Inc.
Biddeford, Maine

Client: York School Department
Project: Proposed Tennis Court Construction
Yok, ME
Project No: 1017-007 **Lab** 15948-02

Tested By: JCR **Checked By:** JRF JRF

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.6	16.2	6.0	11.0	21.9	39.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2"	100.0		
1"	94.4		
3/4"	94.4		
1/2"	85.7		
3/8"	83.4		
1/4"	80.5		
#4	78.2		
#10	72.2		
#20	66.4		
#40	61.2		
#80	52.1		
#140	44.4		
#200	39.3		

* (no specification provided)

Soil Description

silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 15.2948 D_{85}= 12.1292 D_{60}= 0.3696
D_{50}= 0.1545 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Moisture Content: 12.3%

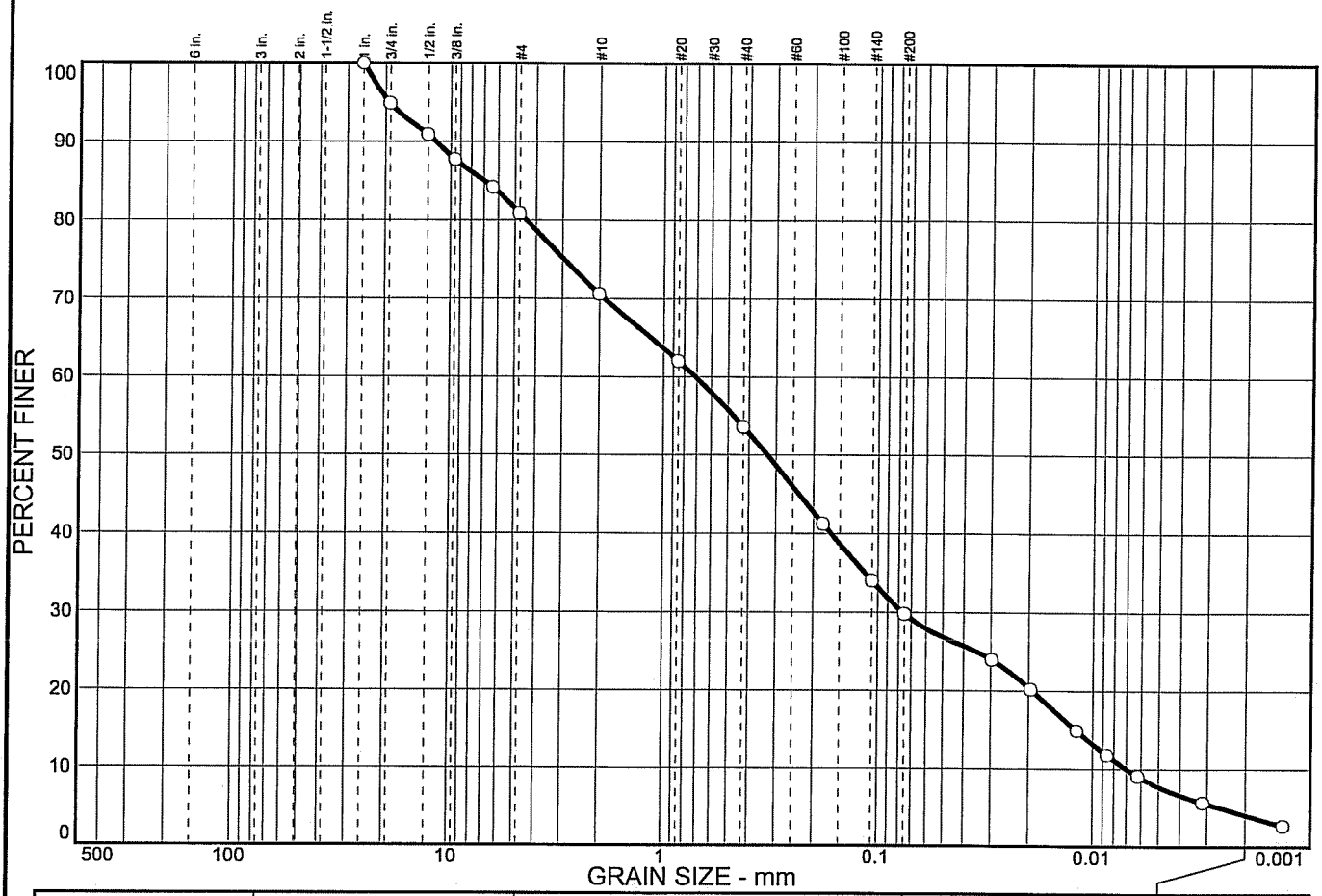
Location: B-103
Sample Number: S-2 **Depth:** 2.2'-4.2' **Date:** 4/8/20

R.W. Gillespie & Associates, Inc.
Biddeford, Maine

Client: York School Department
Project: Proposed Tennis Court Construction
Yok, ME
Project No: 1017-007 **Lab** 15948-03

Tested By: JCR **Checked By:** JRF JRF

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	5.1	14.0	10.3	17.0	23.8	25.7	4.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	94.9		
1/2 in.	90.9		
3/8 in.	87.7		
1/4 in.	84.2		
#4	80.9		
#10	70.6		
#20	62.0		
#40	53.6		
#80	41.2		
#140	34.0		
#200	29.8		

* (no specification provided)

Soil Description

Silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.94 D_{60}= 0.709 D_{50}= 0.329
D_{30}= 0.0765 D_{15}= 0.0119 D_{10}= 0.0070
C_u= 101.46 C_c= 1.18

Classification

USCS= SM AASHTO=

Remarks

Tested by: DCH
Moisture content: 11.8%

Sample No.: S-2 **Source of Sample:** B-1 **Date:** 10/11/06
Location: York, Maine **Elev./Depth:** 3'-5'

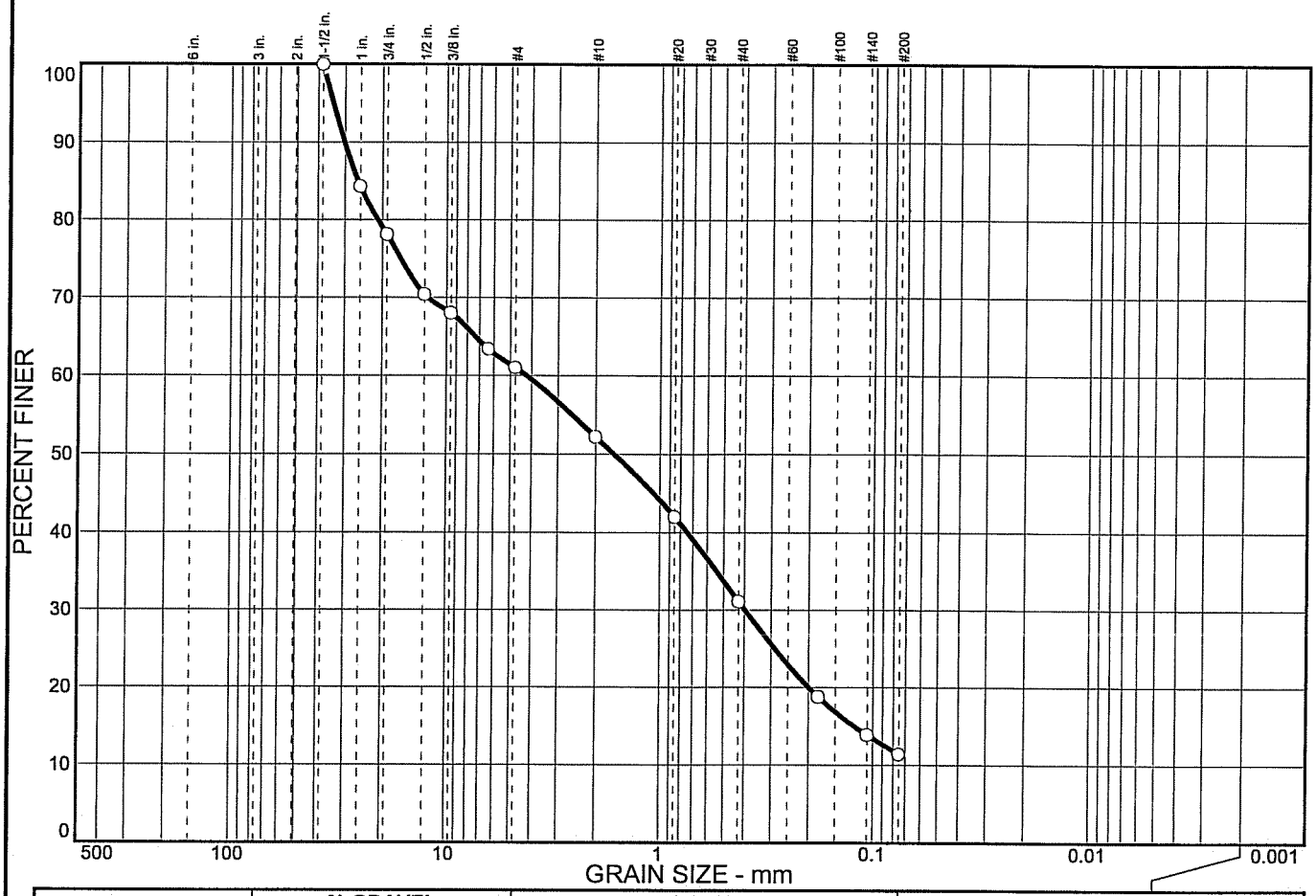
R.W. Gillespie & Associates, Inc.

Client: York School Department
Project: Tennis Court Evaluation

MTG

Project No: 1017-01 **Sample No.** 8983a

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	21.9	17.1	8.8	21.1	19.7	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	84.3		
3/4 in.	78.1		
1/2 in.	70.4		
3/8 in.	68.0		
1/4 in.	63.4		
#4	61.0		
#10	52.2		
#20	42.0		
#40	31.1		
#80	18.8		
#140	13.9		
#200	11.4		

* (no specification provided)

Soil Description

Poorly graded sand with silt and gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 26.0 D_{60}= 4.22 D_{50}= 1.64
D_{30}= 0.397 D_{15}= 0.122 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Tested by: DCH
Moisture content: 3.8%

Sample No.: S-2 **Source of Sample:** B-2 **Date:** 10/11/06
Location: York, Maine **Elev./Depth:** 2.5'-3.5'

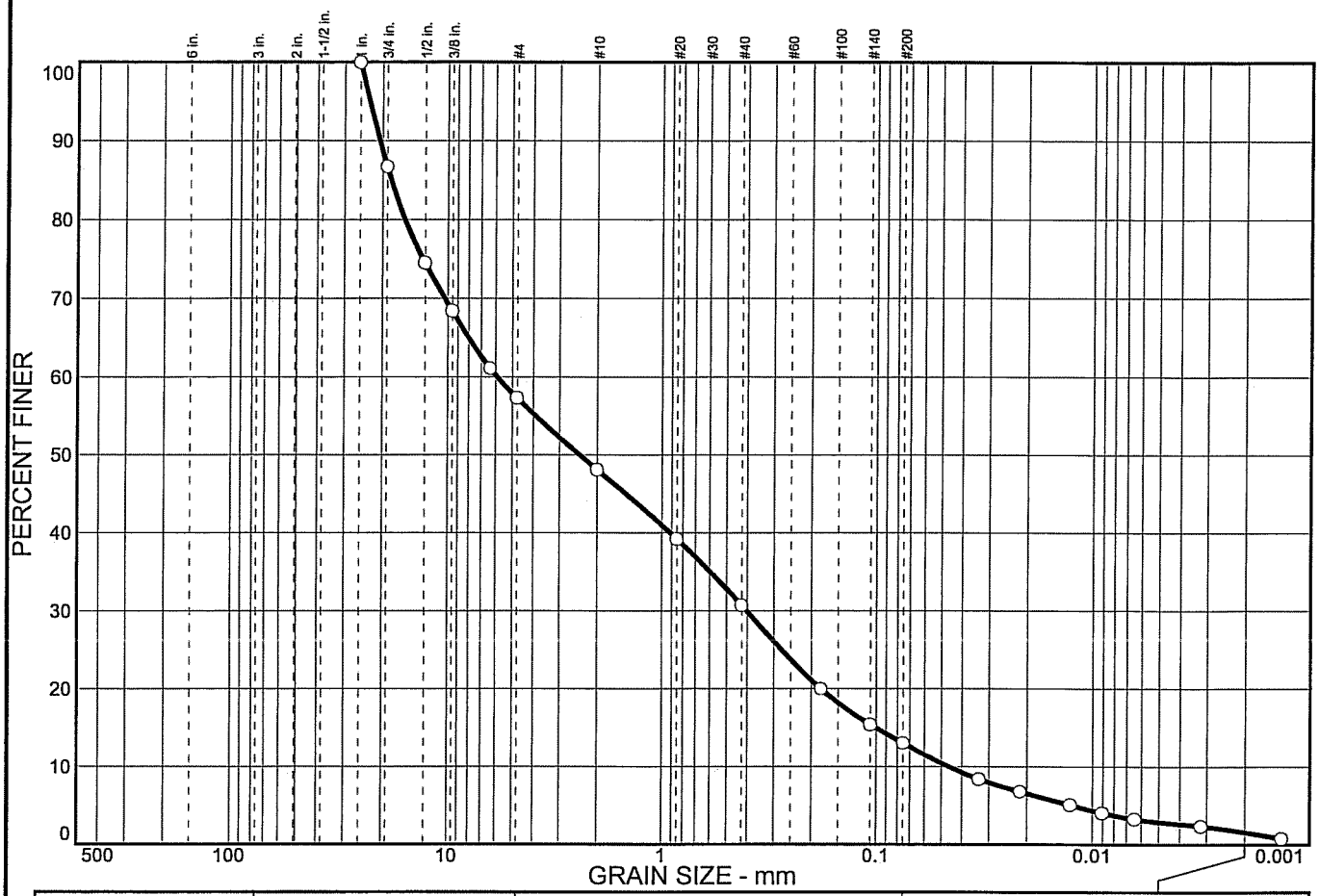
R.W. Gillespie & Associates, Inc.

Client: York School Department
Project: Tennis Court Evaluation

MTG

Project No: 1017-01 **Sample No.** 8983b

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	13.3	29.4	9.2	17.4	17.7	11.4	1.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	86.7		
1/2 in.	74.5		
3/8 in.	68.4		
1/4 in.	61.1		
#4	57.3		
#10	48.1		
#20	39.2		
#40	30.7		
#80	20.0		
#140	15.4		
#200	13.0		

* (no specification provided)

Soil Description

Silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 18.2 D_{60}= 5.88 D_{50}= 2.42
D_{30}= 0.403 D_{15}= 0.100 D_{10}= 0.0460
C_u= 127.95 C_c= 0.60

Classification

USCS= SM AASHTO=

Remarks

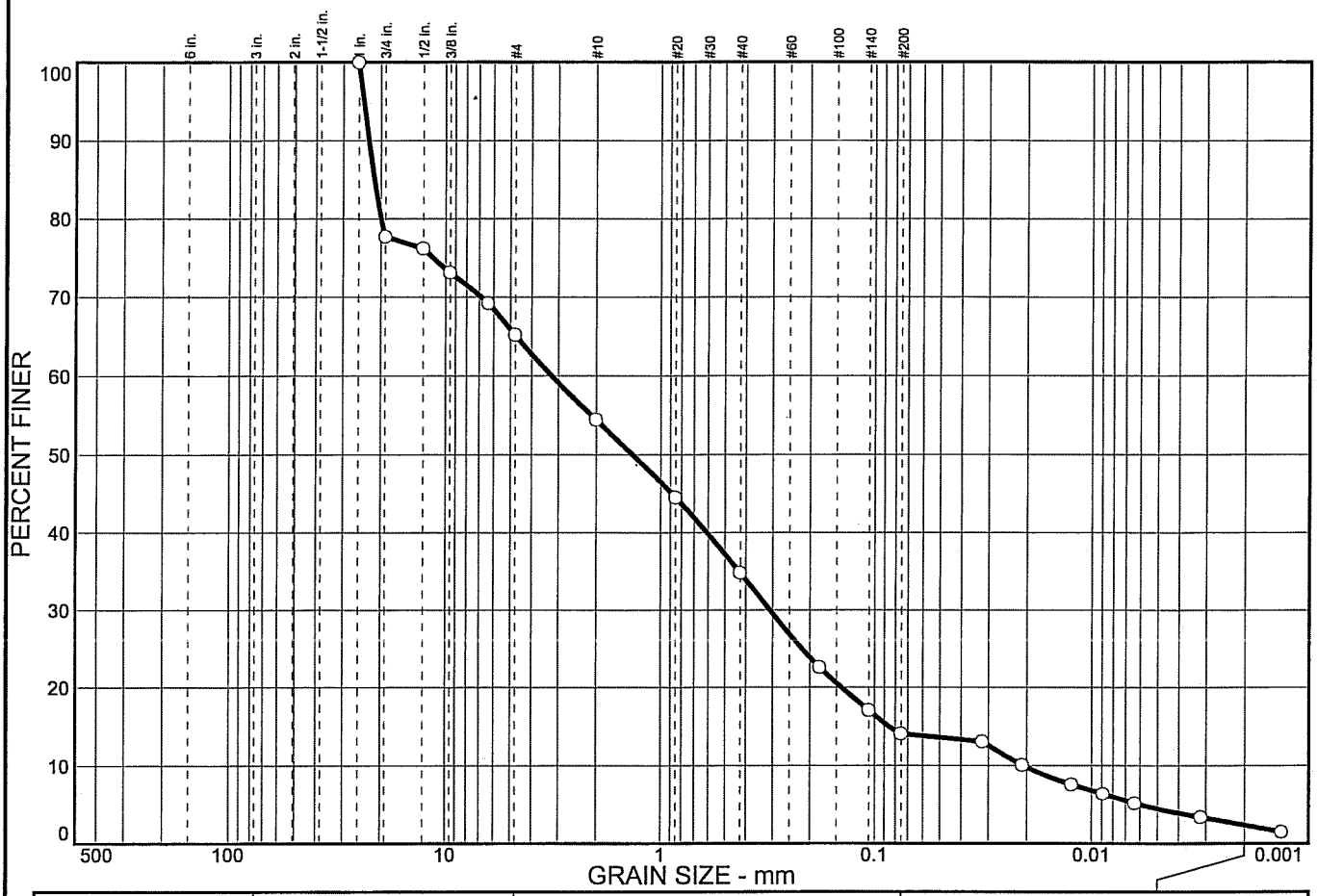
Tested by: DCH
Moisture content: 6.2%

Sample No.: S-2 **Source of Sample:** B-3 **Date:** 10/11/06
Location: York, Maine **Elev./Depth:** 3'-5'

R.W. Gillespie & Associates, Inc.

Client: York School Department
Project: Tennis Court Evaluation
MTG
Project No: 1017-01 **Sample No.** 8983c

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	22.3	12.5	10.8	19.6	20.7	11.7	2.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	77.7		
1/2 in.	76.2		
3/8 in.	73.1		
1/4 in.	69.2		
#4	65.2		
#10	54.4		
#20	44.5		
#40	34.8		
#80	22.6		
#140	17.1		
#200	14.1		

* (no specification provided)

Soil Description

Silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 21.5 D_{60}= 3.22 D_{50}= 1.35
D_{30}= 0.309 D_{15}= 0.0851 D_{10}= 0.0206
C_u= 156.36 C_c= 1.44

Classification

USCS= SM AASHTO=

Remarks

Tested by: DCH
Moisture content: 7.0%

Sample No.: S-2 **Source of Sample:** B-4 **Date:** 10/11/06
Location: York, Maine **Elev./Depth:** 3'-5'

R.W. Gillespie & Associates, Inc.

Client: York School Department
Project: Tennis Court Evaluation
Project No: 1017-01 **Sample No.** 8983d