SITE UPGRADES / IMPROVEMENTS AT VARIOUS SCHOOLS

PRINCETON PUBLIC SCHOOLS
PRINCETON - MERCER COUNTY - NEW JERSEY

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Fraytak Veisz Hopkins Duthie, P.C.
New Jersey - Pennsylvania
WWW.FVHDPC.COM

FVHD PROJECT #5559A

Edwards Engineering Group an L2A Company
Consulting Engineers

May 15, 2025

S P E C I F I C A T I O N S

for
SITE UPGRADES / IMPROVEMENTS AT VARIOUS SCHOOLS

for the
PRINCETON PUBLIC SCHOOLS
Princeton, Mercer County, New Jersey

FVHD PROJECT NO. 5559A

Locations:
Johnson Park Elementary School, 285 Rosedale Road, Princeton, NJ 08540
Littlebrook Elementary School, 39 Magnolia Lane, Princeton, NJ 08540
Riverside Elementary School, 58 Riverside Drive, Princeton, NJ 08540
Princeton Middle School, 217 Walnut Lane, Princeton, NJ 08540

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BID NOTICE
Princeton Public Schools
Mercer County, New Jersey

NOTICE IS HEREBY GIVEN that the Princeton Board of Education ("Owner") will receive bids for **Site Upgrades / Improvements at Various Schools,** together with all work incidental thereto, in accordance with the requirements of the Bid Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. (FVHD), Architects-Planners, www.fvhdpc.com, **FVHD Project #5559A.**

Bids will be received for: Single Overall Contract (DPMC: C054 Prime with C056 & C059 Subcontractor)

Bid Documents for the proposed Work are on file at the office of the Architect, Fraytak Veisz Hopkins Duthie, P.C., 1515 Lower Ferry Road, Trenton, NJ 08618, tel. 609.883.7101. Bid Documents are available for no fee from the Architect's website. Requests for electronic project documentation must be made through a registered account via the FVHD Contractor Portal at https://www.fvhdpc.com/contractors. Hard copies are available for $150 per set. A check or money order should be made payable to Fraytak Veisz Hopkins Duthie, P.C. A direct shipping account number (FedEx or UPS) and preferred shipping speed must also be provided.

Prebid Meeting is scheduled for **Monday, May 19, 2025, 2:00 PM**, starting at Johnson Park School, 285 Rosedale Road, Princeton, NJ 08540. Attendance at the prebid meeting is optional but encouraged.

All Requests for Information (RFI) must be submitted in writing by **May 23, 2025**, and sent to info@fvhdpc.com, or fax to 609-883-2694 or via common carrier to the Architect at the address indicated above. All correspondence must include the Architect's Project Name and Project Number referenced. The Architect is not responsible for misdirected or misrouted correspondence.

Sealed Bids are due by **Thursday, June 5, 2025, 2:00 PM**, to Princeton Board of Education, Attn.: Matthew Bouldin, 25 Valley Road, Princeton, NJ 08540, and will be publicly opened and read immediately thereafter. Any Bid received after that time shall be rejected.

Bid Proposals shall be submitted in duplicate (one original and one copy) in a sealed envelope, addressed to the Owner, bearing the name and address of the bidder, and clearly marked "BID" with the contract title and/or bid number on the outside of the envelope and must be accompanied by a Certified Check, Cashier's Check or Bid Bond drawn to the order of the Owner in the amount of ten percent (10%) of the amount of the bid, but in no case in excess of $20,000; and must be delivered to the above place on or before the hour named. The Board of Education and the Architect assume no responsibility for bids mailed or misdirected in delivery.

If the bid exceeds $20,000, bidder must be pre-qualified by the New Jersey Division of Property Management and Construction (DPMC), in the above-listed classifications prior to the date that bids are received. Any Bidder and their Prime Subcontractors who do not possess a valid and active "Notice of Classification" may be ineligible to bid on this Project, and any bid submitted by such Bidder and their Prime Subcontractors may be rejected as non-responsive.

Pursuant to N.J.S.A. 18A:18A-25, each proposal shall be accompanied by a Consent of Surety from a Surety Company stating it will provide each bidder with separate Performance and Payment Bonds, each in the amount of 100% of the contract sum. Also, Surety agrees to furnish bidder with a Maintenance Bond in required form. The Consent of Surety shall be executed by an approved surety company authorized to do business in the State of New Jersey and in accordance with N.J.S.A. 2A:44-143, and 2A:44-144 and with AM BEST rating of A- or better companies nationally recognized.

This project is subject to the New Jersey State Prevailing Wage Act, N.J.S.A. 34:11-56.27 et seq.
All bidders must comply with N.J.S.A. 10:5-31 et seq., N.J.A.C. 17:27 et seq. and N.J.S.A. 10:2-1. An Initial Project Workforce Report will be required from the successful bidder (Form AA-201).

Pursuant to "The Public Works Contractor Registration Act", N.J.S.A. 34:11-56.48 et seq., bidders and their subcontractors are required to be registered with the New Jersey Department of Labor and Workforce Development and to possess a current certificate by said Department indicating compliance with the Act prior to the time and date that bids are received.

No bidder who is on the State Treasurer's or the Federal Government's List of Debarred, Suspended or Disqualified Bidders shall be eligible to bid on this project.

Per N.J.S.A. 52:32-44(b) all contractors and subcontractors must provide a Business Registration Certificate prior to contract award.

No bid may be withdrawn for a period of sixty (60) days after the date set for the opening thereof. The right is reserved to reject all bids pursuant to N.J.S.A. 18A:18A-22 and to waive minor informalities in the bidding in accordance with applicable law.

Princeton Public Schools Board of Education
Matthew Bouldin, Business Administrator/Board Secretary

BIDDING INFORMATION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1. INVITATION TO BID

A. All Bidders are required to prepare bids in accordance with all Drawings and Specifications (Bid Documents) prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects-Planners.

1. Access to Bid Documents:
   a. Requests for electronic project documentation must be made through a registered account via FVHD Architect's Contractor Portal. If you have not already done so, please visit https://www.fvhdpc.com/contractors to register.
   b. To obtain Bid Documents, you must create/register a Contractor account on the Architect's website and submit a request for Bid Documents at https://www.fvhdpc.com/contractors/bidlisting

B. **DISCLAIMER**: Bidders should only rely on original digital and paper versions of the Bid Documents obtained directly from the Architect's office. Fraytak Veisz Hopkins Duthie, PC (FVHD) Architects-Planners is not responsible for any unauthorized copies made of the digital or paper Bid Documents obtained from sources other than the Architect's office. All information provided by Fraytak Veisz Hopkins Duthie, PC (FVHD) Architects-Planners is intellectual property and is protected under copyright laws. It is not to be used for any purpose other than for the indicated project. Any other use or manipulation of the information is strictly prohibited.

C. Bids for Contract(s), as listed in the Advertisement for Bids or Invitation to Bid as hereinafter described, will be received for the performance of the Project. The bids shall cover all costs of any nature, incident to and growing out of the Work. In explanation but not in limitation thereof, these costs shall include the cost of all Work, labor, materials, equipment, transportation and cost of all else necessary to perform and complete the Project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the Project caused by the Contractor, or Contractor's Agent, to the extent that the cost of such loss is not recovered from insurance carried by the Owner and the Contractor, and any additional expenses for unforeseen difficulties encountered, for settlement of damages and for replacement of defective Work and materials.

D. Before submitting a Bid, the Bidder shall become familiar with the Drawings, Specifications and other documents that will form the Contract, shall investigate the site of the Project (not mandatory) and make such examination thereof as may be necessary to determine the character and amount of Work involved. The Bidder shall also determine that they can secure the necessary labor and equipment and

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that the materials proposed to use will comply with the requirements specified therefore and can be obtained by the Bidder in the quantities and at the time required.

1. **Site visit(s) can be arranged upon request by contacting the Architect (not mandatory): (gduthie@fvhdpc.com / dschittone@fvhdpc.com / info@fvhdpc.com).**

E. The Owner reserves the right to accept or reject all bids including Alternate Bids, if any, pursuant to applicable law under any Contract for a period up to sixty (60) days after receipt of bids.

2. ETHICS IN PURCHASING

A. School District Responsibility

1. Recommendation of Purchases
   a. It is the desire of the Board of Education to have all Board employees and officials practice exemplary ethical behavior in the procurement of goods, materials, supplies, and services.
   b. School district officials and employees who recommend purchases shall not extend any favoritism to any vendor. Each recommended purchase should be based upon quality of the items, service, price, delivery, and other applicable factors in full compliance with N.J.S.A. 18A:18A-26 et seq.
   c. Solicitation/Receipt of Gifts - Prohibited:
      1) School district officials and employees are prohibited from soliciting and receiving funds, gifts, materials, goods, services, favors, and any other items of value from vendors doing business with the Board of Education or anyone proposing to do business with the Board of Education.

2. Vendor Responsibility:
   a. Offer of Gifts, Gratuities – Prohibited
      1) Any vendor doing business or proposing to do business with Board of Education, shall neither pay, offer to pay, either directly or indirectly, any fee, commission, or compensation, nor offer any gift, gratuity, or other thing of value of any kind to any official or employee of the Board of Education or to any member of the official's or employee's immediate family.
   b. Vendor Influence – Prohibited:
      1) No vendor shall cause to influence or attempt to cause to influence, any official or employee of the Board of Education, in any manner which might tend to impair the objectivity or independence of judgment of said official or employee.

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3. Vendor Certification:
    a. Vendors or potential vendors will be asked to certify that no official or employee of the Board of Education or immediate family members are directly or indirectly interested in this request or have any interest in any portions of profits thereof. The vendor participating in this request must be an independent vendor and not an official or employee of the Board of Education.

3. OBLIGATION OF BIDDER

A. At the time of the opening of bids, each Bidder will be presumed to have inspected the site (not mandatory) and to have read and to be thoroughly familiar with the Drawings, Specifications and all other Bid Documents, including all Addenda and Bulletins. The failure or omission of any Bidder to receive or examine any form, instrument or document shall not relieve Bidder from any obligation with respect to their bid. It is recommended the Bidders visit the site and acquaint themselves with the existing conditions.

B. Any and all discrepancies between the Drawings and Specifications or between trades shall be brought to the attention of the Architect prior to the Contractor's bid submission.

4. CHALLENGES TO BID SPECIFICATIONS (N.J.S.A. 18A:18A-15)

A. Any prospective Bidder who wishes to challenge a bid Specification shall file such challenges in writing with the School Business Administrator/Board Secretary no less than three (3) business days prior to the opening of bids. Challenges filed after that date shall be considered void and having no impact on the Board of Education or the award of a Contract.

5. NOTICE OF CLASSIFICATION OF BIDDERS (CONTRACTORS AND PRIME SUBCONTRACTORS)

A. Pursuant to N.J.S.A. 18A:18A-26 et seq., as amended, and N.J.A.C. 17:19-2.1 through N.J.A.C. 17:19-2.7, Bidders and their Prime Subcontractors, on any Contract on public work for a Board of Education (Owner) in the State of New Jersey in which the entire cost of the Contract exceeds $20,000.00, must:
    1. Have a Classification from the Division of Property Management and Construction (DPMC), as to character and amount of public work on which they may submit bids. Bidder and their Prime Subcontractors must submit, a "Notice of Classification" setting forth the type of Work and the amount of Work for which the Bidder and their Prime Subcontractors have been qualified;
    2. That there has been no material adverse change in their qualification information;
    3. The total amount of uncompleted work on Contracts at the time and the date of the bid due date.

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Any Bidder and their Prime Subcontractors who do not possess a valid and active "Notice of Classification" may be ineligible to bid on this Project, and any bid submitted by such Bidder and their Prime Subcontractors may be rejected as non-responsive. (Forms for this purpose are available from the Director of the Division of Property Management and Construction - DPMC, Trenton, New Jersey 08625.)

1. Each classified Bidder's and their Prime Subcontractor's aggregate rating shall be calculated in accordance with formula prescribed by N.J.A.C. 17:19-2.8.
    a. Calculations shall be based on Bidder's base bid amount at time of bid or total amount of base bid and accepted Alternate Bids at time of Award.

B. In accordance with N.J.S.A. 34:11-56.48 et seq. and N.J.S.A. 18A:7G-37, each Bidder must be properly registered with the New Jersey Department of Labor and Workforce Development at the time of the bid. The Contractor shall enter into Subcontracts only with Subcontractors who are registered pursuant to N.J.S.A. 34:11-56.48 et seq.

    1. No Contractor/Subcontractor will be permitted to bid on or engage in any Contract for public work, as defined in the "New Jersey Prevailing Wage Act," N.J.S.A. 34:11-56.26 et seq., unless that Contractor / Subcontractor is registered with the New Jersey Department of Labor and Workforce Development at the time of the bid.

C. The Owner may make such additional investigations as it deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. Pursuant to N.J.S.A. 18A:18A-31, "where there have been developments subsequent to the qualifications and classification of a Bidder which in the opinion of the Owner would affect the responsibility of the Bidder, information to that effect shall forthwith be transmitted to the department for its review and reconsideration of the classification. Before taking final action on any such bid, the Owner concerned shall notify the Bidder and give them an opportunity to present to the department any additional information which might tend to substantiate the existing classification."

6. TOTAL AMOUNT OF UNCOMPLETED CONTRACTS

A. Uncompleted Contracts (For Contracts Exceeding $20,000) (N.J.A.C. 17:19-2.13(a))

    1. The Board requires that each Bidder (and their Subcontractors) submit with their bid, a certified Total Amount of Uncompleted Contracts form as prescribed by the cited regulation. (Form DPMC 701). Failure to submit this document will lead to having the bid being rejected as non-responsive.

7. CHANGES TO BID DOCUMENTS, INTERPRETATIONS AND ADDENDA

A. Changes to the Bid Documents may be required to be issued via Addenda. Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners will issue notice of the

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publication of all Addenda to prospective Bidders, who have obtained Bid Documents from Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners. **All Bidders are to check the Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners website www.fvhdpc.com and download Addenda if any are issued for the Project.**

1. All Addenda issued become a part of the Bid Documents as though originally incorporated into the Specifications.

2. For the/all Contract(s) for construction Work, notice shall be provided no later than seven days, Saturdays, Sundays, or holidays excepted, prior to the date for acceptance of bids, to any person who has submitted a bid or who has received a bid package in any of the following ways:
   i) in writing by certified mail or;
   ii) by certified facsimile transmission, meaning that the sender's facsimile machine produces a receipt showing date and time of transmission and that the transmission was successful or;
   iii) by a delivery service that provides certification of delivery to the sender.

3. Bidders must acknowledge receipt of all Addenda on the Bid Proposal Form or the bid shall be deemed non-responsive by the Owner.

B. Pre-bid Request for Information: No oral interpretations will be made to any Bidder as to the meaning of the Drawings and Specifications. **All Requests for Information (RFI's) must be submitted in writing by May 23, 2025 and sent by faxing to 609-883-2694; by emailing info@fvhdpc.com; or sent via common carrier to the Architect. All correspondence must include the Architect's Project Name and Project Number. The Architect is not responsible for misdirected or misrouted correspondence.**

Fraytak Veisz Hopkins Duthie, P.C.
Architects / Planners
1515 Lower Ferry Rd., Trenton, NJ 08618
Electronic Facsimile (609) 883-2694
FVHD Project No. 5559A

1. Every interpretation made to a Bidder will be in the form of an Addendum. During the bidding period, the Architect may furnish Addenda for additions to or alterations of the Drawings and Specifications, which shall be included in the Work covered by the Bid Proposal Form(s).

2. Addenda, when issued, will be made available no later than seven (7) business days prior to the date for receiving bids, Saturday, Sunday or holidays excepted, to all persons who have obtained Bid Documents from the Architect.

3. Addenda will also be available for examination at the Architect's office.

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4. It shall be the responsibility of the Bidder to ascertain that they have received and examined all Addenda and Bulletins issued, prior to submitting their bid. Failure of the Bidder to download and examine all Addenda shall not relieve the Bidder from any of the requirements of the Bid Documents.

5. All Addenda will be issued in accordance with N.J.S.A. 18A:18A-21(c).

8. PREPARATION OF BIDS

A. Enclose **two copies (one original and one copy)** of the Bid in a sealed envelope, identified on the outside of the envelope and clearly marked "BID" with the name and address of the Bidder, name of the Project and Contract number in which the Bidder is submitting.

B. Bids shall be submitted on the form of Bid furnished by the Architect, properly filled out and duly executed. Bid Proposal Forms shall not be altered or added to in any way. Lump Sum Bid or Base Bid prices shall be filled in, in ink or typewritten, in both words and figures. In case of discrepancy, the amount described in words shall govern.

1. **Bids containing any conditions, omissions, unexplained erasure or alteration, items not called for in the Bid Proposal Form, attachment of additive information not required by the Specifications, or irregularities of any kind may be rejected by the Owner.**

2. **Any changes, white-outs, strike-outs, etc. on the Bid Proposal Form must be initialed in ink by the person responsible for signing the Bid Proposal Form.**

C. When the Bid is made by an individual, their post office address shall be stated and they shall sign the Bid. When made by a firm or partnership, its name and post office address shall be stated and the Bid shall be signed by one or more of the partners. When made by a corporation, its name and principal post office address shall be stated, and the Bid shall be signed by an authorized official of the corporation.

D. Alternate Bids and Unit Prices for the various portions of Work for Contract(s) shall be as stated in other Sections of the Specifications.

1. Attention is called particularly to the requirements for filling in all Alternate Bids called for on the Bid Proposal Form, as the Owner reserves the right to award a Contract based upon the possible inclusion of one or more such Alternate Bids.

2. The amounts of the Alternate Bids shall include any and all modifications to related, adjacent or surrounding work made necessary by use of such Alternate Bids.

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3. The Alternate Bids must be stated as additions to or deductions from the Base Bid, unless otherwise noted.

4. **The term "No Bid" shall not be used with respect to Alternate Bids and Unit Prices requested on the Bid Proposal Forms. The Bidder who does not desire to make a change from the Base Bid under a particular Alternate Bid shall so indicate by using the words "No Change" or "N/C." Failure to bid or use of the term "No Bid" on any Alternate shall cause rejection of entire bid.**

5. Bidders must bid on every Alternate Bid. Additions to, or deductions from, the base bid shall be indicated in the appropriate blanks on the Bid Proposal Form with additions to or deductions from the base bid filled in as appropriate. If a particular Alternate Bid does not result in an addition to or deduction from the base bid, the words "No Change" or N/C" shall be written in the blank for "No Change" on the Bid Proposal Form, and the words "No Change" shall be written in the blank provided for the purpose of stating the numeric amount in words. Failure to bid on every Alternate Bid shall render the bid nonresponsive and shall cause the bid to be rejected.

9. BID GUARANTEE

A. The Bid, when submitted, shall be accompanied by a Bid Guarantee in the form of a Certified Check, Cashier's Check or acceptable Bid Bond made payable unconditionally to the Owner, in the sum of ten percent (10%) of the Bid, but in no case in excess of $20,000.00 and as per Bid Bond Form included:

1. Bid Bond Form: Bid Bond shall be as per the form included and shall include an effective and current Power of Attorney authorizing the Attorney-in Fact to bind the Surety, on Bid Date and Time, for the full amount of the Bond.

2. Bid shall be accompanied by a Proposition of Surety in accordance with paragraph 1.10.

B. Pursuant to N.J.S.A. 18A:18A-36, all Bid Guarantees, except those of the three apparent lowest responsible Bidders, will be returned, if requested, after ten (10) days from opening of bids, Sundays and holidays excepted. Within three (3) days after the awarding of the Contract and the approval of the Contractor's performance bond and payment bond, the bid security of the remaining unsuccessful Bidders will be returned, Sundays and holidays excepted.

C. The Bid Guarantee shall be forfeited if successful Bidder fails to execute the Agreement between Owner and Contractor identified in paragraph 1.13 hereof and furnish the Performance-Payment Bond within ten (10) days after notification of award of Contract to them (Sundays and holidays excepted).

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1. Any failure by the successful Bidder to perform its obligations regarding the time, manner, and substance of compliance with Bid Documents in relation to the Award of a Contract, shall constitute an Event of Default, entitling the Owner to:
    a. Demand, from said guarantor, immediate payment of the entire Bid Bond amount, as liquidated damages, not as a penalty, for the delay which is acknowledged and agreed that the Owner will sustain in connection with said Default; and in addition thereto,
    b. Recovery of any and all other Losses incurred by the Owner, to which the Owner shall, to the fullest extent permitted by Applicable Law, be entitled to recover, including without limitation Special Damages.

10. CONTRACT BONDS

A. Prior to start of guarantee period and before the final payment is made, the Contractor shall provide the Owner with a Maintenance Bond in the amount of ten percent (10%) of Final Contract Amount, to insure the replacement or repair of defective materials or workmanship during the two-year guarantee period.

B. Proposition of Surety:

1. Pursuant to N.J.S.A. 18A:18A-25, Bids shall be accompanied by a Proposition of Surety in form as bound in these documents, assuring that satisfactory arrangements have been made between the Surety and the Bidder by which Surety agrees to furnish within ten (10) days after notification of award, Sundays and holidays excepted, of Contract, a Performance Bond and a Payment Bond; each in the amount of 100% of the amount bid.

2. The Proposition of Surety shall be executed by an approved Surety company authorized to do business in the State of New Jersey and in accordance N.J.S.A. 2A:44-143, and with the three highest rating categories of rating companies nationally recognized and listed as per Appendix A (go to www.nj.gov/dobi/surety.htm).

3. If, at any time after execution and approval of a Contract and Performance-Payment Bond required by Bid Documents, such Bond shall cease to be adequate security for the Owner, the Contractor shall, within five (5) days after notice to do so, furnish a new or additional Bond, in form, sum and signed by such Sureties as shall be satisfactory to the Owner. No further payment shall be deemed due nor shall any further payment be made to the Contractor unless and until such new or additional Bond shall be furnished and approved.

C. Prior to start of guarantee period and before the final payment is made, the Contractor shall provide the Owner with a Maintenance Bond in the amount of ten percent (10%) of Final Contract Amount, to insure the replacement or repair of defective materials or workmanship during the **two-year** guarantee period.

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D. The cost of all Bonds shall be paid for by the Contractor and shall be included as a part of Contractor's bid price.

11. POWER OF ATTORNEY

A. Attorneys-in-fact who sign Bid Bonds, Performance-Payment Bonds, Maintenance Bonds and Proposition of Surety forms must accompany each bond or proposition with a certified and effectively dated copy of their power-of-attorney.

12. FORM OF AGREEMENT

A. The form of agreement shall be AIA Document A132/CMa Standard Form of Agreement between Owner and Contractor, Construction Manager as Advisor, 2019 Edition, and in accordance with AIA Document A232/CMa General Conditions of the Contract, Construction Manager as Advisor, 2019 Edition as amended, and all other documents referenced herein.

13. CERTIFICATE OF AUTHORITY

A. All Bidders are to submit their Sworn Contractor Certification, a current valid "Certificate of Authority" as issued by the New Jersey Department of Treasury. Reference - N.J.S.A. 18A:7G-37.

14. AWARD OF CONTRACT

A. Award, if made, will be to the lowest responsive and responsible Bidder for the Single Overall Building Contract selected to include Alternate Bids, if any, which the Owner chooses to accept, that results in the lowest aggregate total sum pursuant to N.J.S.A. 18A:18A-4.

B. Award made to a Bidder not a resident of the State of New Jersey is conditioned upon Bidder designating a proper agent in the State of New Jersey on whom service can be made in the event of litigation.

C. If the successful Bidder is a corporation not organized under the laws of New Jersey, the award of Contract and payment of consideration thereunder shall be conditioned upon the Corporation procuring a certificate of authority to transact business in the State of New Jersey pursuant to N.J.S.A. 14A:13-3 and complying with the provisions of N.J.S.A.14A:13-4.

D. NJ Business Registration Certificate:

1. Pursuant to N.J.S.A. 52:32-44, Princeton Public Schools ("Owner") is prohibited from entering into a Contract with an entity unless the Bidder/proposer/Contractor, and each Subcontractor that is required by law to be named in a bid/proposal/Contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

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2. Prior to Contract award or authorization, the Contractor shall provide the Owner with its proof of business registration and that of any named Subcontractor(s).

3. Subcontractors named in a bid or other proposal shall provide proof of business registration to the Bidder, who in turn, shall provide it to the Owner prior to the time a Contract, purchase order, or other Bid Document is awarded or authorized.

4. During the course of Contract performance:
   a. the Contractor shall not enter into a Contract with a Subcontractor unless the Subcontractor first provides the Contractor with a valid proof of business registration.
   b. the Contractor shall maintain and submit to the Owner a list of Subcontractors and their addresses that may be updated from time to time.
   c. the Contractor and any Subcontractor providing goods or performing services under the Contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at http://www.state.nj.us/treasury/revenue/busregcert.shtml.

5. Before final payment is made under the Contract, the Contractor shall submit to the Owner a complete and accurate list of all Subcontractors used and their addresses.

6. Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration, as required, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000, for each proof of business registration not properly provided under a Contract with the Owner.

7. Emergency Purchases or Contracts
   a. For purchases of an emergent nature, the Contractor shall provide its Business Registration Certificate within two weeks from the date of purchase or execution of the Contract or prior to payment for goods or services, whichever is earlier.

E. The Owner reserves the right to reject all bids, or to waive minor informalities or non-material exceptions in a bid, pursuant to applicable law.

F. In accordance with requirements of the N.J.S.A. 18A:18A-36(b), execution of the Contract by all parties will be done within 21 days of the notification of the award date, Sundays and holidays excepted, after making the award.

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1. The Bidder to whom the Contract is awarded shall be required to execute said Contract within seven (7) calendar days of the notification of the award to them, Sundays and holidays excepted, after making the award.

G. Upon award of the Contract, the Contractor shall execute and return to the Owner the "Contractor Certification and Consent Upon Award of Contract," attached to the Contract as an Exhibit.

H. The award of the Contract is subject to availability and appropriation of sufficient funds.

15. BID PROTESTS AND CONTRACTOR'S RESPONSIBILITY

A. Contractors may contact the Purchasing Agent in writing, when they feel it necessary to challenge a procurement Specification item or to protest an award of Contract. All challenges and protests will be reviewed by the Purchasing Agent, the District Administrator of the Contract and the Board Attorney. All determinations shall be made in writing to the Contractor. The Purchasing Agent pursuant to N.J.S.A. 18A:18A-2 (b) is the School Business Administrator.

B. A bid protest filed shall:

1. Include the name, street address, electronic mail address, and telephone and facsimile numbers of the protester;

2. Be signed by the protester or its representative;

3. Identify the bid or solicitation number and date of bid or solicitation;

4. Include a detailed statement of the legal and factual grounds of protest including copies of relevant documents;

5. Set forth all information establishing that the protester is an interested party for the purpose of filing a protest;

6. Set forth all information establishing the timeliness of the protest; and

7. Provide any or all information pertaining to the bid protest.

16. BID DOCUMENTS

A. The Bid Documents consist of but not limited to the following:

1. Instructions To Bidders in accordance with this Section,

2. General Conditions, AIA Document A232, and as supplemented in the Supplementary General Conditions; Section 00800,

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3. Bid Form including attachments as per Bidder's Checklist,

4. Addenda, if issued,

5. Specifications: As outlined in the "Index" included in the Project Manual,

6. Drawings: As per List of Drawings indicated on Project Title Sheet and in accordance with Section 00850,

7. Agreement Between Owner & Contractor, AIA Document A132 and as amended by the Project Specifications.

B. Note: The above list is not intended to establish order of precedence.

17. TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Refer to Section 01800, "Time of Completion and Liquidated Damages".

18. LISTING OF STOCKHOLDERS, PARTNERS OR MEMBERS (N.J.S.A. 52:25-24.2)

A. Statement of Ownership

1. No business organization, regardless of form of ownership, shall be awarded any Contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the bid or accompanying the bid of said business organization, Bidders shall submit a statement setting forth the names and addresses of all persons and entities that own ten (10%) percent or more of its stock or interest of any type at all levels of ownership.

2. The included Statement of Ownership shall be completed and attached to the bid proposal. This requirement applies to all forms of business organizations, including, but not limited to, corporations and partnerships, publicly-owned corporations, limited partnerships, limited liability corporations, limited liability partnerships, sole proprietorship, and Subchapter S corporations. Failure to submit a disclosure document shall result in rejection of the bid as it cannot be remedied after bids have been opened.

3. Not-for-profit entities should fill in their name, check the not-for-profit box, and certify the form. No other information is required.

19. NON-COLLUSION AFFIDAVIT

A. The Bidder shall submit the Non-Collusion Affidavit, on form as bound herein, must be submitted with the bid. Failure to submit this document may lead to having the bid being rejected as non-responsive.

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20. FALSE MATERIAL REPRESENTATION / TRUTH IN CONTRACTING

A. A person commits a crime if the person knowingly makes a material representation that is false in connection with the negotiation, award or performance of a government Contract. If the Contract amount is for $25,000.00 or above, the offender is guilty of a crime of the second degree. If the Contract amount exceeds $2,500.00, but is less than $25,000.00, the offender is guilty of a crime of the third degree. If the Contract amount is for $2,500.00 or less, the offender is guilty of a crime of the fourth degree. Bidder should be aware of the following statutes that represent "Truth in Contracting" laws:

1. N.J.S.A. 2C:21-34, governs false claims and representations by Bidders. It is a serious crime for the Bidder to knowingly submit a false claim and/or knowingly make material misrepresentation.

2. N.J.S.A. 2C:27-11 provides that a Bidder commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.

3. Bidder should consult the statutes such as N.J.S.A. 18A:7G-39 or legal counsel for further information.

21. EQUIVALENT PRODUCTS

A. The use of manufacturers' brand names, catalogue numbers and similar proprietary identifying data in the Bid Documents are not intended to eliminate from consideration products that are equivalent in quality, appearance and function to those specified.

22. CONTRACT

A. As indicated in the Advertisement for Bids, the Owner is intended to receive sealed bids and to award and administer the Contract for the work required by the Bid Documents as follows:

Single Overall Contract

B. The Bidder shall be a firm classified by the State of New Jersey - Division of Property Management and Construction for the following classification:

Prime General Contractor
C054 - Site Work
and have Subcontractor(s) for the following classification(s) of work:

Subcontractor(s):
C056 - Sewer Piping & Storm Drains
C059 - Road Construction & Paving

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C. **Pursuant to N.J.S.A. 18A:18A-26, the Bidder shall be in possession of the required DPMC Classification for the specified Work.**

1. In the case of a Combined Single Overall Bid, if the Contractor possess the DPMC Classification in one category, but not in all of the required categories, the Contractor must list the Prime Subcontractor(s) bidding the scope of work for the other categories. The Subcontractor(s) must possess the DPMC Classification(s) in that category.

END OF SECTION 00100

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BID PROPOSAL FORM

SINGLE OVERALL CONTRACT

DPMC Classifications: C054 Prime Contractor with C056 & C059 Subcontractor

To: Princeton Public Schools
Board of Education
25 Valley Road
Princeton, NJ 08540

1. The undersigned, having familiarized themself with the local conditions affecting the cost of the work, the Drawings, the Specifications and other Bid Documents, as in the Advertisement for Bids thereto, for the **Site Upgrades / Improvements at Various Schools (FVHD-5559A),** together with all work incidental thereto, in accordance with the requirements of the Drawings and Specifications prepared by Fraytak Veisz Hopkins Duthie, P.C., Architects/Planners, Trenton, New Jersey, hereby proposes to furnish all labor, materials and equipment required for all Work and as follows:

   SINGLE OVERALL CONTRACT - BASE BID: All Work at the above referenced school, including applicable Allowances - Section 01020, in accordance with the requirements of Bid Documents. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   TOTAL BASE BID INCLUDING ALLOWANCE: $_____
   (Numerical)

   _____
   (To be written in full)

2. **Alternate Proposal(s) - Section 01030** shall be quoted as additions to, deductions from or No Change (NC) to the Base Bid and shall be in accordance with the Specifications for Alternate Bid Work. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   Alternate Bid No. 1: Full-Depth Reconstruction of Existing Paved Playground, New Basketball Goals, New Engineered Wood Fiber Playground & Swings at Princeton Middle School ADD $_____
   (Numerical)

   _____
   (To be written in full)

   Alternate Bid No. 2: Milling & Paving an Existing Paved Playground and New Basketball Goals at Riverside Elementary School ADD $_____
   (Numerical)

   _____
   (To be written in full)

Submitted by: _____
(Firm Name)

3. **UNIT PRICES - SECTION 01151: Materials in Place.**

Bulk rock excavation	$ **300.00** per cu. yd.
Trench or pit rock excavation	$ **400.00** per cu. yd.

UNIT PRICES - GENERAL CONSTRUCTION: Materials in Place.

Concrete Curb Replacement	$ _____ per lin. ft.
Concrete Sidewalk Replacement (4″ thk) including subbase	$ _____ per sq. ft.
Standard Duty Hot Mix Asphalt Replacement	$ _____ per sq. yd.

THE REMAINDER OF THIS PAGE WAS LEFT INTENTIONALLY BLANK

Submitted by: _____
(Firm Name)

3. Bidder hereby acknowledges receipt of the following Addenda:
   No Addenda Issued ☐
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)

4. In submitting this bid, it is understood that the right is reserved by the Board of Education to accept or to reject any or all bids, and it is agreed that this bid may not be withdrawn for a period of sixty (60) days from the date set of the opening thereof.

5. Bid Security in the sum of_____($_____) in the form of _____ (Certified Check, Cashier's Check, or Bid Bond) is submitted herewith in accordance with the requirements of the Specifications.

6. The undersigned is an individual ( )
   a partnership ( )
   a corporation ( ) under the laws of the State of _____,
   having principal office in the _____ of _____, County of _____, and State of _____.

Respectfully Submitted,

_____
(Company Name, if Bidder is a company)

BIDDER'S SIGNATURE

_____
(Company Officer, if Bidder is a Corporation or LLC)

(Seal, if Corporation)

_____
Printed or Typed Name Title of Officer (if the Bidder is a Company)

_____
Address

_____
City, State, Zip Code

_____
Phone & Fax

_____
Dated

_____
Email Address

NOTE: SEE BIDDERS CHECKLIST

Submitted by:_____
(Firm Name)

BIDDER'S CHECKLIST

This checklist along with all listed documents must be signed and submitted with the bid package to the Owner as part of the Bid Documents. (*) indicates mandatory. Failure to submit all documents may be cause for rejection.

	Reviewed the Bid Documents (Including the permits obtained by the Owner), satisfied themselves regarding the character of the reviewed locality, and all local conditions and Laws and Regulations That in any manner may affect cost, progress, performance or furnishing of work.	
	Reviewed General Bond Requirements	
	Reviewed the Contract Documents contained herein (Owner/Contractor)	
	ITEM	Initial
(*)	Bidder's Proposal	
(*)	Bid Bond, Certified Check, Cashier's Check or Any Combination Thereof in an Amount of Ten Percent (10%) of the Total Amount of Bid, Not to Exceed $20,000 (Twenty Thousand Dollars) with Power of Attorney	
(*)	Consent of Surety for 100% of the Contract Amount with Power of Attorney to Provide Performance Bond and Labor and Material Payment Bond If Surety is being provided for Subcontractors by Bidder, indicate here _____ Initial	
(*)	Subcontractor Identification Statement	
(*)	Statement of Ownership Disclosure Certification	
(*)	Division of Property Management & Construction (DPMC) Form 701 - Total Amount of Uncompleted Contracts, N.J.A.C. 17:19-2.13 All Contractor(s) and Named Subcontractor(s)	
(*)	Division of Property Management & Construction (DPMC) Current Notice of Classification - All Contractor(s) and Named Subcontractor(s)	
(*)	Non Collusion Affidavit	
(*)	Equipment Certification	
	Prevailing Wage Certification	
	Public Works Contractors Registration Act Certificate (N.J.S.A. 34:11-56.48) All Contractor(s) and Named Subcontractor(s)	
	Business Registration Certificate - All Contractor(s) and Subcontractor(s)	
	Federal and State Non-debarment Certifications - All Contractor(s) and Subcontractor(s)	
	Certification of non Debarment for Federal Government Projects Shall Be Submitted Prior to Award of Contract - All Contractors	
	Trade License - All Contractor(s) and Subcontractor(s)	
	Compliance with New Jersey Prevailing Wage Act	

BIDDER'S CHECKLIST

	Certification of Insurance Statement	
	Certification of No Material Change of Circumstances - All Contractor(s)	
	Political Contribution Disclosure Form	
	Prohibited Russia-Belarus Activities & Iran Investment Activities	
	Americans with Disabilities Act Language	
	Mandatory Equal Employment Opportunity Language	
	Status of Present Contracts	
	Performance Record Certification	
	Contractor(s) shall participate in an "apprenticeship training program" and shall submit evidence of same and/or a description of the Contractor's apprenticeship training program prior to the award of the Contract.	

By signing below, I acknowledge having read and fully understand all the requirements of each of the documents referenced herein.

_____
BIDDER (Signature)

Dated:_____

_____
BIDDER (Print Name)

BID BOND

THE UNDERSIGNED BIDDER and **"Surety"**, a corporation duly authorized to transact business in the State of New Jersey, are held and firmly bound unto _____ (the **"OWNER"**) for the full and just sum of:

_____ Dollars ($_____),
(10% of the Bid Price not to exceed $20,000.00: words) **(figures)**

The payment of which sum the **BIDDER** has submitted a Bid to perform certain Work described in Bidding Documents entitled:

TITLE: _____

_____

CONTRACT NO.: _____

The **Surety** hereby agrees to pay the full face value of this Bond to the **OWNER**, as Liquidated Damages, and not as a penalty, unless this Bond is void.

This Bond shall only be void if the **BIDDER** well, truly and faithfully performs all requirements contained in the Bidding/Contract Documents incident to an Award of the Contract including, but not limited to, proper execution and submission of the Contract Forms and all other required documentation.

On this _____ day of _____ 20___, the **BIDDER** and **Surety** hereby bind themselves herein:

FOR THE BIDDER:	**FOR THE SURETY:**
_____	_____
(Name of **BIDDER**)	(Name of **Surety**)
By:_____	By:_____
(Print Name-**BIDDER's** Authorized Representative)	(Print Name of Attorney-in-Fact)
By:_____	By:_____
(Signature-**BIDDER's** Authorized Representative)	(Signature of Attorney-in-Fact)

IMPORTANT – ATTACH AND SUBMIT WITH THE BID:

- **A POWER OF ATTORNEY FOR THE ATTORNEY-IN-FACT WHICH IS CURRENTLY DATED AND VALID FOR THE ENTIRE AMOUNT OF THE BOND**

FORM OF CONSENT OF SURETY

PERFORMANCE BOND, PAYMENT BOND and MAINTENANCE BOND

For and in consideration of the sum of one dollar ($1.00) lawful money of the United States, the receipt is hereby acknowledged, paid to the undersigned surety, and for other valuable consideration, the undersigned surety, authorized to transact business in the State of _____, certifies and agrees that if the Contract entitled: _____

_____

CONTRACT _____, _____
(NUMBER) (TITLE)

is awarded to: _____
(BIDDER'S NAME)

the undersigned hereby warrants that it is in all respects qualified to provide the required Bonds as set forth in the Contract Documents, and that it will provide and execute the **Performance Bond** in the full amount of awarded contract in the event that said contractor is awarded a contract for the above project, the **Payment Bond**, and the **Maintenance Bond** in the form and as otherwise required by the Contract Documents.

_____
(Print Name of Surety)

_____ _____
(Print Name of Attorney-in-Fact) (Signature of Attorney-in-Fact)

ATTACH AND SUBMIT WITH THE BID: A POWER OF ATTORNEY FOR THE ATTORNEY -IN-FACT WHICH IS CURRENTLY DATED AND VALID FOR THE TOTAL AMOUNT OF ALL BONDS.

Consent of Surety must be signed by an authorized agent or representative of a surety company and not by the individual or company representative submitting the bid.

NOTE: IF SUBCONTRACTORS ARE LISTED ON BID FORM, N.J.S.A. 18A:18A-18 REQUIRES THAT EVIDENCE OF PERFORMANCE SECURITY AS TO SUBCONTRACTORS BE SUBMITTED WITH THE BID, EITHER BE THE BIDDER ON ITS OWN BEHALF AND ON BEHALF OF ALL LISTED SUBCONTRACTORS, OR BY EACH SUBCONTRACTOR, OR ANY COMBINATION THEREOF, PROVIDED THAT THE PERFORMANCE SECURITY IN TOTAL EQUALS, BUT DOES NOT EXCEED, THE TOTAL AMOUNT OF THE BID.

SUBCONTRACTOR IDENTIFICATION STATEMENT

The following information is to be provided in the case of all subcontractors who will furnish labor of the various trades governed by N.J.S.A. 18A:18A-18 (b) (General Construction, Steel, Plumbing, HVAC, Electric) and all DPMC Specialty Trades, where applicable.

TRADE	**Contractor's Name/Address/Telephone**	**NJ License No.**

If work of the types designated by the above referenced law will be performed by the Bidder, the Bidder shall state below and shall enclose copies of licenses covering each trade.

TRADE	**N.J. License No.**

BIDDER _____

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

City, State, ZIP: _____

Part I Check the box that represents the type of business organization:

☐ Sole Proprietorship

☐ Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)

☐ For-Profit Corporation (any type) ☐ Limited Liability Company (LLC)

☐ Partnership ☐ Limited Partnership ☐ Limited Liability Partnership (LLP)

☐ Other (be specific): _____

Part II Check the appropriate box

☐ The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. (**COMPLETE THE LIST BELOW IN THIS SECTION**)

OR

☐ No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. (**SKIP TO PART IV**)

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Address

To be completed, signed and returned with Bid

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed**.

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above**. The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the _____ ***(Owner)*** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the ***Owner*** to notify the ***Owner*** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the ***Owner*** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

To be completed, signed and returned with Bid

NON-COLLUSION AFFIDAVIT

STATE OF NEW JERSEY/_____
(Specify, if Other)

COUNTY OF _____

I, _____ , of the (City, Town, Borough) of

_____State of _____ , of full age, being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____, the Bidder making the Proposal for the above named Projects, and that I executed the said Proposal with full authority to do so; that said Bidder has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Project; and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge, and the State of New Jersey relies upon the truth of the statements contained in this affidavit in awarding the contract for the said Project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by _____ . (Name of Contractor)

By: _____
(Signature of Authorized Representative)

Subscribed and sworn to before me
this _____ day of _____, 20___.

_____

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20___.

THIS FORM MUST BE COMPLETED, SIGNED, NOTARIZED, AND SUBMITTED WITH BID

EQUIPMENT CERTIFICATION

Title of Bid: _____

Bid No. _____ Bid Date: _____
(Weekday, Month 00, 20__)

In accordance with N.J.S.A. 18A:18A-23, I hereby certify that

A) _____ *(Name of Company)* owns all the necessary equipment as required by the specifications and to complete the specified public work project.

or

B) _____ *(Name of Company)* leases or controls all the necessary equipment as required by the specifications and to complete the specified public work project.

PLEASE NOTE: If your company is not the actual owner of the equipment, **you shall submit with the bid**

1. A certificate stating the source from which the equipment will be obtained and
2. Obtain and submit with the bid a certificate from the owner and person in control of the equipment, definitely granting to the bidder the control of the equipment required during such time it may be necessary for the completion of that portion of the contract for which said equipment will be necessary.

Name of Company _____

Authorized Agent _____ Title _____

Authorized Signature _____

CERTIFICATION OF NON-DEBARTMENT FOR
FEDERAL GOVERNMENT CONTRACTS
N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

Public Works Contracts

Project No._____ Title of Bid_____

This certification shall be completed, certified to, and submitted to the contracting unit **prior to contract award**, except for emergency contracts where submission is required prior to payment.

PART I: VENDOR INFORMATION	
Individual or Organization Name	
Address of Individual or Organization	
DUNS Code (if applicable)	
CAGE Code (if applicable)	
Check the box that represents the type of business organization:	

☐Sole Proprietorship ☐Non-Profit Corporation (skip Parts III and IV)

☐For-Profit Corporation (any type) ☐Limited Liability Company (LLC) ☐Partnership

☐Limited Partnership ☐Limited Liability Partnership (LLP)

☐Other (be specific): _____

PART II – CERTIFICATION OF NON-DEBARMENT: Individual or Organization			
I hereby certify that the **individual or organization listed above in Part I** is not debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above- named organization; that the _____ **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **"OWNER"** to notify the **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning	
Section A	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.
Name of Individual or Organization	
Address	
OR	
☐	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.
Section B (Skip if no Business entity is listed in Section A above)	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization's parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization's parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization's parent entity, as the case may be.
Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity	
Address	
OR	
☐	No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.

I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the **Organization listed above in Part I** or, if applicable, owns greater than 50 percent of a parent entity of _____ ***(name of organization)***. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award **"OWNER"** to notify the **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

Part IV – CERTIFICATION OF Non-Debarment: Contractor – Controlled

Section A	
☐	Below is the name and address of the corporation(s) in which the **Organization listed in Part I** owns more than 50 percent of voting stock, or of the partnership(s) in which the **Organization listed in Part I** owns more than 50 percent interest therein, or of the limited liability company or companies in which the **Organization listed above in Part I** owns more than 50 percent interest therein, as the case may be.

Name of Business Entity	**Business Address**

Add additional sheets if necessary

OR	
☐	The **Organization listed above in Part I** does not own greater than 50 percent of the voting stock in any corporation and does not own greater than 50 percent interest in any partnership or any limited liability company.

Section B (skip if no business entities are listed in Section A of Part IV)	
☐	Below are the names and addresses of any entities in which an entity listed in Part III A owns greater than 50 percent of the voting stock (corporation) or owns greater than 50 percent interest (partnership or limited liability company).

Name of Business Entity Controlled by Entity Listed in Section A of Part IV	Business Address

Add additional Sheets if necessary

OR

☐	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.

Section C – Part IV Certification of Non-Debarment

I hereby certify that the **Organization listed above in Part I** does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **"OWNER"** to notify **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

FEDERAL AND STATE NON-DEBARMENT CERTIFICATIONS

I, _____ of the city of _____, in the County of _____ and the State of _____, of full age, certify that the entity listed on the form and/or any person or company employed by this entity, are not presently on the following:

- New Jersey Department of Treasury – Consolidated Debarment Report
- New Jersey Department of Labor – Prevailing Wage Debarment List
- Federal Debarred Vendor List – System for Award Management (SAM.gov)

Company Name: _____

Authorized Agent: _____

Signature: _____

Date: _____

CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS

N.J.S.A. 18A:18A-49.5

Pursuant to N.J.S.A. 52:32-60.1, et seq. (L. 2022, c. 3) any person or entity (hereinafter "Vendor[i]") that seeks to enter into or renew a contract with a State agency for the provision of goods or services, or the purchase of bonds or other obligations, must complete the certification below indicating whether or not the Vendor is identified on the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, available here: https://sanctionssearch.ofac.treas.gov/. If the Department of the Treasury finds that a Vendor has made a certification in violation of the law, it shall take any action as may be appropriate and provided by law, rule, or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

I, the undersigned, certify that I have read the definition of "Vendor" below, and have reviewed the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, and having done so certify:

(Check the Appropriate Box)

○ A. That the Vendor is not identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ B. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ C. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list. However, the Vendor is engaged in activity related to Russia and/or Belarus consistent with federal law, regulation, license or exemption. A detailed description of how the Vendor's activity related to Russia and/or Belarus is consistent with federal law is set forth below.

_____

_____

_____

_____

_____

(Attach Additional Sheets If Necessary.)

Signature of Vendor's Authorized Representative	Date
Print Name and Title of Vendor's Authorized Representative	Vendor's FEIN
Vendor's Name	Vendor's Phone Number
Vendor's Address (Street Address)	Vendor's Fax Number
Vendor's Address (City/State/Zip Code)	Vendor's Email Address

[i] Vendor means: (1) A natural person, corporation, company, limited partnership, limited liability partnership, limited liability company, business association, sole proprietorship, joint venture, partnership, society, trust, or any other nongovernmental entity, organization, or group; (2) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in Section 1701(c)(3) of the International Financial Institutions Act, 22 U.S.C. 262r(c)(3); or (3) Any parent, successor, subunit, direct or indirect subsidiary, or any entity under common ownership or control with, any entity described in paragraph (1) or (2). NJ Rev. 1.22.2024

Compliance with New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.)

Every Contractor and Subcontractor performing services in connection with this Project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development (NJ DLWD).

Wage rates for the county of the location of the Public Agency (Owner), as published by the State Department of Labor and Workforce Development (DLWD), can be viewed at https://www.nj.gov/labor/wagehour/wagerate/prevailing_wage_determinations.html

The Contractor must complete and sign the "Prevailing Wage Certification" form included in the bid package and submit with his bid. This form confirms the Contractor's intention to comply with the Act. The Owner may terminate the contract if Contractor fails to pay workers prevailing wage.

The prevailing wage rates in affect at the time of award, will be included by Owner as a part of the construction contract.

PREVAILING WAGES COMPLIANCE CERTIFICATION

It is the determination that this is a public works project that in total will exceed $2,000.00 (two thousand dollars), therefore prevailing wages rules and regulations apply as promulgated by the New Jersey Prevailing Wage Act and in conformance with N.J.S.A. 34:11-56:25 et seq.

Certification

1. I certify that our company understands that this project requires prevailing wages to be paid in full accordance with the law.

2. I further certify that all subs named in this bid understand that this project requires the sub to pay prevailing wages in full accordance with the law.

Non-compliance Statement

If it is found that any worker, employed by the Contractor or any Subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the Owner, may begin proceedings to terminate the Contractor's or Subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The Contractor and his sureties shall be liable for any excess costs occasioned thereby to the public body.

NOTIFICATION OF VIOLATIONS – New Jersey Department of Labor and Workforce Development

Has the Bidder or any person having an "interest" with the Bidder, been notified by the New Jersey Department of Labor and Workforce Development by notice issued pursuant to N.J.S.A. 34:11-56a et seq that he/she has been in violation for failure to pay prevailing wages as required by the New Jersey Prevailing Wage Act within the last five (5) years?

*Yes_____ No_____

*If yes, please attach a signed document explaining any/or all administrative proceedings with the Department within the last five (5) years. Please include any pending administrative proceedings with the Department if any.

Submission of Certified Payroll Records

All certified payroll records are to be submitted to the Owner, Business Administrator, who is coordinating the activities for the project:

Name of Company _____

Authorized Agent _____

Authorized Signature _____

CERTIFICATION OF INSURANCE STATEMENT

The Bidder fully understands the Owner's insurance requirements as stated in the Bid Documents and agrees to provide all insurance required by these documents at award of contract.

_____

COMPANY NAME

_____

BIDDER (Signature)

_____

BIDDER (Print Name)

Note: Failure to sign this document may result in the rejection of your Proposal.

CERTIFICATION OF INSURANCE STATEMENT

CERTIFICATION OF INSURANCE STATEMENT

The Bidder fully understands the Owner's insurance requirements as stated in the Bid Documents (i.e., Supplementary General Conditions, AIA 232 Article 11 Insurance and Bonds, A132 Exhibit A Insurance and Bonds) and agrees to provide all insurance required by these documents at award of contract.

_____

COMPANY NAME

_____

BIDDER (Signature)

_____

BIDDER (Print Name)

Note: Failure to sign this document may result in the rejection of your Proposal.

SAMPLE INSURANCE FORMS.xls: SCHOOL DISTRICT

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/01/03

PRODUCER:

XYZ Insurance
123 Any Street
Anywhere, NJ 12345

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED

School District
123 State St
Anywhere, NJ 12345

INSURER A:
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY		01/01/03	01/01/04	EACH OCCURRENCE	$ 1,000,000
	✓ COMMERCIAL GENERAL LIABILTY				FIRE DAMAGE	$
	CLAIMS MADE				MED EXP	$
	AUTOMOBILE LIABILTY		01/01/03	01/01/04	COMBINED SINGLE LIMIT	$ 1,000,000
	✓ ANY AUTO				BODILY INJURY (per person)	$
	ALL OWNED AUTOS				BODILY INJURY (per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE	$
	✓ HIRED AUTOS					
	✓ NON-OWNED AUTOS					
	GARAGE LIABILTY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY:	$
					EACH ACCIDENT	$
					AGGREGATE	$
	EXCESS LIABILITY		01/01/03	01/01/04	EACH OCCURRENCE	$ 4,000,000
	✓ UMBRELLA FORM				AGGREGATE	$
	PROPERTY		START OF CONSTRUCTION	END OF CONSTRUCTION	STATED VALUE	$ project cost
	✓ BUILDER'S RISK					
	Builder's risk must be for Total Project cost less any excavations, foundations, or other structures normally excluded.					
	WORKERS COMPENSATION AND		01/01/03	01/01/04	X WC STATUTORY LIMITS	
	EMPLOYERS' LIABILITY				EL EACH ACCIDENT	$ 500,000
					EL DISEASE-POLICY LIMIT	$
					EL DISEASE-EA EMPLOYEE	$
	OTHER					

SAMPLE

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

Listing of Additional Insured

The Owner, Architect, Construction Manager, THE STATE OF NJ, NJ DEPARTMENT OF EDUCATION, NJ SCHOOLS DEVELOPMENT AUTHORITY, AND NJ ECONOMIC DEVELOPMENT AUTHORITY ARE NAMED AS ADDITIONAL INSURED WITH RESPECT TO COMMERCIAL GENERAL LIABILTY, AUTOMOBILE LIABILITY, & BUILDER'S RISK AS LOSS PAYEES AS THERE INTEREST MAY APPEAR.

CERTIFICATE HOLDER	CANCELLATION
	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPNAY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE

CERTIFICATION OF NO MATERIAL CHANGE OF CIRCUMSTANCES

Bidder's Name: _____

Address: _____

1. A statement as to the financial ability, adequacy of plant equipment, organization and prior experience of the Bidder, as required by N.J.S.A. 18A:18A-28 has been submitted to the Department of Treasury within the last twelve (12) months preceding the date of opening of bids for this contract.

2. I certify, as required by N.J.S.A. 18A:18A-32, that there has been no material adverse change in the qualification except:

   _____

   _____

   _____

   _____

_____
(Name and Title of Signer - Please print or type)

_____ _____
(Signature) (Date)

STATUS OF PRESENT CONTRACTS

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS.

- **Each classified bidder's aggregate rating shall be calculated in accordance with formula prescribed by N.J.A.C. 17:19-2.8.**
- **Calculations shall be based on Bidder's base bid amount only at time of bid or total amount of base bid and accepted Alternate Bids at time of Award.**

Entity	Project Title	Original Contract Amount	Uncompleted Amount As of Bid Opening Date	Name and Telephone Number of Party To Be Contacted From Entity For Verification

Sworn and Subscribed to before me
this_____ day of _____ , 20__

BIDDER

_____
Notary Public

_____
(Print and Signature)

PERFORMANCE RECORD

How many years has your organization been in business as a Contractor under your present business name? _____

How many years experience in construction work has your organization had:
(a) As a Prime contractor? _____ (b) As a subcontractor? _____

What is the construction experience of the principal individuals of your organization?

Individual's Name	Present Position or Office	Years of Constr. Experience	Magnitude and Type of Work	In What Capacity

Have you ever failed to complete any work contracted to you? _____

If so, where and why? _____

_____

Has any officer or partner of your organization ever failed to complete a construction contract handled in its own name?

_____

If so, state name of individual, name of owner, location and type of project and reason for the failure to complete.

_____

_____

PERFORMANCE RECORD (Continued)

List of all contracts completed by you.

Name of Owner	Name & Location of Project/ Type of Work	Prime or Sub-Contractor	Architect or Engineer in Charge for Owner	Contract Price (Omit Cost)	Date Completed	Was* Time Extension Necessary	Were any Penalties Imposed	Were* Liens Claims or Stop Notice Filed

*Explain "Yes" answers.

PERFORMANCE RECORD
CERTIFICATION

Explanation of details in connection with non-completion of contracts, time extensions, penalties imposed, labor troubles experience, liens, termination of contracts, poor performance, debarment, claims and notices filed against contracts.

_____

_____

_____

_____

_____

The information above is true and complete to the best of my knowledge and belief.

_____
(Name of Organization)

_____
(Signature)

_____
(Title)

STATE OF)
)ss.
COUNTY OF)

_____, being duly sworn to law, deposes and says that it is authorized to make this affidavit for, and on behalf of, the individual, partnership or corporation herein first named as the Bidder, that deponent is familiar with the books of the said Bidder and that the foregoing statement is a true and accurate statement taken from the books of said Bidder of such financial condition as of the date herein first named; that the answers to the foregoing interrogatories are true and correct.

Subscribed and sworn to before me

This _____ day of _____, 20___

_____
(Signature)

_____
(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires_____, 20___.

INSTRUCTIONS FOR COMPLETING THE INITIAL PROJECT WORKFORCE REPORT – CONSTRUCTION (AA201)

DO NOT COMPLETE THIS FORM FOR GOODS AND/OR SERVICE CONTRACTS

1. **Enter the Federal Identification Number assigned to the contractor by the Internal Revenue Service, or if a Federal Employer Identification Number has been applied for but not yet issued, or if your business is such that you have not or will not receive a Federal Identification Number, enter the social security number assigned to the single owner or one partner, in the case of a partnership.**

2. **Note: The Department of Labor & Workforce Development, Construction EEO Monitoring Program will assign a contractor ID number to your company. This number will be your permanently assigned contractor ID number that must be on all correspondence and reports submitted to this office.**

3. **Enter the prime contractor's name, address and zip code number.**

4. **Check box if Company is Minority Owned or Woman Owned**

5. **Enter the complete name and address of the Public Agency awarding the contract. Include the contract number, date of award and dollar amount of the contract.**

6. **Enter the name and address of the project, including the county in which the project is located.**

7. **Note: A project contract ID number will be assigned to your firm upon receipt of the completed Initial Project Workforce Report (AA201) for this contract. This number must be indicated on all correspondence and reports submitted to this office relating to this contract.**

8. **Check "Yes" or "No" to indicate whether a Project Labor Agreement (PLA) was established with the labor organization(s) for this project.**

9. **Under the Projected Total Number of Employees in each trade or craft and at each level of classification, enter the total composite workforce of the prime contractor and all subcontractors projected to work on the project. Under Projected Employees enter total minority and female employees of the prime contractor and all subcontractors projected to work on the project. Minority employees include Black, Hispanic, American Indian and Asian, (J=Journeyworker, AP=Apprentice). Include projected phase-in and completion dates.**

10. **Print or type the name of the company official or authorized Equal Employment Opportunity (EEO) official include signature and title, phone number and date the report is submitted.**

This report must be submitted to the Public Agency that awards the contract and the Department of Labor & Workforce Development, Construction EEO Compliance Monitoring Program after notification of award, but prior signing the contract.

THE CONTRACTOR IS TO RETAIN A COPY AND SUBMIT COPY TO THE PUBLIC AGENCY AWARDING THE CONTRACT AND FORWARD A COPY TO:

NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
CONSTRUCTION EEO COMPLIANCE MONITORING UNIT
P.O. BOX 209
TRENTON, NJ 08625-0209
(609) 292-9550

STATE OF NEW JERSEY

DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
CONSTRUCTION EEO COMPLIANCE MONITORING PROGRAM

FORM AA-201
Revised 11/11

INITIAL PROJECT WORKFORCE REPORT CONSTRUCTION

Official Use Only

Assignment

Code

For instructions on completing the form, go to: http://www.state.nj.us/treasury/contract_compliance/pdf/aa201ins.pdf

1. FID NUMBER

2. CONTRACTOR ID NUMBER

3. NAME AND ADDRESS OF PRIME CONTRACTOR

(Name)

(Street Address)

(City) **(State)** **(Zip Code)**

4. IS THIS COMPANY MINORITY OWNED [ ] OR WOMAN OWNED [ ]

5. NAME AND ADDRESS OF PUBLIC AGENCY AWARDING CONTRACT

Name:
Address:

CONTRACT NUMBER **DATE OF AWARD** **DOLLAR AMOUNT OF AWARD**

6. NAME AND ADDRESS OF PROJECT

Name:
Address:

COUNTY

7. PROJECT NUMBER

8. IS THIS PROJECT COVERED BY A PROJEC
LABOR AGREEMENT (PLA)? YES

9. TRADE OR CRAFT	PROJECTED TOTAL EMPLOYEES				PROJECTED MINORITY EMPLOYEES				**PROJECTED PHASE - IN DATE**	**PROJECTED COMPLETION DATE**
	MALE		FEMALE		MALE		FEMALE			
	J	AP	J	**AP**	J	AP	J	AP		
1. ASBESTOS WORKER										
2. BRICKLAYER OR MASON										
3. CARPENTER										
4. ELECTRICIAN										
5. GLAZIER										
6. HVAC MECHANIC										
7. IRONWORKER										
8. OPERATING ENGINEER										
9. PAINTER										
10. PLUMBER										
11. ROOFER										
12. SHEET METAL WORKER										
13. SPRINKLER FITTER										
14. STEAMFITTER										
15. SURVEYOR										
16. TILER										
17. TRUCK DRIVER										
18. LABORER										
19. OTHER										
20. OTHER										

I hereby certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements are willfully false, I am subject to punishment.

(Signature)

10. **(Please Print Your Name)** **(Title)**

(Area Code) **(Telephone Number)** **(Ext.)** **(Date)**

FORM AA-202
REVISED 11/11

State Of New Jersey

Department of Labor & Workforce Development
Construction EEO Compliance Monitoring Program

MONTHLY PROJECT WORKFORCE REPORT - CONSTRUCTION

For instructions on completing the form, go to:
http://www.state.nj.us/treasury/contract_compliance/pdf/aa202ins.pdf

3. F ID or SS Number

1.Name and address of Prime Contractor

2. Contractor ID Number

4. Reporting Period

(NAME)

5. Public Agency Awarding Contract **Date of Award**

(ADDRESS)

6. Name and Location of Project **County**

7. Project ID Number

(CITY) (STATE) (ZIP CODE)

8. CONTRACTOR NAME (LIST PRIME CONTRACTOR WITH SUBS FOLLOWING)	9. PERCENT OF WORK COMPLETED	10. TRADE OR CRAFT	CLASSIFICATION (SEE REVERSE)	11. NUMBER OF EMPLOYEES A. TOTAL	B. BLACK	C. HISPANIC	D. AMERICAN INDIAN	E. ASIAN	F. FEMALES	12. TOTAL NO. OF MIN. EMP.	13. WORK HOURS TOTAL WORK HOURS	A. MIN. W/H	B. FEMALE W/H	14. % OF WORK HRS A. % OF MIN. W/H	B. % OF FEMALE W/H	15. CUM. WORK HRS TOTAL WORK HOURS	A. MIN. HOURS	B. FEMALE HOURS	16. CUM. % OF W/H A. % OF MIN. W/H	B. % OF FEM. W/H
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	

17. COMPLETED BY (PRINT OR TYPE)

(NAME) (SIGNATURE) (TITLE)

(AREA CODE) (TELEPHONE NUMBER) (EXT.) (DATE)

AMERICANS WITH DISABILITIES ACT OF 1990
Equal Opportunity for Individuals with Disability

The contractor and the Board of Education (hereafter "owner") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act")
(42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the owner's grievance procedure, the contractor agrees to abide by any decision of the owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the owner, or if the owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the owner or any of its agents, servants, and employees, the *owner shall* expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the owner or its representatives.

It is expressly agreed and understood that any approval by the owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the owner pursuant to this paragraph.

It is further agreed and understood that the owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

Name of Company_____

Authorized Agent_____

Title or Position _____

Signature_____ Date_____

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)
N.J.A.C. 17:27-1.1 et seq.
CONSTRUCTION CONTRACTS

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

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affection or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as supplemented and amended from time to time and the American with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

EXHIBIT B (Continued)

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

i. The contractor or subcontractor shall interview the referred minority or women worker.
ii. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.
iii. The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
iv. If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which

result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ration established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

(Revised: January, 2016)

Reviewed By:_____ Title: _____

Company:_____ Date: _____

Signature: _____

Surety Disclosure Statement and Certification
N.J.S. A. 2A:44-143

SAMPLE

SURETY DISCLOSURE STATEMENT AND CERTIFICATION

....., surety(ies) on the attached bond, hereby certifies(y) the following:

(1) The surety meets the applicable capital and surplus requirements of N.J.S.A.17:17-6 or N.J.S.A. 17:17-7 as of the surety's most current annual filing with the New Jersey Department of Insurance.

(2) The capital (where applicable) and surplus, as determined in accordance with the applicable laws of this State, of the surety(ies) participating in the issuance of the attached bond is (are) in the following amount(s) as of the calendar year ended December 31, ... (most recent calendar year for which capital and surplus amounts are available), which amounts have been certified as indicated by certified public accountants (indicating separately for each surety that surety's capital and surplus amounts, together with the name and address of the firm of certified public accounts that shall have certified those amounts):

.....

.....

.....

(3) (a) With respect to each surety participating in the issuance of the attached bond that has received from the United States Secretary of the Treasury a certificate of authority pursuant to 31 U.S.C. 9305, the underwriting limitation established therein and the date as of which that limitation was effective is as follows (indicating for each such surety that surety's underwriting limitation and the effective date thereof):

.....

.....

.....

(b) With respect to each surety participating in the issuance of the attached bond that has not received such a certificate of authority from the United States Secretary of the Treasury, the underwriting limitation of that surety as established pursuant to N.J.S.A. 17:18-9 as of (date on which such limitation was so established) is as follows (indicating for each such surety that surety's underwriting limitation and the date on which that limitation was established):

.....

.....

.....

(4) The amount of the bond to which this statement and certification is attached is $.....

(5) If, by virtue of one or more contracts of reinsurance, the amount of the bond indicated under item (4) above exceeds the total underwriting limitation of all sureties on the bond as set forth in items (3)(a) or (3)(b) above, or both, then for each such contract of reinsurance:

(a) The name and address of each such reinsurer under that contract and the amount of that reinsurer's participation in the contract is as follows:.....

.....

.....

.....; and

(b) Each surety that is party to any such contract of reinsurance certifies that each reinsurer listed under item (5)(a) satisfies the credit for reinsurance requirement established under NJSA 17:51B-1 et seq. and any applicable regulations in effect as of the date on which the bond to which this statement and certification is attached shall have been filed with the appropriate public agency.

CERTIFICATE

(to be completed by an authorized certifying agent

for each surety on the bond)

I ..... (name of agent), as ..... (title of agent) for ..... (name of surety), a corporation/mutual insurance company/other (indicating type of business organization) (circle one) domiciled in ..... (state of domicile), DO HEREBY CERTIFY that, to the best of my knowledge, the foregoing statements made by me are true, and ACKNOWLEDGE that, if any of those statements are false, this bond is VOIDABLE.

.....

(Signature of certifying agent)

.....

(Printed name of certifying agent)

.....

(Title of certifying agent)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____ as PRINCIPAL and sureties with underwriting office at _____ to which all communication in regard to this bond should be addressed, a Corporation organized and existing under the laws of the State of_____and duly authorized to do business in the state of New Jersey, as SURETY, are hereby held and firmly bound unto the _____ (Owner) in the penal sum of _____ Dollars, ($_____) for payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

SIGNED and SEALED this_____day of_____two thousand and_____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, the above named Principal did on the _____ day of _____, 20____, entered into a contract with _____ identified as _____ which said contract, upon execution by the Owner, and the Principal, will be a part of this bond the same as though set forth herein.

Now, if the said Principal shall well and faithfully do and perform each and every, all and singular, the things agreed by it (or them) to be done and performed according to the terms of said contract, and shall pay all lawful claims of beneficiaries as defined by N.J.S.2A:44-143 for labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implements or machinery furnished, used or consumed in the carrying forward, performing or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit of any beneficiary as defined in N.J.S.2A:44-143 having a just claim, as well as for the oblige herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said Surety hereby stipulated and agrees that no modifications, omissions or additions in or to the terms of the said contract, or in or to the plans or specifications therefore, shall in anyway affect the obligations of said Surety on its bond.

Recovery of any claimant under the bond shall be subject to the conditions and provisions of this article to the same extent as if such conditions and provisions were fully incorporated in the form set forth above.

Principal:

Affix Corporate Seal

_____
Witness

_____
Print or Type Name

By: _____
Print Name:
Print Title:

Surety:

Affix Corporate Seal

_____
Witness

_____
Print or Type Name

By: _____
Print Name:
Print Title:

PAYMENT BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____ as PRINCIPAL and sureties with underwriting office at _____ to which all communication in regard to this bond should be addressed, a Corporation organized and existing under the laws of the State of_____and duly authorized to do business in the state of New Jersey, as SURETY, are hereby held and firmly bound unto the _____ in the penal sum of _____, for payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

SIGNED and SEALED this_____day of_____two thousand and_____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, the above named Principal did on the _____ day of _____, 20____, entered into a contract with _____ identified as _____ which said contract, upon execution by the Owner, and the Principal, will be a part of this bond the same as though set forth herein.

Now, if the said Principal shall pay all lawful claims of beneficiaries as defined by N.J.S.2A:44-143 for labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implement or machinery furnished, used or consumed in carrying forward, performing or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit of any beneficiary as defined in N.J.S.2A;44-143 having a just claim, as well as for the party of the first part mentioned in the contract aforesaid; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said Surety hereby stipulated and agrees that no modifications, omissions or additions in or to the terms of the said contract, or in or to the plans or specifications therefore, shall in anyway affect the obligations of said Surety on its bond.

Principal:

Affix Corporate Seal

By: _____

Print Name:

Print Title:

_____
Witness

_____
Print or Type Name

Surety:

Affix Corporate Seal

By: _____

Print Name:

Print Title:

_____
Witness

_____
Print or Type Name

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned,

_____

as principal, and _____ a Corporation organized and existing under the laws of the state of _____, and duly authorized to do business in the State of New Jersey, as Surety, are held and firmly bound unto the _____ as Owner, in the penal sum of _____

_____

(10% of the Final Contract Amount)

for payment of which, well and truly to be made, we hereby, jointly, and severally, bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas the above named principal did on the _____ day of _____, 20___ , enter into a Contract with the Owner for_____

_____

_____

(Project Name)

which said Contract is made a part of this bond the same as though set forth herein.

NOW, if the said principal shall remedy without cost to the Owner any defects which may develop during the two (2) year Maintenance Period of the work performed under the said Contract, provided such defects, in the judgment of the Owner are caused by defective or inferior materials or workmanship, then this obligation shall be void, otherwise it shall be and remain in full force and effect. The two (2) year period shall commence on the date established in the Certificate of Substantial Completion.

The said Surety hereby stipulates and agrees that no modifications, deletions or additions in or to the terms of the said Contract or the plans or specifications therefor shall in any way affect its obligations on this bond.

Signed and Sealed this _____ day of _____, 20__.

_____
(Principal) (Seal)

_____
(Witness)

_____
(Title)

_____
(Surety) (Seal)

_____
(Witness)

_____
(Title)

AIA® Document A132® – 2019

Standard Form of Agreement Between Owner and Contractor, *Construction Manager as Adviser Edition*

AGREEMENT made as of the day of in the year
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

Princeton Public Schools Board of Education
25 Valley Road, 2nd Floor
Princeton, NJ 08540

and the Contractor:
(Name, legal status, address, and other information)

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

The Construction Manager:
(Name, legal status, address, and other information)

The Architect:
(Name, legal status, address, and other information)

Fraytak Veisz Hopkins Duthie, P.C.
1515 Lower Ferry Road
Trenton, NJ 08618

The Owner and Contractor agree as follows.

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

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

This document is intended to be used in conjunction with AIA Documents A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser. AIA Document A232™–2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9. In the event of any conflict among the Contract Documents, the Contractor shall notify the Owner and the Architect of same and follow and comply with their interpretation of same.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

[ ] The date of this Agreement.

[**X**] A date set forth in a notice to proceed issued by the Owner.

[ ] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:

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Refer to Specification Section 01800.

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of all of the Contractors for the Project are to be completed prior to Substantial Completion of the entire Work of all of the Contractors for the Project, the Contractors shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.4 When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:
(Check one of the following boxes and complete the necessary information.)

[ ] Not later than ( ) calendar days from the Notice to Proceed.

[ ] By the following date:

§ 3.4.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:

Portion of Work	Date to be substantially complete

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[X] Stipulated Sum, in accordance with Section 4.2 below

[ ] Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below

[ ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates

§ 4.2.2.1 Alternates, if any, included in the Contract Sum: Section 01030 – Alternate Bids

Item	Price

§ 4.2.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

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Item	Price	Conditions for Acceptance

§ 4.2.3 Allowances, if any, included in the Contract Sum: Section 01020 - Allowances
(Identify each allowance.)

Item	Price

§ 4.2.4 Unit prices, if any: Section 01151 – Unit Prices
(Identify the item and state the unit price, and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

Liquidated Damages to be assessed in accordance with the Specification requirements, Section 01800, entitled "Time of Completion and Liquidated Damages." By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work. TIME IS OF THE ESSENCE. If the Contractor fails to complete his work or fails to complete a portion of his work and therefore not achieve Substantial Completion and/or Final Completion on the respective dates required, s/he shall pay the Owner, as liquidated damages and not as a penalty, ($2,000) per day, which is agreed upon as a reasonable and proper measure which the Owner will sustain each calendar day by failure of the Contractor to complete work within the stipulated time. Substantial Completion and Final Completion liquidated damages shall be stacked and be concurrently imposed.

ARTICLE 5 PAYMENTS

§ 5.0 No billings shall be deemed approved and certified by passage of time unless submitted in accordance with the application date as specified in Section 5.1.3 below. Moreover, if the contractor fails to perform in accordance with the provisions of the contract, in a significant way, the remedies of the Prompt Payment Act will not be applied, and failure by the Owner to act within the time allowed by N.J.S.A. 2A:30A-1 *et seq*. shall not constitute an implied approval of the Payment Application.

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum, to the Contractor, as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows: Each Application for Payment must be accompanied by Certified Payroll Records for the period covered by the Application. The payroll records shall indicate the proper classification of employees and the payment of overtime, if any. These records shall include each Contractor's subcontractor's certified payroll. Payment will not be authorized if the required payroll records have not been submitted.

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§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the 7th day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the 25th day of the following month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment of the amount certified shall be made by the Owner not later than ( ) days after the Construction Manager receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.3 .1 The Owner will issue timely payments for those duly approved and undisputed to the contractor(s) in accordance with the requirements of the Prompt Payment Act, N.J.S.A. 2A:30A-1 et seq., as described in Section 00860.

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay. Moreover, if the contractor fail to perform in accordance with the provisions of the contract in a significant way, the remedies of the Prompt Payment Act will not be applied, and failure by the Owner to act within the time allowed by N.J.S.A. 2A:30A-1 et seq. shall not constitute an implied approval of the Payment Application.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment, which period shall be a calendar month in accordance with N.J.S.A. 40A:11-16.2. No billings shall be deemed approved and certified by passage of time unless submitted in accordance with the application date as specified in Section 5.1.3 above. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and for which releases of liens have been furnished; and
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- **.4** For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019; and
- **.5** Retainage withheld pursuant to Section 5.1.7.

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

§ 5.1.5.7 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

.1 Pursuant to N.J.S.A. 18A: 18-40.3, unless indicated otherwise in the Contract Documents, if the Contractor does have a performance bond, 2% of the amount due on each partial payment shall be withheld by the Owner when the outstanding balance of the contract exceeds $500,000, and 5% of the amount due on each partial payment shall be withheld by the Owner when the outstanding balance of the Contract is $500,000 or less, until final completion and acceptance of all work covered by the Contract until final completion and acceptance of all work covered by the Contract, including the completion of all corrective or punch list items. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3 of the General Conditions.

.2 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocable to that portion of the Work in the schedule of values, less retainage of two percent (2%) when the contract balance is over $500,000 and five percent (5%) when the contract balance is $500,000 or less. **.3** Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of two percent (2% when the Contract balance is over $500,000 and five percent (5% when the contract balance is $500,000 or less**.**

.**4** Retainage shall be withheld until the Owner approves the Architect's determination that the work has been satisfactorily completed and no unsettled claims exist. The final acceptance shall not be binding or conclusive upon the Owner should it subsequently discover that the Contractor has supplied inferior material or workmanship or has departed from the terms of his contract. Should such a condition appear the Owner shall have the right, notwithstanding final acceptance and payment, to cause the work to be properly done in accordance with the drawings and specifications at the cost and expense of the Contractor.

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

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

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect.

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment or as follows: The Architect will submit the final Certificate for Payment once the Contractor has satisfactorily addressed all punch-list items and requisite close-out documents, including but not limited to, the Release of Mechanic Lien claims of all sub-contractors, suppliers and other contractor(s).

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§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

No interest will be paid.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[ ] Arbitration pursuant to Article 15 of AIA Document A232–2019.

[X] Litigation in a court of competent jurisdiction.

[ ] Other: *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction. If there are any claims or disputes, the Contractor is to submit in accordance with Article 15 as a pre-requisite to such a claim. Notwithstanding the foregoing and anything construed to the contrary, the foregoing shall only be applicable in the event that: (i) the Contractor has produced an updated Schedule prior to the alleged material delay; (ii) there are no components of the project for which the Contractor has delayed; and (iii) the alleged materially delayed component of the project affects the critical path and no other Work can continue to keep the project on schedule.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.1.2 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follow: No Termination Fee.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.
A condition of this Agreement is that the Contractor will comply with all applicable governmental laws and regulations including, but without limitation, those set forth in Section 00860 of the Specifications, which are hereby incorporated by reference as if set forth herein at length.

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§ 8.4 The Contractor's representative shall not be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Contractor shall purchase and maintain insurance as set forth in AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A132™–2019, Exhibit A, and elsewhere in the Contract Documents.

§ 8.7 Relationship of the Parties

:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

.2 AIA Document A132™–2019, Exhibit A, Insurance and Bonds Exhibit

.3 AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

and its revisions.

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages
Part 1	Contract Conditions and General Requirements		In Full

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Part 1	Contract Conditions and General Requirements		In Full

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.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

Proposal, dated
Exhibit B

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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AIA® Document A132® – 2019 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the day of in the year
(In words, indicate day, month, and year.)

for the following **PROJECT**:
(Name and location or address)

THE OWNER:
(Name, legal status, and address)

Princeton Public Schools Board of Education
25 Valley Road, Princeton, NJ 08540

THE CONTRACTOR:
(Name, legal status, and address)

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A232™–2019, General Conditions of the Contract for Construction.

(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final

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

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

This document is intended to be used in conjunction with AIA Document A232™–2019, General Conditions of the Contract for Construction. Article 11 of A232™–2019 contains additional insurance provisions

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Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies. The coverage maintained by the Contractor shall be written by companies licensed to do business in the State where the project is located and maintaining an AM BEST rating of A- or better with a financial size rating of Class IX or larger. If the Contractor fails to maintain any insurance required hereunder, then, in addition to all other remedies given to the Owner in case of the breach of any conditions or covenants of this Contract, the Owner may (but shall not be obligated to) secure or pay the premium for any such policy or policies and charge the Contractor therefor the cost of such premiums.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor. Such deductibles or self-insured retentions shall be subject to the Owner's approval. The Contractor shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor (and all Subcontractors) shall cause the commercial general liability coverage to include (1) the Owner, the Architect and the Architect's consultants, and the Construction Manager and the Construction Manager's consultants, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, and the Construction Manager and the Construction Manager's consultants, CG 20 32 07 04. The Products and Completed Operations insurance shall be maintained for five (5) years after final payment or the then current applicable statue of repose. A "per project endorsement" shall be included, so that the general aggregate limit applies solely to the project that is the subject of this contract.

§ A.3.1.4 All insurance shall contain a waiver of subrogation against the Owner.

§ A.3.1.5 Contractor shall, without in any way altering Contractor's liability under the Contract or applicable law, obtain, pay for and maintain insurance for the coverages and amounts of coverage not less than those set forth below in the Schedule of Insurance Coverages and shall provide to Owner certificates issued by insurance companies satisfactory to Owner to evidence such coverage no later than 7 days of the date of the execution of this Contract and prior to any personnel or equipment being brought onto and/or before any work commences at the job site. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary to any valid and collectible insurance carried separately by any of the indemnities. Such certificates shall provide that there shall be no cancellation, non-renewal or material change of such coverage without thirty (30) days prior written notice to Owner. In the event of any failure by Contractor to comply with the provisions of this Article 11, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Article 11 and/ or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, and charge the Contractor therefor the cost of such premiums plus fifteen percent (15%) as an administrative fee to the Owner, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and coverages. Contractor shall provide to Owner a copy of any and all applicable insurance policies. The Owner shall be named as an additional insured on a primary and non-contributory basis on all Insurance Policies to be provided by the Contractor

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General

(Paragraphs deleted)

Conditions. The Contractor shall either require each of his subcontractors to procure and to maintain during the life of their subcontracts, subcontractor's public liability and property damage, of the type and in the same amounts as specified below; or insure the activities of their subcontractors under their respective policies.

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§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than two million dollars ($ 2,000,000.00) each occurrence, two million dollars ($ 2,000,000.00) general aggregate, and two million dollars ($ 2,000,000.00) aggregate for products-completed operations hazard (and independent contractor liability), providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal injury and advertising injury;

.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

.4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

.6 the policy shall name the Owner, Architect, Construction Manager and their Consultants, Agents and Employees as additional insured.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.

.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.

.3 Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.

.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.

.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.

.8 Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the Work involves such hazards.

.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than one million dollars ($ 1,000,000.00) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

(Paragraphs deleted)

§ A.3.2.5 Workers' Compensation at statutory limits applicable to the laws of the State of project location and other State or Federal jurisdiction required to protect the employees of the Contractor and any Subcontractor who will be engaged in the performance of this Contract. The certificate must also indicate that no proprietor, partner, executive officer, or member is excluded. This insurance shall include Employers' Liability Protection.

§ A.3.2.6 Employers' Liability with policy limits not less than one million dollars ($1,000,000) bodily injury, each occurrence, one million dollars ($1,000,000) disease, each employer, and one million dollars ($1,000,000) disease,

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aggregate limit. Including the employer's liability insurance under the umbrella insurance can satisfy the limit requirements.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

A.3.2.13 Excess Liability, umbrella insurance form, applying excess of primary to the commercial general liability, commercial automobile liability and employer's liability insurance shall be provided with minimum limits in an amount such that the commercial general liability insurance and excess/umbrella is equal to $1,000,000 per occurrence, general aggregate, and products/completed operations.

§ A.3.2.14 The General Liability insurance, General Aggregate and Umbrella Excess Liability limits shall apply and be written exclusively, in total, to this Project only. A per project endorsement for all coverages and limits must be included in each policy.

A.3.2.14.1 Bodily injury and property damage insurance policies shall be so written as to provide coverage for special hazards where such hazards will be incidental to subcontractors' work.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[ ] **§ A.3.3.2.1** If there is only one Contractor performing the Work on the Project, property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property

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insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[ ] **§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for Work within fifty (50) feet of railroad property.

[ ] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[ ] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[ ] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[ ] **§ A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	**Limits**

§ A.3.4 Performance Bond and Payment Bond
The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	**Penal Sum ($0.00)**
Payment Bond	Amount equal to the Contract Sum
Performance Bond	Amount equal to the Contract Sum
Maintenance Bond	Amount equal to the Contract Sum

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

§ A.3.4 .1 Contractor shall furnish each of the performance bond and payment bond meeting all statutory requirements of the State of New Jersey in form and substance satisfactory to the Owner and, without limitation, complying with the following specific requirements:

.1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment;

.2 The bonds shall be executed by an approved surety company authorized to do business in the State of New Jersey and in accordance with N.J.S.A. 2A:44-143 and 2A:44-144, and with the three highest rating categories of rating companies nationally recognized and listed as per Appendix A, (go to www.nj.gov/dobi/surety.htm), and shall remain in effect for a period of not less than one year following the date of substantial completion or the time required to resolve any items of incomplete or inadequate work and the payment of any disputed amounts, whichever time period is longer;

.3 The performance bond and the labor and material payment bond shall each be in an amount equal to the Contract Sum;

.4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the

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surety to affix thereto a certified and current copy of his/her power of attorney indicating the monetary limit of such power;

.5 Any bond under this Paragraph 11.6.1 must display the surety's bond number. A rider including the following provisions shall be attached to each bond:

.1 Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change or other modification of the Contract Documents. Any other alterations, change, extension of time or other modification of the Contract Documents or a forbearance on the part of either the Owner or the Contractor to the other shall not release the surety of its obligations hereunder and notice to surety of such matter is hereby waived.

.2 Surety further agrees that in the event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or surety shall cause written notice of such default (specifying said default in writing) to be given to the Owner, and the Owner shall have thirty (30) calendar days after receipt of such notice within which to cure such default or such additional reasonable time as may be required if the nature of such default is such that it cannot be cured within thirty (30) calendar days. Such notice of default shall be sent by certified or registered U.S. mail, return receipt requested, first class postage, prepaid to the Owner.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

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PART 1 - CONTRACT CONDITIONS AND GENERAL REQUIREMENTS

SECTION 00700 - GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
AIA DOCUMENT A232 – 2019

AIA® Document A232® – 2019

General Conditions of the Contract for Construction, *Construction Manager as Adviser Edition*

for the following PROJECT:
(Name, and location or address)

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

THE OWNER:
(Name, legal status, and address)

Princeton Public Schools Board of Education
25 Valley Road, 2nd Floor, Princeton, NJ 08540

THE ARCHITECT:
(Name, legal status, and address)

Fraytak Veisz Hopkins Duthie, P.C. Architects - Planners
1515 Lower Ferry Road, Trenton, NJ 08618

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

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

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents. The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§1.1.2.1 The Contractor acknowledges and warrants that it has closely examined all of the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the competition of the Work in full compliance with all applicable codes, laws, ordinances and regulations and that questions regarding the bid documents and any interpretation(s) regarding same have been asked by the Contractor, in the form and manner required in the instructions to bidders.

§1.1.2.2 In connection therewith, Contractor specifically represents and warrants to Owner that it has, by careful examination, satisfied itself as to: (1) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (2) the quality and quantity of materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents; and (3) the condition of existing and planned structures on the site and the ability, safety and appropriateness of same to receive the Work in the manner required by the Contract Documents.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

§ 1.1.5 Contractors. Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

§ 1.1.6 Separate Contractors. Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

§ 1.1.7 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

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§1.1.7.1. Construction Drawings prepared by the Architect are intended to show the scope of work, including but not limited to general arrangement of stairs, equipment, ducts, piping and other elements of the structure, and approximate locations and sizes of equipment. This does not relieve the Contractor from providing all connections and accessories necessary to make structural, mechanical and electrical work complete, ready to operate, in compliance with all applicable codes, laws and other regulations, and acceptable to the Architect. As such, they are not to serve as Shop Drawings.

§1.1.7.2 Locations and arrangements of items are designated by dimensions at less than full scale, unless otherwise noted. Such reductions of scale may vary and will be noted.

§1.1.7.3 Designs, information, reports and other materials and/or data may be performed and/or provided for the project by other than the Architect. Such designs, information, reports and other materials and/or data may include, without limitation, designs, information, reports and other materials and/or data performed and/or provided by the Contractor(s) or by Subcontractors and/or other consultants retained by the Contractor(s) and/or the Owner. Such designs, information, reports and other materials and/or data may include without limitation the locations, quantities, sizes, conditions and scope of specific items of the construction Work required to be provided for the Project. The Contractor shall immediately notify the Construction Manager and Architect in writing upon its discovery or knowledge of any errors, omissions or defects in any designs, information, reports and other materials and/or data prepared or provided by the Contractor or on the Contractor's behalf which are provided to the Architect for the Architect's preparation of its design documentation for the Project. The Contractor shall also be required to immediately notify the Architect in writing in the event that it discovers or becomes aware of any errors, omissions or defects in any designs, information, reports or other materials or data that are provided to the Architect by others for the preparation of the Architect's design documentation. The Contractor shall also be required to immediately notify the Construction Manager and Architect in writing if it discovers or becomes aware of any discrepancies between any design documentation prepared by the Architect and any designs, information, reports or other materials and/or data provided to the Architect by the Contractor(s), the Owner, Subcontractors or Subconsultants retained by the Contractor(s) or Owner, or by others. In such event, the Contractor shall promptly submit a written request for resolution of such discrepancy to the Architect and Owner.

§ 1.1.8 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.9 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.10 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§1.2.3.1 In the event of a conflict or an inconsistency in or among the Contract Documents, or between the Contract Documents and applicable codes in effect at the time the Contract Sum is bid or negotiated, the Contractor shall, unless directed otherwise in writing by and Addendum or Change Order, provide the greatest quantity, highest quality, highest degree of safety and most stringent material, equipment or Work.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data. Any information or data obtained or derived from electronic files to create shop drawings or other submissions must be compared with the hard paper Construction Documents issued by the Architect for construction. Use of electronic documents for any reason is at the user's sole risk.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

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G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner may designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

(Paragraph deleted)

§ 2.2 Evidence of the Owner's Financial Arrangements

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. The furnishing of these surveys and the legal description of the site shall not relieve the Contractor from its duties under the Contract Documents.

§ 2.3.6 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner

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may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4.1 Notwithstanding the foregoing, the Owner shall have the authority to immediately correct, service, repair, replace or otherwise make operational any component of their facilities, including equipment, if, in the sole discretion of the Owner, the damaged component is a threat to education, safety, or security. The Owner is obligated to notify the Contractor of the issue threatening education, safety or security, and the Owner's intent to remedy immediately with other resources, backcharging the Contractor for the cost of said service. However, there is no obligation to provide the Contractor an opportunity to cure, as required for corrective actions necessary to protect the Owner's interest in education, safety, and security.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and (i) fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, or (ii) Owner and Architect reasonably believe that such correction cannot be properly completed within a twenty-day period, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner as approved by the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. The Contractor has carefully examined the Plans, Specifications, and the site of the work, and based on their own investigations, the Contractor has satisfied themselves regarding the nature and location of the work, the character, quality, and quantity of the surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, the general local conditions, and all other materials that may in any way affect the work or their performance.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. The Contractor shall satisfy itself as to the accuracy of all dimensions and locations. In all cases of interconnection of its work with existing or other work, it shall verify at the site, all dimensions relating to such existing or other work. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the

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purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. If the Contractor performs any construction activity involving an error, inconsistency, nonconformity, or omission in the Contract Documents – which the Contractor either recognized or reasonably should have recognized – and fails to notify the Architect, the Contractor shall assume complete responsibility for such performance, including the full amount of attributable costs for correction and any damages to Owner, Architect, Owner's Representative, or Separate Contractors arising from that work. The Contractor may not be liable to the Owner for damage resulting from errors, inconsistencies or omissions in the Contract Documents that could not have been discovered by a prudent and experienced Contractor in advance and that are not in the nature described in and intended to be covered in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require. Notwithstanding the foregoing, as an inducement for the Owner to execute the Owner-Contractor Agreement, the Contractor represents and warrants to the Owner (in addition to the other representations and warranties contained in the Contract Documents) that they are familiar with local ordinances and applicable building codes affecting the Work, and these representations and warranties shall survive the execution and delivery of the Owner-Contractor Agreement and the final completion of the Work.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations of Sections 3.2.2. or 3.2.3, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, unless the Contractor recognized or should have recognized such error, inconsistency, omission or difference and yet knowingly failed to timely report it to the Architect.

§3.2.4.1 The General Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

§3.2.4.2 Should the General Contractor elect to release work without approvals, same shall be at his/her own risk and expense. Such work, if it is determined by the Architect and Construction Manager to not be in accordance with the requirements of the Contract Documents, shall be removed and replaced without additional cost or extension of time.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall also at all times use best efforts and its judgment as an experienced General Contractor to adopt and implement policies and practices which are designed to avoid work stoppages, slowdowns, disputes or strikes; and shall at all times use best efforts to maintain project-wide labor harmony. The Owner reserves the right to require the Contractor to remove from the Project any of its personnel, or Subcontractor's personnel, for violating Owner's policies, rules or regulations.

§3.4.5 All materials delivered to the premises which are to form a part of the work are to be considered the property of the Owner and must not be removed without the Owner's consent. Materials not incorporated into the work shall become the Contractor's property and must be removed from the Project Site at or prior to Substantial Completion, unless other arrangements are made with the Owner.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 The Contractor represents that all manufacturer and supplier warranties shall run directly to or be specifically assignable to the Owner. The Contractor warrants that all portions of the Work that will be covered by a manufacturer's or supplier's warranty shall be performed in such a manner so as to preserve all rights under such warranties. The Contractor hereby assigns to the Owner, effective upon the termination of this Contract, all manufacturer's and supplier's warranties relating to the Work; and the Contractor shall, upon request of Owner, execute any documents reasonably requested by Owner to effectuate such assignment. If the Owner attempts to enforce a claim based upon a manufacturer's or supplier's warranty and such manufacturer or supplier refuses to honor such warranty based in whole or in part on a claim of defective installation by the Contractor, the Contractor shall be responsible for any resulting loss or damages incurred by the Owner as a result of the manufacturer's or supplier's refusal to honor such warranty. The Contractor's obligation under this Subparagraph 3.5.3 shall survive the expiration or earlier termination of the Contract.

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§ 3.5.4 The Contractor agrees that all warranties in the Contract Documents survive acceptance of, delivery of and payment for the goods, whether any defect shall be latent or patent. The Contractor agrees to correct, without expense to, and to the satisfaction of the Owner, any defects that may develop in the Work. Any facilities, including buildings and their contents, which have been damaged either directly or indirectly by the Work performed by the Contractor shall be repaired within ten (10) working days after receipt of written notice of the defect from the Owner by the Contractor at no cost to the Owner.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices, and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. The Contractor shall arrange for any inspections by governmental authorities needed to obtain any necessary occupancy permits.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§3.7.4 Prior to application for final payment, furnish a written certification that the Work is in conformance with applicable laws, ordinances, rules, regulations and lawful orders.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

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§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work, and until the final completion of all work, including all corrections and punch list items. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager, or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§3.9.4 The Contractor shall immediately remove from the Project, whenever requested by the Owner or Construction Manager, any employee, Project Manager or Superintendent who is considered by the Owner or Construction Manager to be incompetent or disposed to be disorderly, or who, for any reason, is not satisfactory to the Owner and the Project. The replacement shall be at no additional cost, and that person shall not be employed on the Project again without the consent of the Owner or Construction Manager.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to

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provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data, and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been reviewed and approved by the Architect.

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§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Construction Manager and Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner, the Architect, and the Construction Manager shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.12.10.3 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§**3.13.3** The Contractor shall send proper notices, make all necessary arrangements and perform all other services required in order to protect and maintain all marked, identified or known public utilities such a fire lines and plugs, electric, gas, water lines, sewer pipes, mechanical systems and all other items of this nature, and assume all responsibility and pay all costs for which the Owner may be liable if said services are interrupted by actions of the Contractor or Subcontractors . The Contractor acknowledges that all public utilities or other infrastructure may not be

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identified or marked, and Contractor acknowledges that all public utilities or other infrastructure may not be identified or marked and that Contractor has taken all reasonable precautions to identify all known and unknown utilities or other infrastructure.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located.

§3.16.1 The Contractor shall keep only necessary equipment on-site and shall cooperate with the Construction Manager regarding the location of stored material. No Contractor shall unreasonably encumber the Project site (or building) with equipment and stored material, and they shall afford other contractors a reasonable opportunity for the introduction and storage of their materials and the execution of other work.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager, and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), to the extent caused by the actual or alleged negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§3.18.3 The Contractor's indemnity obligations under this Section 3.18 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, without limitation, reasonable attorneys' fees) and punitive damages (if any) arising out of, or in connection with, and (i) violation of or failure to comply with any law, statute, ordinance, rules, regulations, code or requirement of a public authority that bears upon the performance of the Work by the Contractor, a Subcontractors or any person or entity for whom either is responsible, (ii) means, methods procedures, techniques or sequences of execution or performance of the Work, and (iii) failure to secure and pay for permits, fees, approvals, licenses and inspections as required under the Contract Documents, or any violation of any permit or other approval of a public authority applicable to the Work by the Contractor, Subcontractors or any person or entity for whom either is responsible.

§3.18.4 The Contractor has determined what local ordinances, if any, will accent his work. The Contractor has checked for any County, City, Borough, or Township rules or regulations applicable to the area in which the Project is being constructed and in addition, for any rules or regulations of other organizations having jurisdiction, such as chambers-of-commerce, planning commission, industries, or utility companies who have jurisdiction over property on which the Work will be performed. Any costs of compliance with local controls are included in the prices bid, even if documents of such local controlling agencies are not listed specifically in the Contract Documents.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

§ 4.1.3 Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, Architect, and Contractor. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

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§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule to maintain all completion dates. Adherence to provided direction is required.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work. No claims by any Contractor for delay or cost will be entertained if the Owner determines that said Contractor and their Subcontractors have been uncooperative with the Construction Manager.

§ 4.2.6 Communications. The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

§ 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be

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taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.17 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.18 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.19 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.20 The Architect's decisions on matters relating to aesthetic effect will be final.

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Construction Manager, for review by the Owner, Construction Manager and Architect, of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors. The Contractor shall obligate each Subcontractor to comply with the Public Works General Contractor Registration Act of the State of New Jersey.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

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.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner's own forces, Separate Contractors, Construction Manager and other Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable. If the Contractor incurs cost or damage due to the failure of another Separate Contractor(s) to perform their contract with the Owner, no action can be taken against the Owner. The Owner bears no liability for such damages. Instead, the Contractor may assert its claim for damages against the Separate Contractor responsible as a third-party beneficiary under the Contract between the other Contractor and the Owner.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction. The Owner, in turn, shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces.

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§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner, Separate Contractors, and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§7.1.1.1 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule, based upon an impact analysis of the current schedule. The Contractor shall furnish spreadsheets from which the breakdowns were prepared, plus spreadsheets, if requested, of any Subcontractor.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

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.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Construction Manager and Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted. The increased contract unit price shall not apply to quantities scheduled under the contract for delivery before the effective date of the increased contract unit price, unless failure to deliver before that date results from causes reasonably beyond the Contractor's control and without his or her fault or negligence.

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§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day of twenty-four (24) hours, beginning at 12:00 midnight, unless otherwise specifically defined. The term "working day" (or "business day") shall mean any calendar day except Saturdays, Sundays and legal holidays at the place of the Project. A time limit ending on a weekend or holiday shall be automatically extended to the succeeding working day.

§ 8.1.5 The Contract Time shall commence as of the date of the Notice to Proceed unless otherwise specified in the Agreement. However, the Work to be performed under this Contract shall not commence until the required insurance has been obtained or approved. The date shall not be postponed by the failure to act by the Contractor or of persons or entities for whom the Contractor is responsible.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. If the Contractor reasonably anticipates, or reasonably should anticipate the potential impact of a delay on the progress of the Work, or if the Work has not progressed to the extent required to maintain the Project Construction Schedule for reasons unrelated to Contractor's entitlement to any extension of the Contract Time under the Contract Documents, and it is reasonably unlikely that the Work will be Substantially Complete by the required date, then the Construction Manager and/or the Owner shall have the right to order Contractor to increase manpower, work hours, and equipment necessary to maintain the Project Construction Schedule ("Acceleration Measures"), and shall be without additional cost or charge to the Owner.

§8.2.4 The Construction Manager, in coordination with the Contractor, will set work hours. The Contractor will be required to work nights, weekends or holidays as necessary to complete the work in accordance with the Schedule. NOTE: Standard work hours for this project may be affected by local Noise Ordinance. The Contractor shall be responsible to adhere to the Noise Ordinance, including night, weekend and holiday work. All utility shut downs, interruptions and work in or adjacent to an existing building will be coordinated through the Construction Manager and may have to be performed during hours when the facility is not in operation. All costs associated with this Article 8.2.4 are the responsibility of the Contractor and shall not be considered additional costs to the Owner.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an intentional act or neglect of the Owner's own forces, Architect, Construction Manager; (2) by material changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented

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in accordance with Section 15.1.6.2, or other causes beyond the Contractor's reasonable control not due to its fault or negligence, and which could have been prevented or avoided by the affected Party through the exercise of reasonable due diligence; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§8.3.1.1 Where the cause of delay is due to the weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow, or extreme low temperature) for the past five (5) years for the month in question, plus twenty (20) percent. In other words, weather is not deemed to be unusually severe unless it is twenty (20) percent worse that the average for that month over the last five (5) years.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 No payment or allowance of any kind or extension of time shall be made to the Contractor as compensation for damages on account of hindrance or delay from any cause in the progress of the Work, when the Architect determines the delay to be: (i) avoidable, (ii) caused by the Contractor's negligence or intentional misconduct in whole or in part, (iii) attributed to the Contractor's fault (in whole or in part) for the delay, including but limited to any delay attributable to lack of coordination or cooperation by or between the Contractor and his Subcontractors; or (iv) caused by Owner unless based on a sustainable and valid claim of Owner negligence or intentional act.

§ 8.3.4 The Contractor shall not be entitled to make a claim for delay (regardless of the cause of the delay) unless within two (2) business days after the beginning of such delay or delays, the Contractor files a written request providing notification of the delay (including specific explanation as to the cause) with the Architect, Construction Manager and Owner. In case of a continuing cause of delay, only one request is necessary.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

(Paragraph deleted)

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Construction Manager, before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed and value yet to be completed.

§ 9.3 Applications for Payment

§ 9.3.1 At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner, Construction Manager or Architect require, such as copies of requisitions, and releases of waivers of lien from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

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§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Where the Contract Documents permit payment for materials stored off the Project site, the Contractor shall procure insurance covering the full value of the material and, in addition to the other requisites of the Contract Documents, shall make any other provisions necessary to ensure and protect Owner's title and right of possession and access to such materials. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the reasonably-incurred costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven (7) days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven (7) days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven (7) days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven (7) days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information,

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and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to the results of subsequent tests and inspections, to the correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect and Owner.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
.4 reasonably avoidable delays or reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor or other Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.
.8 failure to maintain the site in a safe and satisfactory manner in accordance with construction practices as determined by the Owner or Architect;
.9 any labor strike or labor disruption whatsoever which impacts the progress of the Work;
.10 claims made or likely to be made against the Owner or its property;
.11 loss caused by the Contractor or its Subcontractors;
.12 failure of the Contractor to correctly and accurately represent the Work performed in a payment request;
.13 the Contractor's failure to use funds previously paid to the Contractor to pay Project-related obligations;

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.14 failure to update the Schedule(s);
.15 failure to maintain Record Drawings;
.16 deliberate delay in the submission for approval of names of Subcontractors, materialmen, sources of supply, product date, shop drawings and samples; or
.17 otherwise failure to comply with the requirements of the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15. If the Contractor disputes any determination of the Architect with respect to any Applications for Payment, the Contractor shall nevertheless continue to diligently prosecute the Work. In no event shall the General Contractor stop Work, except pursuant to Paragraph 9.7 hereof.
§ 9.5.3 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default of the Contract by reason of withholding payment while any of the above grounds remain uncured.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments
§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

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(Paragraph deleted)

§ 9.7 Failure of Payment

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§9.7.1 If the Owner is entitled to reimbursement or payment from the Contractor pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any costs and expenses to cure any default of the Contractor, including costs paid to other Contractors as a result of the Contractor's performance, or to correct defective Work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Contractor shall deliver to the Architect, with a copy to the Owner, all final and unconditional certificates of occupancy and any other permits or approvals necessary for Owner to occupy the entire Project or designate portions thereof.

§9.8.1.1 Substantial Completion shall not be achieved prior to the issuance of the Certificate of Occupancy issued by the state or local authority having jurisdiction.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

.1 No later than (10) ten calendar days prior to date scheduled for Substantial Completion the Construction Manager and/or Owner may add additional items requiring completion or correction.

.2 The Contractor shall immediately proceed with the Work required by the Punchlist and shall complete and correct items on or added thereto by the date scheduled for Substantial Completion.

.3 When the Contractor determines that the Work has reached Substantial Completion, or when the Owner or Construction Manager so determines and directs the Contractor to do so, the Contractor shall request the Construction Manager's final inspection to determine Substantial Completion. The Contractor shall prepare and submit to the Architect and Owner its final Application for Payment submitted in compliance with the requirements of the Contract Documents and shall thoroughly reinspect the Work. Additionally, the Contractor shall prepare and submit to the Architect and Owner a comprehensive final Punchlist of any and all items remaining to be completed or corrected (whether or not included on any previous Punchlists).

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

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§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§9.8.6 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under or pursuant to the Contract Document shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The final Certificate for Payment will not be issued by the Architect or Construction Manager until all warranties and guarantees have been received and approved by the Architect and Construction Manager.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and

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other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

.1 If more than one inspection for Final Completion is required, the Contractor will be billed and responsible for the professional fees and services of the Architect.

.2 Following Substantial Completion, in the event the Contractor or its subcontractor fails to complete the list of items of the Work instructed by the Architect to be corrected or completed within fourteen (14) days after the date of receipt of Certificate of Substantial Completion, the Owner may:

.1 exercise any available remedies to correct or complete deficient work or retain a third party of correct or complete such work at the cost of the defaulting Contractor; and

.2 retain and deduct from any payments or retention otherwise due to the defaulting Contractor fees and expenses for services required to be provided by the Architect more than twenty-one (21) days after the Date of Substantial completion.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;

.2 failure of the Work to comply with the requirements of the Contract Documents;

.3 terms of special warranties required by the Contract Documents; or

.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§10.1.1 The Contractor's attention is particularly directed to the governing agencies (State, Federal and Municipal, or other requirements) regarding reporting of accidents involving injury, loss of life and property damage.

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§10.1.2 The Contractor will serve as the overall Project Safety Coordinator and shall be responsible for all issues of safety and protection. The Contractor, if applicable, shall also designate a safety person at the job site from notice to proceed to Contract completion. The designated safety person shall be responsible for the safety of their work and for their workers, and to make continuous inspections for all safety issues relating to his work. The Owner and their representatives, including but not limited to the Architect, the Construction Manager and the Owner's representative, are not responsible for safety on this project , but will endeavor to promote safety. The Contractor must comply with job Safety Requirements in addition to OSHA and local agency requirements. Failure to comply with safety issues will be ground for withholding of payments.

§ 10.1.3 The Contractor shall also insure that all of its Subcontractors follow its safety program and that this requirement is included in Contractor/Subcontractor Agreements. The Contractor should defend and indemnify Owner, Architect and Construction Manager for any damages or injuries arising for the failure of the Contractor to follow and/or enforce the safety program.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- **.4** construction or operations by the Owner, Separate Contractors, or other Contractors.
- **.5** the general public

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards, consistent with applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities, and prevailing industry practice.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. In all cases, the Contractor shall give the Owner reasonable advance notice.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

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§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner, Construction Manager and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

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§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary and non-contributory. Coverages should be written on an occurrence basis, and shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction. The Contractor shall indemnify, defend and hold harmless all parties or persons described in Section 3.18 from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage. The Contractor's failure to obtain or maintain adequate insurance coverage shall be considered a material breach of the contract.

§ 11.2 Owner's Liability Insurance

§ 11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

(Paragraphs deleted)

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by

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each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

(Paragraphs deleted)

§ 11.4 Performance Bond and Payment Bond

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. Bonds shall be obtained from a company lawfully authorized to do business in the location of the site and have an A.M. Best and Company rating of "A-" or better; and the cost of the bonds shall be included in the Contract Sum. The Contractor shall provide a Performance Bond equal to 100 percent of the Contract Sum, a Payment Bond equal to 100 percent of the Contract Sum, and a Two (2) Year Maintenance Bond equal to 100 percent of the Contract Sum. Bonds shall be consistent with the requirements of **N.J.S.A.** 2A:44-143, and 2A:44-144.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§11.4.3 The Contractor shall deliver the require bonds to the Owner not later than three (3) days following the date of the Agreement.

§11.4.4 The Contractor shall require the attorney who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the Power of Attorney, indicating the monetary limit of such power.

§11.4.5 The Contractor shall provide Owner and Construction Manager with the name, address, phone number and other contact information of the local agent of the Company issuing the Project bonds.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's, Architect's, or authority having jurisdiction's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their observation, inspection, testing or approval,and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion, and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

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§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the two-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5. This obligation shall survive the termination of any or all other obligation or obligations under the contract Documents and it is agreed by the Contractor that in the event the Owner is required to bring suit under this provision against the Contractor to enforce this obligation, the Contractor hereby waives any defense of the statutes of limitations.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Separate Contractors, or other Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§12.2.6 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect issued through the Construction Manager, the Owner may remove it and store the salvaged materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten (10) days after written notice, the Owner may, upon ten (10) additional days' written notice, sell such materials and equipment at auction or at private sale, and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

§12.2.7 If, in the opinion of the Architect and the Construction Manager, the General Contractor delays Final Completion of the Work beyond a reasonable time after the Date of Substantial Completion of the Project to such extent that the period between the Date of Substantial Completion of the Project and the end of the guarantee period becomes less than eleven (11) months, the start of the guarantee period shall be the date of the final Project Certificate of Payment in lieu of the Date of Substantial Completion of the Project

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§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the State of New Jersey and any dispute regarding the Contract shall be venued in Superior Court of New Jersey, Essex County.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.4.2 If the Construction Manager, Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

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§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§13.4.6.1 Inspections and Tests required to establish with the Contract Documents and specified to be "by Owner", will be made by an independent testing agency selected and paid for by the Owner. Re-testing required as a result of first test showing non-compliance with the Contract Documents will be performed by the same agency, with costs paid for by the Contractor. Representatives of the testing agency shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its function.

§13.4.6.2 The independent agency employed by the Owner shall prepare the test reports, logs and certificates applicable to the specific inspection and test, and promptly deliver the specified number of copies of same to the designated parties. Other required certificates of inspections, testing or approval shall be secured by the Contractor and delivered by him to the Construction Manager and/or Owner's Representative, in such time as not to delay progress of the Work or final payment thereof.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. Notwithstanding, any payments withheld for time delays, faulty materials, or workmanship, shall not bear interest for period of delay or non-acceptance.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on an approved and undisputed Certificate for Payment within the time stated in the Contract Documents.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 The Owner shall not be responsible for damages for loss of anticipated profits on work not performed on account of any termination described in Subparagraph 14.1.1 and 14.1.2. If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed up to the date of the termination in accordance with the Contract Documents.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees, or any other persons performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the

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Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 refuses or fails to supply properly skilled workers or proper quality or quantity of materials, or falls in any respect to prosecute the Work with promptness and diligence;

.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 disregards the instructions of the Owner, when such instructions are based on the requirement of the Contract Documents;

.5 is adjudged a bankrupt or insolvent, or makes a general assignment for the benefit of the Contractor's creditors, or a trustee or receive is appointed for Contractor or any of its property, or files a petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar laws;

.6 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with the requirements of the Contract Documents

.7 Breaches any warranty made by the Contractor under or pursuant to the Contact Documents;**.8** otherwise does not comply with the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the costs of finishing the Work, including compensation for the services of any consultants and the Architect's services and expenses made necessary thereby, and the other costs and expenses identified hereinafter, exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner upon demand. The costs of finishing the Work include, without limitation, all reasonable attorney's fees, additional title costs, insurance, additional interest because of any delay in completing the Work and all other damages as contemplated by this Agreement.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of this Contract.

Notwithstanding, the Contractor is required to continue performing those portions of the work not suspended by the Owner, as refusal to continue the work not suspended constitutes a breach of contract on the part of the Contractor.

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§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed up to the date of the termination in accordance with the Contract Documents; reasonable costs incurred by reason of the termination as determined by Owner, including costs attributable to termination of Subcontracts. The Contractor shall, as a condition of receiving the payments referred to herein, execute and deliver all such papers, turn over all plans, documents and files of whatsoever nature required by the Owner, and take all such steps, including the legal assignment of its contractual rights, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor. Any claims or damages presented by subcontractors, suppliers, or other parties under contract with the Contractor, arising from or in connection with the termination for the Owner's convenience, shall be the sole responsibility of the Contractor. The Owner shall not be liable for, and the Contractor shall not be entitled to claim or recover, the following costs or damages associated with the termination: (a) Loss of anticipated profits or consequential damages; (b) Costs related to the Contractor's general overhead or home office expenses; (c) Costs incurred after the effective date of termination; (d) Costs that are not directly attributable to the termination or those lacking proper documentation.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

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§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4. The foregoing written notice shall contain a written statement from the Contractor setting forth in detail the nature and cause of the Claim and an itemized statement of the increase requested to the extent that such costs are reasonably available to the Contractor and accurate. No such written notice shall form the basis of an increase to the Contract Sum unless and until such increase has been authorized by a written Change Order executed and issued according to the terms and conditions set forth herein.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by the Owner and Architect. No such claim shall be valid unless so made The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

Where the cause of delay is due to the weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow, or extreme low temperature) for the past five (5) years for the month in question, plus twenty (20) percent. In other words, weather is not deemed to be unusually severe unless it is twenty (20) percent worse than the average for that month over the last five (5) years. Notwithstanding, weather events may include those days in which the Contractor is unable to proceed with work on the critical path for more than seven (7) continuous normal Work hours in a day.

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, 15.1.7 and 16.2.6.1, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the

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other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

(Paragraphs deleted)

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SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 FUNCTION

A. The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition", AIA Document A232 - 2019 and the Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, AIA Document A132 - 2019. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the remaining unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

B. Refer to Sections in Division 1 "General Requirements" for additional modifications, deletions and additions to the "General Conditions of the Contract for Construction".

1.2 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, CONSTRUCTION MANAGER AS ADVISER EDITION, AIA DOCUMENT A232-2019.

A. Document is modified in accordance with the following paragraphs and as indicated herein after:

1.3 PARAGRAPH 1.1 - BASIC DEFINITIONS

A. Paragraph 1.1.1 - "The Contract Documents":

Delete last sentence "Unless specifically enumerated in the Agreement, the Contract Documents do not..... proposal requirements)."

B. Supplement Paragraph 1.1 "Basic Definitions", as follows:

1.1.11 The Project Manual. The Project Manual is a volume, or volumes, assembled for the Work that includes, or is deemed to incorporate by reference the General Conditions, Supplementary Conditions, the Bidding Requirements and Documents related thereto, the Specifications, and all Addenda issued prior to the execution of the Contract."

1.1.12 Final Completion. The date the Contract has been fully performed, all the Work has been completed and a final certificate for Payment approved by the Owner has been issued by the Architect.

1.1.13 Or Approved Equal and Equal To. Shall mean products by manufacturers other than those specified in the Contract Documents in which the Contractor may submit for those specified in the Contract Documents and which may be

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incorporated in the Work after review and acceptance by the Architect and acceptance by the Owner.

1.4 PARAGRAPH 1.2 - CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

A. Delete Paragraph 1.2.1 in its entirety and substitute with the following:

1.2.1 The Contract Documents include all items necessary for the proper execution and completion of the Work by the Contractor. The Work shall consist of all items specifically included in the Contract Documents as well as all additional items of Work which are reasonably inferable from that which is specified in order to complete the Work in accordance with the Contract Documents. The Contract Documents are complementary, and what is required by any one Contract Document shall be as binding as if required by all. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to the Owner, Architect and Construction Manager by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all Bidders.

If any such differences or conflicts were not called to the Owner's, Construction Manager and the Architect's attention prior to submission of bids, the Architect shall decide which of the conflicting requirements will govern based upon the most stringent of the requirements, and, subject to the approval of the Owner, the Contractor shall perform the Work at no additional cost and/or time to the Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results.

1.5 PRECEDENCE OF LARGE SCALE DETAILS

A. Supplement Paragraph 1.2 "Correlation and Intent of the Contract Documents", as follows:

1.2.4 The general character of the detail Work is shown on the Drawings but minor modifications may be made in large scale details. Where the word "similar" occurs on the Drawings it shall be used in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection to other parts of the Work. Where on any Drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to other like portions of the Work. Where detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the Work unless otherwise indicated. In case of differences between small and large scale Drawings, the larger scale Drawings shall take precedence. Dimensions given shall take precedence over scale measurements. Any discrepancies shall be referred to the Architect for adjustment before any Work affected thereby has been performed.

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1.2.5 During the course of the Work, should any ambiguities or discrepancies be found in the Specifications or on the Drawings; or should there be found any discrepancies between the Drawings and Specifications to which the Contractor has failed to call attention before submitting their bid, then the Architect will interpret the intent of the Drawings and Specifications and the Contractor hereby agrees to abide by the Architect's interpretation and to carry out the work in accordance with the decision of the Architect. It is expressly stipulated that neither the Drawings nor the Specifications shall take precedence over the other, and it is further stipulated that the Architect may interpret or construe the Drawings and Specifications so as to secure in all cases the result most consistent with the needs and requirements of the Work, and which is in the best interests of the Owner.

1.6 PARAGRAPH 2.1 - GENERAL

A. Delete Paragraph 2.1 in its entirety.

1.7 PARAGRAPH 2.2 - EVIDENCE OF THE OWNER'S FINANCIAL ARRANGEMENTS

A. Delete Paragraph 2.2.1 in its entirety.

1.8 PARAGRAPH 2.2 - INFORMATION AND SERVICES REQUIRED OF THE OWNER

A. Delete Paragraphs 2.3.1, 2.3.5 and 2.3.5 in their entirety.

B. Delete Paragraph 2.3.7 in its entirety and substitute with the following:

2.3.7 The Architect will furnish the Contractor, without charge, the following number of sets of Drawings and Specifications. Additional copies will be furnished at the Architect's reproduction costs, to be paid by the Contractor.

Single Overall Contract 3 Sets

1.9 PARAGRAPH 2.4 - OWNER'S RIGHT TO STOP THE WORK

A. Edit paragraph 2.4 as follows:

Line 1; after "Documents" add:

"or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, through, or under Contractor, or disregard the instructions of Architect, Construction Manager or Owner when based on the requirements of the Contract Documents,".

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1.10 PARAGRAPH 2.5 - OWNER'S RIGHT TO CARRY OUT THE WORK

A. In the 10th line, delete “the Contractor....to the Owner”, and substitute with the following:

"the Contractor, and/or their Surety shall pay the difference to the Owner."

1.11 PARAGRAPH 3.2 - REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

A. Delete the second sentence in Paragraph 3.2.2 in its entirety and substitute with the following:

“If any errors, inconsistencies or omissions appear in the Drawings, Specifications or other Contract Documents, which should reasonably have been discovered and concerning which interpretation had not been obtained from the Architect during the Bidding Period, the Contractor shall within ten days after receiving written ‘Notice of Award’ notify the Architect in writing of such error, inconsistency or omission. In the event the Contractor fails to give such notice, they will be held responsible for the results of any such errors, inconsistencies or omissions and the cost of rectifying same. Interpretation of this procedure after the ten-day period will be made by the Architect and their decision will be final”.

1.12 LAYOUT OF WORK

A. Supplement Paragraph 3.3 "Supervision and Construction Procedures", as follows:

3.3.4 Each Contractor shall lay out their own Work and be responsible for all lines, elevations and measurements of the building, and other Work executed by them under the Contract. They must exercise proper precaution to verify the figures shown on the Drawings before laying out the Work and will be held responsible for any errors resulting from their failure to exercise such precaution.

3.3.5 The Contractor shall coordinate their operations with those of all their Subcontractors.

3.3.6 The Contractor, including their Subcontractors, shall keep fully informed of the progress and the details of the Work of all Subcontractors, and shall notify the CM immediately of lack of progress or defective workmanship on the part of any Subcontractors.

3.3.7 Failure of the Contractor to keep informed of the Work progressing on or off the site, and their failure to give notice of lack of progress of defective workmanship by others, will be construed by Owner and by the CM as acceptance by the Contractor of the status of the Work as being satisfactory for proper coordination with the Contractor's own Work and with the Work of all their Subcontractors.

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1.13 WARRANTY

A. Supplement Paragraph 3.5 "Warranty", as follows:

3.5.1.1 The warranty period for all work of each Contractor shall be **two (2) years** from the date of substantial completion and acceptance by the Owner unless otherwise specified.

1.14 PARAGRAPH 3.7 - PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

A. 3.7.3 In line 3, delete "the costs attributable to correction" and replace with "all costs attributable to the correction thereof or related thereto, including all fines and penalties."

1.15 PARAGRAPH 3.9 - SUPERINTENDENT

A. Supplement Paragraph 3.9 "Superintendent", as follows:

3.9.2.1 Qualifications of superintendent proposed to be used shall be submitted to the Construction Manager and Owner's approval obtained before proceeding with the Work.

3.9.7 The superintendent shall be assigned to the project on a full-time basis from the inception of construction until the completion of all corrective and punch list Work.

1.16 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

A. Supplement Paragraph 3.10 "Contractor's Construction Submittal Schedules", as follows:

3.10.1.1 Within fifteen (15) days after the date of the notice to proceed the Contractor shall submit to the Architect, on forms supplied by the Architect, a bar-graph Progress Schedule upon which shall be indicated the dates for starting and the dates for completion of the Contract and all divisions of the Work in a manner which will coincide with Time For Completion and other project milestone dates.

Schedule "CPM" Requirements:

.1 General Construction Work Contractor shall include in their price the cost of the outsourcing CPM scheduling for entire project and all prime Subcontractors. Utilize "Primavera-Project Planner - current version Software by Primavera Systems Inc.".

.2 CPM consultant to be approved by Architect and the Construction Manager. Initial GC. Schedule to be provided to all Prime Subcontractors within 15 days of Notice to Proceed.

.3 Monthly updates will be required during construction with each payment application.

.4 Interim Progress Updates will be required for each Job Progress Meeting.

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.5 Comply with all recommendations and instructions of the Construction Manager for preparation of Project Schedule and associated periodic reports.

3.10.1.2 This schedule will be distributed to the Prime Subcontractors. When approved by the Subcontractors and agreed upon by the Architect, this schedule will become one of the Contract Documents, and shall be altered thereafter only in accordance with duly authorized change orders for extensions of time in accordance with Paragraph 8.3, "Delays and Extensions of Time".

1.17 SUBMITTALS

A. Supplement Paragraph 3.12 "Shop Drawings, Product Data and Samples", as follows:

3.12.11 All fabricated Work shall require shop drawings.

3.12.12 The Architect may request samples of any or all materials to be used in the Work. When requested, samples shall be submitted promptly.

3.12.13 Shop drawings and other data, where possible, shall be submitted in the form of reproducible transparency. Catalogs and other printed matter shall be submitted in six (6) copies.

.1 Additional prints for file, distribution and for coordination of the work with other Contractors shall be provided as directed or as required.

3.12.14 Submittal Procedures: The Contractor's failure to follow proper procedures for submittals constitutes grounds for withholding of payments until such time as the Contractor is in compliance. Proper submittal procedures include all of those set forth elsewhere in this specification including the following:

.1 All submittals shall be separate for each Project. Contractor must indicate on each transmittal the reference to the Architect's Project Number.
.2 Failure to adhere to deadlines for completion of submittals and record/resubmittals.
.3 Failure to provide submittals in good order as required by the Contract Documents.
.4 Failure to provide submittals in relationship to the progress of the Work.
.5 Performance of Work or part of the Work, without complete approved submittals.

3.12.15 Architect / Engineer's actions for submittals shall be as follows:

.1 Submittals returned to the Contractor marked "Approved" allow the Contractor to proceed with the work.
.2 Submittals returned to the Contractor "Approved As Noted"; "Resubmit For Record":
  .1 The Contractor may proceed with work, however noted items by the Architect / Engineer (or any affected portion of the submittal), must be corrected and resubmitted to the Architect's office within ten (10) working days of Contractor's receipt of the original submittal. Final

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acceptance of all work is subject to the Contractor's compliance with requirements of the Contract Documents.

.3 Submittals returned marked "Returned for Corrections" require the Contractor to resubmit corrected or alternate data in accordance with the corrections indicated.

.1 The originals of the reproducible transparencies marked "Returned for Corrections" shall be corrected until approval is obtained. The Contractor shall provide such number of prints of transparencies marked "Approved" as required for the expeditious execution of the Work.

.4 Submittals returned marked "No Action Taken":

.1 The Contractor may not proceed with the Work. The Architect / Engineer will not review submittals so marked until the Contractor has properly completed the submittal or corrected the reasons stated thereon.

.2 Reasons for "No Action Taken" on a submittal include, but are not limited to the Contractor's failure to:

.1 Submit an approved Subcontractor or supplier.

.2 Indicate job specific product data such as catalog number, size, type or material on each submittal.

.3 Submit complete data, test reports or similar information as required by the Contract Documents.

.4 Obtain prior approval for substitution.

.5 Submit documents in a legible or orderly fashion.

.6 Adhere to any submittal requirements set forth in the Contract Documents.

.7 Submit only submittals which are called for in the Contract Documents, other submittals will not be reviewed by the Architect / Engineer.

3.12.16 The following submittal schedule will be mandatory; time is from date of the notice to proceed, in consecutive calendar days and also in accordance with requirements of Specification Section 01800.

The Contract and Trades: 30 days

3.12.17 Request for Substitutions:

.1 Substitutions may be considered Only within thirty (30) calendar days after the award of the Contract. Subsequent requests will be considered Only when, through no fault of the Contractor or any other persons for whom Contractor is responsible, none of the specified products are available.

.2 Submission of request for substitution shall constitute a representation by the Contractor that they:

.1 Have investigated the proposed product and determined that it is equal to or better than the specified product.

.2 Will provide the same variety for the proposed product as for the specified product.

.3 Will coordinate the installation and make other changes which may be required for the Work to be complete in all respects, including:

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.1 Re-design.
.2 Additional components and capacity required by other Work affected by the change.
.3 Waives all claims for additional costs and time extensions which subsequently may become apparent and which are caused by the change.
.4 Will reimburse the Owner for additional costs for evaluation of the substitution request, re-design if required, and re-approval by authorities having jurisdiction if required.

.3 Substitutions will not be considered when acceptance would require substantial revision of the Contract Documents.

.4 Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals without separate written request.

.5 Substitution requests will not be considered when submitted directly by Subcontractor or supplier.

.6 When the proposed substitution is not accepted, Contractor(s) must provide the product (or one of the products, as the case may be) specified.

.7 The Contractor will be notified in writing within a reasonable time, verbal acceptance will not be valid.

.8 Acceptable substitutions will be added to the Contract Documents by appropriate modifications.

.9 Requests for substitution will be reviewed by the Architect upon receipt of all the information requested in the following paragraph. Failure to provide the required information shall be cause for rejection of substitution request.

.10 Submittal for Substitutions:

.1 Submit 3 copies of requests for substitutions, fully identified for product, material or method being replaced by substitution, including related Specification section and Drawing number(s), and fully documented to show compliance with requirements for substitutions. Submit the following:

.1 Complete product data, Drawings, and descriptions of materials and methods where applicable. Provide manufacturer's name and address, trade name, and model number of product (if applicable), and name of fabricator or supplier (if applicable).
.2 Samples where applicable or requested.
.3 Detailed comparison of significant qualities (size, weight, durability, performance and similar characteristics, and including visual effect where applicable) for proposed substitution in comparison with original requirements.
.4 List, with addresses, of 3 projects where proposed substitution has been used previously and successfully in a similar application.
.5 Coordination information, indicating every required change in every other element of the work which is affected by substitution, extended to include work by Owner and separate Contractors.
.6 A complete statement of effect substitution will have upon schedule of the Work, including its effect (if any) on Contract time (in comparison with compliance with requirements without approval of

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proposed substitution).

.7 Cost information, including a proposal of net change in Contract Sum (if any).

.8 Certification by Contractor to the effect that, in their opinion and after their thorough evaluation, proposed substitution will result in total Work which is equal to or better than the Work originally required by Contract Documents, in every respect of significance except as specifically stated in certification; and that it will perform adequately in application indicated, regardless of equality and exceptions thereto.

.9 Include in certification, Contractor's waiver of rights to additional payment and time which may subsequently be necessitated, by failure of substitution to perform adequately and for required Work to make corrections thereof.

3.12.18 Approval of Substitutions:

.1 Pursuant to N.J.S.A. 18A:18A-15(d), requests for substitutions, for a requested approved equal product, will be reviewed for compliance with the Specifications based upon the data provided by the Contractor after the award of the project. Approval or rejection will be based on samples, technical data and other items submitted and will be reviewed once and only once for each such request.

.2 Change Order Form: Submit requests for substitutions which propose a change in either the Contract Sum or Contract Time by procedures required for change order proposals.

3.12.19 "Or Equals"

A. Contractor's Request; Governing Criteria: Whenever an item of equipment or material is specified to described in the Contract Documents by using the names of one or more proprietary or items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The Specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the Specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that the Architect authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

B. If the Architect, in its sole discretion, determines that an item of equipment or material proposed by the Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, the Architect will deem in an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

C. In the exercise of reasonable judgment, Architect determines that the

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proposed item:

1. Is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
2. Will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
3. Has a proven record of performance and availability of responsive service; and
4. Is not objectionable to the Owner.

D. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1. There will be no increase in cost to the Owner or increase in Contract Times; and
2. The item will conform substantially to the detailed requirements of the item named in the Contract Documents.

E. Contractor's Expense: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

F. Architect's Evaluation and Determination: Architect will be allowed a reasonable time to evaluate each "or equal" request. Architect may require Contractor to furnish additional data about the proposed "or equal" item. Architect will be the sole judge of acceptability. No "or equal" item will be ordered, furnished, installed or utilized until Architect's review is complete and Architect determines that the proposed item is an "or equal," which will be evidence by an approved Shop Drawing or other written communication. Architect will advise Contractor in writing of any negative determination.

G. Effect of Architect's Determination: Neither approval nor denial of an "or equal" request will result in any change in Contract Price. The Architect's denial of an "or equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

H. Treatment as a Substitution Request: If Architect determines that an item of equipment or material proposed by Contractor does not qualify as an "or equal" item, Contractor may request that the Architect consider the item a proposed substitute pursuant to 3.12.17.

1.18 LONG LEAD ITEMS

A. Supplement Paragraph 3.12 "Shop Drawings, Product Data and Samples", as follows:

3.12.19 In addition to and concurrent with the submission of the "Schedule of Values" as provided under Paragraph 9.2, Contractor shall submit a list of all materials, equipment or components which are anticipated to require more than four weeks delivery, together with scheduled ordering and delivery time table. This will be

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discussed and reviewed regularly at the job site meetings. Upon request by the Architect, the Contractor shall be prepared to produce evidence of having placed orders for specific materials, equipment and components.

1.19 PARAGRAPH 3.13 - USE OF SITE

A. Supplement Paragraph 3.13 “Use of Site”, as follows:

3.13.7 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from each project site. Protection of construction materials and equipment stored at each project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

3.13.8 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the project site without the prior written consent of the Owner.

1.20 CLEANING UP

A. 3.15.1 In line 2, insert "promptly" before "remove." In the last line, add "in addition, the Contractor shall comply with 3.15.4."

B. 3.15.2 In the last line, add ",and withheld from any remaining payments."

C. Supplement Paragraph 3.15 “Cleaning Up”, as follows:

3.15.3 The Contractor shall frequently clean up all refuse, rubbish, scrap, cartons, materials and debris caused by construction operations to the end that the site of the Work shall at all times present a neat, orderly and workmanlike appearance. This includes, without exception, the debris created by the work of all trades engaged under the Contract. The Contractor shall remove the debris from the site and premises and dispose of it by legal means at its own expense for collecting, loading, hauling and dumping.

3.15.4 The Prime Contractor shall also perform or have performed the following immediately prior to the Architect's inspection for Substantial Completion:

.1 Removal of all manufacturer's temporary labels from materials, equipment and fixtures.

.2 Removal of marks, stains, fingerprints, other soil, dust, dirt, from equipment surfaces.

.3 Final site clean-up shall extend beyond the Contract Limit Lines as reasonably required to insure the complete removal of all construction debris from each site, including staging areas.

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1.21 PARAGRAPH 3.16 - ACCESS TO WORK

A. Supplement Paragraph 3.16 “Access to Work”, as follows:

3.16.1 The Contractor shall promptly notify the Architect and Construction Manager and Owner of the presence of hazardous conditions at the / each site, including the start of hazardous operations or the discovery or exposure of hazardous substances.

1.22 PARAGRAPH 3.18 - INDEMNIFICATION

A. Supplement Paragraph 3.18.1, “Indemnification”, as follows:

.1 Contractor, for itself, its successors and assigns, agrees to indemnify and save Owner, the individual members (past, present and future), its successors, assigns, employees, agent, Architect(s), Engineer(s), and the Construction Manager, harmless from, and against any and all claims, demands, damages, actions or causes of action together with any and all losses, costs or expenses in connection therewith or related thereto, including, but not limited to, attorney fees and costs of suit, for bodily injuries, sickness, disease, death or property damage arising in or in any manner growing out of the Work performed, or to be performed under this Contract. Contractor and its successors and assigns agree to indemnify the Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect(s), Engineer(s) and/or Construction Manager against all fines, penalties or losses incurred for, including, but not limited to, attorney fees and costs of suit, or by reason of the violation by Contractor in the performance of this Contract, or any ordinance, regulation, rule of law of any political subdivision or duly constituted public authority. Without limiting the foregoing, the Contractor, at the request of Owner, its individual members (past and present), its successors, assigns, employees, agents, Architect(s), or Engineer(s) and Construction Manager, agrees to defend at the Contractor's expense any suit or proceeding brought against Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect(s), Engineer(s) and /or Construction Manager, due to, or arising out of the Work performed by the Contractor.
    .1 Contractor acknowledges and agrees that obligations and duties of the Construction Manager under the Construction Manager's agreement with the Owner are solely for the benefit of the Owner, that notwithstanding any action of the Construction Manager in connection with the Project.
    .2 The Construction Manager shall not in any respect be deemed to have assumed any duties or obligations in favor of the Contractor, and that Construction Manager is acting as an agent of and on behalf of the Owner to the extent provided herein.

1.23 RE-DESIGN

A. Supplement Article 3 "Contractor", as follows:

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3.19 RE-DESIGN

If the Contractor makes, or causes to be made, due to approval of substitute equipment or otherwise, any substantial change in the form, type, system and details of construction from those shown on the Drawings, they shall pay for all costs arising from such changes. The Contractor shall pay all Architectural and Engineering fees required to check the adequacy of such changes. Any changes or departures from the construction and details shown shall be made only after written approval from the Architect.

1.24 PARAGRAPH 4.2 - ADMINISTRATION OF THE CONTRACT

A. Supplement Paragraph 4.2.1, as follows:

.1 The Owner has designated New Road Construction Management as Construction Manager, authorized to act in the Owner's behalf to administer, coordinate, and inspect the Work of this Project.

.1 Any and all correspondence, coordination, questions and instructions will be directed to and issued by the Construction Manager to all project participants.

B. 4.2.3 In lines 2 and 3, delete "determine in general" and replace with “endeavor to determine”.

C. 4.2.4 In the 1st line, change "Construction Manager" to "Prime Contractor".

D. 4.2.10 In this Paragraph, change all references "Construction Manager" to read "Architect" and change "Architect" to read "Construction Manager".

E. 4.2.13 After "Construction Manager" add words "and the Architect".

F. Supplement Paragraph 4.2 "Administration of the Contract", as follows:

4.2.22 Reference in the technical provisions of the Specifications to standard Specifications and test methods, including those of the American Society for Testing and Materials, the American Iron and Steel Institute, the American National Standards Institute, the American Society of Mechanical Engineers, the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Factory Mutual System, the National Fire Protection Association, Federal Specifications, and other similar nationally recognized technical societies and agencies shall refer to the editions and revisions current with the date of the Contract Documents.

"Any claim, dispute or other matter in question between the Contractor and the Owner referred to the Architect through the Construction Manager, except those relating to the artistic effects as provided in subparagraph 4.2.20 and those which have been waived by the making or acceptance of final payment as provided in subparagraph 9.10, inclusive, may proceed to litigation, but not before the earlier of

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(1) the date on which the Architect has rendered a written decision, or (2) the tenth day after the parties have presented their evidence to the Architect or have been given a reasonable opportunity to do so, if the Architect has not rendered a written decision by that date. No such claim may proceed to arbitration."

4.2.23 The Architect's decision, after consultation with Owner and Construction Manager with respect to proposed substitutions of material or equipment specified by trade name, shall be final. The Architect reserves the right, after consultation with Owner and Construction Manager, to waive Specifications and to accept a proposed substitution which in their opinion is superior to the material or product specified, or to limit the Specification to the product specified.

4.2.24 Where three or more trade names or manufacturers' names are specified, the Contractor shall furnish one of the brands specified or may submit an equivalent or better product(s) to be reviewed by the Architect / Engineer for consideration. Where only one brand or name is specified, the Contractor may submit other brands for consideration; however, it shall be the Contractor's responsibility to prove equality.

4.2.25 Approval of substitutions shall not relieve the Contractor of responsibility for adequate fulfillment of all the various parts of the work, nor from specified guarantees and maintenance. Modification of adjacent or connecting work required due to any substitution approval shall be provided as part of the substitution.

4.2.26 Insofar as practicable, except as otherwise specified or shown, the material or product of one manufacturer shall be used throughout the work for each specified purpose.

4.2.27 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in strict accordance with the manufacturer's directions. Should such directions conflict with the Specifications, the Contractor shall request clarification from the Architect before proceeding.

1.25 SUBCONTRACTORS AND MATERIALMEN

A. Delete subparagraph 5.2.3 and substitute with the following:

5.2.3 The names of all Subcontractors and material suppliers, in addition to those required to be listed pursuant to N.J.S.A. 18A-18A-18 (if any), shall be submitted for approval not later than thirty (30) calendar days after the date of the notice to proceed. Subcontractors referenced herein, are in addition to those required to be listed, along with all necessary paperwork concerning each such Subcontractor’s qualifications, licensure, etc., pursuant to N.J.S.A. 18A:18A-18, if any. The list of proposed Subcontractors shall include a description of the materials and equipment each proposes to furnish and install in the work. The description shall be in sufficient detail to allow the Architect to determine general conformance to Contract requirements. Approval of the submittals required under this Article shall not relieve the Contractor from conformance to Contract requirements.

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B. Supplement subparagraph 5.2.3, as follows:

.1 Written confirmation of award of each major Subcontract shall be submitted to the Architect, in form subject to their approval, within seven (7) calendar days after receipt of Architect's approval of proposed Subcontractor list as provided under Paragraph 5.2.3 above.

1.26 PARAGRAPH 5.3 - SUBCONTRACTUAL RELATIONS

A. 5.3 At lines 5, 10, 11, and 13, insert “written” before the word “agreement” or “agreements”

B. Supplement Paragraph 5.3, as follows:

5.3.1 The Contractor shall obligate the/each Subcontractor specifically to comply with the New Jersey Plan of Affirmative Action to avoid discriminatory practice in employment.

5.3.2 The Contractor shall obligate the/each Subcontractor to comply with the applicable prevailing wage schedule of the Department of Labor of the State of New Jersey.

5.3.3 The Contractor agrees that all of its Contract(s) with Subcontractor(s) shall have provisions requiring that the Subcontractor(s) comply with the provisions of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.

1.27 PARAGRAPH 6.1 - OWNER’S RIGHT TO PERFORM CONSTRUCTION WITH OWN FORCES AND TO AWARD OTHER CONTRACTS

A. Delete subparagraph 6.1.2 in its entirety and substitute with the following:

6.1.2 The Prime Contractor shall provide for the coordination of the Work of their own forces and of each of their separate Subcontractors with Work of the other Contractors, who shall cooperate therewith as provided in Paragraph 6.2.

1.28 PARAGRAPH 6.2 - MUTUAL RESPONSIBILITY

A. 6.2.4 In line 1, delete "wrongfully."

B. Supplement Paragraph 6.2.4, as follows:

.1 Should the Contractor cause damage to the Work or property of any separate Contractor on the project, the Contractor shall, upon due notice, promptly settle with such other Contractor by agreement or otherwise resolve the dispute. If such separate Contractor sues or institutes an arbitration proceeding against the Owner on account of any damage alleged to have been so sustained, the Contractor shall defend such proceeding at

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their own expense, and if any judgment against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for any attorney's fees and court costs which the Owner has incurred.

1.29 ARTICLE 7 - CHANGES IN THE WORK

A. Supplement Paragraph 7.1 “General”, as follows:

7.1.2 Add to the end of Subparagraph 7.1.2, "Neither this Contract nor the Work to be performed hereunder can be changed by oral agreement. No course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether there is, in fact, any unjust enrichment to the Work, shall be the basis for any alleged implied agreement by the Owner to the change or any increase in any amounts due under the Contract or a change in any time period provided for in the Contract Documents."

7.1.2.1 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim in regard thereto unless it shall, prior to complying with same and in no event no later than 10 business days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

B. Supplement Paragraph 7.2 “General”, as follows:

7.2.2.2 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule. The Contractor shall furnish spread sheets from which the breakdowns were prepared, plus spread sheets, if requested, of any Subcontractors.

1.30 ALLOWANCE FOR CHANGE ORDER OVERHEAD AND PROFIT

A. Supplement Paragraph 7.2 "Change Orders" as follows:

7.2.4 For any extra Work or portion thereof performed by the Prime Contractor, the cost to the Owner shall include the cost of the extra work plus a maximum allowance of fifteen percent (15%) for overhead and profit.

.1 For any extra Work or portion thereof performed by a Subcontractor(s), the cost to the Owner shall include the cost of the extra work to the Subcontractor plus a maximum allowance of ten percent (10%) for overhead and profit, plus the Prime Contractor's overhead and profit not to exceed five percent (5%) of the Subcontractor's cost.

7.2.5 Change Order shall include all costs, including cost of preparation of the change order, all impact and ripple costs associated with modifications or delays to the Work, and all costs associated with modifications to other Work.

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.1 The Prime Contractor shall furnish all necessary documentation to support the additional cost, including but not limited to the following:
  .1 Copy of Subcontractor's proposal.
  .2 Complete breakdown for all costs for labor and material.
  .3 Complete breakdown of related costs.
  .4 Other information as may be requested by the Architect / Construction Manager.

7.2.6 The overall cost of the Change Order shall be inclusive and once accepted by the Owner it shall be considered full and final.

7.2.7 No additional time will be granted to the Contractor for minor change orders unless each individual change order totals more than $100,000.

7.2.8 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim in regard thereto unless it shall, prior to complying with same and in no event no later than 10 business days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

7.2.9 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule. The Contractor shall furnish spread sheets from which the breakdowns were prepared, plus spread sheets, if requested, of any Subcontractors.

1.31 PARAGRAPH 8.2 - PROGRESS AND COMPLETION

A. 8.2.2 Delete "knowingly" in line 1.

1.32 TIME OF COMMENCEMENT

A. Supplement Paragraph 8.2 "Progress and Completion", as follows:

8.2.4 Work shall commence within ten (10) business days from the date of the Notice to Proceed (NTP).

1.33 EXTENSION OF TIME

A. Supplement Paragraph 8.3 "Delays and Extensions of Time", as follows:

8.3.4 Where the cause of delay is due to weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow or low temperature) for the past five (5) years for the month in question, plus 10 percent. In other words, weather is not deemed to be unusually severe unless it is more than 10 percent worse than the average for that month over the last five years.

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8.3.5 If the Contractor is delayed in completion of the work by any act or neglect of the Owner, Architect, or of any other Contractor employed by the Owner, or by changes ordered in the Work, or by strikes, lockouts, fire, unusual delay by common carriers, unavoidable casualties, or any cause beyond the Contractor's control or by any cause which the Architect / Construction Manager shall decide to justify the delay, then for all such delays and suspensions the Contractor shall be allowed one day additional to the time limitations herein stated for each and every day of such delay so caused in the completion of the work, the same to be ascertained solely by the Architect / Construction Manager, and a similar allowance of extra time will be made for such delays as the Architect / Construction Manager may find to have been caused by the Owner.

.1 No such extensions of time shall be made for any one or more delays unless within ten (10) business days after the beginning of such delays a written request for additional time shall be filed with the Architect / Construction Manager. In case of a continuing cause of delay, only one request is necessary.

8.3.6 The Contractor agrees that the Owner can deduct from the Contract Price, any wages paid by the Owner to any Inspector or Inspectors necessarily employed by the Owner for any number of days in excess of the number of days allowed in Specification section 01800, for completion of the Work.

1.34 PARAGRAPH 9.2 - SCHEDULE OF VALUES

A. Supplement Paragraph 9.2 "Schedule of Values", as follows:

9.2.1 The Schedule of Values shall include bonds and insurance and shall include copies of invoices and / or cancelled checks from bonding and insurance agents for the additional cost of the coverage for the project being billed.

.1 The Prime Contractor must provide draft copies of the Schedule of Values, within fifteen (15) business days from Notice to Proceed. Submit two (2) copies to the Architect.
   .1 Schedule of Values shall include separate costs for work at the / each School Project referenced with Architect's Project Number.
   .2 Schedule of Values shall also include each type of Work, materials and installation, in accordance with each Specification section, as listed in the Index and / or as shown on Drawings.
   .3 The Prime Contractor shall include separate line items for the following:
      .1 Bonds,
      .2 Insurance,
      .3 Mobilization,
      .4 General Conditions,
      .5 Submittals,
      .6 As-Built Drawings, as per Section 01700,
      .7 Punch list items,

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.8 CPM Schedule,
.9 Closeout Documents,
.10 Allowances.

1.35 STORED MATERIALS

A. Supplement Paragraph 9.3.2, as follows:

.1 To encourage early purchase, Owner will pay for stored materials and equipment. The following procedures must be followed in order to obtain payment.
.1 A certificate of insurance naming the Owner as loss beneficiary for the full dollar amount representing the materials stored.
.2 A consent of surety in the amount being requisitioned, said Surety being the bonding company of the Prime Contractor.
.3 Materials to be stored in warehouse must be inspected by the Construction Manager and Contractor will not receive extra compensation for storage costs.
.4 Any time and traveling expenses for the Construction Manager to visit and inspect equipment stored will be borne by the Contractor making the off-site storage request.
.5 Payment invoices for materials stored off-site shall be so noted.
.6 After the receipt of the above, the Construction Manager will endorse same and forward to the Owner for their approval.
.7 Payment invoices not following the above format will be rejected in total.
.8 There will be no storage space available in existing buildings. Space in new building may be used for storage only if approved in writing by Construction Manager and all Contractors having work in the area.
.9 The Contractor will be paid for stored materials no more than the actual or replacement value of the materials. The Contractor will furnish Vendors price lists, priced inventories or other documentation to support claims for payment of materials stored on or off-site.

1.36 PARAGRAPH 9.3 - APPLICATIONS FOR PAYMENT

A. Supplement Paragraph 9.3 “Applications for Payment”, as follows:

9.3.4 Applications for payment which include billing for bonds and insurance shall enclose copies of invoices or cancelled checks from bonding and insurance agents for the additional cost of the coverage for the project being billed.

1.37 PARAGRAPH 9.5 - DECISIONS TO WITHHOLD CERTIFICATION

A. 9.5.1.6 In the first line, delete "and" and substitute "or".

B. 9.5.1.7 Delete "repeated".

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C. Supplement Paragraph 9.5.1, as follows:

.8 Deliberate delay in the submission for approval of names of Subcontractors, materialmen, sources of supply, shop drawings and samples.
.9 Failure to maintain the site in a safe and satisfactory condition in accordance with good construction practices.

1.38 PARAGRAPH 9.6 - PROGRESS PAYMENTS

A. Supplement Paragraph 9.6 “Progress Payments”, as follows:

9.6.9 In making progress payments, on Contracts totaling more than $100,000 dollars there shall be retained two percent (2%) of the approved amount when the outstanding balance of the Contract exceeds $500,000, and five percent (5%) of the amount due on each partial payment when the outstanding balance of the Contract is $500,000 or less, until final completion and acceptance of all work covered by the Contract, including the completion of all corrective or punch list items.

9.6.10 In making progress payments, on Contracts totaling less than $100,000 dollars there shall be retained ten percent (10%) of the approved amount until seventy-five percent (75%) of the Contract Price has been paid at which time the retainage for that seventy-five percent (75%) will be reduced to five percent (5%) if in the judgment of the Architect the work is progressing satisfactorily, and on progress payments thereafter there shall be retained ten percent (10%) of the approved amounts until final completion and acceptance of all Work covered by the Contract, including the completion of all corrective or punch list items. The Contractor will be required to provide a Consent of Surety to Reduction in or Partial Release of Retainage (AIA Document G707A), before reduction in retainage will be considered.

9.6.11 Final payment will be made provided the Work has been completed, the Contract fully performed and a final certificate for payment has been reviewed and approved by Architect and Construction Manager.

1.39 PARAGRAPH 9.7 - FAILURE OF PAYMENT

A. In the fourth / fifth lines, delete “or awarded by binding dispute resolution”.

1.40 PARAGRAPH 9.8 - SUBSTANTIAL COMPLETION

A. 9.8.1 Modify as follows:

Add at the end of the Subparagraph: "The Work will not be considered substantially complete until all project systems included in the Work are operational as designed and scheduled, all designated or required inspections, certifications, permits, approvals, licenses and other documents from any governmental Authority Having Jurisdiction thereof necessary for the beneficial use and occupancy Project are received, designated instruction of Owner's personnel has been completed, and all

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final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature so that the Owner can occupy the building on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's (or those claiming by, through or under the Owner) normal operations. Contractor recognizes that normal operations require the use and occupancy of the Work by students and faculty without interruption and that any punchlist or corrective work shall be done at times when the Work is not so occupied. As a further condition of substantial completion acceptance, the Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or otherwise as agreed upon following the date of substantial completion.

B. Supplement Paragraph 9.8.2, as follows:

.1 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

C. Supplement Paragraph 9.8.3, as follows:

.1 The Contractor shall complete all items attached to the "Certificate of Substantial Completion" within thirty (30) calendar days of issuance of same. If not completed, the Owner may proceed to carry out the Work in accordance with Paragraph 2.4 of the General Conditions. The Owner will suffer financial loss if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor (and the Contractor's Surety) shall be liable for and pay to the Owner the sums hereinafter stipulated and fixed, agreed as liquidated damages for each calendar day of delay until the work is substantially complete.

1.41 PARAGRAPH 9.10 - FINAL COMPLETION AND FINAL PAYMENT

A. 9.10.1 Add the following at the end of the Paragraph:

All warranties and guarantees required pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Owner as part of the final application for payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guaranties have been received, appropriately transferred to, and accepted by the Owner.

B. Supplement Paragraph 9.10.1, as follows:

.1 The Architect's Certificate of Final Completion shall be subject to the Owner’s final approval.

1.42 GENERAL CONTRACTOR AS OWNER'S SAFETY REPRESENTATIVE

A. Supplement Paragraph 10.1 "Safety Precautions and Programs", as follows:

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10.1.1 The General Contractor shall provide all necessary temporary enclosures, guard rails, barricades etc. to adequately protect all workers and public from possible injury.

10.1.2 The General Contractor shall be responsible for the general safeguarding of the Project, for gaining compliance with the safety requirements from all other Contractors and parties engaged in operations at the site, and shall act as the Owner's representative with regard to all safety inspections required and shall perform all necessary functions for this purpose. The Contractor shall designate a "Site Safety Officer".

1.43 PARAGRAPH 10.2 - SAFETY OF PERSONS AND PROPERTY

A. Supplement Paragraph 10.2.8, as follows:

.1 The Contractor shall promptly report in writing to the Owner, Architect and Construction Manager all accidents arising out of or in connection with the Work which caused death, personal injury or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the Owner, Architect and Construction Manager.

B. Supplement Paragraph 10.2 “Safety of Persons and Property”, as follows:

10.2.9 Contractor is required to follow and enforce the work rules set forth below. Failure to comply with or enforce any of these rules will be grounds for suspension and / or termination of the Contractor:

.1 No use of alcoholic beverages prior to or during working hours. Anyone found impaired will be escorted from the Project site.
.2 No use of illegal drugs or prescription medications which could induce drowsiness or otherwise impair perception or performance. Use of illegal drugs may result in prosecution to the fullest extent of the law. Any warning associated with use of prescription drugs must be complied with, particularly warning against operation of machinery and equipment.
.3 No horseplay or rough-housing will be allowed.
.4 No sexual, racial, ethnic harassment, or similar conduct will be tolerated.
.5 All employees shall use proper sanitation habits, including use of toilet facilities and garbage cans.
.6 All employees shall dress in clothing appropriate for the work they are to perform. All personnel are to wear hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.
.7 All equipment is to be properly stored and / or secured at the end of the work day if it is to remain idle for greater than one hour.
.8 All personnel are to be made aware of the availability of Safety Data Sheets (SDS) for materials used at the Project site. This information is available from

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the Contractor using the product. The Contractor shall maintain a copy of all SDS forms at the construction site office for all personnel to review.

1.44 LOST OR STOLEN ITEMS

A. Supplement Article 10 "Protection of Persons and Property", as follows:

10.5 Lost or Stolen Materials
The Contractor shall protect all materials and equipment for which they are responsible, which is stored at the Project Site for incorporation in the Work, or which has been incorporated into the Work. They shall replace all such materials and equipment which may be lost, stolen or damaged at their expense, whether or not such materials or equipment have been entirely or partially paid for by the Owner.

1.45 INSURANCE

A. Supplement Paragraph 11.1.1, as follows:

.1 Certificate of Insurance shall be submitted within ten (10) business days upon notification of award of Contract.

B. Supplement Paragraph 11.1 “Contractor’s Liability Insurance”, as follows:

11.1.5 Contractor's liability insurance must be maintained until the final Certificate of Payment is issued pursuant to Paragraph 9.10.1 and Completed Operations Insurance is in effect.

11.1.6 Insurance specified to be provided by the Contractor under Paragraph 11.1 shall be on an occurrence basis, as follows:

.1 The Contractor shall take out and maintain during the life of this Contract commercial general liability insurance, covering any and all bodily injury, including accidental death, as well as claims for property damage arising out of or in connection with the Work performed hereunder, whether such Work be performed by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by either of them.
  .1 The policy shall name the Owner, the Architect, the Construction Manager and their consultants and agents and employees as additional insureds.

.2 The Contractor shall take out and maintain comprehensive automobile liability insurance, including coverage for all owned, non-owned and hired vehicles, covering bodily injury and property damage.
  .1 The policy shall name the Owner, the Architect, the Construction Manager and their consultants and agents and employees as additional insureds.

.3 Contractual liability insurance as applicable to the Contractor's obligations under Paragraph 3.18 of the AIA General Conditions and A132 Exhibit A Insurance and Bonds.

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.4 Workers' Compensation Insurance of not less than statutory limits.

.5 Completed Operations Insurance written to the limits specified for liability insurance in AIA 132 - 2019, Exhibit A, Article A.3 - Contractor's insurance and Bonds. Coverage shall be required from the date of the start of Beneficial Occupancy until two years after the issuance date of Final Certificate for Payment.

.6 Certificates of insurance must be submitted on the ACORD Form, Certificate of Insurance.

.7 The Contractor shall either:

.1 require each of their Subcontractors to procure and to maintain during the life of their Subcontracts, Subcontractor's Public Liability and Property Damage, of the type and in the same amounts as specified in the preceding paragraph, or

.2 insure the activities of their Subcontractors under their respective policies.

1.46 PARAGRAPH 11.4 - LOSS OF USE, BUSINESS INTERRUPTION, AND DELAY IN COMPLETION INSURANCE

A. 11.4 Delete the second sentence in its entirety.

1.47 PARAGRAPH 11.5 - ADJUSTMENT AND SETTLEMENT OF INSURED LOSS

B. Delete Paragraph 11.5.1 and substitute the following:

11.5.1 Owner as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of the Owner's duties. The Owner shall deposit in a separate account, any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

C. Delete Paragraph 11.5.2 and substitute the following:

11.5.2 The Owner, as trustee, shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within five (5) business days after the occurrence of loss to the Owner's exercise of this power.

1.48 PARAGRAPH 12.1 - UNCOVERING OF WORK

A. 12.1.1 Add "or Contract Sum" at the end of the Paragraph.

1.49 PARAGRAPH 12.2 - CORRECTION OF WORK

A. 12.2.1 Add the following at the end of the Paragraph:

If prior to the date of Substantial Completion, the Contractor, a Subcontractor or anyone for whom either is responsible, uses or damages any portion of the Work,

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including, without limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause each such item to be restored to "like new condition" at no expense to the Owner.

B. 12.2.2.1 Add the following to the end of the Paragraph:

"If payments then or thereafter due to the Contractor are not sufficient to cover such amount, the Contractor, or their Surety, shall pay the difference to the Owner. The appropriate reduction shall be an amount equal to the entire cost of replacing the work performed with work originally specified and intended."

1.50 PARAGRAPH 12.3 - ACCEPTANCE OF NONCONFORMING WORK

A. 12.3.1: Add the following sentence to the end of the Paragraph:

"This Subparagraph relates exclusively to the knowing acceptance of nonconforming work by the Owner. It has no applicability to work accepted by the Owner, Architect or Construction Manager without the knowledge that such work fails to conform to the requirements of the Contract Documents."

1.51 PARAGRAPH 13.1 - GOVERNING LAW

A. In the first line, delete everything after "located".

B. Supplement Paragraph 13.1 "Governing Law", as follows:

13.1.1 Contractor must comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities, utility companies, National Board of Fire Underwriters, and others which bear on performance of the Work. Deliver to the Owner certificates and other required legal evidence and proof of compliance with the above.

1.52 PARAGRAPH 13.4 - TESTS AND INSPECTIONS

A. 13.4.1 Delete the last two (2) sentences in their entirety.

B. 13.4.2 In lines 5 and 6, add "and Owner" after the word "Architect".

C. 13.4.3 Add the following at the end of the Paragraph:

The Contractor also agrees that the cost of testing services required for the convenience of the Contractor in their scheduling and performance of the Work and the cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

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1.53 PARAGRAPH 14.1 - TERMINATION BY THE CONTRACTOR

A. Delete Paragraph 14.1.2 in its entirety and substitute the following:

14.1.2 If one of the above reasons exist, the Contractor may, upon fourteen (14) calendar days written notice to the Owner, Construction Manager and Architect, terminate the Contract, unless this reason is cured prior to the expiration of the notice, and recover from the Owner payment of Work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for payment for cost directly related to Work thereafter performed by Contractor in terminating such Work, including reasonable demobilization and cancellation charges provided said Work is authorized in advance by Construction Manager, Architect and Owner.

1.54 PARAGRAPH 14.2 - TERMINATION BY THE OWNER FOR CAUSE

A. Delete Paragraph 14.2 in its entirely and substitute the following:

14.2 TERMINATION OF CONTRACT

14.2.1 Owner May Suspend Work:

.1 Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) calendar days by notice in writing to Contractor, Construction Manager and Architect which shall fix the date on which Work shall be resumed. Contractor shall resume the Work on the date so fixed. Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if they make a claim therefor as provided in Articles 11 and 12.

14.2.2 Owner May Terminate:

.1 Upon the occurrence of any one or more of the following events:
.2 If Contractor is adjudged a bankrupt or insolvent, "subject to the provision of the National Bankruptcy Act and specifically 11 U.S.C., Paragraph 365.
.3 If Contractor makes a general assignment for the benefit of creditors.
.4 If a trustee or receiver is appointed for Contractor or for any of Contractor's property.
.5 If Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws.
.6 If Contractor repeatedly fails to supply sufficient skilled workers or suitable materials or equipment.
.7 If Contractor repeatedly fails to make prompt payments to Subcontractors for labor, materials or equipment.
.8 If Contractor disregards laws, ordinances, rules regulations or orders of any public body having jurisdiction.
.9 If Contractor disregards the authority of the Architect.
.10 If Contractor otherwise violates in any substantial way any provisions of the

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Contract Documents, Owner may after giving Contractor and their Surety seven days' written notice, terminate the services of Contractor, exclude Contractor from the site and take possession of the Work and of all Contractor's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to Contractor. If such costs exceed such unpaid balance, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Architect and incorporated in a Change Order, but in finishing the Work, Owner shall not be required to obtain the lowest figure for the Work performed.

.11 Where Contractor's services have been so terminated by Owner, the termination shall not affect any rights of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

.12 Upon seven days' written notice to Contractor and Architect, Owner may without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, Contractor shall be paid for all Work executed and any expense sustained plus reasonable termination expenses.

1.55 PARAGRAPH 15.1 - CLAIMS

A. Supplement Paragraph 15.1.5 as follows:

After the first sentence, add: "Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner, Architect and Construction Manager. No such claim shall be valid unless so made."

At the end of the Subparagraph, add: "Any change in the Contract Sum resulting from such claim shall be authorized only by Change Order or Construction Change Directive, as the case may be."

1.56 RESOLUTION OF CLAIMS AND DISPUTES

A. Delete the last sentence in Paragraph 15.2.5.

B. Delete Paragraph 15.2.6 in its entirety.

C. Delete Paragraph 15.2.6.1 in its entirety.

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1.57 PARAGRAPH 15.3 - MEDIATION

A. Delete Paragraph 15.3 “Mediation”, in its entirety.

1.58 PARAGRAPH 15.4 - ARBITRATION

A. Delete Paragraph 15.4 "Arbitration” in its entirety and substitute the following:

15.4 - LITIGATION

15.4.1 The Owner and Contractor agree that all claims, disputes and other matters in question between the parties arising out of or relating to the Project or this Contract or breaches thereof, shall be heard in a Court of competent jurisdiction venued in the project's County, New Jersey.

END OF SECTION 00800

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SECTION 00850 - CONTRACT DRAWINGS

1.1 Johnson Park Elementary School (JP)

A. All Drawings listed on drawing No. G001 JP, "Title Sheet and Drawing Index," dated May 15, 2025, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

1.2 Littlebrook Elementary School (LB):

A. All Drawings listed on Drawing No. G001 LB, "Title Sheet & Drawing Index," dated May 15, 2025, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

1.2 Riverside Elementary School (RS):

A. All Drawings listed on Drawing No. G001 RS, "Title Sheet & Drawing Index," dated May 15, 2025, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

1.3 Princeton Middle School (PMS):

A. All Drawings listed on Drawing No. G001 PMS, "Title Sheet & Drawing Index," dated May 15, 2025, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

END OF SECTION 00850

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SECTION 00860 - LAWS GOVERNING PUBLIC WORK

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The paragraphs below supplement the AIA A232 - General Conditions. Attention is called, but not limited, to the following Laws Governing Public Work.

1.2 STATE SALES AND USE TAX EXEMPTION

A. Supplement paragraph 3.6 "Taxes" as follows:

3.6.1 As a New Jersey governmental entity, the Board of Education is exempt from the requirements under New Jersey state sales and use tax (N.J.S.A. 54:32B-1 et seq.), and does not pay any sales or use taxes. Bidders should note that they are expected to comply with the provisions of said statute and the rules and regulations promulgated thereto to qualify them for examinations and reference to any and all labor, services, materials and supplies furnished to the Board of Education. Contractors may not use the Board's tax identification number to purchase supplies, materials, service or equipment, for this project.

.1 A Contractor may qualify for a New Jersey Sales Tax Exemption on the purchase of materials, supplies and services when these purchases are used exclusively to fulfill the terms and conditions of the Contract with the Board of Education. All Contractors are referred to New Jersey Division of Taxation-Tax Bulletin S&U-3 and in particular, Contractor's Exempt Purchase Certificate (Form ST-13). Again, Contractors are not permitted to use the Board's tax identification number to purchase supplies, materials, services of equipment.

1.3 MUNICIPAL REQUIREMENTS

A. Supplement paragraph 3.7 "Permits, Fees, Notices and Compliance with Laws" as follows:

3.7.1.1 N.J.S.A. 52:27D-130, provides that local Municipal Construction Enforcing Agency issue required construction permit, perform required inspections during construction, and issue required certificate of occupancy upon completion of Project.

3.7.1.2 N.J.S.A. 52:27D-126C, "No county, municipality, or any agency or instrumentality thereof shall be required to pay any municipal fee or charge in order to secure a construction permit for the erection or alteration of any public building or part thereof from the municipality wherein the building may be located. No erection or alteration of any public building or part thereof by a county, municipality, school board, or any agency or instrumentality thereof shall be subject to any fee, including any surcharge or training fee, imposed by any department or agency of State government pursuant to any law, or rule or regulation, except that nothing contained in this section shall be interpreted as preventing the imposition of a fee

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upon a board of education by either the Department of Education for plan review or by a municipality for the review of plans submitted to it pursuant to the provisions of section 12 of P.L.1975, c.217 (C.52:27D-130).

3.7.1.3 N.J.S.A. 40:55D-8(d), A municipality shall exempt a Board of Education from the payment of any fee related to the Municipal Land Use Law.

3.7.1.4 N.J.S.A. § 52:27d-126e (amended effective July 21, 2017) Waiver of construction permit surcharge or enforcing agency fee for construction, alteration, etc. to promote accessibility by persons with disabilities to existing public or private structures or facilities, or to promote accessibility by veterans with disabilities to their living units.

1.”a. Notwithstanding the provisions of the "State Uniform Construction Code Act," P.L. 1975, c.217 (C.52:27D-1 19 et seq.), or any rules, regulations or standards adopted pursuant thereto, to the contrary, the governing body of any municipality which has appointed an enforcing agency pursuant to the provisions of section 8 of P.L.1975, c.217 (C.52:27D-126) may, by ordinance, provide that no person shall be charged a construction permit surcharge fee or enforcing agency fee for any construction, reconstruction, alteration or improvement designed and undertaken solely to promote accessibility by disabled persons to an existing public or private structure or any of the facilities contained therein.

The ordinance may further provide that a disabled person, or a parent or sibling of a disabled person, shall not be required to pay any municipal fee or charge in order to secure a construction permit for any construction, reconstruction, alteration or improvement which promotes accessibility to his own living unit.

For the purposes of this subsection, "disabled person" means a person who has the total and permanent inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment, including blindness, and shall include, but not be limited to, any resident of this State who is disabled pursuant to the federal Social Security Act (42 U.S.C.416), or the federal Railroad Retirement Act of 1974 (45 U.S.C.231 et seq.), or is rated as having a 60% disability or higher pursuant to any federal law administered by the United States Veterans' Act. For purposes of this paragraph "blindness" means central visual acuity of 20/200 or less in the better eye with the use of a correcting lens. An eye which is accompanied by a limitation in the fields of vision such that the widest diameter of the visual field subtends an angle no greater than 20 degrees shall be considered as having a central visual acuity of 20/200 or less.

b. (1) Notwithstanding the provisions of the "State Uniform Construction Code Act," P.L. 1975, c.217 (C.52:27D-119 et seq.) or any rules, regulations or standards adopted pursuant thereto to the contrary, the governing body of any municipality which has appointed an enforcing agency pursuant to the

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provisions of section 8 of P.L. 1975, c.217 (C.52:27D-126) shall not charge a person who has a service-connected disability declared by the United States Department of Veterans Affairs, or its successor, to be a total or 100% permanent disability that would entitle them to a property tax exemption under section 1 of P.L.1948, c.259 (C.54:4-3.30) or a spouse, parent sibling, or guardian of the disabled veteran, a construction permit surcharge fee or enforcing agency fee for any construction, reconstruction, alteration, or improvement designed and undertaken solely to promote accessibility by the disabled veteran to their own living unit.

(2) A municipality that has granted an exemption from a construction permit surcharge fee or enforcing agency fee pursuant to paragraph (1) of this subsection may apply to the Department of Community Affairs, in accordance with rules and regulations promulgated by the Commissioner of Community Affairs for this purpose, for reimbursement of those exempt fees.

B. Utility Connection Fees: The Contractor shall pay utility connection fees and shall be reimbursed by Owner within thirty (30) days of presentation and Owner approval of receipt for same.

C. Certificates of Occupancy: Contractors shall be responsible for obtaining all Certificates of Occupancy.

1.4 TIME INCLUDING COMPLETION

A. Supplement Article 8 "Time" as follows:

8.1.5 The term "completed" in N.J.S.A. 18A:18A-19 shall mean substantial completion as defined in this Article 8.

8.1.6 The term "Working Days" as used to compute the time of completion shall mean Mondays through Fridays, exclusive of the thirteen major yearly holidays, as listed on the official State of New Jersey website, https://www.state.nj.us/nj/about/facts/holidays/

B. Supplement Article 8.3 "Delays and Extension of Time" as follows:

8.3.5 The Contractor agrees that the Owner can deduct from the Contract Price, any wages paid by the Owner to any Inspector or Inspectors necessarily employed by the Owner for any number of days in excess of the number of days allowed in the Specifications for completion of the work.

1.5 NONDISCRIMINATION AND MISCELLANEOUS LABOR PROVISIONS

A. Attention is called to the following which supplement paragraph 13.1 "Antidiscrimination Provisions" as follows:

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13.1.2 N.J.S.A. 10:2-1, Antidiscrimination provisions. Every Contract for or on behalf of the State or any county or municipality or other political subdivision of the State, or any agency of or authority created by any of the foregoing, for the construction, alteration or repair of any public building or public work or for the acquisition of materials, equipment, supplies or services shall contain provisions by which the Contractor agrees that:

a. In the hiring of persons for the performance of work under this Contract or any Subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this Contract, no Contractor, nor any person acting on behalf of such Contractor or Subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the Work to which the employment relates;

b. No Contractor, Subcontractor, nor any person on their behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of Work under this Contract or any Subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such Contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

c. There may be deducted from the amount payable to the Contractor by the contracting public agency, under this Contract, a penalty of $50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the Contract; and

d. This Contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the Contract occurring after notice to the Contractor from the contracting public agency of any prior violation of this section of the Contract.

No provision in this section shall be construed to prevent a board of education from designating that a Contract, Subcontract or other means of procurement of goods, services, equipment or construction shall be awarded to a small business enterprise, minority business enterprise or a women's business enterprise pursuant to N.J.S.A. 18A:18A-51 et seq.

During the performance of this Contract, the Contractor agrees to Mandatory Equal Employment Opportunity Language, as shown in Exhibit B, included with the Bid forms.

13.1.3 N.J.S.A. 34:11-56.25 et seq., in accordance with which the Contractor(s) and Subcontractor(s) are required to do the following:

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.1 Pay to all workers engaged in the performance of services directly upon the work not less than the prevailing rate of wages. In the event that it is found that any worker employed by the Contractor(s) or any Subcontractor(s) has been paid a rate of wage less than the prevailing wage required to be paid by such Contract, the Owner may terminate the Contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay required wages and to prosecute the Work to completion or otherwise.

.1 Prime Contractor(s) shall post the New Jersey Department of Labor and Workforce Development - Prevailing Wage Rate Determination in accordance with N.J.S.A. 34:11-56.25 et seq., which establish and enforce a prevailing wage level for workers engaged in the project, based on the effective date where the Contract is to be awarded. This document is to be posted in a prominent and easily accessible place at the site of the work and at such a place or places as are used to pay workers their wages. The prevailing wage rates shall be incorporated into the bid Specification manual as a reference and part of the Contract. A copy of the project's prevailing wage rates, as applicable to this Project, are on file at the Architect's office.

.2 Before final payment, furnish Owner with an Affidavit stating that all workers have been paid in accordance with the New Jersey Prevailing Wage Act.

.3 Keep an accurate record showing the name, craft or trade and actual hourly rate of wages paid to each workman employed by them in connection with their work. Preserve records for 2 years from date of payment.

.4 Upon request, the Contractor(s) and each Subcontractor shall file written statements certifying to the amounts then due and owing to any and all workers for wages due on account of the Work. The statement shall set forth the names of the persons whose wages are unpaid and the amount due to each. These statements shall be verified by the oaths of the Contractor(s) or Subcontractor(s), as the case may be.

1.6 AMERICANS WITH DISABILITIES ACT; FACILITIES FOR PERSONS WITH DISABILITIES

A. The Contractor must comply with all provisions of Title II of the Americans with Disabilities Act (ADA), in accordance with 42 U.S.C. S121.01 et seq. The Owner further recognizes that all Specifications for the construction, remodeling or renovation of any public building shall provide facilities for persons with disabilities. Reference: N.J.S.A. 18A:18A-17.

B. It is further recommended that Bidders are required to read the Americans with Disabilities Act (Act) language form that is included in the bid forms. The form shall be signed to show agreement with the provisions of Title II of the Act and the provisions are to be made a part of the Contract. The signed form shall be submitted with the bid proposal. The Contractor is obligated to comply with the Act and to hold the Owner harmless.

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1.7 AMERICAN GOODS AND PRODUCTS

A. Supplement Paragraph 13.1 "Governing Law" as follows:

13.1.5 N.J.S.A. 18A:18A-20 et seq., American goods and products to be used where possible. "Each Board of Education shall provide as a condition of the Contract that only manufactured and farm products of the United States, where ever available, be used in the work."

1.8 PAYMENTS TO LISTED SUBCONTRACTORS UNDER SINGLE OVERALL CONTRACT

A. Supplement Paragraph 13.1 "Governing Law" as follows:

13.1.6 Pursuant to N.J.S.A. 18A:18A-18(c), "in every case in which a [single overall Contract is awarded], all payments required to be made under such Contract for Work, goods and services supplied by a Subcontractor may, upon certification of the Contractor of the amount due to the Subcontractor, be paid directly to the Subcontractor."

1.9 ANNUAL DISCLOSURE OF CONTRIBUTIONS TO NEW JERSEY ELECTION LAW ENFORCEMENT COMMISSION (ELEC)

A. N.J.S.A. 19:44A-20.27 establishes a new disclosure requirement for business entities. It requires that, when a business entity has received in any calendar year $50,000 or more in public Contracts with public entities, it must file an annual report with the Election Law Enforcement Commission (ELEC). The report shall disclose any contribution of money or any other thing of value, including an in-kind contribution, or pledge to make a contribution of any kind:

1. To a candidate for or the holder of any public office having ultimate responsibility for the awarding of public Contracts, or,

2. To a political party committee, legislative leadership committee, political committee or continuing political committee.

B. The report will include all reportable contributions made by the business entity during the 12 months prior to the reporting deadline. ELEC will be promulgating a form and procedures for filing commencing in January 2007. ELEC can also impose fines for failure to comply with this requirement.

1.11 PROMPT PAYMENT ACT

A. The Owner will issue timely payments to Contractors in accordance with the requirements of the Prompt Payment Act, N.J.S.A. 2A:30A-1, et seq. The Bidders are hereby notified that the Owner as a public entity requires all payments to be

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approved at scheduled public board meetings. The vote on authorization for payments will be made at the first public meeting of the Board following the Board's receipt of the Architect's authorization for payment and paid during the subsequent payment cycle.

1.12 NEW JERSEY DEPARTMENT OF TREASURY

A. N.J.S.A 18A:18A-49.5 Board of Education, Compliance; Report of False Certification.

1. 3.b. If the board determines that a person or entity has submitted a false certification concerning its engagement in prohibited activities in Russia or Belarus pursuant to section 1 of P.L.2022, c.3 (C. 52:32-60.1), the board shall report to the New Jersey Attorney General the name of that person, and the Attorney General shall determine whether to bring a civil action against the person to collect the penalty prescribed in subsection c. of section 1 of P.L.2022, c.3 (C. 52:32-60.1).

B. In accordance with N.J.S.A. 52:32-57 (P.L. 2012, c.25), as amended and supplemented, the following Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 will be a condition of the Contract as follows:

1. 3.a. A person or entity that, at the time of bid or proposal for a new Contract or renewal of an existing Contract, is identified on a list created pursuant to subsection b. of this section as a person or entity engaging in investment activities in Iran as described in subsection f. of section 2 of this act, shall be ineligible to, and shall not, bid on, submit a proposal for, or enter into or renew, a Contract with a State agency for goods or services.

C. In accordance with P.L.2012, Chapter 25, C.52:32-58, as amended and supplemented, the following Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 will be a condition of the Contract as follows:

1. 4.a. A State agency shall require a person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a Contract to certify, at the time the bid is submitted or the Contract renewed, that the person or entity is not identified on a list created pursuant to subsection b. of section 3 of this act as a person or entity engaging in investment activities in Iran described in subsection f. of this act.

1.13 EQUAL EMPLOYMENT OPPORTUNITIES AND AFFIRMATIVE ACTION

A. Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27 et seq.

1. The construction Contractors shall complete and submit an Initial Project Workforce Report Form AA-201 after notification of award. Proper completion and submission of this Report shall constitute evidence of the Contractor's compliance with the regulations. Failure to submit this form may result in the

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Contract being terminated. The Contractor also agrees to submit a copy of the Monthly Project Workforce Report, Form AA-202 once a month thereafter for the duration of the Contract to the Department of Labor and Workforce Development and to the Public Agency Compliance Officer. The EEO/AA evidence must be submitted after notification of award, but prior to signing a construction Contract. All Public Agencies must retain the affirmative action evidence in their files for review by the Division.

B. Initial Project Workforce Report - Construction (AA201)

1. In accordance with the requirements of the New Jersey Department of Labor & Workforce Development Construction EEO Compliance Monitoring Unit, the Initial Project Workforce Report-Construction (AA201) document, must be submitted to the Public Agency that awards the Contract and the Department of Labor & Workforce Development Construction EEO Compliance Monitoring Program after notification of award, but prior to signing the Contract. For more information, visit:

https://www.nj.gov/treasury/contract_compliance/documents/pdf/guidelines/pa.pdf

1.14 OFFICE OF THE STATE COMPTROLLER

A. N.J.A.C. 17:44-2.2: Authority to Audit or Review Contract Records

1. Relevant records of private vendors or other persons entering into Contracts with covered entities are subject to audit or review by the Office of the State Comptroller (OSC) pursuant to N.J.S.A. 52:15C-14(d).
   a. The (Prime Contractor) shall maintain all documentation related to products, transactions or services under this Contract for a period of **five (5) years** from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request. N.J.A.C. 17:44-2.2.

B. Contractor/Vendor Requirements-Office of the New Jersey State Comptroller

1. Contractors/Vendors doing business with the Owner is reminded of the following legal requirements pertaining to the Office of the New Jersey State Comptroller:
   a. Access to Relevant Documents and Information - N.J.S.A. 52:15C-14 (d)
      1) Private Vendors or other persons contracting with or receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State authority, public institution of higher education, or unit of local government or Board of Education shall upon request by the State Comptroller provide the State Comptroller with prompt access to all relevant documents and information as a condition of the Contract

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and receipt of public monies. The State Comptroller shall not disclose any document or information to which access is provided that is confidential or proprietary. If the State Comptroller finds that any person receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State authority, public institution of higher education, or unit of local government or Board of Education refuses to provide information upon the request of the State Comptroller, or otherwise impedes or fails to cooperate with any audit or performance review, the State Comptroller may recommend to the contracting unit that the person be subject to termination of their Contract, or temporarily or permanently debarred from contracting with the Owner.

1.15 ANTI-BULLYING BILL OF RIGHTS ACT (P.L. 2010.C.122)

A. N.J.S.A. 18A:37-16 provides:

1. A member of a Board of Education, school employee, student or volunteer shall not engage in reprisal, retaliation or false accusation against a victim, witness or one with reliable information about an act of harassment, intimidation or bullying.

2. A member of a Board of Education, school employee, contracted service provider, student or volunteer who has witnessed, or has reliable information that a student has been subject to, harassment, intimidation or bullying shall report the incident to the appropriate school official designated by the school district's policy, or to any school administrator or safe schools resource officer, who shall immediately initiate the school district's procedures concerning school bullying.

3. A member of a board of education or a school employee who promptly reports an incident of harassment, intimidation or bullying, to the appropriate school official designated by the school district's policy, or to any school administrator or safe schools resource officer, and who makes this report in compliance with the procedures in the district's policy, is immune from a cause of action for damages arising from any failure to remedy the reported incident.

4. A school administrator who receives a report of harassment, intimidation, or bullying from a district employee, and fails to initiate or conduct an investigation, or who should have known of an incident of harassment, intimidation, or bullying and fails to take sufficient action to minimize or eliminate the harassment, intimidation, or bullying, may be subject to disciplinary action.

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1.15 CONTROLLING SILICA EXPOSURES IN CONSTRUCTION

A. Occupational Safety and Health Administration (OSHA) - U.S. Department of Labor: OSHA 29 CFR 1926.1153, 2017.

1. The above referenced guidance advisory document is not a standard or regulation, and it creates no new legal obligations. The document is advisory in nature, informational in content, and is intended to assist employers in providing a safe and healthful workplace. The Occupational Safety and Health Act requires employers to comply with safety and health standards promulgated by OSHA or by a state with an OSHA approved state plan. In addition, pursuant to Section 5(a)(1), the General Duty Clause of the Act, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take reasonable steps to prevent or abate the hazard. However, failure to implement any specific recommendations contained within this document is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.
    a. This guidance document addresses the control of employee exposures to respirable dust containing crystalline silica, which is known to cause silicosis, a serious lung disease, as well as increase the risk of lung cancer and other systemic diseases.
    b. This document provides information on the effectiveness of various engineering control approaches for several kinds of construction operations and equipment, and contains recommendations for work practices and respiratory protection, as appropriate.
    c. OSHA encourages employers to conduct periodic exposure monitoring to confirm that engineering and work practice controls are effective and that appropriate respiratory protection is being used where necessary.

2. The above referenced advisory document can be found at:

    https://www.osha.gov/dsg/topics/silicacrystalline/construction_info_silica.html

1.16 CERTIFICATION OF NON-DEBARMENT FOR FEDERAL GOVERNMENT CONTRACTS

1. Pursuant to N.J.S.A. 52:32-44.1, any natural person, company, firm, association, corporation, or other entity prohibited, or "debarred," from contracting with the federal government agencies, shall also be prohibited from contracting for public work in the State of New Jersey. This prohibition also extends to any affiliate organization(s) held by or subject to the control of an entity of that prohibited person or entity.
    a. Prior to awarding a Contract for public work, a local units must obtain written certification from the contracting person or entity through the form

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(Certification of Non-Debarment for Federal Government Contracts, N.J.S.A. 52:32-44.1, attesting to their non-debarment from contracting with federal government agencies.

1.17 CONTRACTOR EMPLOYEES PROCEDURE FOR CRIMINAL HISTORY RECORD CHECKS

1. The Office of Student Protection (OSP) suggests the following recommendation when educational facilities submit Contractor employees (i.e., masons, building and roofing companies) for short-term and long-term projects. The school official, acting as a liaison to the construction Contractor, must share with other school district administrators the names of the company's employees who will be submitting to a criminal record check. This process will assure that employees of the Contractor who have not obtained their approval for employment and are disqualified or ineligible for school employment will be identified as a Contractor service provider employee and not continue to be employed at school facilities and have direct contact with the student population.

2. To ensure compliance with the requirements of N.J.S.A. 18A:6-7.1 et seq., the Chief School Administrator shall direct the school official acting as a liaison to the construction company to obtain a list of individuals who will be employed by the Contractor for the school facility project that will be undergoing a criminal history record check. The liaison shall then provide a copy of this list to the Superintendent's Office and Human Resource Director, as these offices will receive any adverse action correspondence from the OSP related to the criminal history record check process.

3. Upon receipt of disqualification or ineligibility correspondence, the Superintendent's Office or Human Resource personnel shall review the contracted company list in order to determine if the subject of that letter is either a school employee or an employee of any Contract service provider and take the appropriate action.

4. As with any school employee, **no employee of a Contract service provider** shall commence Work at a school facility without having first obtained an approval for employment from the Office of Student Protection.

5. Approvals for employment for these type contracted employees shall be maintained with the liaison and copies forwarded to the Superintendent's Office.

1.18 LABOR-REGISTERED APPRENTICESHIP PROGRAM

1. As of May 1, 2019, N.J.S.A. 34:11-56.50, et seq. requires Contractors that directly employ craftworkers to participate in a United States Department of

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Labor-registered apprenticeship program as a condition of initial or renewed PWCR registration. Contracting units are not responsible for verifying Contractor participation in a registered apprenticeship program.

2. A Contractor working on a Public Works Project who directly employs craft workers, must certify to the NJDOL that they participate in a registered Apprenticeship Program for each craft they employ as defined in N.J.S.A. 34:11-56 and CFR , et al.

3. "Registered apprenticeship program" means an apprenticeship program which is registered with and approved by the USDOL, which provides each trainee with combined classroom and on-the-job training in an occupation recognized as an apprenticeable occupation, and which meets the program standards of enrollment and graduation under 29 C.F.R. §29.6. N.J.S.A. 34:11-56.50.

1.19 NEW JERSEY PREVAILING WAGE ACT

1. An Act concerning certain Contracts for public work and amending and supplementing N.J.S.A. 34:11-56.27.

   a. N.J.S.A. 34:11-56.27a. Payment of prevailing wage rates; certification required of certain Bidders; rules and regulations.

      1) a. If a person makes the lowest bid for a Contract with a public body for public work subject to the provisions of the "New Jersey Prevailing Wage Act," P.L.1963, c.150 (C.34:11-56.25 et seq.) and that bid is ten percent or more lower than the next lowest bid for the Contract, the person making the lowest bid shall certify to the public body that the prevailing wage rates required by that act shall be paid. If the Bidder does not provide the certification prior to award of the Contract, the public body shall award the Contract to the next lowest responsible and responsive Bidder. This certification shall be required only when a public body is engaging in competitive bidding for public work.

      b. The Commissioner of Labor and Workforce Development, in consultation with the Division of Local Government Services in the Department of Community Affairs, shall promulgate rules and regulations concerning the standardization of the certification necessary to effectuate the provisions of this section.

      2) N.J.S.A. 34:11-56.27. Required Contract provisions; liability of Contractor and Sureties for excess costs; rules and regulations.

         a. Every Contract in excess of the prevailing wage Contract threshold amount for any public work to which any public body is a party or for public work to be done on property or premises owned by a public body or leased or to be leased by a public body shall contain a provision stating the prevailing wage rate which can be paid (as shall be designated by the commissioner) to the workers employed in the performance of the Contract and the Contract shall

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contain a stipulation that such workers shall be paid not less than such prevailing wage rate. Such Contract shall also contain a provision that in the event it is found that any worker, employed by the Contractor or any Subcontractor covered by said Contract, has been paid a rate of wages less than the prevailing wage required to be paid by such Contract, the public body, the lessee to whom the public body is leasing a property or premises or the lessor from whom the public body is leasing or will be leasing a property or premises may terminate the Contractor's or Subcontractor's right to proceed with the Work, or such part of the Work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The Contractor and their Sureties shall be liable for any excess costs occasioned thereby to the public body, any lessee to whom the public body is leasing a property or premises or any lessor from whom the public body is leasing or will be leasing a property or premises.

b. Compliance with New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.)
   1) Every Contractor and Subcontractor performing services in connection with this Project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development (NJ DLWD).
   2) Wage rates for the county of the location of the Public Agency (Owner), as published by the State Department of Labor and Workforce Development (DLWD), can be viewed at https://www.nj.gov/labor/wagehour/wagerate/prevailing_wage_determinations.html.
   3) The Contractor must complete and sign the "Prevailing Wage Certification" form included in the bid package and submit with his bid. This form confirms the Contractor's intention to comply with the Act. The Owner may terminate the Contract if Contractor fails to pay workers prevailing wage.
   4) The prevailing wage rates in effect at the time of award, will be included by Owner as a part of the construction Contract.

END OF SECTION 00860

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AMERICANS WITH DISABILITIES ACT OF 1990
Equal Opportunity for Individuals with Disability

The contractor and the Board of Education (hereafter "owner") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act")
(42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the owner's grievance procedure, the contractor agrees to abide by any decision of the owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the owner, or if the owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the owner or any of its agents, servants, and employees, the *owner shall* expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the owner or its representatives.

It is expressly agreed and understood that any approval by the owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the owner pursuant to this paragraph.

It is further agreed and understood that the owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

Name of Company_____

Authorized Agent_____

Title or Position _____

Signature_____ Date_____

SECTION 00870 - MISCELLANEOUS REQUIREMENTS

PART 1 - GENERAL

1.1 JOB SITE MEETINGS

A. Regularly scheduled job meetings shall be held at a location and time convenient to the Owner's representatives, Construction Manager, Architect and the Contractor. The Prime Contractor shall attend such meetings, or be represented by a person in authority who can speak for and/or make decisions for the Contractor.

B. Attendance by the Contractor is mandatory, whether the meetings are weekly, bi-weekly or at whatever interval is determined by the Architect.

1. Unless given prior approval by the Architect, the Prime Contractor will be fined $250.00 for each regularly scheduled meeting for which they are not represented by a person the Contractor has advised the Architect and Construction Manager has authority and who can speak for and/or make decisions for the Contractor. Fine amounts shall be withheld and deducted from the Contract Sum.

1.2 STRUCTURAL SAFETY STANDARDS AND CODES

A. The standards, codes and design data referred to in the New Jersey "State Uniform Construction Code", apply to the work of the Contract, where applicable.

B. Contractor shall comply with all applicable requirements of the Uniform Fire Safety Act N.J.S.A. 52:27D-192 et seq.

1.3 OWNER'S RIGHT TO OCCUPY

A. The Owner reserves the right to occupy any portion of the Project which is ready for occupancy prior to completion and acceptance of the Project, after Local Municipal Construction Enforcing Agency approval.

B. The occupancy of any portion of the Project does not constitute an acceptance of any work nor does it waive the Owner's right to liquidated damages or constitute an acceptance of any Work as the Project will be accepted as a whole and not in units. Prior to such occupancy, however, the Architect, Construction Manager, a representative of the Owner, and the Contractor shall fully inspect the portions of the Project to be occupied, preparing a complete list of omissions of materials, faulty workmanship, or any items to be repaired, torn out or replaced. The Owner will assume responsibility for damage to premises so occupied of any items not on this list when such damage is due to greater than normal wear and tear, but does not assume responsibility for improper or defective workmanship or materials.

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1.4 OWNER'S GENERAL REQUIREMENTS

A. The Owner requires that the Contractor demonstrate a safety and health program/plan, which includes, but is not limited to first aid, fire protection, housekeeping, illumination, sanitation, personal protective equipment, medical, exit, emergency action plans and all other issues required by governmental Agencies Having Jurisdiction over the work of this project.

B. The following Owner's General Requirements shall be enforced during construction and until final completion of the work:

1. No deliveries of construction materials or equipment is to take place during the arrival and departure of students from the/their respective school(s). Verify and coordinate arrival and departure time with the Principal(s).

2. All construction materials and equipment shall be stored behind the construction fence.

3. No smoking on any of the School's Property.

4. All workers must wear shirts at all time.

5. Use of profanity will not be tolerated.

6. The Prime Contractor shall provide identification cards for their Subcontractors, employees, etc.

7. The Contractor shall comply with the requirements of all local ordinances including for noise.

8. The Contractor and their Subcontractors shall not interact with students or staff, other than those identified by the Owner as a representative of the Owner.

1.5 ENVIRONMENTAL PROTECTION

A. Conform to New Jersey Department of Environmental Protection Regulations N.J.A.C. 7:27, sub-chapters 5 and 7 and all other applicable standards.

B. Conform to New Jersey Statute N.J.S.A. 26:2C-9.2 which requires that no person shall construct, install, alter or operate any equipment capable of causing the emission of air contaminants into the open air or control apparatus which prevents or controls the emission of air contaminants until an application has been filed with and approved by the Department of Environmental Protection.

1.6 SOIL EROSION AND SEDIMENT CONTROL

A. Compliance with soil erosion and sediment control will be strictly enforced. Failure

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to conform to specified sequence of soil erosion and sediment control will result in imposition of penalties as levied by local Soil Conservation District, and withholding of payments for work not performed in accordance with soil erosion sequence.

1.7 RELATIONSHIP OF ARCHITECT AND CONSTRUCTION MANAGER

A. Where reference is made to "Architect" in these Specifications it will in some cases be interpreted as meaning "Construction Manager". Spheres of influence are defined in general as follows:

Architect:

Interpretation of Bid Documents.
Decisions relative to artistic effect.
Review and approval of shop drawings, product data, samples.
Review, recommendation and preparation of change orders.
Receipt of record drawings, operating and maintenance manuals.
Assistance with start-up, adjusting, operating and maintenance.
Review and recommendation of bid breakdown.
Review and approval of applications for progress payments.
Preparation of Punch Lists.
Close-out of Contract and determination of final completion.

Exclusions: Construction means, methods, techniques, sequences or procedures, safety precautions, acts or omissions of Contractors, Subcontractors, or any other persons.

Construction Manager:

Project meetings.
Monitoring of Contractors' work.
Review and approval of bid breakdown (Schedule of Values).
Review and forwarding of applications for progress payments.
Review and recommendations regarding proposed changes.
Administration of Progress Schedule and construction time schedules.
Assist in Preparation of Punch Lists.
Assist in Close-out of contracts and determination of final completion.

Exclusions: Construction means, methods, techniques, sequences or procedures, safety precautions, acts or omissions of Contractors, Subcontractors, or any other persons.

1.8 SEPARATE TRADES COORDINATION

A. The Contractor for General Construction shall set anchor bolts and other accessories furnished to them, in the manner, and in the locations directed by the Contractor furnishing the anchor bolts and other accessories.

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B. The Contractor for General Construction shall provide foundations and supports for equipment furnished under the General Construction Contract, and foundations and supports shown on the General Construction Contract, Drawings for equipment furnished by other Contractors. All other foundations and supports shall be provided by the Contractor requiring the foundations and supports to accommodate the work.

1.9 CERTIFIED PAYROLLS

A. Pursuant to N.J.A.C. 12:60-5.1(c)(1)(i), the Contractor shall furnish to the Owner certified payroll records each payroll period within ten (10) days of the payment of wages, indicating name, craft, social security number and actual hourly rate of wages paid to each worker employed on the project. A certified payroll record is defined as "a payroll record which is attested to by the employer, or a corporate officer of such company, or an authorized agent of the employer."

END OF SECTION 00870

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SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Construction Contract Documents including drawings, Division 1 - Miscellaneous Requirements Sections, and Specifications Sections.

1.2 SUMMARY

A. Section Includes:

1. Project description.
2. Contract scope description.
3. Contractor's use of the premises.
4. Preconstruction meeting.
5. Security procedures.

1.3 PROJECT DESCRIPTION

A. The project consists of the Site Upgrades / Improvements at Johnson Park Elementary School & Littlebrook Elementary School for the Princeton Public Schools, Board of Education, Mercer County, New Jersey.

B. Contract Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects / Planners, (Project Number: FVHD-5559A) and their Consulting Civil Engineer: Edwards Engineering Group Inc., an L2A Company, Somerville, NJ.

1.4 CONTRACT SCOPE DESCRIPTION

A. The Base Bid work consists of but is not limited to the following:

1. Johnson Park ES:
   a. Includes the rehabilitation of an existing paved playground,
   b. installation of an underdrain system and new engineered wood fiber at an existing mulched playground,
   c. construction of new concrete risers and walkways,
   d. construction of modular block retaining walls,
   e. grading,
   f. underground storm water management basin.

2. Littlebrook ES:
   a. Includes the rehabilitation of an existing paved playground,
   b. construction of a new paved access, with an above-ground bioretention basin and underground storm water management system.

3. All other indicated work.

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B. Alternate Bids:

1. Alternate Bid No. 1: Full-Depth Reconstruction of Existing Paved Playground, New Basketball Goals, New Engineered Wood Fiber Playground & Swings at Princeton Middle School.

2. Alternate Bid No. 2: Milling & Paving an Existing Paved Playground and New Basketball Goals at Riverside Elementary School.

C. Single Overall Contract: This Contract includes:

1. All work in accordance with Drawings, Specification Sections and in accordance with Bid Documents.

2. General Construction Work includes:
   a. Work that is primarily civil in nature plus work traditionally recognized as general construction in accordance with Drawings and as listed as a part of Part 2 Specification sections, unless otherwise indicated below:
      1) Also includes both administrative and coordination responsibilities.
         a) General Construction Contractor is responsible for all coordination between their work and work of all Subcontractors.
      2) All earthwork, site utility work outside the building (storm drainage, etc.), as specified in Part 2 specification sections.
      3) All concrete work in accordance with Part 2 specification.
      4) Provide and install the metal fabrications (bollards, etc).

1.5 CONTRACTOR'S USE OF THE PREMISES

A. The space available to the Contractor for the performance of the work, either exclusively or in conjunction with others performing other construction as part of the project, is shown on the Drawings.

1. Other areas are off limits to all construction personnel.

B. The following building facilities may not be used by construction personnel:

1. Toilet facilities.

2. Food service facilities, including dining areas.

C. The Owner will partially occupy the adjacent buildings during the construction period.

1. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Owner in advance of need for changes in operations in order to accommodate construction operations.

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2. Conduct the work so as to cause the least interference with the Owner's operations.

D. Coordinate with Local Authorities as to which routes are capable of handling heavy truck traffic.

E. Signs: Provide signs adequate to direct visitors.

1. Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.

F. All deliveries by the Contractor shall be coordinated with the Owner's Representative/ Construction Manager, prior to the delivery date.

1.7 PRECONSTRUCTION MEETING

A. A preconstruction meeting will be held at a time and place designated by the Architect/ Construction Manager for the purpose of identifying responsibilities of the Owner's / Architect's / Construction Manager's personnel and explanation of administrative procedures.

B. The Contractor shall also use this meeting for the following minimum agenda:

1. Construction schedule.
2. Use of areas of each site.
3. Delivery and storage.
4. Safety.
5. Security.
6. Cleaning up.
7. Subcontractor procedures relating to:
   a. Submittals.
   b. Change orders.
   c. Applications for payment.
   d. Record documents.

C. Attendees shall include:

1. The Owner / Owner's Representative.
2. The Architect, and any Consultants.
3. Construction Manager.
4. The Prime Contractor and their superintendent(s).
5. Major Subcontractors, suppliers, and fabricators.
6. Others interested in the work.

1.8 SECURITY PROCEDURES

A. Limit access to each site and building to persons involved in the work.

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B. Provide secure storage for materials for which the Owner has made payment and which are stored on-site.

C. Secure completed work as required to prevent loss.

D. The Contractor, and their employees, will be required to be registered with the Owner's Representative / School's Main Office / Construction Manager Office.

1. The Contractor's personnel and Subcontractors will be required to wear identification badges at all times on each site.

END OF SECTION 01010

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SECTION 01030 - ALTERNATE BIDS

PART 1 - GENERAL

1.1 PROCEDURE FOR ALTERNATE BIDS

A. Each Bidder shall submit on the Proposal Form, all Alternate Bids applicable to the Work under their bid. Alternate Bids shall state the difference in price as "additions to" or "deductions from" the Base Bid, unless otherwise noted, for the substitution, omission, or addition of the following materials, items or construction from that shown and specified.

B. The Alternate Bids, when accepted, become part of the Contract.

C. Each Bidder shall carefully check the Drawings and Specifications to determine the extent of each Alternate Bid required.

D. Alternate Bids shall include all overhead and profit applicable thereto.

E. Alternate Bids shall reflect the increase or decrease in cost of all Work of every name and nature which may be affected thereby and no subsequent claims for extras by reason of the Contractor's failure to observe this requirement will be considered.

F. The description herein for each Alternate Bid is recognized to be incomplete and abbreviated, but implies that each change must be complete for the scope of work affected. Refer to applicable Specification sections and to applicable Drawings, for specific requirements of the work, regardless of whether references are so noted in description of each Alternate Bid. Coordinate related work and modify surrounding Work as required to properly integrate with the Work of each Alternate Bid. It is recognized that descriptions of Alternate Bids are primarily scope definitions, and do not necessarily detail full range of materials and processes needed to complete the Work, as required.

G. Except as otherwise described or approved, materials and workmanship of the Alternate Bids shall conform to the requirements specified under the various sections of the Specifications for similar items of Work.

H. Where methods of construction, materials, finishes or details of installation required by the various Alternate Bids differ from the requirements shown on the Drawings or specified for corresponding items, the alternate construction, materials, etc. will be subject to approval by the Architect.

I. The Contractor shall submit shop drawings and samples for the Work under each accepted Alternate Bid for approval in conformance with requirements specified for submittals in both Part 1, AIA Document A232 and Section 00800 - Supplementary General Conditions.

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J. The following Alternate Bids shall apply to single overall bids, and must be included in the Bidder's Proposal(s).

1.2 ALTERNATE BIDS - GENERAL CONSTRUCTION WORK

A. **Alternate Bid No. 1:** Full-Depth Reconstruction of Existing Paved Playground, New Basketball Goals, New Engineered Wood Fiber Playground & Swings at Princeton Middle School

State the amount to be added to the base bid to provide and install full-depth reconstruction of an existing paved playground with new basketball goals and the construction of a new engineered wood fiber playground with new swings at Princeton Middle School and all associated Work, as shown on various Drawings and as indicated in various Specification sections.

B. **Alternate Bid No. 2:** Milling & Paving an Existing Paved Playground and New Basketball Goals at Riverside Elementary School

State the amount to be added to the base bid to provide and install the milling and paving an existing paved playground with new basketball goals at Riverside Elementary School and all associated Work, as shown on various Drawings and as indicated in various Specification sections.

END OF SECTION 01030

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SECTION 01040 - COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections.

1.2 REQUIREMENTS INCLUDED

A. Coordination of submittals.

B. Coordination meetings.

C. Coordination drawings.

D. Coordination of project closeout.

E. Administrative/supervisory personnel.

F. Coordination of Trades.

G. Coordination of space.

H. Coordination of field measurements and field conditions.

1.3 GENERAL REQUIREMENTS

A. Contractor shall coordinate their activities with the activities of Subcontractors and Work performed by others.

B. If necessary, inform each party involved, in writing, of procedures required for coordination; include requirements for giving notice, submitting reports, and attending meetings.

1. Inform the Architect when coordination of their Work is required.

1.4 COORDINATION OF SUBMITTALS

A. Coordinate and correlate the submittals on each work item and on interrelated work items to ensure their timeliness, completeness, consistency, compatibility and compliance with the Bid Documents.

B. Prepare and submit special coordination drawings where close and careful coordination of information is required for proper fabrication or installation of

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materials, products or equipment by separate entities. Coordination drawings may also be required where limited space availability necessitates close and careful coordination for efficient and proper installation of different components.

1. Show interrelationships of components shown on separate shop drawings.

2. Indicate required installation sequences.

C. Coordinate any request for substitution to ensure compatibility of its space requirements, its operating characteristics and elements and its effects on other work. Prior to proposing a substitution for any item, verify that its size, configuration, supports and connections will coordinate with all other work and that it will fit within the allotted space while allowing for proper operating, maintenance and circulation space.

1. Comply with requirements for requests for submittal of substitution indicated in AIA A232 and Section 00800.

1.5 COORDINATION MEETINGS

A. The General Construction Work Contractor shall hold additional coordination meetings and conferences with Subcontractors and others involved in the Work as needed to ensure coordination of Work.

1. Notify the Architect and Construction Manager of such coordination meetings.

B. Regular project site meetings shall be in accordance with Sections 00870 and 01200.

1.6 COORDINATION OF TRADES

A. Coordinate construction activities included under various sections of these Specifications to ensure efficient and orderly installation of each part of the Work and to prevent interferences among parts of the Work. Coordinate work items and construction operations included under different sections of the Specifications that are dependent upon one another for proper installation, connection and operation.

1. Where installation of one part of the Work is interrelated with installation of other components, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to prevent interferences and to ensure proper accessibility for required maintenance, service and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

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B. Where necessary, prepare memoranda outlining special procedures required for coordination. Include such items as required notices, reports and attendance at meetings. Distribute these coordination memoranda to all parties involved in the Work being coordinated.

1. Prepare similar memoranda for the Owner and other Contractor(s) where coordination with construction or operations by them is required.

2. Provide copies of such coordination memoranda to the Architect.

C. Coordinate the scheduling and timing of required administrative activities with other construction activities to avoid conflicts and ensure orderly progress of the Work. Administrative activities include:

1. Preparation and updating of schedules.
2. Preparation and processing of submittals.
3. Preparation and processing of requests for information.
4. Project meetings.
5. Testing and inspection activities.
6. Project close-out activities.

1.7 COORDINATION OF SPACE

A. Coordinate use of available space and sequence of installation for Work which is indicated diagrammatically or schematically on the Drawings. Prevent physical interference of components. Follow routing shown for pipes, taking into account the limitations of available space. Utilize space efficiently to ensure proper installations (including installation of other work) and accessibility for maintenance, service and repairs.

1. Detailed Drawings of proposed departures from spatial arrangements or locations indicated in the Bid Documents, due to field conditions or other causes, shall be submitted to the Architect for review. No such departures shall be made without prior review by the Architect.

2. Where required for coordination, the Architect will have the authority to order, as changes in the Work, changes in locations and sizes. Such changes shall be made without adjustment to the Contract Sum or Contract Time.

B. Field verify measurements of existing items and work which precedes each sequence. Ensure proper fit and location.

C. In finished areas, conceal pipes in the construction.

D. Coordinate locations of fixtures and outlets with finish elements.

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1.8 COORDINATION OF FIELD MEASUREMENTS AND FIELD CONDITIONS

A. Prior to ordering materials or equipment or performing Work, the Contractor and/or Subcontractors shall verify Bid Document and submittal dimensions and weights affecting their Work and other Subcontractor's work associated with field measurements and field conditions at the project site, (for site work), and shall be responsible for their accuracy and correctness.

B. Differences discovered from dimensions or weights indicated in the Bid Documents or submittals shall be submitted in writing to the Architect for review, before proceeding with the Work.

C. Commencing work implies acceptance of surfaces, areas, preceding Work and other field conditions, and verification of dimensions, by the Contractor.

D. No Change Order will be issued in cases where discrepancies in dimensions are discovered after work has been commenced or where the Contractor has failed to properly investigate and take into account field measurements and existing field conditions.

1.9 COORDINATION DRAWINGS

A. General Requirements: Prepare coordination drawings where limited space available may cause conflicts in the locations of installed products, and where required to coordinate installation of products.

1. All Work on the coordination drawings shall be performed by a competent draftsperson and shall be clear and fully legible. The Architect shall be the judge of the legibility of the composite Drawings.

1.10 COORDINATION OF PROJECT CLOSEOUT

A. Coordinate completion and clean-up work and administrative activities in preparation for Substantial Completion and occupancy of the Work or of designated portions of the Work.

B. After Owner occupancy, coordinate access for completion or correction of the Work not in conformance with the Bid Documents to minimize disruption of Owner's activities.

C. Assemble and coordinate closeout submittals specified in Section 01700.

1.11 REQUIRED ADMINISTRATIVE/SUPERVISORY PERSONNEL

A. General: In addition to the other administrative and supervisory personnel required for the performance of the Work, the Prime Contractor shall provide specific coordinating personnel as specified herein.

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B. Project Manager / Superintendent: A full time on site Project Manager, with a recommended minimum of eight (8) years experience, including project management experience on a similar type of projects.

1. The Contractor for General Construction Work shall provide a full-time staff member or members, (Project Manager/Superintendent), experienced in coordination of Work on projects of this type and scale, including administration and supervision.

1.12 COORDINATION OF TRADES

A. Coordinate Work with other trades to eliminate any possible interference before any piping, equipment, devices, supports and fixtures are installed.

B. Where multiple items of work is shown on any of the Bid Documents of the various Trades in the same location, coordinate and adjust items to fit within designated location(s).

1.13 COORDINATION OF SPACE, FIELD MEASUREMENTS AND FIELD CONDITIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both substrate and conditions under which their work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Recheck measurements and dimensions, before starting each installation.

1. Submit to the Architect for review any change in dimensions shown on the Bid Documents or submittals affecting physical size, shape or location of any part of the Work, whether due to field conditions or other causes.

C. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Bid Documents.

D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and movement.

E. Provide all appropriate structural supports and associated assemblies which include but are not limited to materials, finishes, equipment, fixtures and piping components. This work shall be in conformance with requirements of the Bid Documents whether or not indicated by a reference in Specification or as may be in detail shown on Drawings and schedules.

F. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

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G. Install each component during weather conditions and construction status that will ensure best possible results. Isolate each part of completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize necessity of uncovering completed construction for that purpose.

I. Where mounting heights are not indicated:

1. Install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

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SECTION 01050 - ALTERATIONS, CUTTING, PATCHING AND REFINISHING WORK

PART 1 - PRODUCTS

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 DESCRIPTION

A. Work included: Alterations, removals and demolition required for this Work include, but are not necessarily limited to:

1. Alterations, cutting, patching, removal and preparation Work to be done as noted on Drawings, as required, to complete construction.

2. Patching and refinishing of existing surfaces damaged or left unfinished as a result of this Work, including site work, existing ground surfaces, concrete surfaces, bituminous paving surfaces, etc.

3. Worker and Community Right to Know Act Requirements
   a. It is required that the Contractor and/or Subcontractors comply with all of the requirements of HAZCOM 2012 and New Jersey Right To Know (RTK) program. Prime Contractor is responsible for ensuring that containers of substances belonging to the Contractor and/or Subcontractors that are stored at the Owner's facility are properly RTK labeled. Refer to N.J.A.C. 8:59-5.10.
   b. Surveys of hazardous substances stored at the Owner's facility by the Contractor and/or Subcontractor are to be provided to the Owner of the facility. Refer to N.J.A.C. 8:59-2.2(h).
   c. Material Safety Data Sheets (MSDS) and/or Safety Data Sheets (SDS) from manufacturers must be provided to the Owner for all products present at, purchased for, and brought on site by Contractors and/or Subcontractors to the Owner's facility. Refer to N.J.A.C. 8:59-2.2(1).
   d. Contractor and/or all Subcontractors must submit, prior to starting any Work, a copy of their approved Hazard Communication Plan - 29 CFR 1910.1200.

4. This project shall be subject to the requirements of the EPA “Renovation, Repair and Painting” rule including the following:
   a. The Contractor must be lead safe trained and certified. The Contractor will be required to submit a copy of their EPA certificate prior to the start of the Work.
   b. The Contractor shall provide the Owner with a copy of the EPA’s Lead Hazard Management information pamphlet “Renovate Right-Important

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Lead hazard Information for Families, Child Care Providers and Schools" prior to the start of any renovation Work. The Contractor shall have the Owner sign a pre-renovation disclosure form confirming receipt of the pamphlet.

c. The Contractor shall at all times employ lead safe practices as identified in the rules.

5. This project shall be subject to the requirements of the EPA rules on diesel exhaust and off-site particulate dust, including the following:
   a. Diesel exhaust contributes the highest cancer risk of all air toxics in New Jersey and is a major source of NOx within the state. Therefore, per NJ DEP recommendations, construction projects involving non-road diesel construction equipment operating in a small geographic area over an extended period of time shall implement the following measures to minimize the impact of diesel exhaust:
      1) All on-road vehicles and non-road construction equipment operating at, or visiting, the construction site shall comply with the three minute idling limit, pursuant to N.J.A.C. 7:27-14 and N.J.A.C. 7:27-15. Contractor shall purchase "No Idling" signs to post at the site to remind Subcontractors to comply with the idling limits. Signs are available for purchase from the Bureau of Mobile Sources at 609/292-7953 or http://www.stopthesoot.org/sts-no-idle-sign.htm.
      2) All non-road diesel construction equipment greater than 100 horsepower used on the project for more than ten days shall have engines that meet the USEPA Tier 4 non-road emission standards, or the best available emission control technology that is technologically feasible for that application and is verified by the USEPA or the CARB as a diesel emission control strategy for reducing particulate matter and/or NOx emissions.
      3) All on-road diesel vehicles used to haul materials or traveling to and from the construction site shall use designated truck routes that are designed to minimize impacts on residential areas and sensitive receptors such as hospitals, schools, daycare facilities, senior citizen housing, and convalescent facilities.
   b. Contractor will be liable for the effects of off-site particulate dust and/or odors during construction and shall take steps to minimize the impact of air pollution from these activities.

B. Related Sections:

1. Section 00870 - Miscellaneous Requirements.

2. Section 01010 - Summary of the Work.

3. Section 01020 - Allowances.

4. Section 01040 - Coordination.

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5. **Specification Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.**

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Location and Extent of Work: Submit key plan indicating room location where Work to take place. Describe cutting and patching, indicate methods and show how they will be performed.

2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

3. Products: List products to be used and firms or entities that will perform the Work. Provide samples and field mock-up as indicated or requested by the Architect.
   a. Samples and field mock-up shall match existing surfaces and colors.
   b. Obtain Architect's approval prior to proceeding with Work.

4. Schedule and Dates: Provide work schedule, indicate when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Coordinate cutting of operating elements with other trades.

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C. Miscellaneous Building Elements: Do not cut and patch any building elements or related components in a manner that could change their operation, load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1. Engage experienced installers or fabricators for all Work.

E. Cutting and Patching Conference: Before proceeding, meet at each Project site with parties involved in cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

F. Mock-Ups: Provide mock-ups for Architect / Construction Manager approval for each proposed patching method. Do not proceed with patching Work until obtaining of approvals from the Architect / Construction Manager.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties. Confirm existing warranties with Owner prior to starting of Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

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1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

B. Inspection:

1. Prior to start of any Work the General Construction Work Contractor shall verify all existing work area conditions; building lines, lengths, corners and all other dimensions.
   a. General Construction Work Contractor shall engage a Licensed Professional Land Surveyor (PLS) to perform layout of the site elements. Copies of all surveys performed by the General Contractor shall be submitted to the Architect in two copies and shall include layout Drawings and data sheets.

2. The General Construction Work Contractor shall submit information and survey to Subcontractor(s), the Architect / Construction Manager for all required coordination of site work.

3. Prior to work of this section, verify information and survey submitted by the General Contractor, carefully inspect the existing conditions and verify that materials and surfaces to be altered or removed are the same as noted on the Drawings.

C. Discrepancies:

1. In the event of discrepancy of existing conditions, surfaces, etc., immediately notify the Architect and the Construction Manager.

2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

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D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. The Contractor shall provide cutting, patching, relocations, and or re-installations of existing construction to provide for installation of other components or performance of other construction associated with their Work, and subsequently patch and finish as required to restore surfaces to their original condition. Work shall be performed whether or not shown on Drawings.

2. The General Construction Work Contractor shall provide all required and necessary cutting, and preparation Work to allow for installation of new work. The General Construction Work Contractor shall subsequently patch as required to restore and prepare surfaces to receive new finishes.

3. All repairing, patching, piecing out, filling in, restoring and refinishing shall be neatly done by craftsworkers skilled in their respective trades and completed in proper manner to leave same in condition satisfactory to the Architect.

4. All new Work shall be installed plumb, level, true, and shall be shimmed as required to cover any irregularities in substrates.

B. Cutting:

1. Before cutting is started in any location the Contractor shall carefully investigate conditions as to human and structural safety, existing piping, wiring and items concealed, and wherever same interfere with the Work they shall be properly relocated, rerouted or removed as the case may be, at no increase to Contract price.

2. Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

3. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

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4. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

5. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

6. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.

7. Do not disturb any structural Work, plumbing, steam, gas, or electric Work without approval of Architect.

8. Proceed with patching after construction operations requiring cutting are complete.
   a. Remove, cut, alter, replace, patch and repair existing Work as necessary to install new Work.

9. Existing Work disturbed or removed as a result of performing required new Work, shall be patched, repaired, reinstalled or replaced with new Work, and refinished and left in as good condition as existing before commencing Work.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Field Mock-up: Prepare field mock-up of proposed restoration method as requested or required by the Architect. Obtain Architect's approval prior proceeding with actual Work.

3. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate or minimize evidence of patching and refinishing.

3.4 CLEAN-UP

A. Areas where demolition is in progress within or adjacent to Owner occupied areas shall be broom cleaned at the end of each working day.

B. Do not burn materials or debris on premises.

C. Do not allow demolished materials to accumulate outside of existing buildings.

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D. Remove from the site all rubbish and debris resulting from Work of this section.

E. If the Contractor fails to clean-up their debris within 24 hours, the Owner has the right to clean-up the debris left by the Contractor. All associated clean-up costs, incurred by the Owner, will be back-charged to the Contractor.

3.5 PROTECTION

A. Contractor shall provide all other necessary temporary enclosures, guardrails, barricades, etc. to adequately protect all workers and public from possible injury. Provide all necessary temporary partitions, enclosures, coverings of approved materials and construction for the exclusion of weather and for confining dust and debris.

B. Contractor shall be responsible for the protection of the existing adjacent buildings, facilities and improvements within the areas where Work is being done. Any disturbance or damage to the Work, the existing buildings, and improvements, equipment or any impairments of facilities resulting from their Work, shall be promptly restored, repaired, or replaced by the responsible Contractor at no extra cost to the Owner.

C. Adequate protection of persons and property shall be provided at all times, including Saturdays, Sundays and holidays, and during time Work is being performed and after working hours. Protection shall include barricade fencing, traffic control, dust partitions, weather protection and other means, as required.

D. Preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to each site and along access to each site. Be responsible for all unauthorized cutting or damaging of trees and shrubs, including damage due to careless operation of equipment, stock-piling of materials or tracking of grass areas by equipment.

3.6 SALVAGE

A. Partial Removal: Items of salvable value to Contractor may be removed from structure as Work progresses. Salvage items must be transported from site as they are removed.

1. Storage or sale of removed items on site will not be permitted.

B. Items designated on Drawings or in Specifications to remain the property of the Owner, or to be reused, shall be removed, and securely stored with care to prevent damage. Repair or replace such items damaged in removal.

C. Before transporting non-designated, removed items from the site, contact Architect/ Construction Manager for decision as to what items if any are to remain the property

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of the Owner. Items retained by the Owner will be transported by them to their storage area.

3.7 STANDARDS

A. All demolition Work shall be performed in accordance with the applicable rules and regulations and the Codes and Ordinances of local, State and Federal authorities, and in accordance with the requirements of public utility corporations.

B. Work shall satisfy requirements of the Occupational Safety and Health Act of 1970 with amendments.

C. Work not affected by more stringent requirements of regulatory agencies shall satisfy the provisions of ANSI-A10.6-2006 (R2016) - American National Standard Safety Requirements for Demolition.

D. Confine the movement and storage of vehicles, equipment and materials to such routes and locations as may be designated by the Owner and Architect.

E. The building and grounds will be maintained in a clean and orderly manner so as to conform with all local fire safety regulations and in accordance with the latest editions of the Safety Code of the National and State Board of Fire Underwriters.

3.8 INGRESS, EGRESS AND CIRCULATION

A. The Prime Contractor shall be responsible for performing their construction activities in such manner to maintain ingress and egress for visitors and occupants of Owner-occupied areas and to continuously maintain all required emergency exits from and circulation between existing facilities. Passageways for emergency exits shall be kept continuously free from debris, construction equipment, tools, stockpiles or materials, and other hazards to speedy evacuation. The Contractor shall provide all necessary temporary Work as prudence and good practice may dictate and in accordance with Applicable Law and Authorities Having Jurisdiction to obtain and maintain all such ingress, egress and circulation requirements. The Prime Contractor shall be responsible for providing coordination of this temporary Work between Subcontractor(s), as directed by the Architect. All temporary Work shall be removed when no longer required.

3.9 NON-INTERFERENCE WITH OWNER'S OPERATIONS

A. Work under this Contract will be performed when the existing buildings are occupied. Coordinate with Owner’s schedule and operation, obtain Owner’s / Construction Manager’s approval prior to proceeding with Work.

B. Contractor shall acquaint themself with the general character of the Owner's operations prior to commencing Work and shall schedule their Work to avoid interference therewith. The sequence of alteration operations shall be in accordance

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with a schedule of Contract operations approved by the Owner and Architect.

C. The Contractor shall not start Work until the schedule has been approved in writing by the Architect and the Owner. The Contractor shall not perform Work in occupied areas without giving the Owner 72 hours written notice of their intention to Work in occupied areas.

D. The Contractor shall expedite placing orders and submission of shop drawings for equipment required to complete Work under this Contract to ensure delivery of all equipment with adequate time allowed to complete the installations to conform to the project completion date.

END OF SECTION 01050

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SECTION 01151 - UNIT PRICES

PART 1 GENERAL

1.1 PROCEDURE

A. Bidder shall insert on the Proposal Form, all Unit Prices applicable to the Work under their bid. Unit Prices will be used as the basis for computing "additions to" or "deductions from" the Contract Price for extra work and for work countermanded, reduced or omitted.

B. Except as otherwise provided in the General Conditions, the Unit Prices when accepted, adjusted or established by the Contract shall remain binding and irrevocable for the entire period of the Contract, regardless of the quantities of Work ordered or required under such Unit Prices.

C. The acceptance of the Unit Price is on condition that the general character of the material and workmanship required for any Work related thereto shall be equivalent to corresponding Work as shown and specified, and that all costs, overhead and profit, as well as all incidental work required in connection therewith, has been included in the Unit Price.

1.2 RULES OF MEASUREMENT: EARTHWORK

A. Except as provision is made hereinafter for arbitrary measurement, the quantity of excavation shall be its in-place volume before removal.

B. The reference point for computing changes in depth shall be the plan grade at which the change starts.

C. No allowance will be made for excavating additional material of any nature taken out for the convenience of the Contractor beyond the quantity computed under these Rules of Measurement.

D. Excavations shall be in accordance with OSHA requirements and that excavations should be shored and braced, as needed, to avoid encroaching into existing site improvements that are noted to remain undisturbed.

E. Excavation for a footing (the pad) under a wall shall be measured as the neat plan width and depth of the footing.

F. Rock excavation shall arbitrarily be assumed to extend to vertical planes one foot beyond footing, pipe, etc., and to 6 inches below the established elevations.

G. Excavation for sump and other pits shall be computed as vertical shafts, each with a horizontal cross section identical in shape and size with the plan of the bottom of the construction installed (out to out of pit walls).

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H. The volume of backfill shall be the volume of excavation computed under these Rules of Measurement, less the volume of actual displacement by construction installed.

I. Concrete quantities shall be computed from plan size, or if there are no drawings, from actual measurement of the work ordered and placed.

1.3 UNIT PRICES - GENERAL CONSTRUCTION: EARTHWORK

A. Bulk Rock and Trench or Pit Rock Excavation requiring jackhammering - Per Cubic Yard. Price shall include the breaking up of the rock by other means as directed by the Architect and its removal from the site, specified for other excavated material, and shall be the price over and above the price for earth excavation.

Unit Price for bulk rock shall be $ **300.00** per cu. yd.

Unit Price for trench or pit rock excavation shall be $ **400.00** per cu. yd.

If the Contractor cannot perform the Work at the given unit price, they shall accept for consideration subcontractor's price suggested by the Owner and/or the Architect.

1.4 UNIT PRICES - GENERAL CONSTRUCTION: Materials in Place.

Concrete Curb Replacement $_____ per lin. ft.

Concrete Sidewalk Replacement (4″ thk) including subbase $_____ per sq. ft.

Standard Duty Hot Mix Asphalt Replacement $_____ per sq. yd.

END OF SECTION 01151

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SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:

1. Pre-Construction Conference
2. Pre-Installation Conferences
3. Coordination Meetings
4. Progress Meetings

B. Construction Schedule requirements is specified in another Division 1, Section.

1.3 PRE-CONSTRUCTION CONFERENCE

A. The Architect will schedule a pre-construction conference and organizational meeting at the/each Project site or other convenient location no later than fifteen (15) calendar days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: The Owner, Architect, Construction Manager and their consultants, the Prime Contractor and their superintendent(s), major Subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could effect progress including such topics as:

1. Tentative construction schedule
2. Critical work sequencing
3. Designation of responsible personnel
4. Procedures for processing field decisions and Change Orders
5. Procedures for processing Applications for Payment
6. Distribution of Bid Documents
7. Submittal of Shop Drawings, Product Data, and Samples
8. Preparation of record documents
9. Use of the premises

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10. Office, Work, and storage areas
11. Equipment deliveries and priorities
12. Safety Procedures
13. First Aid
14. Security
15. Housekeeping
16. Working hours

1.4 PRE-INSTALLATION CONFERENCES

A. The Prime Contractor to conduct a pre-installation conference at each site before each construction activity that requires coordination with other construction. The installer and representative of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect and Construction Manager of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
    a. Bid Documents
    b. Options
    c. Related change orders
    d. Purchases
    e. Deliveries
    f. Shop Drawings, product data and quality control samples
    g. Possible conflicts
    h. Compatibility problems
    i. Time schedules
    j. Weather limitations
    k. Manufacturer's recommendations
    l. Compatibility of materials
    m. Acceptability of substrates
    n. Temporary facilities
    o. Space and access limitations
    p. Governing regulations
    q. Safety
    r. Inspection and testing requirements
    s. Required performance results
    t. Recording requirements
    u. Protection

2. Record significant discussions and agreements and disagreements of each conference along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner, the Architect and the Construction Manager.

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3. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 COORDINATION MEETINGS

A. The Contractor for General Construction will conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 PROGRESS MEETINGS

A. Regular Progress Meetings: The Construction Manager / Architect will schedule and conduct regular progress meetings as follows:

1. Weekly meetings with the Contractor and Subcontractors.

2. Bi-weekly meeting with the Owner, Architect, Contractor and Subcontractors.
   a. Weekly meetings between the Contractor and Subcontractors will be the responsibility of the Contractor and the Architect will not attend.

B. Special Meetings will be conducted as required by the progress of the Work

C. Location of the meetings: Meetings shall be conducted at a location in the school(s) to be determined by the Owner's Representative.

D. Attendance: Attendance at Construction Meetings shall be as follows:

1. The Owner shall be in attendance at bi-weekly meetings and at any special meetings as appropriate to the agenda.

2. The Construction Manager, Architect and their professional consultants, as needed, at bi-weekly meetings and at any special meetings as appropriate to the agenda.

3. The Contractor at all construction meetings.

4. Subcontractors as appropriate to the agenda.

5. Suppliers as appropriate to the agenda.

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6. The Owner's Representative at all construction meetings.

E. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the project.

F. Contractor's Construction Schedule:

1. Review the present and future needs of each entity present, including such items as:
   a. Interface requirements
   b. Time
   c. Sequences
   d. Deliveries
   e. Off-site fabrication problems
   f. Access
   g. Site utilization
   h. Temporary facilities and services
   i. Hours of work
   j. Hazards and risks
   k. Housekeeping
   l. Quality and work standards
   m. Change orders
   n. Documentation of information for payment requests

G. Reporting: No later than three (3) business days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

H. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

I. Attendance by the Contractor is mandatory, whether the meetings are weekly, bi-weekly or at whatever interval is determined by the Architect and the Construction Manager.

1. Unless given prior approval by the Construction Manager / Architect in writing not to attend meetings, Contractor will be fined **$250.00** for each regularly scheduled meeting for which they are not represented by a person in authority who can speak for and/or make decisions for the Contractor.

2. Fine amounts shall be withheld and deducted from the Contract Sum.

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SECTION 01325 - CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. Work included: To assure adequate planning and execution of the work so that the completion of the work is within the time proposed and allowed in Section 01800 and other documents in the Contract, and to assist the Owner in appraising the reasonableness of the proposed schedule and in evaluating progress of the work, prepare and maintain the schedules and reports described in this section.

B. Preliminary Construction Schedule ("Construction Summary by Phase") and Phasing Plan:

1. The preliminary project schedule provided herein is intended to be used as a guide by the Contractor during the Bidding and the Construction Phase.

2. The Construction Manager, the Architect and the Owner will not be held liable for the scheduled activity durations identified in the schedule.

3. The Phasing Plan provided with Bid Documents is intended to provide the Contractor with a basis for scheduling construction to satisfy Owner's requirements.

1.2 QUALITY ASSURANCE

A. Qualifications of Scheduling Personnel: Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, in analyzing by use of Critical Path Method or PERT, and in preparation and issue of periodic reports as required below.

B. Reference Standards: Perform all data preparation, analysis, charting, and updating in accordance with all recommendations contained in the current edition of "CPM in Construction" Manual of Associated General Contractors, (or in accordance with other standards approved).

C. Reliance upon Approved Schedule:

1. The Contractor's CPM construction schedule shall be an integral part of the Contract, shall incorporate the milestone Contract Completion dates specified elsewhere in the Bid Documents (Section 01800), for each Building/Phase, and shall establish interim completion dates for all construction activities related to each Phase.

2. It is the responsibility of the Contractor for General Construction to obtain all necessary information from Subcontractors, Suppliers, the Owner, Architect, Engineers, Owner's Representative, and any other entities with whom the schedule must be coordinated.

3. Should any activity not be completed within 7 calendar days after its scheduled completion date, the Owner shall have the right to order the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.

4. Should any activity be 15 or more calendar days behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.

5. The Contractor shall reimburse any costs incurred by the Owner in connection with expediting construction activity under this Article to the Owner.

6. It is expressly understood and agreed that failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered precedent setting for any other activities, nor shall it relieve the Contractor of the obligation to complete the Work of each Phase by the Contract milestone date.

1.3 SUBMITTALS

A. General: Comply with the provisions set forth herein.

B. Coordination: The Contractor for General Construction shall be responsible for preparation/submission of all scheduling documents. The Prime Contractor and Subcontractors shall provide the Contractor for General Construction information required to prepare the Preliminary Analysis, Construction Schedule and Periodic Reports. Failure of any one or more Prime Contractor or Subcontractor(s) to provide information requested in a timely manner shall result in the Owner withholding payments until such information is provided.

C. Preliminary Analysis: Within ten (10) calendar days after issuance of Notice to Proceed, submit one electronic copy, one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.

Note: No initial Application for Payment will be approved for payment prior to submission of these items.

D. Construction Schedule: Within fifteen (15) calendar days after issuance of Notice to Proceed, submit one electronic copy, one reproducible copy and four prints of construction schedule prepared in accordance with Part 3 of this Section.

Note: No second Application for Payment will be approved for payment prior to submission of and approval of the General Contractor's Construction Schedule.

E. Periodic Report:

1. On the first working day of each month following submittal described in Paragraph D. above, submit one electronic copy and four prints of the construction schedule updated as described in this Section.

2. On a weekly basis, on the day determined at the Pre-Construction Meeting, submit the Weekly Status Report updated and described in this Section.

F. Processing of future Applications for Payment shall be conditioned upon timely submission of Periodic Reports.

PART 2 - PRODUCTS

2.1 CONSTRUCTION ANALYSIS

A. The Contractor's Construction Schedule shall be prepared using Primavera Project Planner (latest version) software by Primavera Systems, Inc. or other scheduling software approved in advance by the Construction Manager. The Contractor shall provide copies of all required items on paper media as well as on hard disk.

1. In the event the Contractor receives approval to utilize a scheduling software other than Primavera Project Planner latest Version, the Contractor shall provide, at no additional cost to the Owner, one licensed copy of such software, in the unopened original packaging with all documentation, original software and manuals.

B. Logic Diagram: Graphically show the order and interdependence of all activities necessary to complete work, and the sequence in which each activity is to be accomplished as planned by the General Contractor and the project field superintendent in coordination with the/all Subcontractor(s) whose work is shown on the diagram. Activities shown on the diagram shall include, but are not necessarily limited to:

1. Project mobilization at each school;

2. Project Phasing and Milestones;

3. Submittals and approvals of Shop/Coordination Drawings, Color Selections and Samples;

4. Procurement of equipment and critical materials (required for any item with a lead time exceeding 20 calendar days);

5. Fabrication of special material and equipment and their installation and testing;

6. Activities corresponding to entries on the Schedule of Values in accordance with subparagraph E. below;

7. Inspections by the Local Construction Office and Testing and Inspection by the Contractor's consultant;

8. Required Pre-Installation Meetings;

9. Completion and occupancy of individual phasing areas per Phasing Plan;

11. Final clean-up;

12. Final inspection and testing;

13. All activities by the Owner's or Owner's separate Contractor(s) that effect progress, required dates for completion, or both, for all and for each part of the work.

C. The detail of information shall be such that duration times of activities shall normally range from one to twenty days (except for long lead fabrication and delivery activities as required herein). The selection and number of activities shall be subject to the Owner's approval.

1. Show on the diagram, as a minimum for each activity, preceding and following activity numbers, description of each activity, cost, and activity duration in calendar days. Submit diagram on a sheets 24-30 inches high by 36-42 inches wide required.

2. Mathematical Analysis: Furnish a mathematical analysis of the diagram by computer-aided means, including a tabulation of each activity. Show the following information as a minimum of each activity:
   a. Preceding and following activity number(s);
   b. Activity descriptions;
   c. Earliest start date (by calendar date);
   d. Latest start date (by calendar date);
   e. Earliest finish date (by calendar date);
   f. Latest finish date (by calendar date);
   g. Total float (by calendar days);
   h. Monetary value of the activity;
   i. Percentage of activity completed;
   j. Contractor's earning based on portion of activity completed.

D. The means used in making the mathematical analysis shall be capable of compiling the total value of completed and partially completed activities, and be capable of accepting modifications approved for time and logic adjustments.

E. Cost Loading of Schedule: The Contractor's Construction Schedule shall be "cost-loaded" such that the schedule shall reflect the planned sequence of work and billing of the Contract and shall be coordinated with the schedule of values as otherwise required. On a monthly basis, the value of any monthly Application for Payment shall conform to the value of work completed as reflected on the Monthly Project Schedule Updates.

F. Periodic Reports: List all activities in computer printouts, sorted as follows:

1. By the activity identification number (overall and by phase/area).

2. By the amount of total float.

3. By early start, then by early finish and then by total float.

4. Provide a hard disk copy of the Periodic Reports required.

5. Other sorts requested by the Owner.

2.2 WEEKLY STATUS REPORTS

A. Format: The Prime Contractor shall submit weekly status reports in the form supplied at the Pre-Construction Meeting to provide sufficient pertinent data to determine that work and materials procurement flow is adequate for all needs of the work.

B. Content: Show at least the following information:

1. For Work:
   a. All activities commenced in the preceding two (2) weeks (by area and activity number from the approved Project Schedule).
   b. All activities completed in the preceding two (2) weeks (by area and activity number from the approved Project Schedule).
   c. All activities upon which work was performed in the preceding two (2) weeks (by area and new percentage complete conforming to Project schedule information).

2. For Materials: Maintain a database of major items of material to provide weekly update of the buy-out and delivery status showing:
   a. Item Description, listed in accordance with Specifications Section Number in which the item is called for (Note Project Schedule Activity number for all applicable items).
   b. Purchase Order No. and Date of Issue.
   c. Vendor Name.
   d. Date Shipped and Shipping Means Utilized.
   e. Estimated Date of Arrival at Job Site.
   f. Actual Date of Arrival at Job Site and Receiving Report Number.

C. Data Processing: Process the data by computer-aided methods to a degree of promptness and accuracy assuring complete display of all pertinent current information at date of each periodic report. Provide a hard disk copy of each Weekly Status Report.

PART 3 - EXECUTION

3.1 PRELIMINARY ANALYSIS

A. Contents:

1. Show all activities of the Prime Contractor under this work for the period between receipt of Notice to Proceed and Submittal of Construction Schedule required as noted above.

2. Show the Prime Contractor's general approach to remainder of the work.

3. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

B. Submittals shall be in accordance with other Division 1 provisions.

3.2 CONSTRUCTION SCHEDULE

A. As soon as practicable after Contract award, and not later than fifteen (15) calendar days after the issuance of the Notice to Proceed, the Contractor for General Construction must gather scheduling data from all Subcontractors and complete the Construction Analysis described in Article 2.01 above, in preliminary form. The Contractor for General Construction must then conduct a Scheduling conference attended by all Subcontractors, the Architect and the Construction Manager, review contents of proposed construction schedule, and make all revisions agreed upon at the Scheduling Conference. Submit in accordance with Article 1.03 above.

B. All Subcontractors must submit required scheduling data to the Contractor for General Construction within ten (10) calendar days after Contract award.

3.3 WEEKLY STATUS REPORT

A. Prepare, update and review with Subcontractors and Suppliers weekly in accordance with Articles 1.03 and 2.02 above.

3.4 PERIODIC REPORTS

A. Construction Schedule, Contents:

1. Report actual progress by updating the mathematical analysis.

2. Note on the summary report, or clearly show on a revised issue of affected portions of the detailed diagram, all revisions causing changes in the detailed program.

3. Revise the summary report as necessary for clarity.

4. Show activities or portions of activities completed during the reporting period and their actual value.

5. State the percentage of work actually completed, the schedule as of the report date, and the progress along the critical path in terms of days ahead of or behind the allowable dates.

6. If the work is behind schedule, also report progress along other paths with negative float.

7. Include a narrative report which shows, but is not necessarily limited to:
   a. A description of the problem areas, current and anticipated;
   b. Delaying factors and their impact;
   c. An explanation of corrective actions taken or proposed.

8. Show the date of latest revision. Submit in accordance with the provisions above.

B. Weekly Status Reports

1. On the letter of transmittal accompanying periodic reports, on an accompanying summary sheet, or by other means acceptable to the Construction Manager and Architect, clearly indicate those items of construction which, or materials the delivery of which are critically overdue or otherwise hazardous to maintenance of the approved schedule.

2. Submit in accordance with the provisions above.

C. Revisions: Make only those revisions to the approved Construction Schedule as are approved by the Architect/Owner.

END OF SECTION 01325

SECTION 01380 - CPM SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. The General Contractor shall prepare and submit a construction schedule based upon input from the Subcontractors as set forth in Section 00800.

B. The schedule shall include line items for the following information broken down by trade:

1. Contractual milestone dates as set forth in Section 01800.
2. Critical and long-lead item delivery dates
3. Owner activities including move-in/occupancy time
4. Critical inspections or testing
5. Other critical activities appropriate to project
6. Separate activity lines for each school
7 Punch list and final completion period

C. The Construction Schedule shall be completed within thirty(30) days of the notice to proceed. The General Contractor shall distribute copies to the Owner, Architect, Construction Manager and Subcontractor(s). The General Contractor shall provide a sign-off block for signature by all Subcontractors indicating their acceptance of the schedule. The/All Subcontractors shall sign off on the schedule at the job meeting closest to the date of distribution. Failure to submit a monthly schedule update will be grounds for the withholding of payments.

D. Schedule updates shall be provided at least monthly but more often if requested by the Owner or Architect. The monthly update shall be distributed by the General Contractor to the/all Subcontractor(s) for purposes of providing input. Each monthly update shall include a progress bar for each activity. The monthly update shall be submitted to the Architect, Construction Manager and Owner each month prior to the requisition cut-off date. Failure to submit a monthly schedule update will be grounds for the withholding of payments.

E. The project will be scheduled and monitored using a construction schedule; Critical Path method (CPM) techniques. The Contractor for General Construction Work will prepare all schedules and all periodic updates based upon information furnished by the Subcontractor(s) and observations of the work in progress. Revisions of the schedule to reflect changes in the Contractors' plan of performance or modifications of the Bid Documents will be prepared by the Contractor for General Construction Work.

F. This section describes the CPM Progress Schedule requirements. The/Each Subcontractor shall provide all necessary information in connection with their work to enable the Contractor for General Construction Work to comply with these

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requirements. Further, the/each Subcontractor shall provide such information in a timely manner to permit the Contractor for General Construction Work to comply with the time requirements stated herein.

G. Monthly update conferences will be held with all concerned. At these update conferences, the attendees will review actual progress, planned progress, planned progress for the next period, change orders, job issues, and any schedule changes since the previous update. Attendance in mandatory. Contractor current estimate payments are contingent upon attendance and the provision of satisfactory CPM base schedule and update information. The monthly update conference may be scheduled more frequently when required, at the direction of the Contractor for General Construction.

H. The Contractor for General Construction Work shall prepare, based upon information obtained from the Subcontractor(s), and maintain a detailed Progress Schedule as described below. The schedule shall reflect the Contractor's working schedule and be used to plan, organize and execute the work, record and report actual performance and progress, and show how the Contractor plans to complete all remaining work. The schedule shall be in the form of an activity oriented network diagram (Critical Path Method) I-J format. The principles and definition of the terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication "The Use of CPM in Construction", Copyright 1976. In the event of discrepancies, this section shall govern the development and utilization of the Progress Schedule.

I. The completed schedule shall be distributed to the/all Subcontractor(s). When the schedule is approved by the/each Subcontractor, the Owner, Architect, Construction Manager or their agents will review the schedule for conformance with the Contract requirements, and it shall become one of the Bid Documents.

1. This schedule may be revised to show changes in the Contractors' method of their agreement that the Progress Schedule represents their intentions and interpretations of the requirements of the Contract.

1.2 PRE-BID SCHEDULE

A. The Pre-bid Schedule outlined in Section 01800 indicates a general sequence of activities leading towards the completion of the Contract work within the milestones noted.

B. The sequence of operations and the time estimated for activities on the Pre-bid Schedule are shown for information only and are not to be considered binding. Means, Methods, and Procedures are at the discretion of the/each Subcontractor. Specific interfaces between Subcontractors will be planned in the Progress Schedule process described below. However, the Contract completion date and any milestone dates for substantial completion are binding. The actual date when written Notice to Proceed is issued will be used in the CPM Logic Diagrams to calculate the

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milestone dates for those dates contingent on the Notice to Proceed date and will be used to prepare the Official Construction Schedule, using the Subcontractor's proposed sequence of work and duration of activities.

1.3 PRELIMINARY SCHEDULE

A. Within (10) working days of Notice to Proceed (NTP), the/all Subcontractor(s) shall participate in an initial scheduling conference. Attendance is mandatory for the/all Subcontractor(s). The/Each Subcontractor will submit as a minimum, a detailed ninety (90) day work plan in arrow/activity format for approval together with a generalized project schedule network, in summary form, meeting the contractual milestone dates. During this meeting the schedule will be developed from input furnished by the/each Subcontractor. Until the formal schedule has been developed and is approved by the Architect and Construction Manager, the ninety (90) day work plan will serve as the official construction schedule after the review and coordination with the/each Subcontractor.

B. Where such coordinated work is required, Contractor No. 1, (Single Overall Contract), shall schedule reasonable durations and provide proper advance notice for the work of the/each Subcontractor to the extent that normal time work is accommodated without the need for overtime or shift work.

C. The Contractor for General Construction shall develop a 90-day Schedule within ten (10) working days after the initial scheduling conference, utilizing input from Subcontractor(s). This schedule will be in arrow network form, with each node calendar date based on "early start, early finish" of each work activity. The 90-day Schedule will contain work activities over the first ninety (90) days, estimated duration for each work activity will be fifteen (15) work days or will show the key procurement items which will occur during the first ninety (90) days of the project in addition to the field work.

1.4 DETAILED SCHEDULE

A. Within thirty (30) calendar days of Notice to Proceed (NTP), the/all Subcontractor(s) shall participate in a detailed scheduling conference. Attendance is mandatory. The/Each Subcontractor shall submit network based coordinated CPM Schedule information to the Contractor for General Construction for review. The/Each Subcontractor shall work with the Contractor for General Construction Work to prepare the CPM network in a sketch format and, unless otherwise approved by the Owner's Representative, shall meet each consecutive day for eight (8) hours minimum until a useable, logical CPM schedule network, responsive to the project requirements, has been developed as determined by the Owner's Representative. Non-critical path activities shall be scheduled to reflect the float status shown on the Preliminary Construction Schedule unless otherwise approved by the Construction Manager and the Architect.

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B. Based upon CPM Schedule information submitted, the Contractor for General Construction will draft and computerize the schedule and issue it for review an comment. In the event the milestone dates indicated by the Progress Scheduled exceed the contractual dated, the/each Subcontractor shall review and revise the logic and time estimates and resubmit to the Contractor for General Construction for review within one (1) week of notification. This procedure shall be followed for all schedule revisions. After changes in the logic and/or time estimated have been agreed upon, another computerized schedule will be generated and referred to the Contractor.

C. The Detailed Network Diagram shall provide sufficient detail and clarity of form and technique so that the Contractor can plan, schedule and control their work properly and the Construction Manager can readily monitor and follow the progress for all portions of work. The Detailed Network Diagram shall comply with the various limits imposed by the Scope of Work and by any contractually specified intermediate milestone dates and completion dates included in the Contract. The degree of detail shall be to the satisfaction of the Construction Manager, but the following factors shall have a bearing on the required depth of activity detail:

1. The structural breakdown of the project.
2. The type of work to be performed and the labor trades involved.
3. All purchase, manufacture and delivery activities for all manor materials and equipment.
4. Deliveries of Owner furnished equipment.
5. Submittal and approval of shop drawings and material samples.
6. Plans for all key Trades and Subcontract work.
7. Assignment or responsibility for performing all activities.
8. Access and availability to work areas.
9. Identification of interfaces and dependencies with preceding, concurrent and follow-on Subcontractors.
10. Testing of systems.
11. Planning for phased or total takeover by Owner.

D. The Progress Schedule will not include every item of work necessary to complete the project. However, the/each Subcontractor shall accept responsibility to schedule and complete all items of work within the contractual limits.

E. The durations as outlined in the Progress Schedule shall be analyzed in detail to determine activity time durations in units of whole working days. Activities shown will have maximum duration of twenty (20) working days, except in the case of the non-construction activities such as procurement of materials and delivery of equipment. All durations shall be the result of definitive manpower and resource planning by the/each Subcontractor(s).

1.5 AUTOMATED DATA PROCESSING (ADP)

A. The mathematical analysis of the Detailed Network Diagram shall be made by computer and a tabulation for each activity shall include as a minimum, the following:

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1. Preceding and following event numbers.
2. Activity description.
3. Durations in work days for each activity.
4. Earliest start date (by calendar date).
5. Earliest finish date (by calendar date).
6. Latest start date (by calendar date).
7. Latest finish date (by calendar date).

1.6 SUMMARY SCHEDULE

A. The Contractor for General Construction shall also prepare and submit on the Initial and all updated schedules, a time-scaled Summary Schedule on a single sheet showing the total project in approximately fifty to one hundred (50) - (100) activities. This schedule will accurately summarize the Detailed Schedule. Each activity will indicate and I and J note that corresponds to the Detailed Schedule. The Summary Schedule shall be updated monthly showing the original as-planned schedule denoted and the current update information denoted.

1.7 COMPLETION REQUIREMENT

A. The Preliminary Schedule will be completed within thirty (30) calendar days of the Notice to Proceed.

B. The Progress Schedule (logic diagrams and computer computations) and the Summary Schedule shall be prepared for review within sixty (60) calendar days after Notice to Proceed. The/Each Subcontractor shall review the schedule and note any corrections required as a condition of approval within ten (10) days of the receipt of the schedule. The Contractor for General Construction will prepare a final Progress Schedule for approval of the Prime Subcontractors within twelve (12) calendar days following receipt of the/each Subcontractor's comments.

C. When the Progress Schedule is completed and is within contractual limits, the/each Subcontractor shall certify in writing on the face of the computer printout and submit it to the Architect and Construction Manger for approval no later than seventy-five (75) calendar days after Notice to Proceed, unless otherwise approved by the Architect and Construction Manager.

D. The Contractor for General Construction will furnish the/each Subcontractor two (2) copies of Computer Printouts (computations).

E. If the Contractor fails to submit the required monthly update material as indicated in this section within ten (10) calendar days, or revisions thereof within the requested time, the Architect may withhold approval of progress payment estimates until such time as the Contractor submits the required information.

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F. Notwithstanding the implementation of the CPM, it shall be the sole responsibility of the/each Subcontractor(s) to complete the Work within the time of completion and milestone required by the Contract.

1.8 UPDATINGS

A. The first update shall take place thirty (30) calendar days after the Notice to Proceed with subsequent updates performed monthly at the job site for the duration of the Contract.

B. The Preliminary Schedule will be updated until the Progress Schedule is reviewed and approved by the (Sub)Contractors.

C. All update information contained on the 90-day Schedule will be incorporated into the Progress Schedule once the Progress Schedule is accepted.

D. The/Each Subcontractor is required to attend and participate in update meetings with the Contractor for General Construction Work and present data prepared in advance, updated as of the end of the updating period, a complete and accurate report of updated procurement items, and construction progress. The/Each Subcontractor shall show how it will make up the time list due to non-excused Contractor delays. The following will also be presented and made part of the CPM update:

1. Actual start dates.
2. Actual completion dates.
3. Revised logic and changes in activity durations.

E. Should the projected completion time for any significant work activity as determined by the latest CPM printout of the Progress Schedule indicate more than a critical ten (10) day delay to the project, the/each Subcontractor shall submit a revised plan to the Contractor for General Construction, within five (5) calendar days, to recover all lost time and maintain the project schedule. This revised plan is to include a re-sequencing of work activities and/or revisions to the performance time for the affected activities so that remaining milestone completion dates are met.

F. The/Each Subcontractor shall be responsible to coordinate its work with the work of the Subcontractors. The/Each Subcontractor shall not delay and/or interfere with the work of others. The/Each Subcontractor shall pay all costs for damages and/or delays to other Subcontractors caused by lack of coordination and/or interference with their work which could not be reasonably avoided.

1.9 CHANGE ORDERS, DELAYS AND EXTENSIONS OF TIME

A. Extensions of time will only be considered for justifiable delays that are on the critical path and impact milestone dates by exceeding the amount of positive float shown on the approved CPM Schedule. A justifiable delay is delay due to a cause that the Architect, in their discretion, determines is unforeseeable, beyond the Subcontractor's

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control, and not due to any fault, negligence, act, or omission on the part of the Subcontractor. Positive float is the number of calendar days an activity can be delayed without causing a delay to the critical path or milestone completion dates. The Contractor shall plan construction activities to start on "early start dates" to maintain positive float and shall be responsible for any delays which could have been avoided by starting work on the "early start dates" by lack of continuous effort, and/or by inadequate planning, and coordination of the work. Such delays will not be the basis of an extension of time to any milestone date or additional costs.

B. When change orders or delays are experienced, the Contractor shall submit to the Architect, a written Time Impact Analysis illustrating the influence of each change or delay on the current Progress Schedule completion date. Each Time Impact Analysis shall include a network analysis demonstrating how the Contractor proposed to incorporate the change order or delay into the Progress Schedule. Additionally, the analysis shall demonstrate the time impact based on the date the change is given to the Contractor, the status of construction at that point in time, and the event time computation of all effected activities. The event times used in the analysis shall be those included in the latest updated copy of the Progress Schedule, closest to the time of delay or as adjusted by mutual agreement. Each time Impact Analysis shall be submitted within seven (7) calendar days after a delay occurs or notice of direction for a change is given to the Contractor. In cases where the Contractor does not submit a time Impact Analysis for a specific change order of delay within the specified period of time, then it is mutually agreed that the particular change order or delay has no time impact on the Contract completion date and no time extension is required. Approval or rejection of each Time Impact Analysis by the Construction Manager and the Architect shall be made within fourteen (14) calendar days after receipt of each Time Impact Analysis unless subsequent meetings and negotiations are necessary.

END OF SECTION 01380

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SECTION 01400 - MATERIAL TESTING / QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for material testing and quality control services.

1. Testing and inspecting services are required to verify compliance with requirements specified or indicated and are the responsibility of the Contractor. These services do not relieve Contractor of responsibility for compliance with the Bid Document requirements.

B. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

1. Quality Control Services is the responsibility of the Contractor.

2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Bid Document requirements.

3. Requirements for Contractor to provide quality-control services required by Architect, and the Owner or Authorities Having Jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections in AIA Document A232 and Section 01200.

2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.

3. Specification Sections for specific test and inspection requirements.

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1.3 DEFINITIONS

A. Quality Control Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect

C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.

1. Mockups establish the standard by which the Work will be judged.

D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Bid Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 REGULATORY REQUIREMENTS

A. Copies of Regulations: Obtain copies of referenced regulations which also available in Local Public Libraries.

1.6 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Delegated-Design Submittal: When requirement is indicated in specific technical section and/or when requested by the Architect, in addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed

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by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for preforming tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

D. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Bid Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

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B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

1. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.

2. Contractor responsibilities include the following:
    a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
    b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.

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d. When testing is complete, remove assemblies; do not reuse materials on Project.

3. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and the Owner with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Bid Documents.

H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect .

2. Notify Architect seven (7) days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mockups when directed, unless otherwise indicated.

1.8 QUALITY CONTROL

A. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by Authorities Having Jurisdiction.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Bid Documents are Contractor's responsibility.

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a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Bid Documents.

1. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   a. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   b. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   c. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   d. Do not release, revoke, alter, or increase requirements of the Bid Documents or approve or accept any portion of the Work.
   e. Do not perform any duties of Contractor.

2. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   a. Access to the Work.
   b. Incidental labor and facilities necessary to facilitate tests and inspections.
   c. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   d. Facilities for storage and field-curing of test samples.
   e. Delivery of samples to testing agencies.
   f. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   g. Security and protection for samples and for testing and inspecting equipment at Project site.

3. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   a. Schedule times for tests, inspections, obtaining samples, and similar activities.

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4. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Bid Documents. Submit schedule within 30 days of date established for commencement of the Work.
    a. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

2. Comply with the Bid Document requirements for Division 1 Section "Cutting and Patching."

3. Protect construction exposed by or for quality-control service activities.

4. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

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SECTION 01410 - REFERENCES AND INDUSTRY STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections, and Specifications Sections included in Part-2 through Part-6.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved:" The term "approved," when used to convey Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities.

C. "Directed:" Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.

D. "Indicated:" The term "indicated" refers to graphic representations, notes, or schedules on Drawings or to other paragraphs or schedules in Specifications and similar requirements in the Bid Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations:" The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish:" The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install:" The term "install" describes operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide:" The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer:" An installer is the Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

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J. The term "experienced," when used with an entity, means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of Authorities Having Jurisdiction, subject to verification by and approval of the Architect.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. "Project site(s)" is the space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Bid Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Bid Documents to the extent referenced. Such standards are made a part of the Bid Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Bid Documents, unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Bid Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.

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E. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Bid Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S.".

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01410

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SECTION 01505 - TEMPORARY FACILITIES

1.1 RESPONSIBILITIES OF CONTRACTOR

A. Contractor is responsible for the following temporary facilities and services:

1. Installation, operation, maintenance and removal of each temporary facility usually considered as its own normal construction activity.

2. Plug in electric cords, extensions cords, supplementary plug in task lighting and special lighting necessary exclusively for their own activities.

3. Their own storage and fabrication sheds.

4. All hoisting requirements for their Work.

5. Collection and disposal of debris, hazardous, unsanitary or other harmful waste material from their operations, on a daily basis to trash receptacles, hoppers, containers, dumpsters, etc. furnished by the Contractor.
   a. **Refer to Section 01050 - Alterations, Cutting, Patching and Refinishing Work which identifies the responsible Contractor for the collection and disposal of debris and Section 01524 - Construction Waste Management for additional information.**

6. Six foot (6'-0") high site enclosure fence, including maintenance and any gates needed. Provide fence relocations as needed during construction.

7. The secure lockup of their own tools, materials and equipment.

8. Construction aids and miscellaneous services and facilities necessary exclusively for their own construction activities.

9. Temporary storage provisions for Work, including offsite provisions, if required.

10. Containerized bottled drinking water units for their personnel.

11. Fire protection provisions related to Work including fire extinguishers.

12. All personnel safety equipment and provisions for their personnel.

13. Environmental protections.

14. Dust and fume control

15. Tree and plant protection.

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16. Other temporary facilities and services stated as their responsibility elsewhere in the Bid Documents.

17. Temporary toilets in sufficient quantity to suit project needs and including disposable supplies.

1.2 COMPRESSED AIR

A. Contractor shall furnish their own equipment and energy source to provide compressed air required for the completion of work under their Contract.

1.3 REMOVAL AND RESTORATION OF TEMPORARY FACILITIES

A. At the completion of the work prior to final payment, Contractor shall remove temporary facilities and Work which they have been responsible. Refer to Section 01700 for additional requirements.

1.4 UTILITY CONSUMPTION

A. The Owner shall be responsible and pay all utility costs for electric and water consumption during the construction period.

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SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.

2. Recycling nonhazardous demolition and construction waste.

3. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:

1. All of Division 1 and attached Specifications and Drawings that make a part of this Contract.

1.3 DEFINITIONS

A. Construction Waste: Site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to Authorities Having Jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

1.4 SUBMITTALS

A. Waste Management Plan: Submit 4 copies of plan within 30 days of date established for the Notice to Proceed.

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B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of Authorities Having Jurisdiction.

B. Waste Management Conference: Conduct conference at each Project site to comply with requirements in Division 1. Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan.

2. Review requirements for documenting quantities of each type of waste and its disposition.

3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

5. Review waste management requirements for each Trade.

1.6 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, and waste reduction Work plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

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C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

2. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Owner / Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 1 Section "Temporary Facilities" for operation, termination, and removal requirements.

B. Training: Train workers, Subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at each Project site.

1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

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1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Sale and Donation: Not permitted on any Project site.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at each Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from each Project site. Include list of acceptable and unacceptable materials at each container and bin.
   a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

3. Stockpile materials away from construction area.

4. Store components off the ground and protect from the weather.

5. Remove recyclable waste off Owner's property and transport to recycling receiving or processor.

3.4 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.

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3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials on-site.

C. Burying: Do not bury waste materials on-site.

D. Disposal: Transport waste materials off Owner's property and legally dispose of them.

E. Washing waste materials into sewers or drains is not permitted.

END OF SECTION 01524

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SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections, and Specifications Sections.

1.2 SUMMARY

A. Section Includes:

1. General product requirements, including:
   a. General specification requirements for all products.
   b. General requirements and procedures for maintenance materials and tools.

2. General requirements for product documentation, including:
   a. Requirements and procedures for schedule of products.
   b. General requirements for operation and maintenance data.

3. General procedures for products including:
   a. Procedures for transportation and handling.
   b. Procedures for delivery and receiving.
   c. Procedures for storage.

PART 2 - PRODUCTS

2.1 GENERAL

A. Components required to be supplied in quantity within a Specification section shall be identical, interchangeable, and made by the same manufacturer.

B. Do not use products removed from existing construction.

2.2 MAINTENANCE MATERIALS AND TOOLS

A. Maintenance Materials: Parts and materials for repair and maintenance; specific items required are specified in product sections.

1. Provide products and tools which are identical to those used in the Work; if necessary to obtain identical items, order at the same time as products to be installed or tools to be used in the Work.

B. Package appropriately and label to show type and quantity of contents.

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C. Deliver, handle, and store in the same manner as products to be installed.

D. Do not turn over to the Owner until date of substantial completion, unless otherwise approved by the Owner.

E. Deliver to the Owner; unload.

F. Obtain receipt prior to final payment.

PART 3 - EXECUTION

3.1 PRODUCTS

A. It is the Contractor's responsibility to select products which comply with the Bid Documents and which are compatible with one another, with existing work, and with products selected by other Contractors.

1. Where visual matching to an established physical sample is required, the Architect's decision will be final.

B. Do not use any substitute products which have not been approved in accordance with the requirements of the Bid Documents.

C. Where the Specification is silent on whether substitutions will be considered, substitutions will be considered only when submitted in accordance with AIA A232 and Section 00800.

D. Products Specified by Reference Standard: Use any product meeting the Specification. Provisions of reference standards shall not modify the responsibilities of the Owner or Architect as defined in the Bid Documents.

E. Products Specified by Performance Requirements: Use any product meeting the Specification.

F. Products Specified to Match a Physical Sample: Use any product that matches; obtain the Architect's approval.

G. Products Specified by Listing a Brand Name Product(s) made by listed Manufacturer(s) as the "Basis of Design":

1. Pursuant to N.J.S.A. 18A:18A-15(d) indicated basis of design brand name product(s) or equivalent made by one of the manufacturers listed will be acceptable, as determined by the Architect.

H. Products Specified by Listing Brand Name Product(s) Accompanied by Language Indicating that Substitutions Are Allowed: Provide a product meeting the Specification; submit substitution request for any brand-name product, that is not listed, in accordance with AIA A232 and Section 00800.

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I. Products Specified by Listing Manufacturer(s): Provide a product meeting the Specification and made by one of the manufacturers listed or an approved equal. Approval of substitutions will be in accordance with AIA A232 and Section 00800.

J. Unless specified or noted otherwise in the Bid Documents and/or approved submittals, all Work is to be performed in accordance with the respective material Manufacturer's printed installation instruction. Work installed in variance with the Bid Documents, Approved Submittals and Manufacturer's printed installation instructions will be rejected, removed and replaced by the Contractor and at no additional cost to the Owner.

3.2 SCHEDULE OF PRODUCTS

A. Prepare a complete schedule of products used, including the following for each product:

1. Manufacturer's name.

2. Brand or trade name.

3. Model number, if applicable.

4. Reference standard, if more than one is applicable.

5. Arrange products in the schedule by Specification sections; indicate paragraph where specified.

B. Prepare and submit a preliminary schedule within 15 working days after award of Contract; resubmit when revised; submit final schedule prior to final payment. See additional requirements and milestone dates in Section 01800.

C. Schedule of products shall not be used to obtain approval of substitute products; make separate request for substitution.

3.3 OPERATION AND MAINTENANCE DATA

A. Provide operation and maintenance data as specified in individual product sections.

1. Provide data sufficient for operation and maintenance by Owner without further assistance from the manufacturer.

2. Provide completed data in time for use during Owner instruction.

B. Data Required For Products - General:

1. Name of manufacturer and product.

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2. Name, address, and telephone number of Subcontractor or supplier.

3. Local source of replacements.

4. Local source of replaceable parts and supplies.

C. Product Data: Where product data is specified for inclusion in operation and maintenance data, provide manufacturer's data sheets marked to indicate specific product and product options actually installed; delete inapplicable data.

D. Project Record Documents: Provide an additional copy of applicable record documents for inclusion with the operation and maintenance data.

E. Coordination Drawings: When coordination drawings are prepared, include a copy with the operating and maintenance data.

F. Custom Manufactured Products: Provide all information needed for reordering.

G. Finish Materials: Manufacturer's product data, color/texture designations, and manufacturer's instructions for care, cleaning, and maintenance.

H. Products Exposed to Weather and Products for Moisture Protection: Manufacturer's product data, recommended inspection schedule and procedures, maintenance and repair procedures, and maintenance materials required.

I. Equipment: Provide at least the following information:

1. Product data giving equipment and function description, with normal operating characteristics and limiting conditions.

2. Starting, operating, and troubleshooting procedures.

3. Cleaning and maintenance requirements and procedures.

4. External finish maintenance requirements.

5. List of maintenance materials required.

6. List of special tools required.

7. Parts list: List all replaceable parts, with ordering data.

8. Recommended quantity of spare parts to be maintained in storage.

J. Systems: Provide overall function description, with diagrams, prepared especially for this project.

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K. Form of Data: Prepare data in the form of an instructional manual.

1. Arrange contents logically, using section numbers and sequence of sections indicated on the table of contents of this project manual.

2. When multiple volumes are used, arrange by related subjects; identify contents in cover title.

3. Assemble into 3-ring binders with maximum 2-inch ring size.
   a. Hardback, cleanable plastic covers.
   b. Identify each book with title "Operation and Maintenance Instructions" and project name.
   c. Page size 8-1/2 by 11 inches, maximum.
   d. Prepare special typewritten data on minimum 20-pound paper.
   e. Provide tabbed divider for each product and system.
   f. Drawings: Bind in with other data; provide reinforced binding edge; fold larger Drawings to size of pages.
      1) Do not use pockets or loose Drawings.

4. Provide table of contents for each volume listing:
   a. Name of the project.
   b. Name, address, telephone number, and contact name of:
      1) Architect.
      2) Contractor.
   c. Index of products and systems included in volume.

3.4 TRANSPORTATION AND HANDLING

A. Require supplier to package finished products in a manner which will protect from damage during shipping, handling, and storage.

B. Transport products by methods which avoid damage.

C. Deliver in dry, undamaged condition in manufacturer's unopened packaging.

D. Provide equipment and personnel adequate to handle products by methods which prevent damage.

E. Provide additional protection during handling where necessary to prevent damage to products and packaging.

F. Lift large and heavy components at designated lift points only.

3.5 DELIVERY AND RECEIVING

A. Arrange deliveries of products to allow time for inspection prior to installation.

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B. Coordinate delivery to avoid conflict with the work and to take into account both the conditions at the site and the availability of personnel, handling equipment, and storage space.

C. Clearly mark partial deliveries to identify contents, to permit easy accumulation of entire delivery, and to facilitate assembly.

D. Promptly inspect shipments and remedy damage, incorrect quantity, incompleteness, improper or illegible labeling, and noncompliance with requirements of Bid Documents and approved submittals.

3.6 STORAGE

A. No indoor storage areas are available on-site.

B. General Storage Procedures:

1. Store products immediately on delivery.

2. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

3. Store in a manner to prevent damage to the stored products and to the Work.

4. Store moisture-sensitive products in weathertight enclosures.

5. Store indoors if necessary to keep temperature and humidity within ranges required by manufacturer.

6. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

7. Arrange storage to provide access for inspection and inventory.

8. Periodically inspect and remedy damage and noncompliance with required conditions.

C. Loose Granular Materials: Store on solid surfaces in well-drained area; prevent mixing with foreign materials.

D. Exterior Storage:

1. Cover products subject to weather damage with impervious sheet covering; provide ventilation to avoid condensation.

2. Provide surface drainage to prevent runoff or ponded water from damaging stored products.

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3. Prevent damage and contamination from refuse and chemically injurious materials and liquids.

4. Store fabricated products on substantial platforms, blocking, or skids above the ground, sloped to drain.

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SECTION 01700 - PROJECT CLOSEOUT DOCUMENTS AND PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Bid Documents including Drawings, Specifications, Division 1 - Miscellaneous Requirements Sections and Specification Sections.

1.2 SUMMARY

A. Section Includes:

1. Maintenance of Project Record Documents,
2. Record drawings, including As-Built Drawings,
3. Record project manual (Specifications),
4. Operation and Maintenance Manuals,
5. Warranties,
6. Extra Materials,
7. Submittals required prior to requesting for determining dates of substantial and final completion, and also prior to release of final payment(s),
8. Transmittal of Closeout Project Documents to the Owner,
9. Instructions of Owner's personnel,
10. Final Cleaning.

B. GENERAL REQUIREMENTS

1. All submittals shall indicate reference to the appropriate Architect's Project Number.

C. As-Built Drawings:

1. Full-size paper set.
2. Two (2) Flash Drives.

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1.3 MAINTENANCE OF PROJECT RECORD DOCUMENTS

A. Do not use record documents of any type for construction purposes.

B. Maintain record documents in a secure location at each site while providing for access by the Contractor and the Architect during normal working hours; store in a fire-resistive room or container outside of normal working hours.

C. Record information as soon as possible after it is obtained.

D. Assign a person or persons responsible for maintaining record documents.

E. Record the following types of information on all applicable record documents:

1. Dimensional changes.

2. New and revised details.

3. Actual routing of piping.

4. Actual equipment locations.

5. Locations of utilities concealed in construction.

6. Particulars on concealed products which will not be easy to identify later.

7. Changes made by modifications to the Contract; note identification numbers if applicable.

8. New information which may be useful to the Owner, but which was not shown in either the Bid Documents or submittals.

1.4 RECORD AND AS-BUILT DRAWINGS

A. During the progress of the installation, the Contractor shall keep a careful record of all changes and variations in the arrangement of their Work from the layout shown on the Contract Drawings in order that the Owner may be provided with a complete set of all plans (As-Builts) showing the Work as actually installed.

1. The Contractor shall maintain complete two (2) sets of prints of the Contract Drawings, marked to show changes which occur due to their Work.

2. Where the actual Work differs from that shown on the Drawings, mark this set to show the actual Work.

3. Mark location of concealed items before they are covered by other Work.

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4. Mark either record Contract Drawings or shop drawings, whichever are best suited to show the change.

5. Where changes are marked on record shop drawings, mark cross-reference on the applicable Contract Drawing.

6. When the Contractor is required by a provision of a modification to prepare a new Drawing, rather than to revise existing Drawings, obtain instructions from the Architect as to the Drawing scale and information required.

7. Keep Drawings in labeled, bound sets.
   a. Mark with red pencil.
   b. Mark work of separate Contracts with different colors of pencils.

8. Incorporate new Drawings into existing sets as they are issued.

9. Where record Drawings are also required as part of operation and maintenance data submittals, make copies from the original record Drawing set.

10. As-Built Drawing Format to be submitted to the Architect:
    a. One (1) complete, legible full-size paper (hard copy) As-Built Drawing set with the following information on each page:
       1) Note: "As-Built" drawing,
       2) Contractor's Firm name,
       3) Date.
    b. Two (2) copies, pdf format USB flash drive, scanned As-Built Drawings of the hard copy furnished to the Owner (indicated above) shall be furnished to the Owner and the Architect and as directed by the Architect.

11. As-Built Drawings must be submitted to the Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

B. Record drawings shall be provided for **all work** including but not limited to the following:

1. General Construction Work

1.5 PROJECT SPECIFICATION MANUAL

A. The Contractor shall maintain a complete copy of the project Specification manual, marked to show changes which occur due to their Work.

B. Where the actual Work differs from that shown in the project manual, mark the record copy to show the actual Work.

1. Include a copy of each Addendum and modification to the Contract.

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2. In addition to the types of information required on all record documents, record the following types of information:
    a. Product options taken, when the Specification allows more than one.
    b. Product substitutions.
    c. Proprietary name and model number of actual products furnished, for each product, material, and item of equipment specified.
    d. Name of the supplier and installer, for each product for which neither a product data submittal nor a maintenance data submittal was specified.

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:
    a. Emergency instructions and procedures.
    b. System, subsystem, and equipment descriptions, including operating standards.
    c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    d. Description of controls and sequence of operations.
    e. Piping diagrams.

2. Maintenance Data:
    a. Manufacturer's information, including list of spare parts.
    b. Name, address, and telephone number of Installer or supplier.
    c. Maintenance procedures.
    d. Maintenance and service schedules for preventive and routine maintenance.
    e. Maintenance record forms.
    f. Sources of spare parts and maintenance materials.
    g. Copies of maintenance service agreements.
    h. Copies of warranties and bonds.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

C. Operation and Maintenance Manuals must be submitted to the appropriate Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

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1. Contractors shall submit electronic version of the O&M manuals for review by the Civil Consultant. *Paper copies should not be submitted as part of the review process.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the Table of Contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Warranty manual must be submitted to the Architect for review. Architect's approval must be obtained before issuing final payment.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.8 SUBMITTAL REQUIREMENTS - SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list and reasons why the Work is not complete.

2. Advise Owner of pending insurance changeover requirements.

3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

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5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and digital images on USB flash drive, damage or settlement surveys, and similar final record information.

6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

8. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

9. Complete final cleaning requirements, including touch-up painting.

10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.9 SUBMITTAL REQUIREMENTS - FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to the requirements of the Bid Documents.

2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and signed by the Contractor.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

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4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Provide statement signed by Owner's Representatives stating that they have received the required training.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. The cost of additional inspections required by the Architect or their consultants or the Construction Manager due to Contractor's failure to complete the punch list will be paid by the Contractor and will be deducted from the Contractor's final payment.

C. The Contractor is required to obtain all final releases from governmental and regulatory Agencies Having Jurisdiction over the project with the assistance from the Architect / Engineer and Owner (if required).

1.10 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list to the Architect and Construction Manager. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, as applicable.

2. Organize items applying to each space by major element, including categories for equipment and systems.

3. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect and Construction Manager.
   d. Name of Contractor.
   e. Page number.

1.11 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

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B. Record Drawings: Maintain and submit one set of blue - or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

3. Mark important additional information that was either shown schematically or omitted from original Drawings.

4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.

5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including Addenda and Contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, Addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Note related Change Orders, Record Drawings and Product Data, where applicable.

D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

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1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Drawings and Record Specifications, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.12 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Provide instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times.

3. Schedule training with Owner, through Architect and Construction Manager, with at least seven calendar days advance notice.

4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.

B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:

1. System design and operational philosophy.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
6. Maintenance.
7. Repair.

1.13 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

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1. Refer to other Division 1 - specification sections for additional cleaning as required and where applicable.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   f. Remove debris and surface dust from limited access spaces, including trenches, manholes and similar spaces.
   g. Sweep concrete floors broom clean in unoccupied spaces.
   h. Remove labels that are not permanent.
   i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      (1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
   j. Replace parts subject to unusual operating conditions.
   k. Leave Project clean and ready for occupancy.
   l. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

1.14 TRANSMITTAL TO OWNER

A. Collect, organize, label, and package ready for reference.

1. Provide cardboard file boxes for submittals.

2. Provide cardboard Drawing tubes with end caps for paper sets of prints.

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3. Bind print sets with durable paper covers.

4. Label each document (and each sheet of Drawings) with "PROJECT RECORD DOCUMENTS - This document has been prepared using information furnished by _____" [insert the Contractor's name], and the date of preparation.

B. Submit to the Architect for transmittal to the Owner, unless otherwise indicated.

1.15 REMOVE TEMPORARY FACILITIES

A. At the completion of the Work prior to final payment, remove all temporary facilities entirely from the site, including, but not limited to, the following:

1. Trailers, temporary toilets, temporary enclosures, dust barriers and other temporary protection devices.

1.16 SUBMITTALS REQUIRED PRIOR TO FINAL PAYMENT

A. Contractor must satisfy all requirements of Sections 01700 and 01900 prior to submitting for Final Payment.

B. A closeout checklist will be provided to the Contractor when are substantially complete. The Contractor is instructed to mark each submittal with the corresponding item number on the checklist. All warranties must have the Owner Name, Project Name, Architect Project Number and Warranty Periods. If all documents are not received in this format, the submittal will be rejected and the Contractor will be instructed to pick these documents up at the Architect's office for correction.

C. Submittals required prior to final payment shall be in accordance with "Checklist" include, but are not limited to, the following items:

1. Completed Operations Insurance Certificate - ACORD Form.
    a. In accordance with AIA A101- Exhibit A:
        1) § A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor (and all Subcontractors) shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional

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insured coverage shall be no less than that provided under Article A.3.2 Contractor's Required Insurance. The Products and Completed Operations insurance shall be maintained for five (5) years after final payment or the then current applicable statute of repose. A "per project endorsement" shall be included, so that the general aggregate limit applies solely to the Project that is the subject of this Contract.

2. Affidavit of Payment of Debts and Claims - AIA Document G706.

3. Affidavit of Release of Liens - AIA Document G706A.

4. Consent of Surety Company to Final Payment - AIA Document G707.

5. Certification of Wages in accordance with New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.

6. 10% two year Maintenance Bond on the form provided in this Specification.

7. Manufacturers' product warranties, Special written guarantees and warranties, maintenance warranty, etc. in accordance with Section 01900, various Specification sections and the Table of Contents of the Project Manual. This is in addition to the two-year guarantee covered by the Maintenance Bond and in addition to the Contractor's two-year guarantee.
   a. Guarantee shall be signed and sealed by Officer of the Contracting Firm and shall be notarized.

8. Project Record Drawings, (As-Built Drawings), Record Specifications, Record Product Data, and Miscellaneous Record Submittals.
   a. Note: As-Built Drawings shall be submitted to the Engineer(s)/ Architect.

9. Operation and Maintenance Manuals and Instructions.
   a. Note: Operation and Maintenance Manuals shall be submitted to the Engineer(s) / Architect.

10. Certificate of Occupancy / Copies of all Building Department inspection approvals.

11. In accordance with requirements of N.J.S.A. 52:32-44. Contractor must submit accurate list of all Subcontractors and suppliers. Contractor must provide a certification that all proofs of business registration for all Subcontractors and suppliers are maintained in their file.

12. All approvals and final releases from governmental and regulatory agencies have jurisdiction including, but not limited to: NJDCA, Local Construction Department, NJDEP, etc., as required.

END OF SECTION 01700

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CLOSEOUT CHECKLIST

Owner		
Title		
Project #		**Contract:**
Contractor		
Substantial Completion Date:		**Updated:**
Refer to Specification Sections 01700 and 01900 for closeout requirements.		
Item No.	**Documents & Warranties Required For Closeout**	**Status**
1	Completed Operations Insurance Certificate - ACORD Form	
2	Completed Operation Insurance Statement (Sample Enclosed)	
3	AIA Document G704 Certificate of Substantial Completion	
4	AIA Document G706 Affidavit of Payment of Debts & Claims	
5	AIA Document G706A Affidavit of Release of Liens	
6	AIA Document G707 Consent of Surety to Final Payment	
7	Certification that all wages have been paid - NJ Prevailing Wage Act, N.J.S.A. 34:11-56.25	
8	10% two-year Maintenance Bond - must be on form provided in spec book - sample attached	
9	Record Project Manual indicating changes or company letter stating no changes.	
10	Two Year Contractor's Guarantee Covered by Maintenance Bond - Sample Attached	
11	Operation Instructions & Maintenance Manuals **(2 each in 3-ring binder)**	
12	Record Drawings. Indicate As-Built drawings with company name, address and date (**1 Paper Set & 2 CD's)**	
13	Final Payment Requisition & Board Voucher/Invoice (3) Contractor will not be closed out until all paperwork is submitted	
14	Certificate of Approval/Acceptance	
15	Confirmation that FVHD has received "hard copies" (not electronic) of all shop drawing submittals.	
16	Copies of all outstanding certified payroll reports or letter on Contractor's letterhead stating all outstanding certified payroll sheet and manning reports have been sent to the Owner.	
17	Letter on Contractor's letterhead stating date of substantial completion and requesting punch list review to Architect & Engineer	
18	Final Punch list signed and dated indicating completion of all work	
19	Submit accurate list of all subcontractors and suppliers and provide a certification that all proofs of business registration for all subcontractors and suppliers are maintained on his/her file.	
20	Balancing & Testing Reports (HVAC)	
21	Fire Alarm Certification (ELECTRICAL)	
22	Warranties - Refer to Specification Section 01900 for required warranties for each trade	

SECTION 01800 - TIME OF COMPLETION AND LIQUIDATED DAMAGES

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes the requirements for completion of interim milestone events and final completion of all work required by the Bid Documents.

B. Related Sections:

1. Items of Work attached to the "Certificate of Substantial Completion" and establishing "Final Completion Time" as per Section 00800.

C. This section also establishes the relation of liquidated damages for failure to complete the interim milestone events or final completion requirements within the time requirements stated herein.

D. **The building(s) (or part of the adjacent building(s)) will be occupied at all times. The Contractor shall maintain emergency egress paths, control dust and water infiltration at all times.**

1.2 TIME FOR COMPLETION

A. It is understood that the Contractor has a responsibility to complete its work in sequence with the work of the other Contractor(s) and to allow the other Contractor(s) access to each work site so that they may complete their work within the times established.

B. Completion of the Contract Work by the Contractor shall be time of the essence.

C. The Contractor shall work overtime, additional shifts, weekends or holidays to complete the work on time with no additional cost to the Owner.

1. Scarce resources will be no excuse for not completing the work on time.

2. **Work may take place during regular shift and second shift (7:00 AM - 10:00 PM) <u>after June 27, 2025 until August 29, 2025</u>; however, the Contractor is required to review and coordinate all work activities with the Architect, Construction Manager and School Facilities Director prior to commencing with the work.**
   a. Contractor to review permitted work hours to comply with the local "Noise Ordinance".

3. **Contractor is required to include the cost of any premium time, second shift and weekend work which may be required in their bid to complete the work within the indicated milestone dates.**

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D. Substantial and final completion of the Work shall include but is not limited to final inspection and acceptance by the Local Building Officials.

1.3 SEQUENCE OF CONSTRUCTION

A. In order to allow the Prime Contractor(s) and Subcontractor(s) to understand the requirements of the Project, the following general sequence of construction Work will be followed:

1. Generally, the General Construction Contractor is to schedule, sequence and coordinate the Work with Subcontractors, as required, to logically progress the Work, meeting the overall design intent, construction quality and time of completion. **Schedule inspections and obtain required approvals of all stages of the Work as required by the Local Construction Officials.**

2. Proper scheduling of the Work includes timely sequencing, preparation, review and approval by the Prime Contractor and **submission of requisite technical and other project submittals and shop drawings** to the Architect / Engineer(s) for approval to advance the proper, logical progression of the Work.

3. After mobilization and securing the work site, the General Construction Work Contractor is to perform selective demolition of each site construction, layout and coordinate the proposed new construction with existing construction to remain, as noted on the Construction Drawings.
   a. Apply for and obtain demolition permit to allow commencement of the Work while permit applications for new Construction are under review by the Construction Official.

4. Progress the Work of all trades to achieve completion of underground utilities and preparation of subgrades for new construction.

5. Progress the Work of all Trades towards completion, as required, by the Bid Documents to obtain **Substantial Completion** including, inspection to obtain the Certificate of Occupancy.

6. Provide written formal notification of **Substantial Completion** to the Architect / Engineer and request Punch-List Observations.

7. Complete proper preparation, review and approval by the Prime Contractor and submission of all Close-out Documents, Operation and Maintenance Manuals, As-built surveys and Drawings to the Architect / Engineer(s) within Contract time required to achieve **Final Completion**.

1.4 PROJECT CONTRACT MILESTONE DATES

A. TIME OF COMPLETION

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1. **Milestone No. 1**
   a. Sign Contract, no later than **ten (10)** calendar days, Sundays and Holiday's excepted, from **Notice of Award;** on or about **June 12, 2025.**
   b. Contractor submits Bonds and Insurance **ten (10) calendar days from Notice of Award, Sundays and holidays excepted**.
   c. **Notice to Proceed** shall be within **three (3) business days** of date of signing Contract; on or about **June 27, 2025.**

2. **Milestone No. 2**
   a. **Long Lead submittals** for special equipment, fixtures, etc. shall be submitted, on or about **July 15, 2025.**

3. **Milestone No. 3**
   a. Submission of all remaining technical shop drawing submittals shall be submitted within **thirty (30) calendar days from Notice to Proceed.**

4. **Milestone No. 4**
   a. Physical work at the site shall commence on or about **June 30, 2025.**

5. **Milestone No. 5**
   a. Substantial Completion of the entire project shall be on or before **64 Calendar Days from the Notice to Proceed, August 29, 2025.**
   b. Liquidated Damages - $2,000.00 / Calendar day of delay.

6. **Milestone No. 6**
   a. Final Completion of all Work including punch list items and closeout documents, no later than **31 Calendar Days from Substantial Completion, September 29, 2025.**
   b. Liquidated Damages - $2,000.00 / Calendar day of delay.

1.6 LIQUIDATED AND OTHER DAMAGES

A. By bidding the Project, the Contractor is accepting that the time allotted for the completion of Work is reasonable. Completion of Work on or about these milestones are prerequisites for the coordinated Work of the Contractor. When the Owner will suffer financial loss and/or extra cost if a milestone task is not completed within the allotted time, the Contractor responsible for the delay in achievement of each milestone, as determined by the Owner's Project Manager and the Architect, shall pay to the Owner a fixed, agreed sum as liquidated damages for each calendar day of delay until the milestone task is substantially completed.

B. The Liquidated Damages set for above shall be in addition to other consequential losses or damages the Owner may incur by reason of such delay, such as, but not limited to, the cost of additional architectural and engineering, independent third party inspection and other services resulting from the delay, additional costs to the Owner for payments to other Contractors resulting from delay.

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C. Liquidated Damages are fixed and agreed upon by and between the Contractor and the Owner because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amounts shall be retained from time to time by the Owner for the current periodical payments.

1. The Liquidated Damages set for above are intended to compensate Owner for loss of use during the period of delay, for other delay during construction which may result further delay in substantial and/or final completion dates and for any acceleration costs by other Contractors to recover the defaulting Contractor's delay.

2. In no way shall costs of Liquidated Damages be construed as a penalty to the Contractor.

D. The Owner shall have the right to deduct the total amount any Liquidated Damages for which the Contractor may be liable from any monies otherwise due the Contractor, including any retainage under control of the Owner.

E. The Surety providing the Performance Bond, furnished by the Contractor, will be liable for Liquidated Damages assessed against the Contractor, to the extent that the Contractor shall not make settlement thereof with the Owner.

F. The Contractor agrees that in the event the Owner is required to incur or advance any additional necessary and reasonable costs (including but not limited to Architect, Attorney or other fees related expenses), as a result of the failure of the Contractor to perform any obligation of this Contract or to perform its obligations in a timely manner as required by the Bid Documents, the Contractor agrees that such additional necessary and reasonable costs shall be borne by the Contractor and may be deducted by the Owner from any payment due the Contractor.

G. In accordance with N.J.S.A. 18A:18A-19, the Owner shall deduct from the Contract Price, for any wages paid by the Owner to any inspector or inspectors necessarily employed by for the work of this project, for any number of days in excess of the number of days or indicated dates allowed in milestones above. Such sums shall be part of the Liquidated Damages indicated herein after.

END OF SECTION 01800

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SECTION 01900 - GUARANTEES AND WARRANTIES

PART 1 - GENERAL

1.1 CONTRACT

A. Period for all guarantees and warranties shall commence at date of substantial completion for the entire project, as determined by the Architect.

B. The Contractor's guarantee on all work, covered by Maintenance Bond. . . .**Two (2) Yrs.**

1. The Maintenance Bond shall represent a continuing obligation of the Prime Contractor and their Subcontractor(s) to repair/replace defective materials and/or labor of products installed in the project for **two (2) years** from the date of Substantial Completion.

C. Provide required warranties indicated in specification sections which include but not limited to the following:

1.2 GENERAL CONSTRUCTION WORK

A. Selective Demolition as specified in Section 02100.

1. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

END OF SECTION 01900

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SECTION 01950 - SUBSOIL

1. GENERAL

A. The attached subsurface investigation was developed by Professional Engineers at the request of the Owner.

B. Additional surveys, test borings and other exploratory operations may be made by Contractor at no cost to Owner.

C. The Architect and Owner assume no liability or responsibility for the accuracy of this report and for conclusions drawn therefrom.

D. See Report for Test Boring Location Plan.

END OF SECTION 01950

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"Providing Economic Solutions in Real Time"

CLIENT:	L2A Land Design, LLC	
PROJECT:	Princeton Johnson Park School	
REQUIREMENT:	Professional Engineering Services: Stormwater	
LOCATION:	285 Rosedale Road, Princeton, NJ 08540	
DATE:	March 5th, 2025	
ATTENTION:	Greg Magulak, P.E.	via email

PURPOSE

The purpose of this report is to present the Findings, Conclusions and Recommendations relative to the physical investigation performed at the above captioned project location.

INVESTIGATION

Nick Dobson, Project Manager, and representatives of IES were present at the above captioned project location on Monday, February 17th, 2025, to conduct a series of test pits to obtain undisturbed samples of the existing soil subgrade for purpose of stormwater design considerations. The testing was performed to determine if subsurface infiltration is feasible and to provide design data and recommendation for potential stormwater management facilities including the presence of potential limiting layers. Test pit excavations were performed by Accurate Drilling utilizing an excavator to obtain undisturbed samples of the subgrade soils for Falling Head Laboratory Analysis. In total, two (2) predetermined locations were investigated within areas identified for potential proposed basin locations. Locations can be seen on the following page entitled "Test Pit Location Plan". At all testing locations, undisturbed samples were extracted utilizing Shelby tubes. IES recorded the soil morphology at each test pit location including the presence of limiting zones, seasonal high water table indicators and similar pertinent subsurface data germane to stormwater facility potential design. All test pits were advanced to machine max depth capabilities or shallower if a limiting horizon was encountered.

In the laboratory, IES performed Falling Head Permeability Testing upon obtaining samples in accordance with the NJ BMP Manual and corresponding ASTM Standards to measure infiltration rates of the undisturbed samples. Per the NJ BMP Manual Chapter 12, soil hydraulic conductivity tests must be conducted on the most hydraulically restrictive horizon or substratum. The following location plan indicates the two (2) testing location.

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TEST PIT LOCATION PLAN

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FINDINGS

Test Pit Investigation

TP #1

Test @ 36" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting from grass, brown to dark brown in color
6" to 50"	SILT with some clay mixed in, brown in color, moist
50" to 90"	Gravelly SILT, brown to grayish brown in color, moisture increasing with depth
90" to 126"	Weathered Shale/rippable rock and SILT mix, brown to reddish brown in color, wet

120" BGS = Ground Water Encountered

76" BGS ESHWT (start of increased moisture levels and fine grained composition





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TP #2

Test @ 44" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting from grass, brown to dark brown in color
6" to 43"	SILT, brown in color, moist
43" to 55"	SILT and Clay mix, brown to grayish brown in color, moist
55" to 90"	SILT with some gravel, brown in color, moisture increasing with depth
90" to 134"	Weathered Shale/rippable rock and SILT mix, brown to reddish brown in color, wet

127" BGS = Ground Water Encountered

84"BGS ESHWT (start of increased moisture levels and fine grained composition





CONCLUSIONS/RECOMMENDATION

1. According to the *Natural Resources Conservation Service Web Soil Survey* site soils are that of Quakertown Silt Loam, 2 to 6 percent slopes (Hydric Rating of 0%) and Readington and Abbottstown Silt loams, 6 to 12 percent slopes (Hydric Rating of 0%), refer to **Appendix B** for USDA Hydric Soils Map. Quakertown Silt loam has a hydrologic soil rating C (Slow infiltration rate when thoroughly wet) and the Readington and Abbottstown Silt loams has a hydrologic soil rating C (Slow infiltration rate when thoroughly wet), refer to **Appendix B** for USDA Hydrologic Soil Map.

2. As part of this investigation, IES was assigned to determine the estimated seasonal high-water table (ESHWT) at each test pit location base upon visual observation made during each test pit investigation. Generally speaking, groundwater, perched water (contingent upon site conditions) and/or the presence of mottling were determined indicators of the ESHWT. Both test pits in this investigation have an estimated seasonal high-water table around 6.5' to 7' BGS. This assertation is based upon moisture levels in the soil and fine grained composition

3. The Design Engineer is recommended to use the above information for sizing of the Proposed Stormwater Management Facilities. IES recommends the Design Engineer utilize the following unfactored rates with a minimum factor of safety of 2 to ensure the longevity of the system given the presence of fine-grained soils and cohesive soil content based on the average infiltration testing results obtained at test locations and corresponding depths within the vicinity of the proposed SWM facilities.

Test location	Test depth	Total test pit depth	Lab Rate	Avg. Rate (in/hr)
TP-1	36	126	0.005	0.0055
TP-1	36	126	0.006	
TP-2	44	134	0.003	0.004
TP-2	44	134	0.005	

4. The NJ BMP Manual recommends a design infiltration rate between 0.5 to 10 inches per hour. The BMP Manual states a factor of safety between 1 and 10 be used for design with a factor of safety of 2 being the recommended value. The Design Engineer is recommended to use the results of the field infiltration testing above for sizing of the Proposed Stormwater Management Facilities. The minimal vertical distance from the proposed infiltration invert elevation and any limiting layer is designed at 24" by the NJ-BMP Manual. Based upon the findings of this investigation, in-situ conditions do not provide adequate infiltration.

5. It is recommended that a Soils Engineer or representative thereof is present on-site during the construction of stormwater management systems in order to ensure the system was constructed as designed.

6. Subgrade under the proposed infiltration facilities shall **NOT** be compacted or subject to excessive equipment traffic. Areas that where soils have been subjected to construction traffic shall be scarified to a minimum. This also includes any installation of amended soils for specific basin configurations requiring amended soils. All prescribed soils shall be tested in the lab and confirmed to comport to design specifications for gradation and permeability.

7. In the event an accumulation of fine-grained material and/or surface ponding is encountered within the subbase of the facility, material within that area shall be removed and replaced with acceptable material.

8. It is recommended that no fabric be placed on the bottom of any proposed infiltration basin and that non-woven fabric be permeable >2in/hr.

QUALIFICATIONS

Conclusions and recommendations are based on the above investigation and findings. No other conclusions are to be drawn other than that specifically stated.

Very Truly Yours,

Chadd W. Ingram, P.E.
(DE, MD, NJ, PA)
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Project Manager
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Appendix A:

Index Laboratory

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Falling Head Permeability Test Laboratory Report

Client:	L2A Land Design, LLC	**Tested By:**	G. Urich
Project:	Princeton Johnson Park School	**Checked By:**	M. MacCall
Location:	285 Rosedale Road, Princeton, NJ 08540	**Report Date:**	3/3/25

Sample ID: TP-1 36" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.05	43,200	**0.000004**
2	15.24	15.10	43,200	**0.000003**
3	15.24	15.10	43,200	**0.000003**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000004 cm/s

Average K Value = 0.005 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client:	L2A Land Design, LLC	**Tested By:**	G. Urich
Project:	Princeton Johnson Park School	**Checked By:**	M. MacCall
Location:	285 Rosedale Road, Princeton, NJ 08540	**Report Date:**	3/3/25

Sample ID: TP-1 36" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.10	43,200	**0.000003**
2	15.24	15.05	43,200	**0.000004**
3	15.24	15.05	43,200	**0.000004**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000004 cm/s

Average K Value = 0.006 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Johnson Park School
Location: 285 Rosedale Road, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 3/3/25

Sample ID: TP-2 44" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.15	43,200	**0.000002**
2	15.24	15.15	43,200	**0.000002**
3	15.24	15.15	43,200	**0.000002**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000002 cm/s

Average K Value = 0.003 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Johnson Park School
Location: 285 Rosedale Road, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 3/3/25

Sample ID: TP-2 44" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.10	43,200	**0.000003**
2	15.24	15.10	43,200	**0.000003**
3	15.24	15.10	43,200	**0.000003**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000003 cm/s

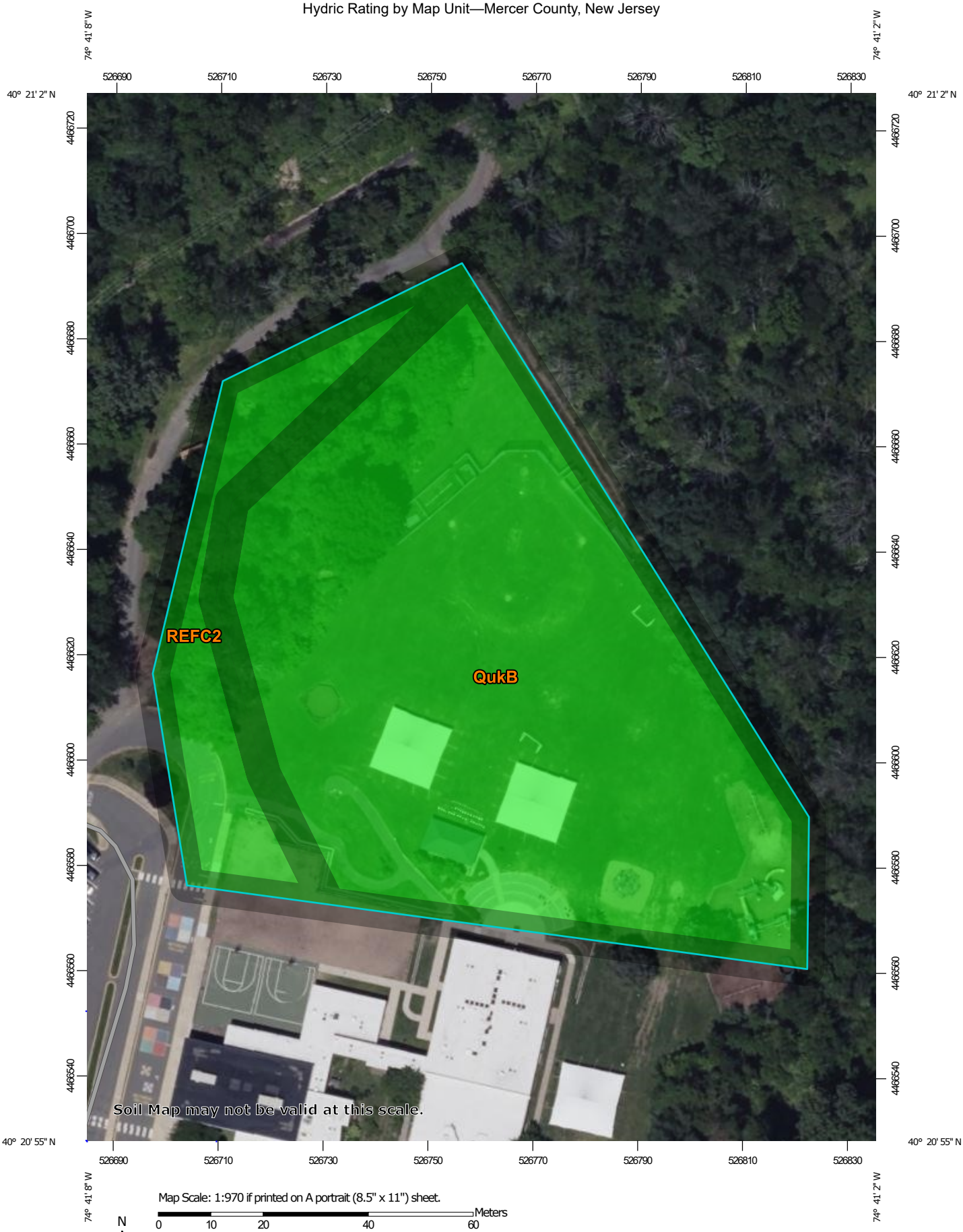
Average K Value = 0.005 Inches Per Hour

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Appendix B:

Soil Maps


74° 41' 8" W
74° 41' 2" W
526690
526710
526730
526750
526770
526790
526810
526830
40° 21' 2" N
40° 20' 55" N
4466720
4466700
4466680
4466660
4466640
4466620
4466600
4466580
4466560
4466540
REFC2
QukB
Soil Map may not be valid at this scale.
Map Scale: 1:970 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 10 20 40 60
Feet
0 45 90 180 270
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
QukB	Quakertown silt loam, 2 to 6 percent slopes	0	2.2	82.9%
REFC2	Readington and Abbottstown silt loams, 6 to 12 percent slopes, eroded	0	0.5	17.1%
Totals for Area of Interest			**2.7**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

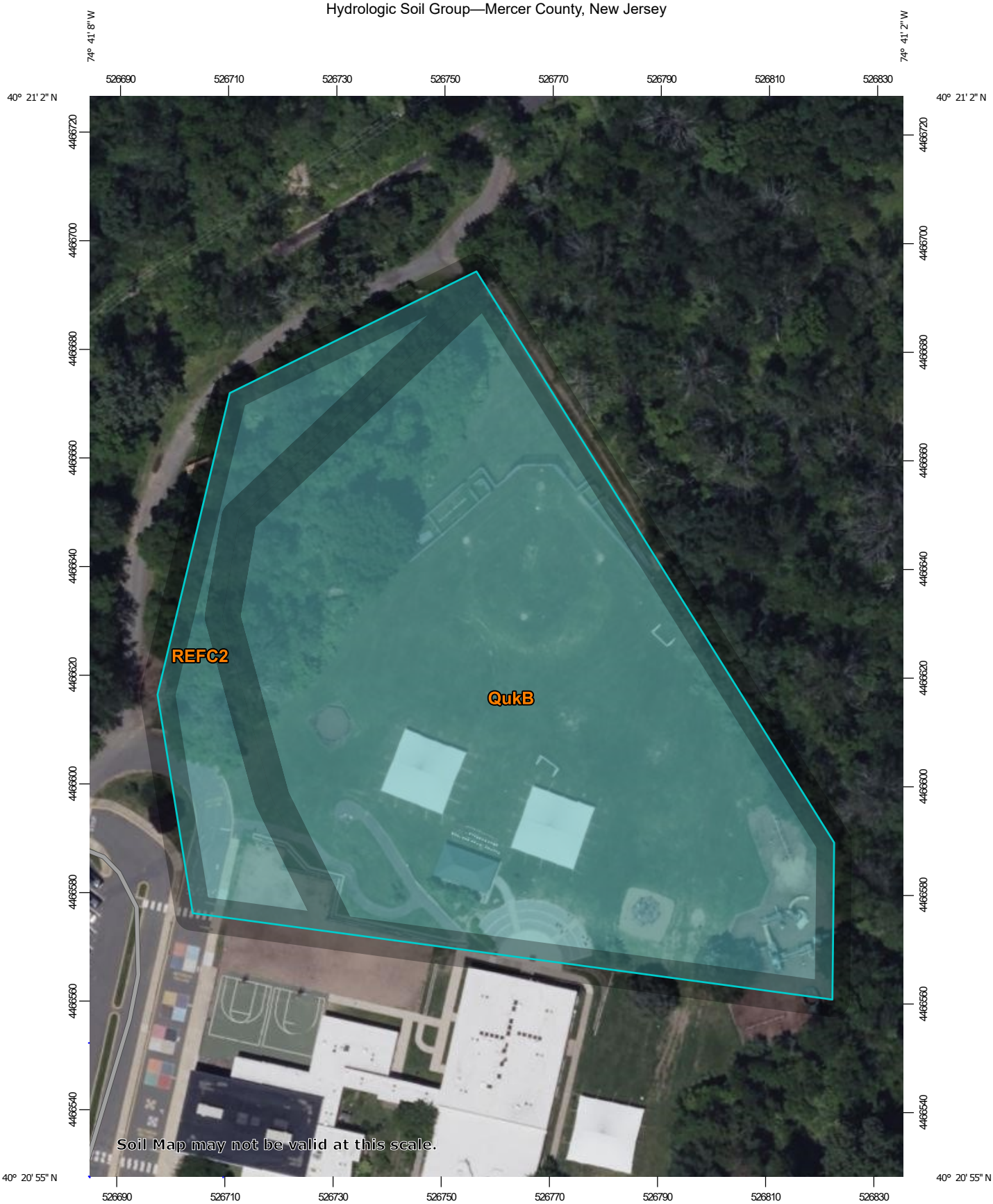
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



Map Scale: 1:970 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 45 90 180 270

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
QukB	Quakertown silt loam, 2 to 6 percent slopes	C	2.2	82.9%
REFC2	Readington and Abbottstown silt loams, 6 to 12 percent slopes, eroded	C	0.5	17.1%
Totals for Area of Interest			**2.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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CLIENT:	L2A Land Design, LLC	
PROJECT:	Princeton Littlebrook School	
REQUIREMENT:	Professional Engineering Services: Stormwater Investigation	
LOCATION:	39 Magnolia Lane, Princeton, NJ 08540	
DATE:	February 27th, 2025	
ATTENTION:	Greg Magulak, P.E.	via email

PURPOSE

The purpose of this report is to present the Findings, Conclusions and Recommendations relative to the physical investigation performed at the above captioned project location.

INVESTIGATION

Nick Dobson, Project Manager, and representatives of IES were present at the above captioned project location on Saturday, February 8th, 2025, to conduct a series of test pits to obtain undisturbed samples of the existing soil subgrade for purpose of stormwater design considerations. The testing was performed to determine if subsurface infiltration is feasible and to provide design data and recommendation for potential stormwater management facilities including the presence of potential limiting layers. Test pit excavations were performed by Accurate Drilling utilizing an excavator to obtain undisturbed samples of the subgrade soils for Falling Head Laboratory Analysis. In total, two (2) predetermined locations were investigated within areas identified for potential proposed basin locations. Locations can be seen on the following page entitled "Test Pit location plan". At all testing locations, undisturbed samples were extracted utilizing Shelby tubes. IES recorded the soil morphology at each test pit location including the presence of limiting zones, seasonal high water table indicators and similar pertinent subsurface data germane to stormwater facility potential design. All test pits were advanced to machine max depth capabilities.

In the laboratory, IES performed Falling Head Permeability Testing upon obtaining samples in accordance with the NJ BMP Manual and corresponding ASTM Standards to measure infiltration rates of the undisturbed samples. Per the NJ BMP Manual Chapter 12, soil hydraulic conductivity tests must be conducted on the most hydraulically restrictive horizon or substratum. The below location plan indicates the two (2) testing location.

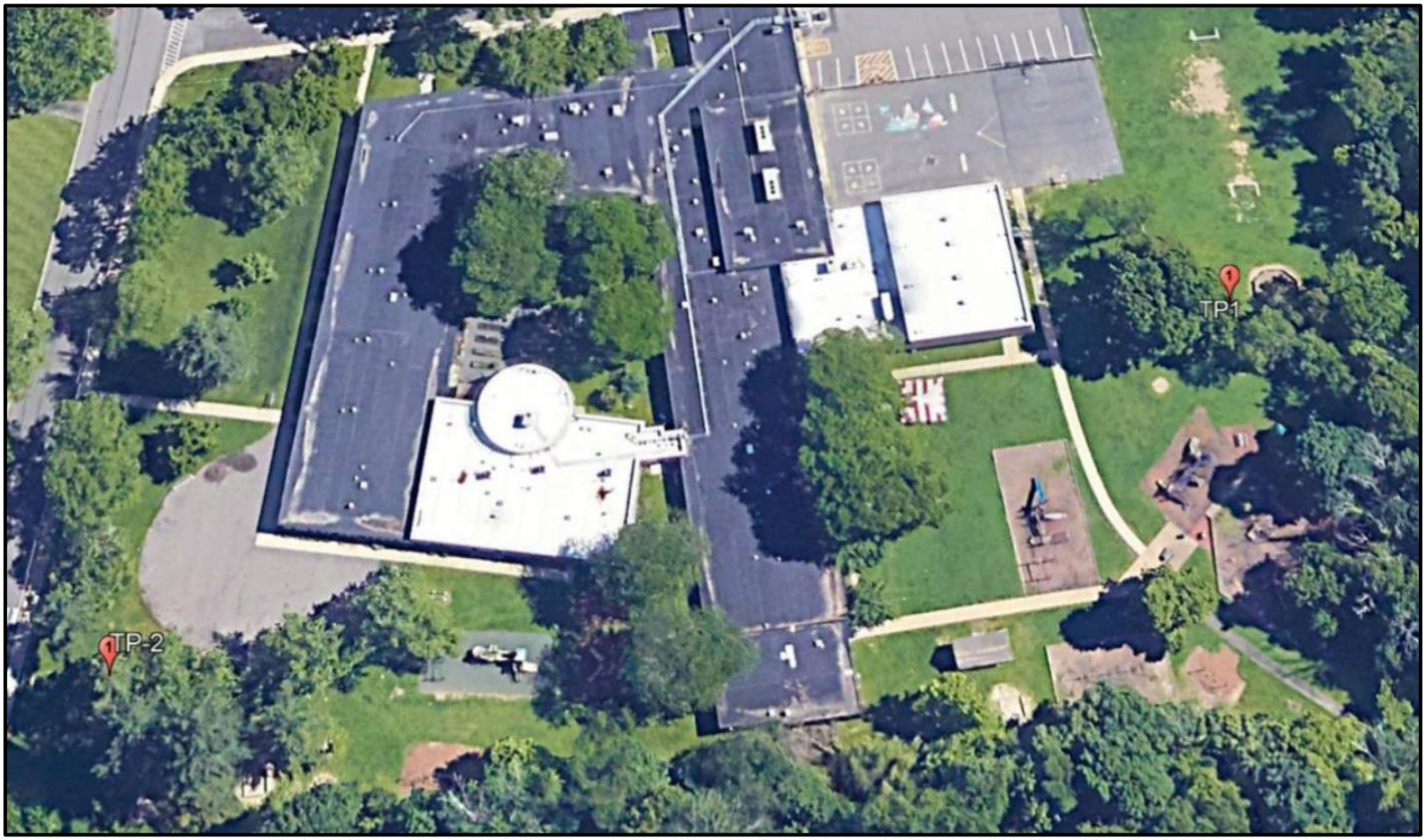
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TEST PIT LOCATIONS



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FINDINGS

Test Pit Investigation

TP #1

Test @ 36" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting, brown to dark brown in color
6" to 62"	Sandy SILT with trace gravel, brown in color, moist
62" to 75"	Sandy SILT to SILT with gravel, few and faint mottling, brown to orangish brown in color, dense, moist
75" to 120"	Rippable Rock and some Gravelly SILT, varigated in color, wet

72" BGS = Perched Water Encountered
62" BGS ESHWT TABLE



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TP #2

Test @ 36" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting, brown to dark brown in color
6" to 60"	Sandy SILT with trace gravel, brown in color, moist
60" to 73"	Sandy SILT to SILT with trace gravel, few and faint mottling, moist
73" to 108"	Rippable Rock and some Gravelly SILT, varigated in color

72" BGS = Ground Water Encountered
60" BGS ESHWT TABLE



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CONCLUSIONS/RECOMMENDATION

1. According to the *Natural Resources Conservation Service Web Soil Survey* site soils are that of Udorthents, bedrock substratum, 0 to 8 percent slopes (Hydric Rating of 4%) refer to **Appendix B** for USDA Hydric Soils Map. Udorthents, bedrock substratrum, 0 to 8 percent slopes has a hydrologic soil rating D (Very slow infiltration rate when thoroughly wet), refer to **Appendix B** for USDA Hydrologic Soil Map.

2. As part of this investigation, IES was assigned to determine the estimated seasonal high-water table (ESHWT) at each test pit location base upon visual observation made during each test pit investigation. Generally speaking, groundwater, perched water (contingent upon site conditions) and/or the presence of mottling were determined indicators of the ESHWT. Both test pits in this investigation have an estimated seasonal high-water table around 4.5' to 5.5' BGS due to the presence of mottling at each of these test pit locations.

3. The Design Engineer is recommended to use the above information for sizing of the Proposed Stormwater Management Facilities. IES recommends the Design Engineer utilize the following unfactored rates with a minimum factor of safety of 2 to ensure the longevity of the system given the presence of fine-grained soils and cohesive soil content based on the average infiltration testing results obtained at test locations and corresponding depths within the vicinity of the proposed SWM facilities.

Test location	Test depth	Total test pit depth	Lab Rate	Avg. Rate (in/hr)
TP-1	36	120	0.005	0.0045
TP-1	36	120	0.004	
TP-2	36	120	0.007	0.008
TP-2	36	120	0.009	

4. The NJ BMP Manual recommends a design infiltration rate between 0.5 to 10 inches per hour. The BMP Manual states a factor of safety between 1 and 10 be used for design with a factor of safety of 2 being the recommended value. The Design Engineer is recommended to use the results of the field infiltration testing above for sizing of the Proposed Stormwater Management Facilities. The minimal vertical distance from the proposed basin bottom and any limiting layer is designed at 24" by the NJ-BMP Manual.

5. It is recommended that a Soils Engineer or representative thereof is present on-site during the construction of stormwater management systems in order to ensure the system was constructed as designed.

6. Subgrade under the proposed infiltration facilities shall **NOT** be compacted or subject to excessive equipment traffic. Areas that where soils have been subjected to construction traffic

shall be scarified to a minimum. This also includes any installation of amended soils for specific basin configurations requiring amended soils. All prescribed soils shall be tested in the lab and confirmed to comport to design specifications for gradation and permeability.

7. In the event an accumulation of fine-grained material and/or surface ponding is encountered within the subbase of the facility, material within that area shall be removed and replaced with acceptable material.

8. It is recommended that no fabric be placed on the bottom of any proposed infiltration basin and that non-woven fabric be permeable >2in/hr.

QUALIFICATIONS

Conclusions and recommendations are based on the above investigation and findings. No other conclusions are to be drawn other than that specifically stated.

Very Truly Yours,

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Appendix A:
Index Laboratory Results

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Littlebrook School
Location: 39 Magnolia Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-1 36" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	14.99	57,600	**0.000004**
2	15.24	15.03	57,600	**0.000004**
3	15.24	15.05	57,600	**0.000003**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000004 cm/s

Average K Value = 0.005 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Littlebrook School
Location: 39 Magnolia Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-1 36" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.05	57,600	**0.000003**
2	15.24	15.10	57,600	**0.000002**
3	15.24	15.10	57,600	**0.000002**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000003 cm/s

Average K Value = 0.004 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Littlebrook School
Location: 39 Magnolia Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-2 36" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	14.95	57,600	**0.000005**
2	15.24	14.95	57,600	**0.000005**
3	15.24	14.95	57,600	**0.000005**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000005 cm/s

Average K Value = 0.007 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Littlebrook School
Location: 39 Magnolia Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-2 36" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	14.90	57,600	**0.000006**
2	15.24	14.85	57,600	**0.000007**
3	15.24	14.90	57,600	**0.000006**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000006 cm/s

Average K Value = 0.009 Inches Per Hour

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Appendix B:

Soil Maps



Map Scale: 1:1,830 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2021—Sep 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UdbB	Udorthents, bedrock substratum, 0 to 8 percent slopes	4	7.7	100.0%
Totals for Area of Interest			**7.7**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

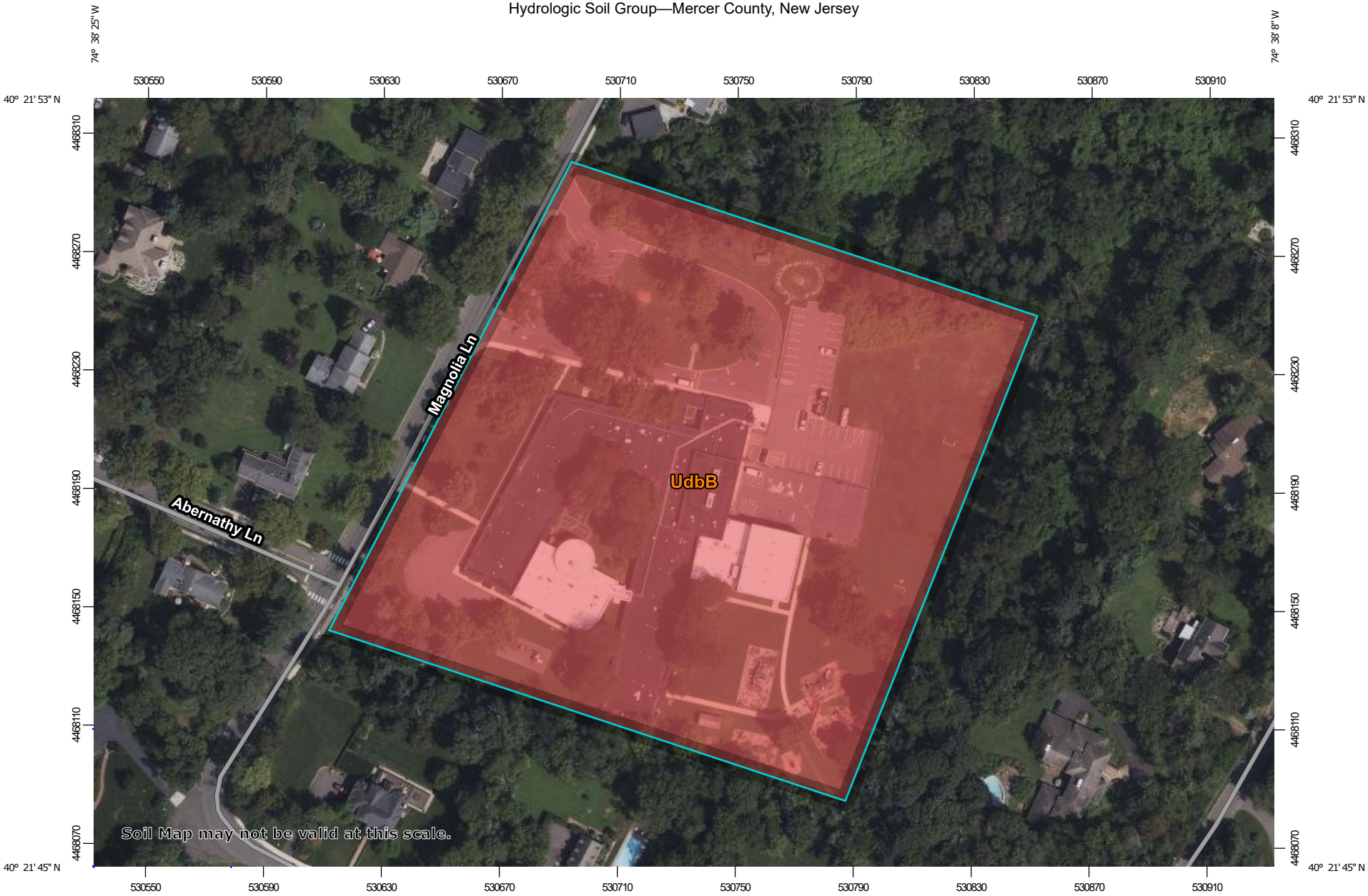
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



Map Scale: 1:1,830 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2021—Sep 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UdbB	Udorthents, bedrock substratum, 0 to 8 percent slopes	D	7.7	100.0%
Totals for Area of Interest			**7.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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CLIENT:	L2A Land Design, LLC	
PROJECT:	Princeton Middle School	
REQUIREMENT:	Professional Engineering Services: Stormwater Investigation	
LOCATION:	217 Walnut Lane, Princeton, NJ 08540	
DATE:	February 27th, 2025	
ATTENTION:	Greg Magulak, P.E.	via email

PURPOSE

The purpose of this report is to present the Findings, Conclusions and Recommendations relative to the physical investigation performed at the above captioned project location.

INVESTIGATION

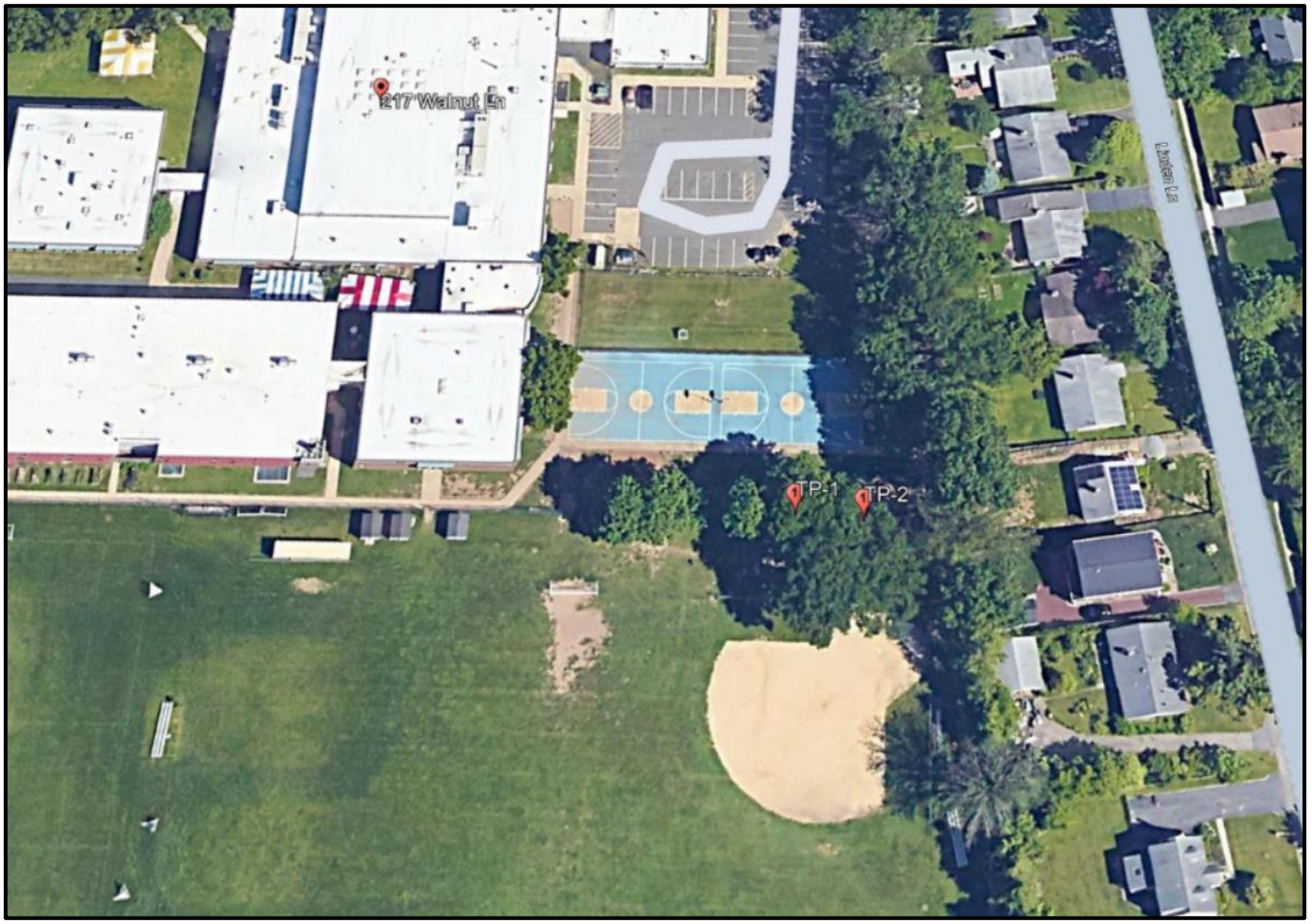
Nick Dobson, Project Manager, and representatives of IES were present at the above captioned project location on Saturday, February 8th, 2025, to conduct a series of test pits to obtain undisturbed samples of the existing soil subgrade for purpose of stormwater design considerations. The testing was performed to determine if subsurface infiltration is feasible and to provide design data and recommendation for potential stormwater management facilities including the presence of potential limiting layers. Test pit excavation were performed by Accurate Drilling utilizing an excavator to obtain undisturbed samples of the subgrade soils for Falling Head Laboratory Analysis. In total, two (2) predetermined locations were investigated within areas identified for potential proposed basin locations. Locations can be seen on the following page entitled "Test pit location Plan". At all testing locations, undisturbed samples were extracted utilizing Shelby tubes. IES recorded the soil morphology at each test pit location including the presence of limiting zones, seasonal high water table indicators and similar pertinent subsurface data germane to stormwater facility potential design. All test pits were advanced to machine max depth capabilities.

In the laboratory, IES performed Falling Head Permeability Testing upon obtaining samples in accordance with the NJ BMP Manual and corresponding ASTM Standards to measure infiltration rates of the undisturbed samples. Per the NJ BMP Manual Chapter 12, soil hydraulic conductivity tests must be conducted on the most hydraulically restrictive horizon or substratum. The below location plan indicates the two (2) testing location.

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TEST PIT LOCATIONS



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FINDINGS

Test Pit Investigation

TP #1

Test @ 22" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting, brown to dark brown in color
6" to 44"	Sandy SILT, brown in color, moist
46" to 72"	Sandy SILT to SILT with trace gravel, few and faint mottling, brown to orangish brown in color, dense, moist
72" to 92"	SILT with some gravel and some rippable rock, brown to light brown in color, common and distinct mottling, brown to grayish brown in color
92" to 120"	Rippable rock and Gravelly silt mix, brown to dark brown in color,

100" BGS = Ground Water Encountered
46" BGS ESHWT



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TP #2

Test @ 22" BGS

Depth BGS	Soil Description
0" to 6"	Topsoil, root matting, brown to dark brown in color
6" to 45"	Sandy SILT, brown in color, moist
47" to 69"	Sandy SILT to SILT with trace gravel, few and faint mottling, moist
69" to 88"	Silt with some gravel and some rippable rock, brown to dark brown in color,moist
88" to 120"	Gravelly SILT and rippable rock mix, brown to dark brown in color, wet

95" BGS = Ground Water Encountered
47"BGS ESHWT



CONCLUSIONS/RECOMMENDATION

1. According to the *Natural Resources Conservation Service Web Soil Survey* site soils are that of Chalfont silt loam, 2 to 6 percent slopes (Hydric Rating of 5%), and Udorthents, bedrock substratum, 0 to 8 percent slopes (Hydric Rating of 4%), refer to **Appendix B** for USDA Hydric Soils Map. Chalfont silt loam, 2 to 6 percent slopes, has a hydrologic soil rating C (Slow infiltration rate when thoroughly wet), and udorthents, bedrock substratum, 0 to 8 percent slopes, (Very slow infiltration rate when thoroughly wet), refer to **Appendix B** for USDA Hydrologic Soil Map.

2. As part of this investigation, IES was assigned to determine the estimated seasonal high-water table (ESHWT) at each test pit location base upon visual observation made during each test pit investigation. Generally speaking, groundwater, perched water (contingent upon site conditions) and/or the presence of mottling were determined indicators of the ESHWT. Both test pits in this investigation have an estimated seasonal high-water table around 3.5' to 4' BGS due to the presence of mottling at each of these test pit locations.

3. The Design Engineer is recommended to use the above information for sizing of the Proposed Stormwater Management Facilities. IES recommends the Design Engineer utilize the following unfactored rates with a minimum factor of safety of 2 to ensure the longevity of the system given the presence of fine-grained soils and cohesive soil content based on the average infiltration testing results obtained at test locations and corresponding depths within the vicinity of the proposed SWM facilities.

Test location	Test depth	Total test pit depth	Lab Rate	Avg. Rate (in/hr)
TP-1	22	120	0.017	0.013
TP-1	22	120	0.009	
TP-2	22	120	0.003	0.007
TP-2	22	120	0.004	

4. The NJ BMP Manual recommends a design infiltration rate between 0.5 to 10 inches per hour. The BMP Manual states a factor of safety between 1 and 10 be used for design with a factor of safety of 2 being the recommended value. The Design Engineer is recommended to use the results of the field infiltration testing above for sizing of the Proposed Stormwater Management Facilities. The minimal vertical distance from the proposed basin bottom and any limiting layer is designed at 24" by the NJ-BMP Manual.

5. It is recommended that a Soils Engineer or representative thereof is present on-site during the construction of stormwater management systems in order to ensure the system was constructed as designed.

6. Subgrade under the proposed infiltration facilities shall **NOT** be compacted or subject to excessive equipment traffic. Areas that where soils have been subjected to construction traffic shall be scarified to a minimum. This also includes any installation of amended soils for specific basin configurations requiring amended soils. All prescribed soils shall be tested in the lab and confirmed to comport to design specifications for gradation and permeability.

7. In the event an accumulation of fine-grained material and/or surface ponding is encountered within the subbase of the facility, material within that area shall be removed and replaced with acceptable material.

8. It is recommended that no fabric be placed on the bottom of any proposed infiltration basin and that non-woven fabric be permeable >2in/hr.

QUALIFICATIONS

Conclusions and recommendations are based on the above investigation and findings. No other conclusions are to be drawn other than that specifically stated.

Very Truly Yours,

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Project Manager
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Appendix A:
Index Laboratory Results

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Client: L2A Land Design, LLC
Project: Princeton Middle School
Location: 217 Walnut Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-1 22" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	14.55	57,600	**0.000012**
2	15.24	14.60	57,600	**0.000011**
3	15.24	14.55	57,600	**0.000012**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000012 cm/s

Average K Value = 0.017 Inches Per Hour

Ingram Engineering Services, Inc.
16 Hagerty Boulevard, Suite 400
West Chester, PA 19382
Office: 484-947-5549
www.ingram-engineering.com

"Providing Economic Solutions in Real Time"

Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Middle School
Location: 217 Walnut Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-1 22" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	14.80	57,600	**0.000008**
2	15.24	14.90	57,600	**0.000006**
3	15.24	14.95	57,600	**0.000005**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000006 cm/s

Average K Value = 0.009 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Middle School
Location: 217 Walnut Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-2 22" A

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.00	57,600	**0.000004**
2	15.24	15.05	57,600	**0.000003**
3	15.24	15.08	57,600	**0.000003**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000003 cm/s

Average K Value = 0.005 Inches Per Hour

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Falling Head Permeability Test Laboratory Report

Client: L2A Land Design, LLC
Project: Princeton Middle School
Location: 217 Walnut Lane, Princeton, NJ 08540

Tested By: G. Urich
Checked By: M. MacCall
Report Date: 2/26/25

Sample ID: TP-2 22" B

Sample Data		
Diameter of Sample Tube:	7.30	cm
Cross-Sectional Area of Sample Tube (**a**) =	41.85	cm^2
Diameter of Sample:	7.30	cm
Cross-Sectional Area of Sample (**A**) =	41.85	cm^2
Length of Sample (**L**):	15.24	cm

Permeability Testing Data

Trial #	Initial Head (cm) (h_1)	Final Head (cm) (h_2)	Elapsed Time (s) (t)	Hydraulic Conductivity (cm/s) (K)
1	15.24	15.05	57,600	**0.000003**
2	15.24	15.05	57,600	**0.000003**
3	15.24	15.15	57,600	**0.000002**

$$K = 2.303 \left(\frac{a * L}{A * t}\right) Log \left(\frac{h_1}{h_2}\right)$$

Average K Value = 0.000003 cm/s

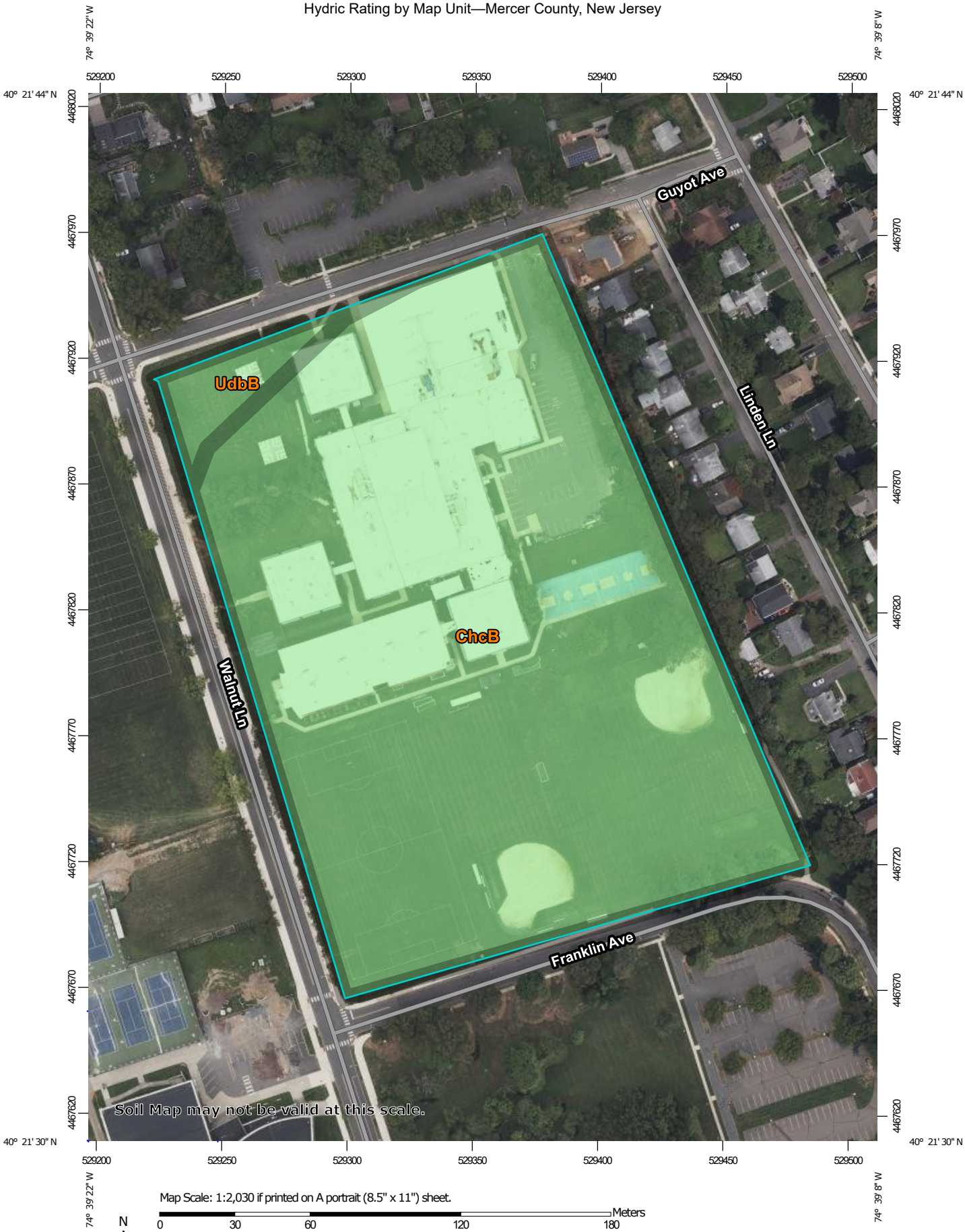
Average K Value = 0.004 Inches Per Hour

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West Chester PA 19382
Office 484-947-5549
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Appendix B:

Soil Maps



Map Scale: 1:2,030 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 6, 2020—Sep 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ChcB	Chalfont silt loam, 2 to 6 percent slopes	5	11.3	96.3%
UdbB	Udorthents, bedrock substratum, 0 to 8 percent slopes	4	0.4	3.7%
Totals for Area of Interest			**11.7**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



Map Scale: 1:2,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2021—Sep 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ChcB	Chalfont silt loam, 2 to 6 percent slopes	C	10.9	95.7%
UdbB	Udorthents, bedrock substratum, 0 to 8 percent slopes	D	0.5	4.3%
Totals for Area of Interest			**11.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

PART 2 - GENERAL CONSTRUCTION

SECTION 02000 – SITE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS (SITE WORK)

A. The work generally consists of:
   1. Site clearing and phased demolition as required for the proposed construction.
   2. Construction of new utilities including storm drainage system and storm water management system.
   3. Construction of site improvements, including but not limited to bituminous asphalt pavement, curbs, concrete pavement, landings, fencing, and retaining walls.
   4. Construction of new playground equipment with engineered wood mulch surfacing and underdrain.
   5. Other site work as indicated on the Construction Plan Set.
   6. Lawn restoration as required.
   7. Control of access to the construction and staging areas, and construction traffic control.
   8. Control of soil erosion and sediment during the term of the contract or until permanent ground cover has been established.
   9. Engage a certified materials testing and inspection company to verify that the construction materials and procedures related to all site work (including; pavements, walls, utilities, and related appurtenances) in the project, meet or exceed the project specifications.
   10. Engage a licensed geotechnical (soils) engineer to dictate the soil compaction measures used to prepare subgrade soils for site work. The geotechnical engineer shall also review the soil compaction test reports prepared by the materials testing and inspection company and must certify that all specifications have been met. This requirement applies to all pavement and parking lot areas, concrete slabs, utility trenches, and foundations.
   11. Final cleanup, owner walk through and punch list.

1.3 CONTRACTOR USE OF PREMISES AND LOGISTICS

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the work is indicated.
   1. The Contractor shall provide all temporary signage for traffic control, access, and safety requirements.
   2. The Contractor shall maintain site access at all times to the Owner’s facilities, including, but not limited to adjacent roads, driveways, and receiving areas.
   3. Owner Occupancy: Allow for Owner occupancy and use by the public as permitted by the Owner. Coordinate with the Owner in this regard.
   4. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.4 CONTROL OF THE WORK AND STORAGE AREAS

A. The construction area shall be enclosed by temporary construction fencing.

B. Gate locations for the temporary fencing shall be coordinated with the owner. Gates may be moved throughout construction as needed by the Contractor. All associated costs shall be included in the contract. All gates shall be secured after working hours by security locks or other means acceptable to the Owner. During working hours, the work and staging areas shall remain open as little as practicable. The contractor will provide all padlocks and keys to secure all construction gates and provide copies of keys to Owner's representative.

C. The contractor may move construction fencing as needed to provide clearance for the work, however, the site shall be secured from public trespass at all times.

D. The Contractor shall periodically inspect the security measures to insure they function properly and that unauthorized persons, particularly children, are effectively prohibited from gaining entry or from coming into contact with hazardous site features.

E. The Contractor shall regularly walk the perimeter of the site and inspect the condition and safety of the existing and temporary construction fence. Any sharp edges, loose parts, burrs, or other potentially harmful components shall be repaired/modified to a safe condition.

END OF SECTION 02000

SECTION 02050 – FIELD ENGINEERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. General: This Section specifies administrative and procedural requirements for field-engineering services including, but not limited to, the following:
   1. Land survey work.
   2. Engineering support for various aspects of construction.
   3. Materials Testing and Inspection for site work.
   4. Geotechnical Engineering Services

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Coordination" for procedures for coordinating field engineering with other construction activities.
   2. Division 1 Section "Submittals" for submitting Project record surveys.
   3. Division 1 Section "Project Closeout" for submitting final property survey with Project Record Documents and recording of Owner-accepted deviations from indicated lines and levels.

1.3 SUBMITTALS

A. Certificates: Submit an as-built survey prepared and signed by a NJ licensed land surveyor certifying the final location and elevation of improvements.

B. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of "Submittals" and "Project Closeout" Sections.

C. Furnish signed and sealed shop drawings for any site work component that requires additional engineering (i.e. modular block retaining walls, fencing support systems, shoring & bracing).

1.4 QUALITY ASSURANCE

A. Surveyor Qualifications: Engage a land surveyor, registered in the State of New Jersey, to perform required land-surveying services.

B. Engineer Qualifications: Engage an engineer of the discipline required; licensed in the State of New Jersey, to perform required engineering services for shop drawings and other construction related work requiring an engineering certification.

C. Materials Testing & Inspections: Engage a certified materials testing and inspection company to perform daily inspections and materials testing as required herein. The company shall possess requisite NJ DPMC and NJ SDA pre-qualifications for work required in this project.

D. Engage a Geotechnical (soils) engineer to oversee and certify the backfilling and compaction of subgrade soils within structural areas of the project, including, but not necessarily limited to; pavement areas, concrete slabs and pedestrian walkways, foundations, and related construction. This work does not apply to the IBC "Special Inspections" related to the building footprint and land within 5 feet thereof (unless a foundation related to site or utility work is located within said 5-foot distance).

E. Engage an underground utility mark out company to mark the location of all buried utilities within the limit of disturbance and within 50 feet thereof. Prior to the commencement of demolition work, excavate test pits to verify the size, depth and alignment of all utilities found within proposed work areas. Report any conflicts to the Architect for instructions via the Request For Information (RFI) process.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
   1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
   2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.

B. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction.
   1. Prior to construction, verify the location and invert elevation at points of connection.

C. The Contractor's certified materials testing and inspection company shall oversee all site work on a daily basis, document the placement of materials and progress of site construction, prepare daily reports, and perform materials testing on soil aggregates, subgrades, pavements, miscellaneous poured-in-place concrete site improvements, and storm and sanitary sewer appurtenances.
   1. The inspection and testing of all storm and sanitary sewer construction shall verify that all work meets or exceeds the construction and materials requirements set forth in applicable sections of the project specifications and construction plans. As a minimum, this includes the depth and composition of pipe bedding & trench backfill, pipe materials, pipe joints & fittings, construction of sewer chambers, and other ancillary work.
   2. All asphalt and Portland cement concrete pavements, subbases, and subgrades shall be inspected for material composition, density, thickness, and strength to verify conformance with applicable sections of the specifications and construction plans.

3.2 PERFORMANCE

A. Work from lines and levels established by the design drawings. Establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
   1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
   2. As construction proceeds, check every major element for line, level, and plumb.

B. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Make this log available for reference.
   1. Record deviations from required lines and levels, and advise the Owner's Representative, when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
   2. On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.

C. Site Improvements: Locate and lay out site improvements, including the building, exterior enclosures, curbs, fencing, walls, pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.
   1. Detailed spot elevations are provided on the Site Grading Plan to insure that all new improvements comply with applicable codes. These spot grades shall be used by the land surveyor when establishing control for the work. Note any specific and detailed grading that has been provided for sidewalk and ADA crossings. This work requires a high degree of construction accuracy and quality control checking during construction. The maximum slopes shown on the plans shall not be exceeded.

D. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.

E. The Contractor’s Land surveyor and/or Engineer shall submit a Request For Information (RFI) to the Owner, if there is any conflicting plan information or confusion over the design intent. This includes a design element that looks out of place, a spot elevation that bucks the grading trend, or a number that appears to be juxtaposed or otherwise incorrect.

END OF SECTION 02050

SECTION 02100 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. The phased demolition and removal of selected site elements. Refer to plans for additional demolition notes and requirements. Maintain surface conditions as long as possible before demolishing same to prevent soils from becoming saturated and damaged.
   2. Perform underground utility mark out before proceeding with any demolition work.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 2 Section "Summary of Work" for use of the building and phasing requirements.
   2. Division 2 Section "Contract Closeout" for record document requirements.
   3. Division 2 Section "Site Clearing" for site clearing and removing above- and below-grade improvements.
   4. Division 2 Section "Earthwork" for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS

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

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

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

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

1.4 MATERIALS OWNERSHIP

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

1.5 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.

B. Proposed dust-control measures.

C. Proposed noise-control measures.

D. Schedule of selective demolition activities indicating the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.

E. Inventory of items to be removed and salvaged.

F. Inventory of items to be removed by Owner.

G. Photographs or video recordings, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.

H. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."
   1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Pre-Demolition Conference: Conduct conference at Project site to comply with preinstallation conference requirements of Division 1 Section "Project Meetings."

1.7 PROJECT CONDITIONS

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

1.8 SCHEDULING

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

1.9 WARRANTY

A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Applicable)

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.
   1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

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

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Owner or Owners representative.

E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

A. Maintain all remaining existing utilities, as required, for the connection to the required new utility connections indicated in the documents. Protect against damage during selective demolition operations.
   1. Do not interrupt existing utilities serving adjacent properties during work. Provide temporary services during new construction work to existing utilities, as acceptable to Owner and to governing authorities.
   2. Utility Requirements: Confirm with local water, electric, and gas utilities, prior to the commencement of selective demolition work that all utilities are properly located and marked out.
   3. Engage the services of a private underground utility mark out company to locate all utilities within the limit of disturbance and at least 50 feet beyond in all directions (when accessible).

3.3 PREPARATION

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

B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide detouring signs and barricades as needed to define alternate routes around closed or obstructed sidewalks and roadways as required by the local police department and County of Bergen as applicable.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
   1. Protect existing site improvements, appurtenances, and landscaping to remain.
   2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
   3. Strengthen or add new supports when required during progress of selective demolition.

3.4 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
   1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

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

D. Maintain dust control screening around all fencing that surrounds the construction site at all times.

3.5 SELECTIVE DEMOLITION

A. Phase the demolition of existing construction so that the site and adjacent areas are kept in a safe and uniform condition. The intent of the demolition limit is for work to be taken to the nearest control joint, but not less than the extent of demolition shown. If a control joint is not present on or beyond four (4) feet of the indicated demolition limit, then sawcut at the designated location. New work shall be constructed to the limit of demolition. Use methods required to complete Work within limitations of governing regulations.
   1. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
   2. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain, using power-driven masonry saw or hand tools.

C. The plans define demolition areas with a hatch as shown in the legend. Demolish all surfaces and structural elements within the hatched area down to subgrade. Protect existing improvements and utilities indicated to remain.

3.6 PATCHING AND REPAIRS

A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

C. Install temporary pavement patches over utility trenches and other areas where surfacing has been removed and maintain the temporary patch until permanent pavements are installed. Temporary patches will not be permitted in roadways. In roadways, construct permanent pavement repair upon completion of the related work,

3.7 DISPOSAL OF DEMOLISHED MATERIALS

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

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials, not to be re-used, off of Owner's property and legally dispose of them.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Remove and salvage the following:

1. Existing signage, as coordinated w/ owner of signage.
2. Existing on-site utility poles, as coordinated w/ owner of pole.
3. Existing utility-owned street lighting, only after new decorative street lighting is operational.
4. All existing features to be removed shall be coordinated with owner prior to removal from site.

END OF SECTION 02100

SECTION 02110 – SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Topsoil stripping.
   2. Removing at-grade improvements.

1.3 PROJECT CONDITIONS

A. Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, parking lots, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from Owner and without proper detouring measures (both pedestrian & traffic) in place.

B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
   1. Protect improvements on adjoining properties and on Owner's property.
   2. Restore damaged improvements to their original condition, as acceptable to property owners.

1.4 EXISTING SERVICES

A. General: Locate and protect existing utilities servicing existing facilities, and in proximity to the construction area.

PART 2 - PRODUCTS (Not Applicable)

2.1 TEMPORARY PATCH

A. Temporary pavement patch shall be HMA 9.5M64 (or FABC-1 Marshall Mix) bituminous pavement, 2” thick, atop 4” DGA subbase per specification section 02400.

PART 3 - EXECUTION

3.1 SITE CLEARING

A. General: Remove grass, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

B. Topsoil: Topsoil is defined as friable clay loam surface soil containing humus. This project requires the installation of topsoil in proposed lawn areas across the entire site at a depth of not less than 4 inches (100 mm).

1. Strip topsoil to whatever depths are encountered or as determined by the soils engineer in a manner to prevent intermingling with underlying subsoil or other objectionable or unsuitable material(s). Remove heavy growths of grass and vegetation from areas before stripping and dispose of grass, vegetation and root mass off site in a legal manner. Review the Site & Grading Plans to determine the amount of topsoil needed for the completion of the project. Stockpile a sufficient quantity of screened clean topsoil in accordance with the drawings, general provisions of the contract, and the standards of Soil Erosion and Sediment Control in New Jersey, latest revision. Confirm stockpile location with the Owner and insure the topsoil location does not interfere with future work.
    a. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.
2. Stockpile topsoil in storage piles in area(s) indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.
    a. Relocate the topsoil pile as many times as necessary to accommodate site construction. Install soil erosion measures on and around the new pile location as per plan details and notes.
3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material.

C. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.

3.2 DISPOSAL OF WASTE MATERIALS

A. Burning on Owner's Property: Burning is not permitted on Owner's property.

B. Removal from Owner's Property: Contractor to remove waste materials, all excess suitable fill and topsoil from Owner’s property.

END OF SECTION 02110

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Preparing and grading subgrades to achieve the lines and grades indicated on the Site Grading Plan.
   2. Excavating and backfilling, including imported controlled compacted backfill (Satisfactory Soil Material) placed in the voids resulting from demolition work.

B. Related Sections: The following Sections contain requirements that relate to this Section.
   1. Division 2 Section "Site Clearing" for site stripping, grubbing, topsoil removal.
   2. Division 2 Section "Selective Demolition" for backfilling of voids created by demolition of site improvements.
   3. Division 2 Section "Erosion Control & Sediment Control”

1.3 DEFINITIONS

A. Excavation: The removal of all material encountered to subgrade elevations and the reuse or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below sub-base, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations. All imported material shall be certified clean and shall meet the composition requirements established herein.

D. Sub-base Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.

E. Base Course: The layer placed between the sub-base and surface pavement in a paving system.

F. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Owners Representative. Unauthorized excavation, as well as remedial work directed by the Owners Representative, shall be at the Contractor's expense.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

H. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

I. NJDOTSS: The New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and addenda.

J. Site Improvement: Any man-made structure, wall, foundation, pavement, material, system, component, or topographic condition that is not naturally in existence on or under the earth.

1.4 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product data for the following:
1. Filter fabric.

C. Samples of the following:
1. 5 lb samples, sealed in air-tight containers, of each proposed fill and backfill soil material from on-site or borrow sources.
2. 12 x 12 inch (300 x 300 mm) sample of filter fabric.

D. Test Reports: In addition to test reports required under field quality control, submit the following:
1. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources. All soil shall meet the New Jersey Department of Environmental Protection, Residential Clean Fill Standards and all imported material shall be certified as such. A minimum of one soil test for every 250 cubic yards of imported material shall be performed.
2. One optimum moisture-maximum density curve for each soil material encountered or used in the project.
3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

B. Testing and Inspection Services:
1. The Owner shall employ a qualified licensed independent geotechnical engineering & testing agency to classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing for the proposed building & foundation construction as required under Chapter 17 of the International Building Code, New Jersey edition.
2. All earthwork related to site work, including, but not limited to pavements, underground sewer construction, and other related site construction shall be inspected & tested on a daily basis for proper soil composition and compaction by the Contractor’s geotechnical engineer and certified material testing and inspection company.

C. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

1. Before commencing earthwork, meet with representatives of the Owner, Architect, Engineer, consultants, Geotechnical Engineer, independent testing agency, and other concerned entities, as required. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.
2. The contractor will be expected to grade the site in accordance with the Site Grading Plan for this project and meet all adjacent surfaces around the limit of demolition work flush.

1.6 PROJECT CONDITIONS

A. Neither the plans, nor the specifications state or imply that cut and fill are balanced on the project site. The contractor shall be responsible for determining the amount of export and required quantities of imported soil needed in the project.

B. When available, Geotechnical Reports are being provided for reference.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS & AGGREGATE

A. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of: rock or gravel, larger than 2 inches (50 mm) in any dimension; debris; waste; frozen materials; vegetation; other deleterious matter.

B. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.

C. Subbase and Base Material: Dense Graded Aggregate (DGA) conforming to NJDOTSS Section 901.10.

D. Engineered or Select Fill: Soil Aggregate Designation I -15, per NJDOTSS, latest edition.

E. Bedding Material: Sub-base or base materials with 100 percent passing a 1 inch (25 mm) sieve and not more than 8 percent passing a No. 200 (75 micrometer) sieve.

F. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2 inch (38 mm) sieve and not more than 5 percent passing a No. 8 (2.36 mm) sieve.

G. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2 inch (38 mm) sieve and 0 to 5 percent passing a No. 50 (300 micrometer) sieve.

H. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility.

B. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches (150 mm) wide and 4 mils (0.1 mm) thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep.
   1. Tape Colors: Provide tape colors to utilities as follows:
      a. Red: Electric.
      b. Yellow: Gas, oil, steam, and dangerous materials.
      c. Orange: Telephone and other communications.
      d. Blue: Water systems.
      e. Green: Sewer systems.

C. Filter Fabric: Manufacturer's standard nonwoven pervious geotextile fabric of polypropylene, nylon or polyester fibers, or a combination.
   1. Provide filter fabrics that meet or exceed the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:
      a. Grab Tensile Strength (ASTM D 4632): 100 lb (45 kg).
      b. Apparent Opening Size (ASTM D 4751): #100 U.S. Standard (150 micrometer) sieve.
      c. Permeability (ASTM D 4491): 150 gallons per minute per sq. ft. (102 L/s per sq. m).

PART 3 - EXECUTION

3.1 PREPARATION

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

B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

D. Tree protection is specified in the Division 2 Section "Site Clearing."

E. Strip Topsoil from work area. Only strip topsoil from areas where work will immediately be performed. Maintain existing vegetated areas as long as possible throughout construction to control erosion. Phase the stripping of topsoil and vegetation accordingly.

3.2 DEWATERING

A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding the building excavation, the project site, and surrounding areas. Install de-watering pumps, piping and siltation filters (at discharge piping) as needed to keep excavations and soils dry and to prevent sediment from washing onto downstream properties and roadways.

1. De-watering pits and pumps shall (MUST) be installed in any excavation where perched water is encountered, and in any excavation deeper than 6 feet. De-watering pumps and filters shall also be used to evacuate surface water from excavations, at all times when water cannot freely drain away by gravity, unimpeded.
2. Install sedimentation control fencing downstream of all de-watering measures.
3. Install a siltation filter bag at the downstream end of discharge piping from de-watering equipment.

B. Protect subgrade soils from softening and damage by rain or water accumulation.

3.3 EXCAVATION

A. Unclassified Excavation: All excavation is unclassified and includes excavation to required subgrade elevation as needed to construct the new building and related site improvements, regardless of the character of materials and obstructions encountered.

B. Strip topsoil layer and underlying soils to establish subgrades for foundations and pavements and construct granular subbases as noted on the plans. The total depth of excavation shall include what is required to establish subgrade for footings and pavement, inclusive of any drainage courses required in the project. Refer to foundation plans for additional notes and details.

C. When directed by the Geotechnical Engineer, or the Owners representatives, remove and dispose of unsuitable material encountered in excavations for structures, pipes, utilities, etc.

D. The on-site soil material may be used as compacted backfill in the upper layers of utility trenches, when soil fill is noted in the trench detail. This provision does not apply to utilities that pass beneath a foundation wall. Backfill for that section shall be ¾" clean stone.

3.4 STABILITY OF EXCAVATIONS

A. Soils are sandy and lack cohesion. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations. Adhere to CFR 029 for OSHA safety requirements. Shore and brace excavations as needed and terrace/slope side walls in accordance with OSHA regulations.

3.5 GENERAL EXCAVATION

A. Excavate only to the minimum extent needed to construct each site improvement, including subbase materials. All excavation shall be performed under the direct observation of the geotechnical engineer. Over excavation will not be permitted and no additional payment will be made for said work.

3.6 APPROVAL OF SUBGRADE

A. Geotechnical Engineering oversight must be provided when excavation has reached subgrade, so soil conditions can be analyzed.

B. When the Geotechnical Engineer determines that unforeseen unsatisfactory soil is present, continue excavation deeper, and take the following action:
1. Beneath building foundation systems, backfill with ¾" clean stone material as directed.
2. Beneath pavements, walkways, walls and other site improvements, backfill with prepared and compacted, moisture-controlled on-site Soil Fill material per the Geotechnical Engineer.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Geotechnical Engineer and/or Owners' Representative at no additional cost.

3.7 UNAUTHORIZED EXCAVATION

A. All excavation and backfilling within the building footprint shall be performed under the presence of the Owner's Geotechnical Engineer.

B. Excavation and backfilling in other areas shall be performed under the presence of the Contractor's Geotechnical Engineer.

C. All excavation shall extend only to the limits needed to properly construct each site improvement so that it is bearing on suitable subgrade. Any excavation beyond suitable subgrade that has not been authorized by a Geotechnical Engineer and the construction manager shall be considered unauthorized.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile excavated materials acceptable for backfill in designated area, including suitable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Place siltation control fencing around the downslope side of all piles.
   1. Stockpile soil materials away from edge of excavations.

3.9 FILL AND BACKFILL

A. Backfill excavations promptly, but not before completing the following:
   1. Testing and compaction of existing subgrade.
   2. Acceptance of subgrade by the Geotechnical Engineer.
   3. Surveying locations of underground utilities, unusual geological formations, or other features to remain for record documents.
   4. Testing, inspecting, and approval of underground utilities.
   2. Removal of trash and debris from excavation.
   3. Removal of temporary shoring and bracing, and sheeting.
   4. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. The exposed subgrades for the slab on grades and any paved areas are to be proofrolled with a vibratory compactor in the presence of the soil engineer to detect and repair any unsuitable soil conditions and to attain a uniform firm subgrade throughout. Any loose soils encountered may be densified by proofrolling and further compaction by additional passes if necessary. This is extremely important due to areas of loose soils encountered in the test borings.

C. Remove two (2) feet of the loose soils beneath the slab-on- grade subgrade foundation areas to a width of five (5) feet beyond the building lines to stable natural ground. Deeper excavations may be required where fill/ loose soils are encountered in areas other than those identified during the initial subsurface investigation. Densify the exposed subgrade with a minimum of six (6) passes with a twenty (20) ton equivalent vibratory compactor to 95 % of the material's maximum dry density per ASTM D-698. Backfill and densify approved structural fill (over excavated loose granular soils screened free of any organic materials or imported structural fill) to 95 % the materials maximum dry density in accordance with recommendations listed under Compaction.

D. Building subgrades may be brought up to desired elevation with approved on-site soils or imported structural (select) fill in lifts no greater than twelve (12) inches loose thickness and compacted to 95% of the material's maximum dry density per ASTM D-698. Materials compacted by hand operated equipment shall be placed in lifts no greater than four (4) inches loose thickness.

E. Backfill all voids from demolition work and utility trenching with suitable on-site soil material or satisfactory soil material compacted in maximum 12 inch lifts, to minimum 95% maximum density per ASTM D-698, under the direct supervision of the Geotechnical Engineer. Bring compacted backfill material to required subgrade elevation, accounting for the thickness of subbase materials, as required.

F. Place suitable Soil Fill in areas where the grade is being raised, in lifts not exceeding 12 inches and thoroughly compact to 95% dry density per ASTM D-698. Soil Fill shall be moisture-controlled and prepared as noted in Part 2.1.

3.60 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content per ASTM D-1557.
   1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
   2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to 95% maximum density per ASTM D-1557.
      a. Stockpile or spread and dry removed wet satisfactory soil material.
   3. Include in project schedule, sufficient time for moisture control measures to restore soil stability due to unforeseen prolonged periods of inclement or unseasonable weather.

3.71 COMPACTION

A. Strip topsoil and remove upper 2 feet of soil. Thoroughly densify the exposed subgrade with a minimum of six (6) passes with a twenty (20) ton equivalent vibratory compactor to 95 % of the material's maximum dry density per ASTM D-698In confined areas, smaller compacting equipment shall be used. The compaction of soils shall be tested and accepted by the geotechnical engineer before placing fill or backfill. Building subgrades may be brought up to desired elevation with approved on-site soils or imported structural (select) fill in lifts no greater than twelve (12) inches loose thickness and compacted to 95% of the material's maximum dry density per ASTM D-698 Repeat compaction operations and remove any unstable soils, replacing same with on-site suitable material or borrow. All exposed footing subgrades are to be compacted by two (2) passes with a jumping jack compactor immediately prior to the placement of the footing concrete.

B. In areas where grades are being lowered, excavate and remove soils down to the required subgrade elevation and perform subgrade soil compaction as described in Part A above.

C. Place backfill materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.

D. Place backfill materials evenly across open excavations to required elevations. Place backfill uniformly along the full length of each area.

E. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D 698:
   1. Compact areas within building footprint and 5 feet thereof to 95 percent maximum dry density.
   2 Compact pavement and structural slab subgrade soils to 98 percent maximum dry density per ASTM D698.
   3. Other areas of the site, including lawn areas, compact subgrade soils to 90% maximum dry density per ASTM D698

F. All backfill shall be inspected and compaction tested by a geotechnical engineer and certified materials testing & inspection company. All inspection and testing reports shall be furnished to the Owner's Representative on a weekly basis.

3.12 GRADING

A. General: Strip topsoil from areas to be graded, section-by-section, exposing subgrade soils only when absolutely necessary. Uniformly grade areas to a smooth surface, to maintain positive overland drainage, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated. Employ interim grading measures as needed to maintain the site in good condition.
   1. Provide a smooth transition between existing adjacent grades and new grades.
   2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish grades to required elevations within the following tolerances:
   1. All areas: Plus or minus ½ inch (13 mm).

3.13 FIELD QUALITY CONTROL

A. Testing Agency Services: All soil inspection and compaction testing shall be under the supervision of a licensed geotechnical engineer. Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
   1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), as applicable.
      a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
      b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.
   2. At subgrade and at each compacted fill and backfill layer, perform at least one field in-place density test for every 2000 sq. ft. (186 sq. m) or less of area, but in no case fewer than three tests.
   3. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet (45 m) or less of trench, but no fewer than two tests.

B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, re-compact and retest until required density is obtained. Continue this process until specified compaction is achieved. The contractor may elect to excavate and replace the soil material with imported Satisfactory Soil Material and re-compact same to achieve required density, however, this work shall be treated as unauthorized excavation and no additional payment will be made.

3.14 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, standing water, and erosion. Keep free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or loose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace material to depth directed by the Construction Manager / Owners Representative; reshape and recompact at optimum moisture content to the required density under the supervision of the Geotechnical Engineer.

C. Settling: Where settling occurs during the maintenance period, remove finished surfacing, test compaction levels, backfill with additional approved material, compact, test compaction levels, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

D. Provide de-watering measures at all times. The on-site soils must not be allowed to become too wet.

3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove waste material, including excess unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property. There shall be no excess material, as the site shall be graded uniformly as shown on the Grading Plan and all surfaces shall meet existing grades around the perimeter of the site flush (or to the designated grade shown on the plan).

B. There shall be no excess soil material stockpiled on the project site at the end of this work.

END OF SECTION 02200

SECTION 02220 - EROSION CONTROL AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

B. All work under this item must comply with the Standards for Soil Erosion and Sediment Control in New Jersey, and the latest revisions thereto.

1.2 SUMMARY

A. Soil Erosion and Sediment Control measures are shown on the plans and all measures must be in place before land disturbance begins. The contractor shall maintain these measures and supplement the measures as needed to accommodate the progression of construction. The contractor shall relocate the siltation control fence to provide clearance for the work, relocate the stabilized construction entrance, provide additional temporary topsoil and seeding to exposed soils, and install additional silt fence as needed to ensure that soils remain on-site and that erosion is controlled.

PART 2 PRODUCTS

2.1 EROSION CONTROL DEVICES

A. Silt Fence may be commercially available silt fence systems, consisting of synthetic geotextile fabrics and hardwood stakes. The height of the fence shall be a minimum of three (3) feet, and the fabric shall be wide enough to allow for a minimum embedment in the ground of one (1) foot of fabric. Sections shall be joined in a manner such that the fence shall function continuously.

B. Miscellaneous materials shall conform to NJDOTSS Sections 909.09 and 909.11.

C. All other materials shall conform to the Plans as indicated on the details for Soil Erosion and Sediment Control, and the NJDOTSS Supplemental Specifications, Section 111.

PART 3 EXECUTION

3.1 GENERAL

A. The contractor shall maintain and supplement all permanent soil erosion and sediment control measures during the entire duration of the project. Temporary features shall be incorporated with the permanent features and with the earthwork, pavement and building construction, drainage, etc., to maintain the maximum protection against soil erosion and sedimentation possible, throughout the life of the contract.

B. All erosion and sediment control practices shall conform to the Plans, the Standards for Soil Erosion and Sediment Control in the State of New Jersey, and the approval from the Soil Conservation District.

C. A schedule of construction operations shall be submitted to the Owners representatives for approval. Said schedule shall outline construction phasing and shall indicate how and where erosion control measures will be utilized to conform with the approval. The schedule shall include indications of locations for construction staging, soil stockpiles, etc., and any disturbances outside the limit of work shown on the Plans.

D. All water pumped from excavations shall be filtered before being discharged off site, to prevent downstream siltation.

E. The smallest practicable area of land shall be disturbed at any one time during the project and, whenever feasible, natural vegetation shall be retained and protected. Stripping of vegetation, grading and other solid disturbances shall be completed in a manner that will minimize soil erosion and sedimentation.

F. Soil erosion and sediment control notes are shown on the Soil Erosions Sediment Control Plan and shall be followed.

G. All other construction procedures shall conform to the NJDOTSS Supplemental Specifications.

END OF SECTION 02220

SECTION 02221 - TRENCHING, BACKFILLING AND COMPACTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Excavating and backfilling trenches for buried storm sewer, sanitary sewer, natural gas, and mechanical and electrical utilities.

1.3 DEFINITIONS

A. Backfill: Soil materials used to fill an excavation.

B. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

C. Excavation: Removal of material encountered above subgrade elevations.

D. Fill: Soil materials used to raise existing grades.

E. Utilities include underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
   1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
   2. Certification that all imported materials are “clean” per NJ DEP Residential Clean Fill Standards.

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials testing, as documented according to ASTM D 3740 and ASTM E 548, shall certify the compaction of all utility trenches. Refer to section 02050.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Perform underground utility mark out as explained in the Site Demolition Section. Do not interrupt existing public utilities.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory Soil Fill materials are not available from excavations.

B. On-site soils are suitable for re-use as compacted backfill in trenches (as allowed by construction details) provided that they are prepared and moisture-controlled in accordance with the earthwork specifications and direction by the Contractor's Geotechnical Engineer.

PART 3 - EXECUTION

3.1 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 24 inches higher than top of pipe or conduit, unless otherwise indicated. Provide trench shoring or slope the sidewalls of trenches in accordance with OSHA requirements, Code of Federal Regulations 029.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade. No trench bottom shall be over excavated. If over excavation occurs, the over excavated area shall be filled and compacted as directed by the Engineer or filled with crushed stone to the correct elevation.

D. Compact trench bottoms and test prior to placing backfill materials.

3.2 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials as directed by the Engineer. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water.

3.3 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Construction below finish grade including, where applicable, damp proofing, waterproofing, and perimeter insulation.
   2. Surveying locations of underground utilities for record documents.
   3. Inspecting and testing underground utilities.

3.4 UTILITY TRENCH BACKFILL

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

B. Backfill trenches excavated under footings and within 18 inches of bottom of footings; fill with concrete to elevation of bottom of footings.

C. Place and compact initial backfill of subbase material, free of particles larger than 1 inch to a height of 12 inches over the utility pipe or conduit.
   1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit.

D. Coordinate backfilling with utilities testing.

E. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.

F. Place and compact final backfill of satisfactory soil material to final subgrade.

G. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.5 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 10 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil to not less than 95% percentages of maximum dry unit weight according to ASTM D 698:

END OF SECTION 02221

SECTION 02240 - DEWATERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes construction dewatering for perched or seasonal high ground water conditions.

B. Related Sections include the following:
   1. Division 2 Section "Earthwork" for excavating, backfilling, and site grading.

1.3 PERFORMANCE REQUIREMENTS

A. Dewatering Performance: Design, provide, test, operate, monitor, and maintain a dewatering system of sufficient scope, size, and capacity to control surface and ground-water flow into excavations and permit construction to proceed on dry, stable subgrades.
   1. Work includes removing dewatering system when no longer needed.
   2. Maintain dewatering operations to ensure erosion is controlled, stability of excavations and constructed slopes is maintained, and flooding of excavation and damage to structures are prevented.
   3. Prevent surface water from entering excavations by grading, dikes, or other means.
   4. Accomplish dewatering without damaging existing buildings adjacent to excavation.
   5. Install filtration measures at the downstream end of discharge piping to insure that silt laden water does not leave the site.

1.4 SUBMITTALS

A. Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.
   1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
   2. Include a written report outlining control procedures to be adopted if dewatering problems arise.
   3. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.

B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
   1. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by dewatering operations.

2. Record drawings at Project closeout identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions.
3. Field Test Reports: Before starting excavation, submit test results and computations demonstrating that dewatering system is capable of meeting performance requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer to assume engineering responsibility and perform dewatering who has specialized in installing dewatering systems similar to those required for this Project and with a record of successful in-service performance.

B. Regulatory Requirements: Comply with water disposal requirements of authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by the Owner or others unless permitted in writing by the Architect and then only after arranging to provide temporary utility services according to requirements indicated.

B. Survey adjacent structures and improvements, employing a qualified professional engineer or surveyor, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
1. During dewatering, resurvey benchmarks weekly, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS (Not Applicable)

PART – 3 EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

3.2 DEWATERING

A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

B. Before excavation below ground-water level, place system into operation to lower water to specified levels and then operate it continuously until drains, sewers, and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.

C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
   1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.

D. Dispose of water removed from excavations in a manner to avoid endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner to avoid inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction. Install sediment filtration measures at the discharge end of piping.

E. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on a continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense.

F. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

END OF SECTION 02240

SECTION 02260 – EXCAVATION SUPPORT SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract and Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes, but is not limited to, the following:
   1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.
   2. Maintenance of shoring and bracing.
   3. Removal of shoring and bracing, as required.

B. Building structure installation will be specified by others.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified professional engineer. System design and calculations must be acceptable to local authorities having jurisdiction, as well as OSHA.

C. Trench details shown on the site plans are intended to provide information regarding backfilling materials, general material depths and payment limits only. The Contractor shall be responsible for the means and methods of construction and shall provide appropriate safety measures, sheeting, and bracing as may be required due to field conditions. The Contractor shall comply with all applicable OSHA standards and details for trench excavation. The design engineer assumes no responsibility or liability for field conditions, trenching or backfilling operations during construction.

1.4 QUALITY ASSURANCE

A. Engineer Qualifications: A professional engineer legally authorized to practice in jurisdiction where Project is located, and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.

B. Supervision: Engage and assign supervision of excavation support system to a qualified professional engineer.
   1. Submit name of engaged consultant and qualifying technical experience.

C. Regulations: Comply with codes and ordinances of governing authorities having jurisdiction.

1.5 JOB CONDITIONS

A. Before starting work, verify governing dimensions and elevations. Verify condition of adjoining properties. Take photographs to record any existing conditions not readily identified on the plans. Prepare a list of such damages, verified by dated photographs, and signed by Contractor and others conducting investigation.

B. During excavation, resurvey benchmarks weekly, maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags or other damage is evident.

1.6 EXISTING UTILITIES

A. Protect existing active sewer, water, gas, electricity and other utility services and structures, if any.

B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.

END OF SECTION 02260

SECTION 02275 - GEOGRID SOIL REINFORCEMENT

PART 1 – GENERAL

1.1 DESCRIPTION

A. Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings and as specified herein.

B. Work includes furnishing and installing all appurtenant materials required for construction of the geogrid reinforced soil retaining wall (a.k.a. modular block retaining wall) as shown on the construction drawings.

1.2 RELATED WORK

A. Section 02276: Modular Retaining Wall Systems

B. Section 02200: Earthwork

C. Section 02221: Trenching, Shoring & Bracing

D Section 02820: Chain Link Fence

1.3 REFERENCE STANDARDS

A. ASTM D4595 - Tensile Properties of Geotextiles by the Wide-Width Strip Method

B. ASTM D5262 - Test Method for Evaluating the Unconfined Creep Behavior of Geogrids

C. ASTM D6638 - Grid Connection Strength (SRW-U1)

D. ASTM D6916 - Grid Shear Strength (SRW-U2)

E. GRI-GG4 - Grid Long Term Allowable Design Strength (LTDS)

F. ASTM D6706 - Test Method for Grid Pullout

1.4 DELIVERY, STORAGE AND HANDLING

A Contractor shall check the geogrid upon delivery to assure that the proper material has been received.

B. Geogrid shall be stored above -10 F (-23 C).

C. Contractor shall prevent excessive mud, wet cement, or other foreign materials from coming in contact with the geogrid material.

1.5 SUBMITTALS

A. Samples of all products used in the work of this section.

B. Latest edition of manufacturer's specifications for proposed materials, method of installation and list of materials proposed for use.

C. Shop Drawings for proposed modular block retaining wall system.
   1. Design shall be **site specific**, fully engineered wall system designed to meet TW (top of wall) and BW (bottom of wall) elevations, as shown on construction drawings, as closely as possible.
   2. Design shall be performed to accommodate onsite suitable material for use as backfill. Soil characteristics shall be assumed to be loose to medium compact silty sands with varying quantities of gravel. Soils are moisture sensitive and have low bearing capacity.
   3. Shop drawings shall be signed and sealed by a licensed NJ professional Engineer.
   4. Wall design shall include provisions for turning the wall to terminate smoothly into proposed grading.
   5. Wall design shall include corner pieces and transitions to incorporate a poured-in-place concrete stairway as shown on the plans.
   6. Shop drawings shall include provisions for the installation of chain link and ornamental metal fence atop the wall, positioned as close to the wall as possible.

1.6 QUALITY ASSURANCE

A. Earthwork observation and testing: The geotechnical engineer shall inspect the wall foundation base area and test soil compaction to assure that required bearing conditions are met. Additionally, the Geotechnical Engineer shall monitor fill and geogrid placement and test compacted soil materials to assure that proper soil type and compaction specifications are being met. Follow guidelines and specifications provided by geotextile manufacturer or retaining wall system manufacturer.

B. Refer to Specification Section 02050.

PART 2 MATERIALS

2.1 DEFINITIONS

A. Geogrid products shall be of high density polyethylene or polyester yarns encapsulated in a protective coating specifically fabricated for use as a soil reinforcement material.

B. Concrete retaining wall units shall be as specified in Section 02276.

C. Wall fill is a free draining granular material used within the concrete units.

D. Suitable backfill is the soil which is used as fill for the reinforced soil mass. Backfill may be obtained from on-site sources, provided it meets or exceeds the requirements for suitable material as defined in the earthwork specification and geotechnical engineering report.

E. Foundation soil is the insitu soil (if suitable), or controlled compacted backfill.

F. Drainage Fill is the 3/4 inch clean stone section installed immediately below and behind the modular concrete block and between the controlled compacted backfill.

2.2 PRODUCTS

A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturer's specifications.

B. Geogrid shall be installed at the lengths and orientations shown on the construction drawings.

2.3 ACCEPTABLE MANUFACTURERS

A. Basis of Design:
   1. Subject to compliance with requirements of the Contract Documents, manufacturers offering products which may be incorporated in work include the following:
      a. US Fabrics, Inc,;
      b. IWT/Cargo-Guard;
      c. SRW Products
      d. Mirafi;
      e. or approved equal

PART 3: EXECUTION

3.1 WALL FOUNDATION SOIL PREPARATION

A. Foundation soil shall be excavated to achieve the lines and grades as shown on the construction and shop drawings, or as directed by the on-site soils engineer.

B. Foundation soil shall be examined by the on-site soils engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.

C. Over-excavated areas shall be filled with compacted backfill material approved by on-site soils engineer.

D. Contractor shall verify locations of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation.

E. Foundation soils shall be proof –rolled prior to fill and geogrid placement.

3.2 WALL CONSTRUCTION

A. Wall construction shall be as specified under Section 02276: CONCRETE MODULAR RETAINING WALL.

B. Wall elevations shown on the drawings are designated as Top of Wall (TW) and Bottom of Wall (BW), and are further defined as follows:

   1. Top of Wall (TW) shall be the elevation of the highest unit (capstone) of the wall.
   2. Bottom of Wall (BW) shall be the finished ground elevation adjacent to the face of the wall. The actual bottom of the overall wall system shall be embedded below grade as per the approved engineered shop drawings.

3.3 GEOGRID INSTALLATION

A. Install wall system to designated height of first geogrid layer. Backfill and compact in layers not to exceed 8 in. (200 mm) lifts behind wall to depth equal to designed grid length before grid is installed.

B. Cut geogrid to designed embedment length and place on top of block to back edge of lip. Extend away from wall approximately 3% above horizontal on compacted backfill.

C. Lay geogrid at the proper elevation and orientations shown on the construction drawings or as directed by the wall design engineer.

D. Correct orientation of the geogrid shall be verified by the contractor and on-site soils engineer. Strength direction is typically perpendicular to wall face.

E. Follow manufacturer's guidelines for overlap requirements, particularly for curves and/or angle points.

F. Place next course of Block on top of grid and fill block cores with wall rock to lock in place. Remove slack and folds in grid and stake to hold in place.

G. Adjacent sheets of geogrid shall be butted against each other at the wall face to achieve 100 percent coverage.

H. Geogrid lengths shall be continuous. Splicing parallel to the wall face is not allowed.

I. Incorporate the fence installation sleeves into the geogrid, per manufacturer's requirements.

J. Coordinate geogrid installation with the installation of beam guide rail footings to insure that each component interleaves with the other.

3.4 FILL PLACEMENT AND BACKFILL PLACEMENT

A. Infill material shall be placed in lifts and compacted as specified under Section 02200 and 02276.

B. Backfill shall be placed, spread and compacted in such a manner that minimizes the development of slack or movement of the geogrid.

C. Only hand-operated compaction equipment shall be allowed within 3 ft (1 m) behind the wall. This area shall be defined as the consolidation zone. Compaction in this zone shall begin by running the plate compactor directly on the block and then compacting in parallel paths to the wall face until the entire consolidation zone has been compacted. A minimum of two passes of the plate compactor are required with maximum lifts of 8 in. (200 mm).

D. When fill is placed and compaction cannot be defined in terms of Modified Proctor Density, then compaction shall be performed using ordinary compaction process and compacted so that no deformation is observed from the compaction equipment or to the satisfaction of the engineer of record or the site soils engineer.

E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6 in. (150 mm) is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 mph (16 Km/h). Sudden braking and sharp turning shall be avoided.

G. The infill shall be compacted to achieve 95% Modified Proctor (ASTM D1557). Compaction tests shall be taken at 3 ft (1 m) behind the block and at the back of the reinforced zone and frequency shall be as determined by the geotechnical engineer. Material Product data sheets of the backfill material shall be submitted to the geotechnical engineer for review and approval prior to the placement of any backfill. The contractor is responsible for achieving the specified compaction requirements. The on-site soils engineer may direct the contractor to remove, correct or amend any soil found not in compliance with these written specifications.

3.5 FENCE INSTALLATION

A. Follow wall manufacturer's guidelines and specifications for installation of fencing along top of wall, per construction drawings. Interleave the geogrid with the fence mounting system as required.

END OF SECTION 02275

SECTION 02276 - MODULAR BLOCK RETAINING WALL

PART 1 – GENERAL

1.1 DESCRIPTION

A. This is a performance-based specification which allows for various wall system manufacturer's product lines. Fully engineered, site specific shop drawings from the wall system selected by the contractor shall be provided and must demonstrate equivalence with these specifications. A sample wall system is shown on the plan to demonstrate the minimum wall components required for the project. This wall section(s) contains the general requirements of the project and shall be supplemented to suit actual field conditions, as necessary.

B. Work includes furnishing and installing modular concrete block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.

C. Work includes earthwork, preparing foundation soil, furnishing and installing soil infill and stone, furnishing and installing leveling pad, unit fill and backfill to the lines and grades designated on the construction drawings and as supplemented by the wall manufacturer's wall system shop drawings.

D. Furnishing and installing all appurtenant materials required for construction of the retaining wall as shown on the construction drawings, including clean stone backfill, filter fabric, fencing anchors (as recommended by the wall and/or geogrid manufacturer), and rear wall drainage pipe.

E. Delegated Design:

1. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated. Designated Design includes, but is not limited to:
    a. Site specific modular block retaining wall indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by a qualified professional engineer responsible for their preparation in the State of New Jersey.
2. Certified shop drawings for site specific walls shall be prepared by a licensed professional engineer (NJ License), the cost of which shall be included in the contractor's bid.

1.2 RELATED WORK

A. Section 02200: Earthwork - Site

B. Section 02221: Trenching, Shoring & Bracing

C. Section 02275: Geogrid Soil Reinforcement

D Section 02820: Chain Link Fencing & Gates

1.3 REFERENCE STANDARDS

A. ASTM C1372 Standard Specification for Segmental Retaining Wall Units.

B. ASTM 1262 Evaluating the Freeze thaw Durability of Manufactured CMU's and Related concrete Units

C. ASTM D698 Moisture Density Relationship for Soils, Standard Method

D. ASTM D422 Gradation of Soils

E. ASTM C140 Sample and Testing concrete Masonry Units

1.4 DELIVERY, STORAGE AND HANDLING

A. Contractor shall check the materials upon delivery to assure that proper material has been received.

B. Contractor shall prevent excessive mud, wet cement, epoxy and like materials which may affix themselves to the blockwork, from coming in contact with the materials.

C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the retaining wall structure.

1.5 SUBMITTALS

A. Samples of all products used in the work of this section. Manufacturer's full range of available colors for Modular Retaining Wall Systems are to be submitted for review and approval by Owner and Architect for color selection prior to their procurement.

B. Site specific design (shop) drawings for the wall system, signed and sealed by a Professional Engineer licensed in the State of New Jersey.

C. Latest edition of manufacturer's specifications for proposed materials, method of installation and list of material proposed for use.

D. Shop Drawings: Include plans, elevations, sections, details and attachments to other work, and the following:
   1. Corner details
   2. Cap details,
   3. Dimensioned elevations showing accent block locations,
   4. Plan details where abutting walkways and other walls.
   5. Plan details for assimilating poured-in-place concrete stairways into the wall system.

1.6 QUALITY ASSURANCE

A. Soil testing and inspection service for quality control testing during earthwork operations will be scheduled by the contractor in accordance with Specification Section 02050.

PART 2 - MATERIALS

2.1 MODULAR WALL UNITS

A. Wall units shall be Keystone, Allan Block, Rockwood Retaining Walls, or approved equal. A sample wall system is shown on the plan for reference only and is not intended to demonstrate all required wall system components.

B. Wall units shall have minimum 28 day compressive strength of 3000 psi (20.7 MPa) in accordance with ASTM C1372. The concrete units shall have adequate freeze-thaw protection in accordance with ASTM C1372 or an average absorption rate of 7.5 lb/ft3 (120 kg/m3) for northern climates and 10 lb/ft3 (160 kg/m3) for southern climates.

C. Exterior dimensions shall be uniform and consistent. Maximum dimensional deviations on the height of any two units shall be 0.125 in. (3 mm).

D. Wall units shall provide a minimum of 110 lbs total weight per square foot of wall face area (555 kg/m2). Fill contained within the units may be considered 80% effective weight.

E. Exterior face shall be textured. Color as specified by Owner and/or Architect.

2.2 WALL ROCK

A. Material must be well-graded compactable aggregate, 0.25 in. to 1.5 in., (6 mm - 38 mm) with no more than 10% passing the #200 sieve. (ASTM D422)

B. Material behind and within the blocks may be the same material.

2.3 INFILL SOIL

A. Infill material shall be prepared on-site Soil Fill, per the earthwork specifications. Note that this soil is extremely moisture sensitive and if it becomes too wet, then it must be aerated to restores its properties for full compaction, otherwise, the soil must be replaced with suitable material at the contractor's expense.

2.4 DRAINAGE PIPE

A. Install perforated polyethylene pipes of the sizes and locations noted on the plans and sample wall detail, wrapped in a filter sock, behind the wall and extend these drain pipes downhill in a continuous manner to connect into the new storm sewer inlet located in the new driveway. There shall be a minimum of six (6) inches of clean stone around all sides of each pipe. Suggested pipe inverts are shown and shall be adjusted per the final shop drawings.

B. The drainage pipes shall be laid in a continuous downhill manner from top end to bottom, with the minimum design slope noted on the plans. In no case shall the drain pipes be back pitched.

PART 3 EXECUTION

3.1 EXCAVATION

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Contractor shall use caution not to over-excavate beyond the lines shown, or to disturb the base elevations beyond those shown.

B. Contractor shall verify locations of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation.

C. Verify that all required utility relocation work needed to accommodate wall construction has been completed.

3.2 FOUNDATION SOIL PREPARATION

A. Foundation soil shall be defined as any soils located beneath a wall.

B. Foundation soil shall be excavated as dimensioned on the plans and compacted to a minimum of 95% of modified Proctor density (ASTM D1557) prior to placement of the base material.

C. Foundation soil shall be examined by the contractor's on-site geotechnical (soils) engineer to ensure that it has achieved maximum compaction at the ideal moisture level, before placing any block courses. Soil not meeting the required strength shall be removed and replaced with acceptable granular fill material, such as DGA or clean ¾" stone.

3.3 BASE

A. Base material shall be placed as shown on the construction drawing. Top of base shall be located to allow bottom wall units to be buried to proper depths as per wall heights and specifications.

B. Base material shall be installed on undisturbed native soils or suitable replacement fills compacted to a minimum of 95% dry density per ASTM D1557.

C. The base shall be constructed to ensure proper wall embedment and the final elevation shown on the plans. Well-graded sand can be used to smooth the top 1/2 in. (13 mm) on the base material.

D. Base material shall be as shown on the plans.

3.4 UNIT INSTALLATION

A. The first course of wall units shall be placed on the prepared base with the raised lip facing up and out and the front edges tight together. The units shall be checked for level and alignment as they are placed.

B. Ensure that units are in full contact with base. Proper care shall be taken to develop straight lines and smooth curves on base course as per wall layout.

C. Fill all cores and cavities and a minimum of 12 in. (300 mm) behind the base course with wall rock. Use approved soils to backfill behind the wall rock and in front of the base course to firmly lock in place. Check again for level and alignment. Use a plate compactor to consolidate the area behind the base course. All excess material shall be swept from top of units.

D. Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below. Perfect "running bond" is not essential, but a 3 in. (75 mm) minimum offset is recommended. Check each block for proper alignment and level. Fill all cavities in and around wall units and to a minimum of 12 in. (300 mm) depth behind block with wall rock. Spread backfill in uniform lifts not exceeding 8 in. (200 mm) in uncompacted thickness and compact to 95% of MPD behind the consolidation zone.

E. The consolidation zone shall be defined as 3 ft (1 m) behind the wall. Compaction within the consolidation zone shall be accomplished by using a hand operated plate compactor and shall begin by running the plate compactor directly on the block and then compacting in parallel paths from the wall face until the entire consolidation zone has been compacted. A minimum of two passes of the plate compactor are required with maximum lifts of 8 in. (200 mm). Maximum lifts of 4 inches (100 mm) may be required to achieve adequate compaction within the consolidation zone. Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall.

F. Install each subsequent course in like manner. Repeat procedure to the extent of wall height.

G. Minimum tolerances.
Vertical Control - ±1.25 in. (32 mm) max. over 10 ft (3 m) distance.
Horizontal Location Control - straight lines ±1.25 in. (32 mm) over a 10 ft (3 m) distance.
Rotation - from established plan wall batter : 2.0°
Bulging - 1.0 in. (25 mm) over a 10 ft (3.0 m) distance

H. Wall elevations shown on the drawings are designated as Top of Wall (TW) and Bottom of Wall (BW), and are further defined as follows:

1. Top of Wall (TW) shall be the elevation of the highest unit (capstone) of the wall.
2. Bottom of Wall (BW) shall be the finished ground elevation adjacent to the face of the wall. The actual bottom of the overall wall system shall be embedded below grade as per the typical wall section determined by the manufacturer’s wall system design engineer.
3. The wall system shall be stepped with grade and geogrid layers shall be adjusted accordingly.

3.5 FENCES

A. Where indicated on the plan, install a minimum 4 ft high fence along the top of the wall. The fence shall be positioned to be as close to the wall as possible and permitted by the wall system manufacturer. Install custom fence post mounting system recommended by the selected wall manufacturer and include the mounting system in the wall submittal.

B. Note that the fencing system requires privacy slats and the additional wind loads shall be factored into the shop drawing design.

END OF SECTION 02276

SECTION 02360 - STORM DRAINAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes storm drainage outside the building.

1.3 PERFORMANCE REQUIREMENTS

A. Gravity-Flow, Non-pressure Piping Pressure Ratings: At least equal to system test pressure.

1.4 SUBMITTALS

A. Shop Drawings: Include plans, elevations, details, and attachments for the following:
   1. Precast concrete manholes and other structures, including frames, covers, and grates.

B. Coordination Drawings: Show manholes and other structures, pipe sizes, locations, and elevations. Include details of underground structures and connections. Show other piping in same trench and clearances from sewerage system piping. Indicate interface and spatial relationship between piping and proximate structures.

C. Design Mix Reports and Calculations: For each class of cast-in-place concrete.

D. Field Test Reports: Provide daily inspection reports that document field construction and interpret test results for compliance with performance requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic structures, pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle precast concrete manholes and other structures according to manufacturer's written rigging instructions.

1.6 PROJECT CONDITIONS

A. Site Information: Perform site survey, research public utility records, and verify existing utility locations.

B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Architect or Engineer not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Architect or Engineer's written permission.

1.7 QUALITY ASSURANCE

A. Testing and inspection service for quality control testing during storm drainage system construction will be coordinated by the contractor in accordance with Specification Section 02050.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Refer to Part 3 "Piping Applications" Article for applications of pipe and fitting materials.

2.2 PIPES AND FITTINGS

A. Polyvinyl Chloride (PVC) Sewer Pipe and Fittings: ASTM D 3034, SCH40 and SDR 35, for solvent-cemented or gasketed joints. Acceptable products are manufactured by CertainTeed Corp, Charlotte Pipe, JM Eagle, or approved equal.
   1. Primer: ASTM F 656.
   2. Solvent Cement: ASTM D 2564.
   3. Gaskets: ASTM F, elastomeric seal.

B. Polyethylene Pipe (PEP): ASTM D3350, AASHTO M294. Acceptable manufacturers include Hancor “Hi-Q”, ADS “N-12", smooth interior lined pipe, or approved equal. Provide and install all required couplers, fittings, gaskets, etc.. as needed.
   1. Fittings: Pipe joints and fittings shall conform to AASHTO M252, ASTM D1056, AASHTO M294.

2.3 SPECIAL PIPE COUPLINGS AND FITTINGS

A. Bushing-Type Pipe Couplings: ASTM C 1173, rubber or elastomeric bushing fabricated to mate with OD of smaller pipe and ID of adjoining larger pipe, for nonpressure joints.
   2. Material for Concrete Pipe: ASTM C 443 (ASTM C 443M), rubber.

2.4 MANHOLES

A. Normal-Traffic Precast Concrete Manholes: ASTM C 478 (ASTM C 478M), precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints.
   2. Diameter: 48 inches (1200 mm) minimum, unless otherwise indicated.
   3. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation.
   4. Base Section: 6-inch (150-mm) minimum thickness for floor slab and 4-inch (100-mm) minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
   5. Riser Sections: 4-inch (100-mm) minimum thickness, and lengths to provide depth indicated.
   6. Top Section: Eccentric-cone type, unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
   7. Gaskets: ASTM C 443 (ASTM C 443M), rubber.

8. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch (150- to 229-mm) total thickness, that match 24-inch- (610-mm-) diameter frame and cover. Adjust to grade with courses of brick (12” max.)
9. Steps: ASTM C 478 (ASTM C 478M), individual steps or ladder. Omit steps for manholes less than 60 inches (1500 mm) deep.
10. Pipe Connectors: ASTM C 923 (ASTM C 923M), resilient, of size required, for each pipe connecting to base section.

B. Manhole Frames and Covers: ASTM A 48-83, Class 30B, gray-iron castings designed for heavy-duty service. Include 23-inch ID by 7- to 9-inch riser with 4-inch minimum width flange, and 25-3/8-inch-diameter cover. Include indented top design with lettering "STORM SEWER" cast into cover. Acceptable products are manufactured by Campbell Foundry, Neenah Foundry, or approved equal.

C. Acceptable manufacturers of pre-cast units include Modern Concrete, Oldcastle Precast, Flemington Precast & Supply, or approved equal.

2.5 CATCH BASINS

A. Normal-Traffic, Precast Concrete Catch Basins (NJ DOT standard inlet designations as noted on the plans): ASTM C 478 (ASTM C 478M), precast, reinforced concrete, of depth indicated, with provision for rubber gasketed joints.
1. Base Section: 6-inch (150-mm) minimum thickness for floor slab and 4-inch (100-mm) minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
2. Riser Sections: 4-inch (100-mm) minimum thickness, 48-inch (1220-mm) diameter, and lengths to provide depth indicated.
3. Top Section: Eccentric-cone type, unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
4. Gaskets: ASTM C 443 (ASTM C 443M), rubber.
5. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch (150- to 229-mm) total thickness, that match 24-inch- (610-mm-) diameter frame and grate.
6. Steps: ASTM C 478 (ASTM C 478M), individual steps or ladder. Omit steps for catch basins less than 60 inches (1500 mm) deep.
7. Pipe Connectors: ASTM C 923 (ASTM C 923M), resilient, of size required, for each pipe connecting to base section.
8. Bottom, Walls, and Top: Reinforced concrete.
9. Channels and Benches: Concrete.
10. Steps: ASTM C 478 (ASTM C 478M), individual steps or ladder. Omit steps for catch basins less than 60 inches deep.

B. Frames and Grates: ASTM A 48-83, Class 30B, gray iron designed for heavy-duty service. Include flat grate with small square or short-slotted drainage openings. Acceptable products are manufactured by Campbell Foundry, Neenah Foundry, or approved equal.
1. Size: As indicated on plan set.
2. Grate Free Area: Approximately 50 percent, unless otherwise indicated.

C. Acceptable manufacturers of pre-cast units include Modern Concrete, Oldcastle Precast, Flemington Precast & Supply, or approved equal.

2.6 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350R, and the following:
   1. Cement: ASTM C 150, Type II.
   2. Fine Aggregate: ASTM C 33, sand.
   3. Coarse Aggregate: ASTM C 33, crushed gravel.
   4. Water: Potable.

B. Portland Cement Design Mix: 4500 psi (27.6 MPa) minimum, with 0.45 maximum water-cementitious ratio.
   1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
   2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed steel.

C. Structure Channels and Benches: Factory or field formed from concrete. Portland cement design mix, 4500 psi (27.6 MPa) minimum, with 0.45 maximum water-cementitious ratio.
   1. Include channels and benches in manholes.
      a. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
         1) Invert Slope: 1 percent through manhole.
         b. Benches: Concrete, sloped to drain into channel.
         2) Slope: 4 percent.
   2. Include channels in catch basins.
      a. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
         1) Invert Slope: 1 percent through catch basin.

D. Ballast and Pipe Supports: Portland cement design mix, 3000 psi (20.7 MPa) minimum, with 0.58 maximum water-cementitious ratio.
   1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
   2. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed steel.

2.7 PROTECTIVE COATINGS

A. Description: One- or two-coat, coal-tar epoxy; 15-mil (0.38-mm) minimum thickness, unless otherwise indicated; factory or field applied to the following surfaces:
   1. Concrete Manholes: On exterior surface.
   2. Manhole Frames and Covers: On entire surfaces.
   3. Catch Basins: On exterior surface.
   4. Catch Basin Frames and Grates: On entire surfaces.
   5. Stormwater Inlets: On exterior surface.
   6. Stormwater Inlet Frames and Grates: On entire surfaces.
   7. Stormwater Detention Structures: On exterior surface.
   8. Stormwater Detention-Structure Manhole Frames and Covers: On entire surfaces.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 2 Section 02200 and 02221.

3.2 IDENTIFICATION

A. Materials and their installation are specified in Division 2 Section "Earthwork." Arrange for installing green warning tapes directly over piping and at outside edges of underground structures.
   8. Use warning tape or detectable warning tape over ferrous piping.
   9. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.3 PIPING APPLICATIONS

A. General: Include watertight, silt-tight, or soil-tight joints, unless watertight or silt-tight joints are indicated.

B. Refer to Part 2 of this Section for detailed specifications for pipe and fitting products listed below. Use pipe, fittings, and joining methods according to applications indicated.

C. Gravity-Flow Piping: Use the following:
   1. PVC Sewer Pipe and Fittings, NPS 15 (DN375) and smaller, SCH40, for solvent-cemented or gasketed joints.
   2. Polyethylene Pipe (PEP): ASTM D3350, AASHTO M294, Hancor “Hi-Q” or ADS “N-12", smooth interior liner or approved equal. Provide and install all required couplers, fittings, gaskets, etc... as needed.
      a. Fittings: Pipe joints and fittings shall conform to AASHTO M252, ASTM D1056, AASHTO M294.

3.4 SPECIAL PIPE COUPLING AND FITTING APPLICATIONS

A. Special Pipe Couplings: Use where required to join piping and no other appropriate method is specified. Do not use instead of specified joining methods.
   1. Use the following pipe couplings for non-pressure applications:
      a. Sleeve type to join piping, of same size, or with small difference in OD.
      b. Increaser/reducer-pattern, sleeve type to join piping of different sizes.
      c. Bushing type to join piping of different sizes where annular space between smaller piping's OD and larger piping's ID permits installation.
   2. Use pressure-type pipe couplings for force-main joints. Include PE film, pipe encasement.

B. Special Pipe Fittings: Use where indicated. Include PE film, pipe encasement.

3.5 INSTALLATION, GENERAL

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.

C. Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. Install gravity-flow piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.
   1. Install piping pitched down in direction of flow, at minimum slope of 1 percent, unless otherwise indicated.

F. Extend storm drainage piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.

3.6 PIPE JOINT CONSTRUCTION AND INSTALLATION

A. General: Join and install pipe and fittings according to installations indicated.

3.7 MANHOLE INSTALLATION

A. General: Install manholes, complete with appurtenances and accessories indicated.

B. Form continuous concrete channels and benches between inlets and outlet.

C. Set tops of frames and covers flush with finished surface of manholes that occur in pavements. Set tops 3 inches (76 mm) above finished surface elsewhere, unless otherwise indicated.

D. Install precast concrete manhole sections with gaskets according to ASTM C 891.

E. Construct cast-in-place manholes as indicated.

3.8 CATCH-BASIN INSTALLATION

A. Construct catch basins to sizes and shapes indicated.

B. Set frames and grates to elevations indicated. Use courses of brick to adjust grades to proposed grade as needed.

3.9 CONCRETE PLACEMENT

A. Cast in place concrete to be 4,000 psi.

3.10 FIELD QUALITY CONTROL

A. Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.
   1. In large, accessible piping, brushes and brooms may be used for cleaning.
   2. Place plug in end of incomplete piping at end of day and when work stops.
   3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (600 mm) of backfill is in place, and again at completion of Project.
   1. Submit separate reports for each system inspection.
   2. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.
      b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
      c. Crushed, broken, cracked, or otherwise damaged piping.
      d. Infiltration: Water leakage into piping.
      e. Exfiltration: Water leakage from or around piping.
   3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
   4. Reinspect and repeat procedure until results are satisfactory.

C. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
   1. Do not enclose, cover, or put into service before inspection and approval.
   2. Test completed piping systems according to authorities having jurisdiction.
   3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
   4. Submit separate reports for each test.
   5. Leaks and loss in test pressure constitute defects that must be repaired.
   6. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

D. Furnish inspection and test reports from the Contractor’s certified materials testing and inspection company for all work performed, certifying that all construction and materials meets or exceeds the specifications.

END OF SECTION 02360

SECTION 02400 - HOT-MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Hot-mix asphalt (HMA) paving (top and base courses) conforming to the New Jersey Department of Transportation Standard Specifications (NJDOTSS) for the construction of new “Superpave” bituminous (HMA) concrete pavements as shown on the drawings.
   2. Restoration of pavements due to installation or replacement of storm or sanitary sewers, utilities, or other underground structures, or due to excavation for other work adjacent to pavements.

B. Related Sections include the following:
   1. Division 2 Section "Earthwork" for aggregate subbase and base courses.

1.3 SYSTEM DESCRIPTION

A. Provide super pave hot-mix asphalt (HMA) pavement according to the materials, workmanship, and other applicable requirements of the standard specifications of the state or of authorities having jurisdiction.
   1. Standard Specification: NJDOT Standard Specifications for Road and Bridge Construction (NJDOTSS), latest edition, with amendments.

1.4 SUBMITTALS

A. Product Data: For each product specified. Include technical data and tested physical and performance properties.

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

C. Samples: 12 by 12 inches (300 by 300 mm) minimum, of paving fabric.

D. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.

E. Material Test Reports: Indicate and interpret test results for compliance of materials with requirements indicated.

F. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has completed hot-mix asphalt paving similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Manufacturer Qualifications: Engage a firm experienced in manufacturing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.
   1. Firm shall be a registered and approved paving mix manufacturer with authorities having jurisdiction or with the NJDOT.

C. Schedule and Coordinate all material testing and inspection work in accordance with Section 02050. Any pavement that has not been tested and inspected will not be accepted. All testing and inspection work shall adhere to NJ DOT Standard Specifications for Road and Bridge Construction, whichever is more stringent.

D. Regulatory Requirements: Conform to applicable standards of authorities having jurisdiction for asphalt paving work on public property.

E. Asphalt-Paving Publication: Comply with the Asphalt Institute's "The Asphalt Handbook," except where more stringent requirements are indicated.

F. Pre-installation Conference: Conduct conference at Project site with Geotechnical Engineer and Testing Company to comply with requirements of Division 1 Section "Project Meetings" Review methods and procedures related to asphalt paving including, but not limited to, the following:
   1. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
   2. Review condition of substrate and preparatory work performed on the subgrade.
   3. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
   4. Review and finalize construction schedule for paving and related work. Verify availability of materials, paving Installer's personnel, and equipment required to execute the Work without delays.
   5. Review inspection and testing requirements, governing regulations, and proposed installation procedures.
   6. Review forecasted weather conditions and procedures for coping with unfavorable conditions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Conform to applicable NJDOTSS requirements.

1.7 PROJECT CONDITIONS

A. Pavements, weather limitations and laydown conditions: Conform to NJDOTSS Sections 404.12 and 404.13, including requirements for prime and tack coats, which also shall be included in the overall contract.

PART 2 - PRODUCTS

2.1 PAVEMENTS AND BASE COURSES

A. General: Use materials, gradations, and product formulations conforming to the NJDOTSS.

B. Bituminous Stabilized Base Course: NJDOTSS Division 400. Mix shall be HMA 19M64.

C. Bituminous Concrete Surface Course (i.e. pavement top course or layers): NJDOTSS Division 400. Mix shall be HMA 9.5M64.

D. Prime Coat: NJDOTSS Section 401.03.02

E. Tack Coat: NJDOTSS Section 401.03.02

F. Water: Potable.

2.2 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by Environmental Protection Agency (EPA). Provide granular, liquid, or wettable powder form.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.

B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.

C. Notify Owner, in writing, of any unsatisfactory conditions. Do not begin paving installation until these conditions have been satisfactorily corrected.

3.2 PATCHING AND REPAIRS

A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Recompact new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.
   1. Tack coat faces of excavation and allow to cure before paving.
   2. Partially fill excavation with dense-graded, hot-mix asphalt base mix and compact while still hot. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
   3. Thickness shall conform to existing pavement thicknesses, however, in no case shall the total thickness of bituminous pavement for patching or restoration be less than five (5) inches.

B. Temporary patching is not allowed in public roadways. Permanent pavement must be constructed in public roadways immediately upon completion of the related work. In other areas, temporary pavement patching is permitted, until such time and permanent pavement is installed. Temporary patching shall be continuously maintained to a safe and uniform condition. Temporary patching shall be constructed flush with adjacent surfaces, with no lips or irregularities in the paving surface. Temporary patching may consist of either Superpave HMA 9.5M64 or Marshall Mix FABC-1 surface course.

3.3 SURFACE PREPARATION

A. General: Conform to NJDOTSS Divisions 300 and 400 as applicable, including all referenced sections.

3.4 HOT-MIX ASPHALT INSTALLATION

A. Transportation and delivery, spreading and finishing, and compaction of the material shall conform to NJDOTSS Division 400 and related sections.

3.5 THICKNESS REQUIREMENTS AND FINISH SURFACE REQUIREMENTS

A. Thickness: Conform to NJDOTSS Division 400.

B. Surface Smoothness: Conform to NJDOTSS Division 400.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Refer to Section 02050.
   1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
   2. Contractor must schedule its work and coordinate with the Testing Agency.

B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to NJDOTSS.

D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to NJDOTSS and tested for compliance.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION 02400

SECTION 02617 – PAVEMENT STRIPES AND MARKINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. This work consists of applying white, blue or yellow traffic and pavement thermoplastic markings.
   2. The plans show the location of linework, pavement markings, lettering and other symbols to be constructed. Existing pavement markings, where pavement areas are being reconstructed in-kind, shall be restored to original configuration, unless noted otherwise on the plans.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Summary of Work" for use of the building and phasing requirements.
   2. Division 1 Section "Contract Closeout" for record document requirements.

1.3 MATERIALS

A. Materials for Pavement Stripes or Markings shall conform to NJDOTSS Section 610. Materials for Thermoplastic Traffic markings shall conform to NJDOTSS Section 610.

1.4 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.

1.5 QUALITY ASSURANCE

A. Contractor Qualifications: Engage an experienced firm that has successfully completed Work similar to that indicated for this Project.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CONSTRUCTION

A. Surface preparation shall conform to NJDOTSS Section 610. All dirt, oil, grease and other foreign material shall be removed from the areas upon which the pavement marking or striping is to be placed.

B. Thermoplastic Pavement markings shall be applied in accordance with NJDOTSS Section 610 et. seq.

C. Thermoplastic Pavement markings and striping shall be completed and the material shall be thoroughly set before opening to traffic. Opening road to traffic shall be in accordance with NJDOTSS Section 610.

D. Should the contractor need to remove any existing striping or markings, in pavement areas that are to be preserved, this work shall be done in accordance with NJDOTSS Section 610.

E. All markings, and traffic control lettering shall conform with the Manual of Uniform Traffic Control Devices, latest edition.

END OF SECTION 02617

SECTION 02800 – SITE RESTORATION

PART 1 GENERAL

1.1 SUMMARY

A. The work under this section shall consist of furnishing all labor, equipment and materials for performing site restoration activities to return the site to pre-construction or improved conditions as described in the Specifications and shown on the Construction Drawings.

B. Related Sections
   1. Section: “Site Clearing”
   2. Section: “Earthwork”

PART 2 PRODUCTS

2.1 MATERIALS

A. Topsoil
   1. The Contractor shall spread sufficient amounts of topsoil material required to provide a minimum of five inches of topsoil over disturbed areas to be vegetated. The Contractor shall prepare topsoil that meets the requirements of Section 02750.

B. Fertilizers
   1. The Contractor shall furnish sufficient amounts of fertilizer, which may be either fluid or dry formulations of commercial carriers of available plant nutrients. The fertilizer shall contain total nitrogen, available phosphoric acid, and soluble potash in the ratio of 10-20-10. The Contractor shall submit the manufacturer's label or certificate indicating compliance with specifications to the Construction Oversight Engineer and for review and approval. During the work, the Construction Oversight Engineer reserves the right to reject any material that has become caked or otherwise damaged.

C. Mulch
   1. The Contractor shall furnish sufficient amounts of mulch. The Contractor may use either hay or straw for mulch. Hay for mulching shall be mowings of acceptable herbaceous growth free from noxious weeds. Straw for mulching shall be stalks of oats, wheat, rye or other approved crops free from noxious weeds.

D. Asphalt
   1. The Contractor shall furnish sufficient amounts of each asphalt pavement layer. The subbase course shall be dense graded aggregate (DGA) conforming to the requirements of Section 02200. The asphalt base course shall be NJDOT HMA 19M64. The asphalt surface course shall be NJDOT specification HMA 9.5M64

E. Fence

1. New fence shall be installed per plan details and reference specifications. The Contractor shall reinstall existing fencing or provide new fencing to replace the type of fence removed to support remedial activities to restore fencing to original or “like new” condition. Fencing shall be replaced with a similar style, height and type to the existing fencing.

2.2 EQUIPMENT

A. The Contractor shall furnish all equipment required to complete the work of this Section.

PART 3 EXECUTION

3.1 RESTORATION OF THE SITE

A. The Contractor shall provide a final layer of material over excavation areas consistent with the existing conditions (i.e., quarry process, asphalt, etc.) in accordance with the requirements below.

3.2 LANDSCAPED AREAS

A. Prior to the placement of topsoil, the subgrade soil shall be loosened to a depth of two inches and graded so that it will be parallel to the proposed finished grade. Topsoil shall be spread, raked and compacted to form, after settlement, smooth draining grades. The minimum depth of topsoil after compaction shall be six inches.

B. Fertilizer shall be evenly spread over the surface of soil in areas as directed. Rates of application shall be as required to promote tree growth. Tests required to determine rate of fertilizer application shall be made by the Contractor and the rate accepted by the Engineer. Any method of application that will ensure an even distribution will be acceptable.

C. The surface of areas where mulch is to be applied shall be cleared of stones, stumps, wire, and other obstacles that might hinder subsequent landscaping operations. The ground shall be harrowed or disked to produce a state of suitable tillage.

D. The mulch shall be spread uniformly in a continuous blanket of sufficient thickness to completely hide soil from view. Mulch may be spread before or not later than three days after placement of topsoil unless otherwise approved. Anchorage to hold mulch in place may be applied by an approved method during mulching operation or subsequently.

E. The Contractor shall care for landscaped areas until final acceptance. Such care shall consist of providing protection against traffic by approved warning signs or barricades, and repairing areas damaged following seeding or mulching operations due to wind, water, fire or other causes. Damaged areas shall be repaired to re-establish condition and grade of area prior to seeding and shall be re-fertilized, re-seeded, and re-mulched as specified herein. The Contractor shall keep seeded areas mowed until acceptance by cutting to a height of three inches when growth reaches six inches, or as directed.

F. When, in the judgment of the Construction Oversight Engineer, at any time prior to acceptance, any area which has been landscaped fails to produce a satisfactory growth of grass after a suitable period of time has elapsed, the Contractor shall re-plant, re-fertilize and re-mulch such areas as specified.

3.3 ASPHALT COVER

A. For areas requiring a final asphalt cover, the Contractor shall perform asphalt installation in accordance with the minimum layer thicknesses shown on the Construction Drawings and Section 2400. The subbase course shall be dense graded aggregate conforming to the requirements of Section 2200. The asphalt base course shall be NJDOT HMA 19M64. The asphalt surface course shall be NJDOT HMA 9.5M64. The Contractor shall install all asphalt courses based on the requirements of the NJDOT Standard Specifications, latest edition.

B. The Contractor shall install the asphalt to the existing cut line of the asphalt. At the joint between the new asphalt and the existing pavement, the Contractor shall provide a smooth transition.

C. All pavement and subbase restoration courses shall be at least as thick as adjacent surfaces they adjoin.

3.4 CLEANUP OF THE PROJECT SITE

A. The Contractor shall perform final cleanup of all work areas and adjacent areas upon completing the site restoration (removal of tarps; broom cleaning paved surfaces; removal of any traffic barriers, etc.).

B. The cleaning work shall also include the following:
   1. Repair of any erosion or runoff related damage.
   2. Grading and final cover, as required, of all areas used by the contractor.
   3. Removal of all materials such as excess construction material, wood, debris and any other foreign material; and
   4. Removal of all construction equipment;

C. Final cleanup of all work areas and adjacent areas upon completing the site restoration (removal of tarps; broom cleaning paved surfaces; removal of any traffic barriers, etc.); removal of all constructed related equipment and material that is not part of the final site design; and all other items and services required for site restoration for which pay items are not provided elsewhere in this Contract.

END OF SECTION 02800

SECTION 02820 – CHAIN LINK FENCE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SECTION INCLUDES

A. Provide vinyl-coated chain link fencing, color matching existing fence posts and fabrics.

B. Provide all required accessories and concrete footings for posts.

C. Coordinate fence work to ensure compatibility between new and existing fencing materials and to avoid installation conflicts.

1.3 RELATED SECTIONS

A. Section 03300 – Concrete Mix Design

1.4 REFERENCED STANDARDS

A. ASTM American Society for Testing and Materials:
   1. Standards and Test Methods referenced in Part 2 - Products.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for metal fencing, fabric, gates and accessories. Include privacy slat cut sheets.

B. Compliance: Not used.

C. Color Selection: Match existing (dark green) vinyl-coated fabric, posts and rails.

D. Shop Drawings: Submit sample of fence section for each height specified.

E. Provide shop drawing depicting the means of installing fencing located in concrete curbs, walks or slabs.

1.6 QUALITY ASSURANCE

A. Provide chain link fences as complete units from a single source, including necessary erection accessories, fittings, and fastenings.

1.7 REGULATORY REQUIREMENTS

A. Comply with the applicable provisions of codes, standards and specifications referenced in this section.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include; but are not limited to, the following:
   1. Steel Fencing and Fabric:
      a. American Fence Corp.
      b. Anchor Fence, Inc.
      c. United States Steel. (Cyclone Fence Division)
      d. National Fence Co.
      e. or approved equal.

2.2 GENERAL

A. Dimensions indicated for pipe, roll-formed, and H-sections are outside dimensions, exclusive of coatings.

2.3 STEEL FABRIC

A. Fabric: Number 9 gage (0.418 inch) steel wires, 2 inch mesh, with top and bottom selvage. Provide one piece fabric widths for fencing up to 12 feet high.
   1. Fabric Finish: Galvanized, ASTM A392, Class II, with not less than 2.0 oz. zinc per sq. ft. of surface. Plastic-coated, color black, 2" mesh as required by plan details.
      a. Comply with ASTM F668, Class 2, except provide fabric with diameter (gage) of core wire equivalent to fabric diameter specified when measured prior to application of non-metallic coating.

2.4 FRAMING AND ACCESSORIES

A. General: Galvanized steel, painted black, ASTM A120 or A123, with not less than 1.8 oz. zinc per sq. ft. of surface.
   1. Fittings and Accessories: Galvanized, ASTM A153, with zinc weights per Table I.

B. End, Corner and Pull Posts: Refer to drawing detail(s) for post sizes.

C. Line Posts: Refer to drawing detail(s) for post sizes.

D. Gate Posts:
   1. For swing gates, provide posts for supporting each gate leaf for nominal gate widths as follows:

Leaf Width	Gate Post	lbs./lin.ft.
Up to 6 feet	3.5 inches x 3.5 inches roll-formed	4.85
	section or 2.875 inches OD pipe	5.79

E. Top Rail: 1.66 inches OD pipe, 2.27 lbs. per ft. or 1.625 inches x 1.25 inches roll-formed sections, 1.35 lbs. per ft. Manufacturer's longest lengths, with expansion type couplings, approximately 6 inches long, for each joint. Provide means for attaching top rail securely to each gate corner, pull and end post.

F. Bottom Rail: Same as top rail, except not continuous.

G. Post Brace Assembly: Adjustable brace at end and gate posts and at both sides of corner and pull posts, with horizontal brace at mid-height of fabric. Use same material as top rail for brace; truss to line posts with 0.375 inch diameter rod and adjustable tightener.

H. Post Tops: Pressed steel, wrought iron, or malleable iron, to form a weather tight closure cap for posts. Provide one cap for each post, except where combination post top caps and barbed wire supporting arms are used. Provide caps with openings for through passage of top rail.

I Stretcher Bars: One-piece lengths equal to full height of fabric, with minimum cross-section of 3/16 inch x 3/4 inch. Provide one stretcher bar for each gate and end post, and 2 for each corner and pull post, except where fabric is integrally woven into post.

J. Stretcher Bar Bands: Steel, wrought iron, or malleable iron. Space not over 15 inches o.c., to secure stretcher bars to end, corner, pull, and gate posts.

2.5 CONCRETE

A. Provide concrete consisting of Portland cement, ASTM C150, aggregates ASTM C33, and clean water. Minimum 28-day compressive strength 2500 psi. Use at least 4 sacks of cement per cu. yd., 1 inch maximum size aggregate, maximum 3 inches slump, and 2 percent to 4 percent entrained air.

PART 3 - EXECUTION

3.1 INSTALLATION IN GROUND

A. Do not begin installation and erection before final grading is completed and finish elevations established.

B. Excavation: Drill or hand excavate (using post hole digger) holes for posts in firm, undisturbed or compacted soil.
   1. Excavate holes for each post to minimum diameter recommended by fence manufacturer, but not less than 4 times largest cross-section of post.
   2. Excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set not less than 36 inches below finish grade surface, except to greater depths where indicated.

C. Setting Posts: Center and align posts in holes 3 inches above bottom of excavation. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing. Extend concrete footings to be flush with finish grade, except extend footings for swing gate posts to underside of bottom hinge. Trowel tops of footings to a crown to shed water away from posts.
   1. Set keeps, stops, sleeves and other accessories into concrete.
   2. Grout-in posts set into sleeved holes, concrete construction, or rock excavations, with non-shrink Portland cement grout.
   3. Allow concrete to attain at least 75 percent of its minimum 28-day compressive strength and wait at least seven (7) days after placement before installing rails, tension wires, barbed wire, or fabric. Do not stretch and tension fabric and wires, and do not hang gates, until the concrete has obtained its full design strength.

D. Top Rails: Run rail continuously through post caps, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer.

E. Center Rails: Provide where indicated. Install in one piece between posts and flush with post on fabric side, using special offset fittings where necessary.

F. Install braces so posts are plumb when diagonal rod is under proper tension.

G. Fabric: Leave approximately 2 inches between finish grade and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.

H. Stretcher Bars: Thread through or clamp to fabric 4 inches o.c., and secure to posts with metal bands spaced 15 inches o.c.

I. Tie Wires: Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing. Tie fabric to line posts with wire ties 12 inches o.c. Tie fabric to rails and braces with wire ties 24 inches o.c. Tie fabric to tension wires with hog rings 24 inches o.c.

J. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.2 PROTECTION AND REPAIR

A. Protect installed fencing from damage until final acceptance. Install barriers or attach protective materials at posts and other points subject to impact or abrasion.

B. Repair damaged coatings by recoating with high zinc dust content paint for repair of galvanizing, or by compatible and equivalent coating for repair of vinyl. Match adjacent coating, and apply per manufacturer's directions.

C. Replace any metal components distorted in the course of construction work. Remove and replace concrete footings displaced by impact.

END OF SECTION 02820

SECTION 02830 - CONSTRUCTION FENCING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SUMMARY

A. Install temporary six (6) foot high temporary light gage metal construction fencing to enclose all active work areas where final grading has not been completed. Provide dust screen on fencing that faces the school building and parking lot/driveway. All active work areas shall be fenced. Fencing may be moved as work is completed.

B. Include the maintenance of all required gates, latches, chains, locks, and hardware needed to secure the construction fencing around all work areas.
   1. Furnish extra sets of gate lock keys to the Construction Manager and Owner.

1.3. RELATED SECTIONS

A. Division 02 Section "Site Clearing"

B. Division 02 Section “Selective Demolition”

PART 2 PRODUCTS

2.1 CONSTRUCTION FENCING

A. Maintain, supplement, move, and re-install, as required, temporary metal construction security fence, six (6) feet high, with dust screen at selected areas, and lockable access gates at appropriate locations that facilitate work and control site access per the construction plans. The Owner’s representative reserves the right to determine the appropriate amount of fencing needed to maintain construction site security and safety, and the Contractor shall provide and maintain the required temporary construction fencing as needed. The temporary chain link construction fencing shall meet or exceed the following specifications.
   1. Minimum 11 gage mesh, 2” square
   2. Minimum post diameter: 1 1/2” (or larger as dictated by fence height)
   3. Minimum Post thickness: 0.065”
   4. Rails as needed to accommodate windscreens.
   5. Mesh to be tied every 12” along posts and rails.
   6. Fence shall be “post in ground” style.
   7. Fence to be provided with windscreen (for dust control) material to full height of fence.

B. All fencing components shall be free of burrs and other jagged edges that could cause bodily harm.

C. All fence shall be securedly anchored to prevent collapse, movement or dislocation.

PART 3 EXECUTION

3.1 GENERAL

A. Provide and maintain temporary construction security fencing around all work areas, including all gates and locking hardware.

B. Inspect and maintain fence in a safe and secure condition throughout construction.

C. Construction fencing may be moved and re-installed around the construction site as the work progresses, to insure that the construction site is secured at all times until substantial completion (or longer if construction site conditions warrant at no additional cost). At no time shall the construction site be left open and unsecured by temporary construction fencing.

D. Construction fencing may be removed when the site work is completed and all permanent fencing, railings, guards, and other safety measures are in place. In the event that the construction schedule is extended, the fencing rental agreement shall also be extended at no additional cost. The Owner reserves the right to require the temporary fencing to remain in place as needed to safeguard an undesirable site condition, until said condition is remedied to the satisfaction of the construction official and the site is deemed to be in safe and orderly condition.

END OF SECTION 02830

SECTION 03100 – CONCRETE FORM WORK

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SECTION INCLUDES

A. Provide formwork for cast-in-place concrete work not specified in other Divisions.

1. Work includes design and engineering of formwork.
2. Do not use earth cuts as forms for vertical surfaces, except as specifically reviewed by Engineer.
3. Earth forms may be used for footings if banks are stable.

1.3 RELATED SECTIONS

A. Section 03300: Cast-in-Place Concrete.

1.4 REFERENCE STANDARDS

A. ACI American Concrete Institute:

1. 318 Building Code Requirements for Reinforced Concrete.
2. 347 Recommended Practice for Concrete Formwork.

B. ASTM American Society for Testing and Materials:

1. ASTM Standard Specifications and Test Methods referenced in Part 2 - Products and Part 3 - Execution.

1.5 SUBMITTALS

A. Product Data: Submit data for formwork materials and accessories, as requested by Engineer.

1. 6 REGULATORY REQUIREMENTS

A. Comply with the applicable provisions of codes, standards and specifications referenced in this section.

PART 2 PRODUCTS

2.1 FORM MATERIALS

A. Forms for Exposed Concrete: Except where special formwork is required to produce surface characteristics indicated or specified, construct with plywood, metal, metal framed plywood or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Provide material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

1. Plywood: Comply with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I and II, Exterior Grade, not less than 5/8 inch thick, mill-oiled and edge-sealed, with each piece bearing legible trademark of an approved inspection agency. Face shall be free of blemishes and irregularities that would otherwise transfer an image to the finished concrete surface.

B. Forms for Unexposed Concrete: Plywood, lumber, metal or other acceptable material. Where lumber used, it shall be nominal 1 inch x 6 inches or 1 inch x 8 inches, dressed on 2 edges and one side for tight fit.

2.2 FORMWORK ACCESSORIES

A. Form Release Agents: Use commercial formulation compounds that cannot bond with, stain nor adversely affect concrete surfaces, and cannot impair subsequent treatments of concrete surfaces.

1. Reference Product:
   a. "Formshield" by W.R. Grace Co.
   b. Substitution: Make substitution under provisions of AIA A201 Section 00800.

B. Form Ties: Snap-off metal, adjustable-length, cone type, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

1. Provide ties with 1-1/2 inches breakback dimension, with a maximum hole size of 7/8 inch diameter in concrete surface.

C. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; of strength and character to maintain formwork in place while placing concrete.

PART 3 EXECUTION

3.1 DESIGN AND ERECTION

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads until such loads can be supported by concrete structure. Construct formwork so concrete members are of correct size, shape, alignment, elevation and position as shown, and within tolerances permitted by ACI 301.

B. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.

C. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work.

D. Use selected materials to obtain required finishes. Solidly butt and back-up joints to prevent leakage of cement paste.

E. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only.

F. Chamfer exposed corners and edges when both surfaces are exposed in the finished work, except where other detail indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

1. Review Drawings for conditions requiring chamfers.

3.2 OPENINGS, INSERTS, AND EMBEDDED WORK

A. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection, and for placement of concrete. Securely brace temporary openings and set tight to forms to prevent loss of concrete mortar. Locate temporary openings at inconspicuous locations.

B. Provide openings in formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.

C. Set and build in to formwork anchorage devices, reglets, and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete.

3.3 JOINTS

A. Locate and install as indicated; if not indicated, locate so as not to impair strength and appearance of the structure, and as reviewed by Engineer.

1. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints.

3.4 PREPARATION OF FORM SURFACES

A. Clean re-used forms of concrete matrix residue; repair and patch as required to return forms to acceptable surface condition.

B. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt and other debris just before concrete is placed. Retighten forms and bracing after concrete placement if required to eliminate mortar leaks and to maintain proper alignment.

C. During cold weather, remove ice and snow from forms. Do not use deicing salts. Do not use water to clean out completed forms, unless formwork and construction are within heated enclosure; use compressed air to remove foreign matter.

D. Coat contact surfaces of forms with form release agent before reinforcement is placed. Apply in accordance with manufacturer's directions.

1. Do not allow excess form release agent to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete shall be placed.
2. Coat steel forms with a non-staining, rust-preventive form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.5 FORM REMOVAL

A. Remove formwork only after both the following minimum concrete ages and percentages of design strength have been reached, and as further specified below:

	ELEMENT	AGE	STRENGTH
1.	Vertical Surfaces	6 days	60 percent
2.	Footings	2 days	35 percent
3.	Other work	When concrete is self supporting.	

B. Time Reduction: When high early strength concrete is used, specified time periods may be reduced when a written review has been sent to the Engineer.

C. Vertical Surfaces: Formwork not supporting weight of concrete may be removed in specified time only if cumulative curing time at not less than 50 degrees F is not less than 24 hours; and provided concrete has sufficiently hardened to prevent damaged by form removal operations and provided curing and protection operations are maintained.

END OF SECTION 03100

SECTION 03200 – CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SECTION INCLUDES

A. Provide reinforcing for cast-in-place concrete work.

B. Provide inspection and testing related to reinforcing.

1.3 RELATED SECTIONS

A. Section 03100: Concrete Formwork.

B. Section 03300: Cast-in-Place Concrete - Site

1.4 REFERENCED STANDARDS

A. ACI American Concrete Institute:

1. 301 - Specifications for Structural Concrete for Buildings.
2. 315 - Manual of Standard Practices for Detailing Reinforced Concrete Structures.
3. 318 - Building Code Requirements for Reinforced Concrete.

B. CRSI Concrete Reinforcing Steel Institute:

1. Manual of Standard Practice.

C. ASTM American Society for Testing and Materials:

1. Standard Specifications and Test Methods referenced in PART 2 - PRODUCTS and PART 3 - EXECUTION.

1.5 SUBMITTALS

A. Product Data: Submit data for reinforcement accessories, as requested by Architect.

B. Compliance: Submit material certifications, signed by manufacturer and Contractor, that each material item complies with or exceeds specified requirements.

C. Shop Drawings: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315. Show bar schedules, stirrup spacing, bending details, and arrangement of reinforcement. Include special reinforcement required at openings through concrete work.

1. Shop drawings shall be sufficiently complete to enable reinforcing to be placed according to, but without reference to, the Construction Drawings, and shall identify and clearly show supports. Include details showing complicated reinforcing arrangements at 1/4 inch to 1'-0" scale or larger.

1.6 QUALITY ASSURANCE

A. Identification: Each reinforcing bar shall have an embossed identifying symbol indicating that steel is of the grade specified. Steel without such a symbol shall be rejected.

B. Inspection: Reinforcing shall be inspected and approved by an independent testing and inspection agency before concrete is placed.

1.7 REGULATORY REQUIREMENTS

A. Comply with the applicable provisions of codes, standards and specifications referenced in this section.

1.8 PRODUCT HANDLING

A. Ship reinforcing steel to the job site in standard bundles, tagged with embossed zinc shipping and marking tags, prepared in accordance with CRSI "Manual of Standard Practice".

B. Sort reinforcement upon delivery to the site; store to avoid contact with the ground, and in a location protected from vehicular traffic.

C. Cover reinforcement remaining in storage on the site for more than one month, to protect it from the weather.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Not applicable.

2.2 MATERIALS

A. Reinforcing Bars: ASTM A615, Grade 60, deformed.

B. Epoxy-Coated Reinforcing Bars: ASTM A775.

C. Welded Wire Fabric: ASTM A185, fabricated from ASTM A82, plain cold-drawn steel wire. Sizes as shown, but not lighter than 6 x 6 - W2.9 x W2.9. Deliver in flat sheets, not rolls.

D. Supports for Reinforcement: Provide bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Supports shall be sized and spaced to prevent cover loss during construction. Use wire bar type supports complying with CRSI specifications.

1. For exposed-to-view concrete surfaces, support legs in contact with forms shall be plastic, plastic protected (CRSI, Class 1), or stainless steel protected (CRSI, Class 2).

E. Tie Wire: Black annealed wire, 16 gage or heavier.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with CRSI "Recommended Practice for Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as specified.

B. Clean reinforcement before placing, to remove loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete. Remove and replace reinforcement reduced in section by rust or damage.

C. Accurately position, support and secure reinforcement against displacement by construction or concrete placement and consolidation operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers; and by wire tying at intersection. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

D. Place reinforcement to provide concrete coverages not less than those specified by ACI, and greater coverages if shown or specified.

E. Do not bend or straighten reinforcement in a manner injurious to the material. Do not install bars with kinks or bends not shown on Drawings. Heating of reinforcement for bending or straightening is not permitted.

F. Install reinforcing in the forms before concrete is placed. No reinforcing bars shall be driven or forced into concrete after the concrete has attained its initial set.

G. Scheduling: Place reinforcement sufficiently in advance of placing concrete to permit inspection, and correction if required. Do not place top layer of deck reinforcing until concealed horizontal conduits and piping are in place.

H. Use bars of single length, except where the length required is greater than stock length, or where the Architect gives permission for shorter lengths. Lap necessary splices as shown on the Drawings sufficiently to develop the strength of the bars by bond. Lap splices shall be in accordance with ACI 318. No splices shall be made unless shown on the Engineering Drawings and Architect's reviewed shop drawings. Where continuous bars are called for lap splices shall be a minimum of 36 diameters.

I. Exercise care in placing reinforcing so as not to displace sleeves, boxing, or other embedded items.

J. Welding shall conform to the AWS "Recommended Practices for Welding Reinforcing Steel, Metal Inserts, and Connections in Reinforced Concrete Construction".

K. Install welded wire fabric in longest lengths practicable. Lap adjoining pieces not less than 6 inches and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

L. Avoid cutting or puncturing vapor retarder during reinforcement placement and concreting operations.

3.2 INSTALLATION DETAILS

A. Details of reinforcement not specified or shown on the Drawings shall be in accordance with ACI 318 and ACI 315.

B. Reinforcement used as dowels at doorways shall be pinned into the building foundation to prevent differential settlement and frost heave. The dowel set into the adjacent concrete slab shall be de-bonded to allow for thermal expansion of the slab. One acceptable method of de-bonding is to slip a section of galvanized pipe over the rebar within the concrete slab before pouring same

END OF SECTION

SECTION 03300 – CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

1.2 SECTION INCLUDES

A. Provide concrete work not specified in other sections.

B. Install, in concrete work, anchorages, reglets and other accessories furnished under other sections.

1.3 RELATED SECTIONS

A. Section 03100: Concrete Formwork.

1.4 REFERENCED STANDARDS

A. ACI American Concrete Institute:

1. 211.1: Recommended Practice in Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
2. 211.2: Recommendation Practice for selecting Proportions for Structural Lightweight Concrete.
3. 214: Recommended Practice for Evaluation of Strength Test Results of Concrete.
4. 301: Specifications for Structural Concrete for Buildings.
5. 302.1R: Guide for Concrete Floor and Slab Construction.
6. 304: Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
7. 304.2R Placing Concrete by Pumping Methods.
8. 305R Hot Weather Concreting.
9. 306R Cold Weather Concreting.
10. 308 Standard Practice for Curing Concrete.
11. 309 Standard Practice for Consolidation of Concrete.
12. 318 Building Code Requirements for Reinforced Concrete.

B. CRSI Concrete Reinforcing Steel Institute:

1. Manual of Standard Practice.

C. ASTM American Society for Testing and Materials:

1. Standard Specifications and Test Methods referenced in Part 2 - Products and Part 3 - Execution.

D. NRMCA National Ready Mixed Concrete Association:

1. Concrete Plant Standards and Truck Mixer and Agitation Standards.

1.5 SUBMITTALS

A. Product Data: Submit data for manufactured materials and items, including admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by Engineer.

B. Compliance: Submit laboratory test reports for concrete materials and mix design tests as specified.

1. Submit each admixture manufacturer's written certification that chloride ion content complies with specified requirements.

1.6 QUALITY ASSURANCE

A. Concrete Testing Service: Coordinate with Contractor's Testing Firm to perform material evaluation tests and to verify the strength of concrete mixes.

B. Materials and installed work may require testing and retesting, as directed by Engineer. Allow free access to material stockpiles and facilities.

1.7 REGULATORY REQUIREMENTS

A. Comply with the applicable provisions of codes, standards and specifications referenced in this section.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, provide listed products of one of the manufacturers listed for each product type.

2.2 CONCRETE MATERIALS

A. Portland Cement: ASTM C150, Type I or II, unless otherwise acceptable to Engineer.

1. Use one brand of cement throughout project, unless otherwise reviewed by Engineer.

B. Normal Weight Aggregates: ASTM C33, and as specified. Provide aggregates from a single source for exposed concrete.

1. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.

C. Water: Drinkable.

D. Air-Entraining Admixture: ASTM C260.

1. Reference Model and Manufacturer:
   a. "Air-Mix" by Euclid Chemical Co.
   b. "Sika Aer" by Sika Corp.
   c. "MB-VR or MB-AE" by Master Builders.
   d. "Darex AEA" or "Daravair" by W. R. Grace.
   e. Substitution: Make substitution under provisions of Section 01630.

E. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.1 percent chloride ions.

1. Reference Model and Manufacturer:
   a. "WRDA Hycol" by W.R. Grace
   b. "Eucon WR-75" by Euclid Chemical Co.
   c. "Pozzolith Normal by Master Builders.
   d. "Plastocrete 161" by Sika Chemical Corp.
   e. Substitution: Make substitution under provisions of Section 01630.

F. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C494, Type F or Type G and containing not more than 0.1 percent chloride ions.

1. Reference Model and Manufacturer:
   a. "WRDA 19" or "Daracem" by W.R. Grace.
   b. "Sikament 300" by Sika Chemical Corp.
   c. "Eucon 37" by Euclid Chemical Co.
   d. "Rheobuild" by Master Builders.
   e. Substitution: Make substitution under provisions of Section 01630.

G. Water-Reducing, Non-Chloride Accelerator Admixture: ASTM C494, Type E, and containing not more than 0.1 percent chloride ions.

1. Reference Model and Manufacturer:
   a. "Accelguard 80" by Euclid Chemical Co.
   b. "Pozzolith 20" by Master Builders.
   c. Substitution: Make substitution under provisions of Section 01630.

H. Water-Reducing, Retarding Admixture: ASTM C494, Type D, containing not more than 0.1 percent chloride ions.

1. Reference Model and Manufacturer:
   a. "Pozzolith Retarder" by Master Builders.
   b. "Eucon Retarder 75" by Euclid Chemical Co.
   c. "Daratard-17" by W.R. Grace.
   d. "Plastiment" by Sika Chemical Co.
   e. Substitution: Make substitution under provisions of Section 01630.

I. Calcium chloride or admixtures containing more than 0.1 percent chloride ions are not permitted.

2.3 RELATED MATERIALS

A. Moisture Retarder: Polyethylene sheet not less than 6 mils thick.

B. Non-Shrink Grout: CRD-C 621, factory pre-mixed. Provide one of the following:

1. Non-metallic - Reference Products and Manufacturer:
    a. "Set Grout" by Master Builders.
    b. "Sonogrout" by Sonneborn-Rexnord.
    c. "Euco-NS" by Euclid Chemical Co.
    d. "Sure-Grip Grout" by Dayton Superior Corp.
    e. "Horngrout" by A. C. Horn.
    f. "Five Star Grout" by U.S. Grout Corp.
    g. Substitution: Make substitution under provisions of Section 01630.

C. Chemical Hardener:

1. Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, not less than 2 lbs. of fluosilicates per gal.
2. Reference Product and Manufacturer:
    a. "Surfhard" by Euclid Chemical Co.
    b. "Saniseal" by Master Builders.
    c. "Burk-O-Lith" by The Burke Co.
    d. Substitution: Make substitution under provisions of Section 01630.

D. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M182, Class 2.

E. Moisture-Retaining Cover: One of the following, complying with ASTM C171.

1. Waterproof paper.
2. Polyethylene film.
3. Polyethylene-coated burlap.

F. Liquid Membrane Forming Curing Compound:

1. ASTM C309, Type I, Class A; Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq ft./gal.
2. Reference Product and Manufacturer:
    a. "Masterseal" by Master Builders.
    b. "Clear Seal" by A. C. Horn.
    c. "J-20 Acrylic Cure" by Dayton Superior.
    d. "Spartan-Cote" by The Burke Co.
    e. "Dressand Seal 18" by L & M Construction Chemicals, Inc.
    f. Substitution: Make substitution under provisions of Section 01630.

G. Bonding Compound:

1. Acrylic base - Reference Product and Manufacturer:
    a. "J-40 Bonding Agent" by Dayton Superior Corp.
    b. "Everbond" by L & M Construction Chemicals.
    c. "Hornweld" by A. C. Horn.
    d. "Sonocrete" by Sonneborn-Rexnord.
    e. "Acrylic Bondcrete" by The Burke Co.

f. "Daraweld C" by W.R. Grace.
g. Substitution: Make substitution under provisions of Section 01630.

H. Epoxy Adhesive:

1. ASTM C881, two component material suitable for use on dry or damp surfaces; Type, Grade, and Class to suit project requirements.
2. Reference Product and Manufacturer:
   a. "Epoxtite Binder 2390" by A. C. Horn.
   b. "Edoco 2118 Epoxy Adhesive" by Edoco Technical Prod.
   c. "Sikadur 32 Hi-Mod" by Sika Chemical Corp.
   d. "Euco Epoxy 452 or 620" by Euclid Chemical Co.
   e. "Epoxy M.V." by The Burke Co.
   f. Substitution: Make substitution under provisions of Section 01630.

2.4 PROPORTIONING AND DESIGN OF MIXES

A. Methods: Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. Use an independent Testing Agency acceptable to Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.

B. Submit written reports to Engineer of each proposed mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Engineer.

C. Properties of Concrete: Design mixes to provide normal weight concrete with the properties indicated on the drawings and schedules.

D. Adjustment to mixes may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as reviewed by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and as reviewed by Engineer before using in work.

E. Admixtures:

1. Use water-reducing admixture or high range water-reducing admixture (super plasticizer) in concrete as required for placement and workability.
2. Use non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50 degrees F (10 degrees C).
3. Use air-entraining admixture in exterior exposed concrete. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within following limits:
   a. Concrete structures and slabs:
      1) 4.5 percent (moderate exposure); 5.5 percent (severe exposure) 1-1/2 inches max. aggregate.
      2) 4.5 percent (moderate exposure); 6.0 percent (severe exposure) 1 inch max. aggregate.
      3) 5.0 percent (moderate exposure); 6.0 percent (severe exposure) 3/4 inch max. aggregate.
      4) 5.5 percent (moderate exposure); 7.0 percent (severe exposure) 1/2 inch max. aggregate.
   b. Other Concrete: 2 percent to 4 percent air.

4. Use admixtures for water-reducing and set-control in strict compliance with manufacturer's directions.

F. Water-Cement Ratio: Provide concrete with maximum water-cement (WC) ratios as indicated on the drawings and schedules.

G. Slump Limits at Point of Placement:

1. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
3. Concrete containing HRWR admixture (super plasticizer): Not more than 8 inches at point of discharge after addition of HRWR to verified 2 inches to 3 inches slump concrete.
4. Other concrete: Not more than 4 inches.

2.5 CONCRETE MIXING

A. Ready-Mix Concrete: Comply with requirements of ASTM C94, and as specified. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required.

1. When air temperature is between 85 degrees F and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.
2. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.

B. Job-Site Mixing: Mix materials for concrete in drum type batch machine mixer. For mixers one cu. yd., or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes, after ingredients are in mixer, before batch is released. For mixers larger than one cu. yd., increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cu. yd., or fraction thereof.

PART 3 - EXECUTION

3.1 CONCRETE PLACEMENT

A. General: Comply with ACI 304 as specified.

B. Inspection: Before placing concrete, inspect formwork, reinforcing, and items to be embedded or cast-in. Notify other trades to complete installation of their work; cooperate in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.

C. Deposit concrete continuously or in layers of such thickness that no concrete shall be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. Provide construction joints where sections cannot be placed continuously. Deposit concrete as close as possible to its final location to avoid segregation.

1. Deposit concrete in forms in horizontal layers not deeper than 24 inches; avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

D. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping, in accordance with ACI recommended practices.

1. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

E. Maintain reinforcing in proper position during concrete placement operations.

F. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified. When air temperature has fallen to or is expected to fall below 40 Degrees F uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F, and not more than 80 degrees F at point of placement.

1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
2. Do not use calcium chloride, salt or other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

G. Hot Weather Placing: When hot weather conditions exist that could impair quality and strength of concrete, place concrete in compliance with ACI 305 and as follows:

1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled. Chopped ice may be used to control temperature provided water equivalent of ice is calculated in total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
2. Cover reinforcing steel with water-soaked burlap if necessary, so that steel temperature shall not exceed the ambient air temperature immediately before embedment in concrete. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.
3. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.2 FINISHES, FORMED SURFACES

A. Rough Form Finish: Formed concrete surfaces not exposed to view in the finished work and other areas as indicated: Concrete surface shall have texture of form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

B. Smooth Form Finish: Formed concrete surfaces exposed to view in the finished work, or to be covered with a coating or a covering material applied directly to concrete, such as waterproofing, dampproofing or painting, and other areas as indicated: As-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams; repair and patch defective areas, and completely remove and smooth fins and other projections.

C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, except where other finish indicated, and except as follows:

3.3 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

B. Moisture Curing: At Contractor's option, cure by one of the following methods:

1. Covering with water to keep concrete surface continuously wet.
2. Continuous water-fog spray.
3. Covering concrete surfaces and edges with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover with 4 inches lap over adjacent covers.

C. Curing Formed Surfaces: Compound cure formed surfaces including walls, piers, and other vertical surfaces within 2 hours of removing forms.

1. Curing and Sealing Compound: Use to cure interior slabs to receive resilient flooring, carpet over cushion, or to be left exposed; and to exterior slabs, walks, and curbs. Do not use on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, ceramic or quarry tile, glue-down carpet, painting, or other coatings and finish materials.

3.4 MISCELLANEOUS CONCRETE WORK

A. Filling-In: Fill-in holes and openings left in concrete work for work by other trades, after work of other trades is in place. Mix, place and cure concrete as specified and to match in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

C. Lighting Bases and Foundations: Provide lighting bases and foundations, as required. Set anchor bolts to template at correct elevations, complying with certified diagrams or templates of manufacturer of light pole bases.

3.5 CONCRETE REPAIRS

A. General:

1. Repair and patch defective areas, where repair rather than replacement is recommended by Engineer.
2. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer.
3. Surface defects include cracks, spalls, air bubbles, honeycomb, and rock pockets.\
4. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar shall match color of adjacent concrete. Make test patches at inconspicuous locations to verify mixture and color match before proceeding with further patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

5. Dry-pack Repair: Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.
6. Perform structural repairs with prior approval of Engineer for method and procedure, using specified epoxy adhesive and mortar.
7. Repair methods not specified below may be used, subject to prior review of Engineer.

B. Repair of Formed Surfaces: Perform repairs immediately after removal of forms. Cut out honeycombing, rock pockets, voids over 1/4 inch in dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to concrete surface. Thoroughly clean, dampen with water and brush-coat area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried. Flush out form tie holes, fill with dry pack mortar or precast cement cone plugs secured in place with bonding agent.

1. For formed surfaces to be exposed in the finished work, defects include also color and texture irregularities, and stains and other discolorations that cannot be removed by cleaning.
2. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

C. Repair of Unformed Surfaces:

1. Test tops of slabs and other unformed surfaces for smoothness, and verify that surface planes are within tolerances specified for each surface and finish. Test surfaces sloped to drain for trueness of slope, using a template having required slope.
   a. Correct high areas by grinding, after concrete has cured at least 14 days.
   b. Correct low areas during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Engineer.
2. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects include crazing, cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width; spalling, pop-outs, honeycomb, rock pockets and other objectionable conditions.
   a. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance completely around steel. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
   b. Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry pack after bonding compound has dried.

3.6 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. Coordinate testing and inspection with Contractor's Testing & Inspection Agency.

B. Comply with requirements of ASTM C172, Sampling Freshly Mixed Concrete, except modified for slump to comply with ASTM C94.

C. Sampling and testing for quality control during placement of concrete includes the following:

1. Slump: ASTM C143; one test at point of discharge for each set of compression test samples taken; additional tests when concrete consistency seems to have changed.
2. Air Content: ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231 pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
3. Concrete Temperature: Test hourly when air temperature is 40 degrees F and below, and when 80 degrees F and above; and each time a set of compression test specimens made.
4. Compression Test Specimen: ASTM C31; one set of 4 standard cylinders for each compressive strength test, unless additional cylinders directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
5. Compressive Strength Tests: ASTM C39; one set for each day's pour plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in a single day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
6. Provide not less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.
7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
8. Strength level of concrete shall be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive by more than 500 psi.

D. Test results shall be reported in writing to Engineer and Contractor within 24 hours of time that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

E. Additional Tests: The testing service shall make additional tests of in-place concrete, as directed by Engineer, when test results indicate specified concrete strengths or other characteristics have not been attained. Testing service shall conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for such initial tests, and additional testing required, when unacceptable concrete is verified.

1. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

END OF SECTION 03300