Request for Proposals
Landscaping
RFP #2020-11

Lincoln High School Project
Town of Lincoln, RI

The Town of Lincoln (Town) invites the submittal of cost proposals from qualified firms interested in providing **Bid Package #2020-11 – Landscaping for the Lincoln High School Project**, located at 135 Old River Road, Lincoln, RI 02865. The Town invites sealed proposals to be submitted in accordance with the Request for Proposal Documents contained herein.

Price Proposals for **Bid Package #2020-11 – Landscaping** will be received by the Purchasing Agent on **Tuesday, October 1, 2019** at the Lincoln Town Hall, 100 Old River Road, Lincoln, RI 02865, until **10:00 AM,** local time. No proposals will be accepted after the date and time specified.

Responses to this RFP must be submitted in a sealed envelope clearly marked as:

PROPOSAL FOR Bid Package #2020-11 – Landscaping - Lincoln High School Project.

A copy of the RFP may be examined at or obtained from the Lincoln Town Hall, 100 Old River Road, Lincoln, RI 02865 or downloaded from the Town of Lincoln website,
www.lincolnri.org/departments/list/purchasing.Php#mobiletarget
There is no pre-proposal or on-site conference for this

The Town of Lincoln reserves the right to accept or reject, without prejudice, any or all proposals or to waive any irregularities therein, or to accept the proposal deemed to be in the best interest of the Town of Lincoln.

Such proposer shall require the submittal of insurance certificates and compliance with Federal, State and Local Laws and ordinances, including the payment of prevailing wages.

For contracts involving construction, alteration and/or repair work, the provisions of State Labor Laws concerning payment of prevailing wage rates apply. (See RI General Laws Section 37-13-1 et seq., as amended). It is the responsibility of the contractor, before proposal submittal, to request, if necessary, any additional information on Minimum Wage Rates for those tradespeople who may be employed for the proposed work under this contract.

TOWN OF LINCOLN, RI

John Ward, Finance Director

INSTRUCTIONS TO BIDDERS:

1. All Bids must be submitted on the forms included in this Request for Proposals. Supplemental materials may be submitted to allow the owner to make an informed decision as to the qualifications of the Bidder.

2. Questions or requests for interpretations will be accepted until 10:00 am Local Time on September 24, 2019. Please submit questions to bwilliams@smma.com, Charles.Roberts@colliers.com, and Daniel.Daisy@colliers.com. Supplemental instructions will be issued in the form of written Addenda to the Specification. All Addenda, if any are issued, will be forwarded to all firms who have requested this Request for Proposals. Failure of any Bidder to receive any such addendum shall not relieve that Bidder from any obligation under their Bid as submitted. All addenda so issued shall become part of the scope of work.

3. A contract will be awarded to the responsive and responsible bidder price on the basis of the anticipated services required for the Lincoln High School Project, as per the Bid Forms, and offering the lowest total estimated cost.

REGULATORY & OTHER REQUIREMENTS

1. Prevailing Wage

Prevailing Wage is the cost per hour, for labor wages set by law, involving construction work for various and related trades. It involves a bidding process for contractors that will use federal, state, or municipal monies (tax payer dollars) for work on projects that will be used for the public, by the public.

The successful contractor and sub-contractor(s) shall comply with the provisions of Rhode Island General Laws, (RIGL) Chapter 37 pertaining to the "Prevailing Wage Laws" for all municipal funded projects in excess of one thousand ($1,000) dollars. The RI Department of Labor has accepted the prevailing wage rates as determined by the Federal Wage and Hour Division under the Davis-Bacon Act. A copy of the most current wage decision pertaining to this bid is available from the Director of Labor at 457-1860 or on the web site www.state.dlt.state.ri.us.

As required under RIGL 37-13-13, the successful contractor and/or sub-contractor(s) must certify and submit weekly payroll forms to the Finance Director's Office.

2. Minority / Women Business Enterprise (MBE/WBE) Requirements

Minority (MBE) and Women (MBE) Business Enterprises shall mean a small business concern, owned and controlled by one or more minorities or women certified by the Rhode Island Department of Administration to meet the definition established by Chapter 37-14.1 of the General Laws of Rhode Island. Disadvantaged Business Enterprises (DBE) shall mean socially and economically disadvantaged firms which are owned and controlled by individuals who are citizens of the United States, or legal permanent residents whose social disadvantage must stem from and individual's color, national origin, gender, physical handicap, long term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the control of the individual, and whose economic disadvantage must stem from an inability to compete in the free enterprise system due to diminished capital

and credit opportunities, as compared to others in the same or similar line of business and/or competitive market area who are not socially disadvantaged.

The Contractor is required to demonstrate that ten percent (10%) of the dollar value of the work performed against contracts for construction exceeding $500,000 shall be performed by MBE, WBE, or DBE where it has been determined that subcontract opportunities exist, and where Certified Minority Business Enterprises are available.

For further information, contact the State of Rhode Island, Department of Administration, Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) Program.

3. Availability of Documents

A copy of the REQUEST FOR PROPOSAL DOCUMENTS may be examined at Lincoln Town Hall, 100 Old River Road, Lincoln, RI 02865, between the hours of 8:30 a.m. to 4:30 p.m., commencing on September 16, 2019, or by reviewing on the Town of Lincoln Purchasing Department website, www.lincolnri.org/departments/list/purchasing.PHP#mobiletarget

4. Expense of Proposal Preparation

The Town accepts no liability for the costs and expenses incurred by the Proposers in responding to this RFP, preparing responses for clarification, attending interviews, participating in contract development sessions or meeting and presentations required for the contract approval process. Each Proposer that enters into the procurement process shall prepare the required materials and submittals at its own expense and with the express understanding that they cannot make any claims whatsoever for reimbursement from the Town for the costs and expenses associated with the procurement process.

5. Proposers' Examination of the RFP

Proposer must acquaint themselves with the requirements of the program, and shall thoroughly examine the proposal and contract documents, including all addenda and requirements for certificates of insurance, bonds, etc., if any. In the event that similar items are listed in one or more of the documents, the more stringent list of items shall govern. Failure of any proposer to acquaint himself with the proposal and contract documents shall in no way release that bidder from the obligations with respect to his proposal. **By submitting qualifications and proposal, the proposer agrees that the contract documents and terms are adequate and that the desired results can be produced.**

6. Conditions of Work

Each proposer must inform himself fully of the conditions relating to the RFP under which the work is now or will be performed; failure to do so will not relieve the successful proposer of his obligation to furnish all materials, equipment and all labor necessary to carry out the provisions of the Contract Documents and to complete the contemplated Work for the consideration set forth in his proposal. Insofar as possible, the Proposer, in the carrying out of his work, shall employ such methods or means as will not cause any interruption of or interference with: character of equipment and facilities needed preliminary to and during

prosecution of the work; requirements of the Town and controlling authorities, having jurisdiction over the various lands, and all other conditions affecting the work to be done, and the labor and materials needed; and he shall make his proposal in sole reliance thereon; and shall not, at any time after submission of a proposal, assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

7. Proposal Form Instructions

Each price proposal must be submitted as specified in this RFP and on the prescribed form as appended. All blank spaces for prices must be filled in, in ink or typewritten, both in words and numerical figures, and be signed by the Proposer with his business address and place of residence. Where both written words and numerical figures are given, the written words shall apply in the event of conflict. All bids shall be prepared in conformity with, and based upon and submitted subject to, all requirements of Contract Documents, together with all addenda thereto.

8. Withdrawal of Proposal

Proposals may be withdrawn up until the date and time set above for opening of proposals. Any Proposer wishing to withdraw its proposal prior to the date and time specified in this RFP for submission shall send a letter by certified mail, return receipt requested, to the Town's official as named in the Invitation, in advance of such withdrawal. Any proposals not so withdrawn shall, upon opening, constitute an irrevocable offer to negotiate for a period of ninety (90) days or until one of the proposals has been accepted and a contract has been executed between the Town and the successful proposer.

9. Open Procurement

A. The Town of Lincoln reserves the right to accept any item or group of items proposed in any response, unless the Proposer qualifies its offer by specific limitation.

B. The Town of Lincoln reserves the right to negotiate with proposers regarding variations to the plan of service in the original proposal, which may be in the best interest of the Town.

C. The Town of Lincoln reserves the right to accept or reject any or all proposals in whole or in part.

D. None of the Proposals shall be deemed rejected, notwithstanding acceptance of any Proposal, until the AGREEMENT has been executed by both the Town and the accepted proposer.

10. Interested Parties to the Contract

The undersigned declares; that the only person interested in this Proposal as principals are named herein as such; that no official of the Town of Lincoln and no person acting for or employed by the Town of Lincoln is interested directly or indirectly in this Proposal, or in any contract which may be made under it, or in any expected profits to arise therefrom; that this Proposal is made in good faith, without fraud, collusion or connection with any other person submitting the proposal or refraining from submitting the proposal for the same work; that he has examined carefully the said instructions and all other documents bound herewith

covered by this Proposal and hereby makes them part of this RFP; that he has informed himself fully in regard to all conditions.

11. Ability and Experience of Proposer

1. No award will be made to any proposer who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the Service successfully. The Owner may make such investigation as they deem necessary to determine the ability of the proposer to perform the work; and the proposer shall furnish to the Owner all such information and data for this purpose as the Owner may request.

2. The Owner reserves the right to reject any proposal if the evidence submitted by, or investigation of, such proposer fails to satisfy the Owner that such proposer is properly qualified to carry out the obligations of the Contract and to complete the Service contemplated therein within the time stated. The Owner's decision or judgment on these matters shall be final, and conclusive.

12. Reduction in Scope of Work

The Town of Lincoln reserves the right to decrease the scope of the work to be done under this Contract and to omit any work in order to bring the cost within available funds. To this end, the Town of Lincoln reserves the right to reduce the quantity of any items or omit all of any as set forth in the RFQ/P, either prior to executing the Contract or at any time during the progress of the Work. The Town of Lincoln further reserves the right, at any time during the progress of the Work, to restore all or part of any items previously omitted or reduced. Exercise by the Town of Lincoln of the above rights shall not constitute any ground or basis of claim for damages or for anticipated profits on the work omitted.

13. Confidentiality

The Town of Lincoln cannot assure the confidentiality of any material or information which may be submitted by a proposer in response to this RFP. Thus, proposers who choose to submit confidential material or information do so at their own risk.

14. Rights to Submitted Material

All proposals, responses, inquiries, or correspondence relating to or in reference to this RFP and all reports, charts, displays, schedules, exhibits, and other documentation submitted by proposers shall become the property of the Town when received. The Town shall have no obligation to return any such submitted material.

The Town retains the right to use any or all system ideas presented in any proposal in response to the RFP, whether amended or not. Selection or rejection of any proposal does not affect this right.

15. Insurance Certificates

The Proposer will not be permitted to start any work until he has submitted certificates covering all insurances called for in the AGREEMENT.

16. Interview

If the Town chooses to conduct interviews, proposers shall be prepared to participate in an Interview during the proposal evaluation period, at a location in Town of Lincoln to be determined by the Town. The Town intends to schedule these interviews within 30 days of receiving the proposals.

17. Laws and Regulations

Applicable provisions of Rhode Island General Laws and Regulations and/or the United States Code and Code of Federal Regulations govern this Contract and any provision in violation of the foregoing shall be deemed null, void and of no effect. Where conflict between Code of Federal Regulations and State Laws and Regulations exist, the more stringent requirement shall apply.

18. State Sales and Use Tax

The Town is exempt from the payment of the Rhode Island Sales Tax under the 1956 General Laws of The State of Rhode Island, 44-18-30, Paragraph 1, as amended. Materials and equipment purchased for installation under this Contract are exempt from the Rhode Island Sales Tax. The exemption from the Sales Tax shall be considered by the Proposer during proposal.

19. Protection of Lives and Health

This project is subject to the Safety and Health Regulations of the U.S. Department of Labor set forth in Title 29 CFR, Part 1926 and to all subsequent amendments, and to the Rhode Island Department of Labor's Laws.

20. Non-Discrimination in Employment

1. Contracts for work under this proposal will obligate the Proposer and any subcontractors not to discriminate in employment practices.

2. The Proposer will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, handicap, or national origin. The Proposer shall take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex, age, handicap, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading; demotions, or transfers; recruitment or recruitment advertising, layoffs, or terminations; rates of pay or other forms of compensation; selection for training including apprenticeship; and participation in recreational and education activities. The Proposer agrees to post in conspicuous places available to employees and applicants for employment notice to be provided setting forth the provisions of this non-discrimination clause. The Proposer will in all solicitations or advertisements for employees placed by or on behalf of the Proposer state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, handicap or national origin. The Proposer will cause the foregoing provisions to be inserted in all sub-contracts for any work covered by this Contract so that such provisions will be binding upon each sub-contractor and upon sub-contracts for standard commercial supplies or

raw materials.

3. The Proposer shall keep such records and submit such reports concerning the racial and ethnic origin of applicants for employment and employees as the Town may require as consistent with Federal and State law. The Proposer agrees to comply with such rules, regulations, or guidelines as the State of Rhode Island may implement these requirements. The Proposer further warrants, that he will comply with the President's Executive Order No. 11246 or any preceding similar Executive Order relating thereto.

4. Successful Proposer must, if required, submit a list of all Subcontractors who will perform work on the project, and written signed statements from authorized agents of labor pools with which they will or may deal with for employees on the work, together with any information to the effect that such labor pools' practices or policies are in conformity with said Executive Order that they will affirmatively cooperate in or offer no hindrance to the recruitment, employment, and equal treatment of employees seeking employment and performing work under this Contract; or a certification as to when such agents or labor pools have failed or refused to furnish them, prior to award of the Contract.

5. The successful Proposer will be required to comply with Equal Opportunity Requirements and to abide by the prevailing wage rates for Public Work Projects for all employees on the job. It is the responsibility of Proposer to inform themselves as to the local labor conditions, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustment of wage rates. Information is available at the Department of Labor.

21. Efficiency Guarantee Bond

Whenever it is written that an equipment manufacturer must have a specified period of experience with his product, equipment which does not meet the specified experience period can be considered if the equipment supplier or manufacturer is willing to provide an "Efficiency Guarantee Bond" or cash deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

22. Award of Contract

The Contract will be awarded to the firm offering the Most Advantageous Proposal, determined by the Town of Lincoln, RI.

GENERAL CONDITIONS:

1. The Town of Lincoln, will make every effort to award of the Bid within thirty (30) days of receipt of Bids.

2. Bids shall be firm and shall not be withdrawn for a period of sixty (60) days after the date of the opening of the same.

3. The responder to this Request for Proposals, shall comply with all of the terms and conditions of this document, which together with the RFP, shall constitute the written agreement between parties.

4. Awarding of the contract will be made to the responsible and responsive Bidder who offers the best combination of qualifications and price on the basis of the anticipated services and tests required for the Lincoln High School Project, as per the Bid Forms. The Town of Lincoln reserves the right to increase or decrease the amount of testing for any tests, or to add such other tests as required by the contract.

5. The Bidder shall also file with the Owner such documents as shall be requested, including but not limited to, Inspector's resumes and all their certifications, licenses and or registrations, Company brochure, list of projects completed in Rhode Island, and statement of General Liability Insurance Coverage, Resumes of all Inspectors, and Testing Laboratory License Number, Certifications and or Registrations.

6. The Town of Lincoln reserves the right to reject any and all Bids, or parts thereof, and to accept any Bid or part thereof, as deemed to be in the best interest of the Town.

7. All unit prices and cost quotations as part of this Bid shall be the unit prices for the duration of the project.

PAYMENT TERMS:

1. Invoices are due and payable within 45 days of receipt and approval by the Town. Every effort will be made to make prompt payment.

INDEMNIFICATION:

The Bidder shall indemnify the Town of Lincoln, Lincoln Public Schools, its officials, officers, agents, servants, and employees and hold harmless the Town of Lincoln, the Architect and Owner's Project Manager of any and all claims, actions, proceedings, expenses, damages or liabilities, including attorney's fees and court costs, arising out of or in connection with the performances of the work under this agreement. The indemnification provided under this section shall constitute in full force and effect notwithstanding the full payment of all obligations under this agreement or the termination of the agreement for any reason.

INSURANCE:

The insurance carried by the Bidder shall be written for not less than the limits of liability required by law or the following limits, whichever is greater:

1. **State and Federal Workman's Compensation:** Statutory requirements in accordance with the laws of the State of Rhode Island.

2. **General Liability**:

   Bodily Injury and Property Damage Combined Single Limit:
   $1,000,000
   Bodily Injury and Property Damage Annual Aggregate Limit:
   $3,000,000

   General Liability shall include the following:

   Comprehensive

Form

Independent Contractors
Premises / Operations
Liability

Broad Form Property Damage
Explosion, Collapse and Underground
(XCU)

Broad Form CGL Endorsement
Products/Completed Operations
Contractual Liability
Personal Injury including Libel and Slander Coverage

PRODUCTS AND COMPLETED OPERATIONS	
Each Occurrence	$1,000,000
Aggregate	$3,000,000
ENVIRONMENTAL COVERAGE (contamination, etc.)	
Each Occurrence	$1,000,000
Aggregate	$3,000,000
PROFESSIONAL LIABILITY (engineers/architects)	
Each Occurrence	$2,000,000
Aggregate	$3,000,000
AUTOMOBILE LIABILITY	
Bodily Injury Per Accident	$1,000,000
Property Damage per Accident	$1,000,000

Provide coverage for all owned, non-owned and hired

The Town of Lincoln, the Lincoln Public Schools, its officials, officers, agents, servants, and employees, along with the Architect and Owner's Project Manager shall be named as Additional Insureds on all liability policies. The party to whom the contract is awarded shall furnish proof of such coverage to the Awarding Authority, in the form the applicable endorsement(s) from the Testing Agency's Insurance Carrier, at the time of execution of the contract.

SCOPE OF WORK

1. Bidder proposes to furnish all labor, materials and equipment and services as required to complete the Work of this Bid Package, all in accordance with the Drawings and Specifications issued for this Proposal and the requirements listed within this Request for Proposals.

2. Screen approximately 3,500 cubic yards of on-site, stockpiled loam for the work of this bid package. This quantity will need to be supplemented by additional imported loam. Remove tailings resulting from this screening operation from the project site and legally dispose as part of the work of this bid package.

3. In addition to the quantity of loam generated by the screening operation above, identify the estimated quantity of additional loam required to complete the scope of this bid package. Include the cost of the additional loam in your base bid pricing proposal. Break-out the cost of the additional loam as a potential deduct Alternate on

the attached bid proposal form, listing the total quantity of loam in cubic yards and the unit cost per cubic yard of loam.

4. The bioretention basins will be shaped to subgrade by others. This bidder will be responsible for providing and installing the filter fabric, bioretention soil and seeding the basins.

5. Provide watering and maintenance of newly seeded areas, per the Specifications, until final acceptance.

6. Exclude aerating, fertilizing and overseeding existing grassed areas that are beyond the project's limits of work lines.

7. Where required to perform the work of this bid package, temporarily move / re-align the existing construction fence.

8. Remove and dispose of erosion control material installed by others at final acceptance of your work. Touch-up loaming and seeding at these locations, where required.

9. Provide all necessary clean-up of sidewalks and asphalt surfaces resulting from the work of this bid package. This includes street and sidewalk sweeping, pressure washing if needed, to remove loam residue and /or hydroseeding overspray onto other surfaces.

10. Bid proposal shall be submitted on the form included at the end of this proposal and shall be signed by an authorized representative of the bidding firm.

11. The Lump Sum Bid Price shall:

    a. Include issued Bid Addenda (if any).
    b. Exclude all sales and use taxes as this is a tax-exempt project under the laws of the State of Rhode Island.
    c. Include all applicable insurances as required by this Proposal.
    d. Include all labor costs in accordance with R.I. Prevailing Wages.
    e. Exclude all premiums for a Performance Bond and a Labor and Material Payment Bond.

12. If notice of acceptance is issued to the undersigned within (60) days after the Proposal due date, the undersigned shall electronically execute the Contract.

13. Milestone Schedule Dates:

    a. Anticipated Date of Contract Award = 10/30/19.
    b. Submittals Due = 11/12/19.
    c. Screen Existing, On-Site Loam Pile 04/01/20 to 04/15/20.
    d. Spring 2020 Loaming & Seeding 04/08/20 to 05/01/20.
    e. Fall 2020 Loaming, Seeding, Bioretention Basins 09/05/20 to 10/25/20.

OTHER CERTIFICATIONS

The Undersigned agrees to execute an agreement for the work noted above provided that notification of acceptance of bid is provided within sixty (30) days after time set for the

receipt of Bids. Undersigned agrees to execute a Contract and deliver it to the Owner within five (5) days after receipt.

The undersigned certifies, under penalty of perjury, that to the best of his knowledge and belief, that:

1. The prices in this Bid have been arrived at independently without collusion, consultation, communication or agreement with any other person, Bidder, business or business association, on any matter whatsoever for the purpose of restricting competition.
2. Except as may be required by law, prices quoted in this Bid have not been knowingly disclosed prior to the opening of Bids.
3. No attempt has been made, nor will be made by the Bidder to induce any other person, Bidder, business, business association, partnership, or corporation to submit or to refrain from submitting a Bid for this Project.
4. If the bidder is an individual, the Undersigned will provide a residential address in addition to any business address if different, on a separate attached sheet.
5. If the bidder is a corporation, the bid is signed by a duly authorized officer or agent of the corporation, the state of incorporation must be provided, and the corporate seal must be affixed. Provide the state of incorporation and the names of all corporate officers, on a separate attached sheet.
6. If the bidder is a partnership, the bid must be signed by a partner, and shall provide full names and residential addresses of all partners.
7. The attached forms, enumerated here, and attached as part of this Materials Testing and Inspections Bid Form, are part of the response to the Invitation for Bid, and are properly and correctly completed, as provided:
8. Corporate or Partnership Resolution Authorizing Representative's Signature
9. Evidence of Insurance Coverages currently carried.

The Undersigned represents and certifies to the Owner/Awarding Authority that each employee entering the project site has completed the Ten (10) Hour OSHA Construction Safety and Health Course, requiring completion of the same. The undersigned agrees to provide evidence of this training for each applicable employee, before said employee enters the project site.

The Undersigned represents and certifies to the Owner/Awarding Authority, that by submitting this Bid, it will provide all the labor, materials, machinery, equipment, supplies, staffing, coordination, organization and management, and that it has the licenses, credit and financial capacity to meet the schedule and the project's requirements, more specifically enumerated herein, and in the Contract Documents, where applicable

BID PROPOSAL FORM
LANDSCAPING

RFP #2020-11

1. Bidder proposes to furnish all labor, materials and equipment and services as required to complete the Work of this Bid Package, all in accordance with the Drawings and Specifications issued for this Proposal and the requirements listed within this Request for Proposals.

2. **Bid Value: All Work for this Bid Package Proposal shall be accomplished for the Lump Sum Bid Price of:**

   $ _____

   Amount in writing:

   $ _____

3. Alternate No. 1 (include within base bid price)

   Total imported quantity of additional loam required to complete scope:

   _____ x _____ = _____
   (loam qty. in c.y.) (unit price) (total cost)

4. The Lump Sum Bid Price Above includes

   a. Bid Addenda(s) No. _____, _____, _____
   b. Excludes all sales and use taxes as this is a tax-exempt project under the laws of the State of Rhode Island.
   c. Includes all applicable insurances as required by this Proposal.
   d. Includes all labor costs in accordance with R.I. Prevailing Wages.
   e. Excludes all premiums for a Performance Bond and a Labor and Material Payment Bond.

5. If notice of acceptance of this bid proposal is provided to the undersigned within (60) days after the Proposal due date, the undersigned shall electronically execute the Contract.

6. Bid proposal submitted by:

   _____
   (name of firm submitting proposal)

   _____
   (date)

_____

(signed name of individual authorized to submit proposal on behalf of firm)

_____

(printed name of individual authorized to submit proposal on behalf of firm)

PROJECT MANUAL

Lincoln High School
Renovations and Additions
Lincoln, Rhode Island 02865

Landscaping Package

Lincoln High School

135 Old River Road
Lincoln, Rhode Island 02865

September 16, 2019

OWNER

Town of Lincoln, RI
100 Old River Road
Lincoln, Rhode Island 02865

OWNER'S PROJECT MANAGER

Colliers International Group Inc.
135 New Road
Madison, Connecticut 06443

Submitted by

SMMA
400 Westminster Street
Providence, Rhode Island 02903

SMMA No. 15061.03

SECTION 01 11 16
CONSTRUCTION PHASING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section provides a detailed description of phasing to supplement the Summary of Work and the Phasing Drawings. The work and designated areas described in this Section are summary in nature and complimentary to the work described in the Drawings and Specifications. Refer to the Drawings and Specifications for full scope of Work. Refer to the Phasing Diagrams for the Phase Area of work.

B. Bidders shall base their bids on the sequence of work described in the Phasing Diagrams and in this Section.

C. Related Work:
   1. Dates for Substantial Completion of each Phase of the Work are set forth in the General Conditions of the Contract.

1.03 SUBMITTALS

A. Contractor's Phasing Plan: Prior to or concurrent with the Start-Up Construction Schedule, submit a detailed phasing plan and schedule for review. Coordinate the Phasing Plan and Schedule with the Contractor's Construction Schedule.

B. In preparing the Contractor's Phasing Plan, the Contractor may propose changes to the plan as described in this Section, provided that the Contractor believes the changes will result in an earlier Project completion date or will reduce disturbances when school is in session. Highlight changes and attach a narrative explaining in detail the impact of each change.
   1. The OPM, Architect and Owner will review the Contractor's Phasing Plan and may accept those changes which they believe to be of benefit to the Owner, but they shall be under no obligation to accept the Contractor's proposed changes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 GENERAL

A. Make fire protection, plumbing, mechanical, security, and electrical systems fully operational. Complete required inspections and tests. The energy management system which controls the HVAC systems shall be fully operational and shall have been running continuously for at least 10 days prior to Owner occupancy.

3.02 DETAILED PHASING PLAN

A. See drawing set for detailed phasing plans.
   1. Phase 1A: July 1, 2018 – August 15, 2018
   2. Phase 1B: September 2018 – November 2018
   3. Phase 1C: October 2018 – December 2019
   4. Phase 2: January 2020 – May 2020
   5. Phase 3: June 2020 – December 2020

3.03 DETAILED PHASING PLAN - ALTERNATE

A. See drawing set for detailed phasing plans.
   1. Phase 1A: July 1, 2018 – August 15, 2018
   2. Phase 1B: September 2018 – November 2018
   3. Phase 1C: October 2018 – December 2019
   4. Phase 2 / 3: January 2020 – August 2020

END OF SECTION 01 11 16

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
   1. Submittal schedule.
   2. Administrative and procedural requirements for submitting.
   3. Shop Drawings.
   4. Product Data.
   5. Samples.
   6. Informational submittals.
   7. Delegated-Design Services.
   8. Contractor’s Review.
   9. Architect’s Action.

B. Related Requirements:
   1. Section 01 31 00 "Project Management and Coordination" for submitting coordination drawings.
   2. Section 01 32 00 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
   3. Section 01 40 00 "Quality Requirements" for submitting test and inspection reports and schedules.
   4. Project Closeout Submittals: Refer to requirements in Section 01 77 00 "Closeout Procedures."
   5. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
   6. Section 01 81 13 "Sustainable Design Requirements" for individual submittal requirements.

1.03 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's and Project Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Project Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.04 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Project Manager and additional time for handling and reviewing submittals required by those corrections.
   1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
   2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
   3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
      a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
   4. Format: Arrange the following information in a tabular format:
      a. Scheduled date for first submittal.
      b. Specification Section number and title.
      c. Submittal category: Action, informational.
      d. Name of subcontractor.
      e. Description of the Work covered.
      f. Scheduled date for Architect's and Project Manager's final release or approval.
      g. Scheduled date of fabrication.
      h. Scheduled dates for purchasing.
      i. Scheduled dates for installation.
      j. Activity or event number.

1.05 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
   1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
      a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
      b. Digital Drawing Software Program: The Contract Drawings are available in Autodesk Revit 2013, with portions in prepared in AutoCAD 2013.
      c. If the Contractor requires conversion from the current software the costs for the Architects resources to perform this conversation will be borne by the Contractor.

d. Contractor shall execute a data licensing agreement in the form of the Architect's standard release form.
e. The following digital data files will be furnished for each appropriate discipline:
1) Floor plans.
2) Reflected ceiling plans.
3) Site plans.
4) Structural plans.
5) Electrical plans.
6) Fire Protection plans.
7) Plumbing plans.
8) Mechanical plans.

2. Drawings will be in Architect's standard format and will be the Drawings as issued for bidding.
3. Do not extract dimensions from the CAD drawings; refer to the written dimensions, and check for internal consistency; verify in field as work progresses. The Contractor and the subcontractor, fabricator, or other entity preparing shop drawings, remain responsible for the information on the shop drawings.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
5. Schedule submittals in sequence which reflects logical sequence of Work, anticipated lead times, and appropriate sequence of decision making when one decision is dependent on another one. Schedule submittals to permit Architect to review related submittals for a single assembly or integrated assemblies together, at the same time.
6. Color Sections of Finishes: Coordinate submittal of samples for selection of finishes so that related, color-coordinated, or matching finishes can be selected at the same time; including but not limited to flooring, base, paint colors and plastic laminate colors in the same room or space. Architect will make color selections after manufacturers and products have been selected and approved. Make color sample submittals in a timely fashion so that color selection can be completed by the Architect before the items have to be fabricated or purchased by the Contractor.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 21 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 21 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties, allow 30 days for initial review of each submittal.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name of Architect and Project Manager.
    d. Name of Contractor.
    e. Name of subcontractor.
    f. Name of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.
        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:
    a. Project name.
    b. Date.
    c. Name and address of Architect and Project Manager.

d. Name of Contractor.
e. Name of firm or entity that prepared submittal.
f. Names of subcontractor, manufacturer, and supplier.
g. Category and type of submittal.
h. Submittal purpose and description.
i. Specification Section number and title.
j. Specification paragraph number or drawing designation and generic name for each of multiple items.
k. Drawing number and detail references, as appropriate.
l. Location(s) where product is to be installed, as appropriate.
m. Related physical samples submitted directly.
n. Indication of full or partial submittal.
o. Transmittal number, numbered consecutively.
p. Submittal and transmittal distribution record.
q. Other necessary identification.
r. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
   a. Project name.
   b. Number and title of appropriate Specification Section.
   c. Manufacturer name.
   d. Product name.

F. Options: Identify options requiring selection by Architect.

G. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

K. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
   1. Submit electronic submittals via email as PDF electronic files.
      a. Architect, through Project Manager, will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
   2. Action and Informational Submittals: In addition to electronic submittal, submit one paper copy of each submittal when original size is 11 by 17 inches or larger.
      a. Do not submit paper copies for submittals smaller than 11 by 17 inches.
      b. Submit structural steel shop drawings on 11 by 17 or larger size sheets.
      c. Architect will not return paper copies.
   3. Submittals for Commissioned Systems: Concurrent with submittal to Architect, submit to the Owner's commissioning agent electronic copies of product data and shop drawings for systems to be commissioned.
   4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
      a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
      b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

2.02 ACTION SUBMITTAL PROCEDURES

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's catalog cuts.
      b. Manufacturer's product specifications.
      c. Standard color charts.
      d. Statement of compliance with specified referenced standards.
      e. Testing by recognized testing agency.
      f. Application of testing agency labels and seals.
      g. "Sustainable Materials Attributes Submittal Form" attached to Section 01 81 13 "Sustainable Design Requirements" with supporting documentation required.
      h. Notation of coordination requirements.
      i. Availability and delivery time information.
   4. For equipment, include the following in addition to the above, as applicable:
      a. Wiring diagrams showing factory-installed wiring.
      b. Printed performance curves.
      c. Operational range diagrams.

d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:
   a. PDF electronic file.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Identification of products.
      b. Schedules.
      c. Compliance with specified standards.
      d. Notation of coordination requirements.
      e. Notation of dimensions established by field measurement.
      f. Relationship and attachment to adjoining construction clearly indicated.
      g. Seal and signature of professional engineer if specified.
   2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
   3. Submit Shop Drawings in the following format:
      a. PDF electronic file.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
   1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
   2. Identification: Attach label on unexposed side of Samples that includes the following:
      a. Generic description of Sample.
      b. Product name and name of manufacturer.
      c. Sample source.
      d. Number and title of applicable Specification Section.
      e. Specification paragraph number and generic name of each item.
   3. Provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
   4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
      a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
      b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
   5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
      a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    a. Number of Samples: Submit three sets of Samples. Architect and Project Manager will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:
    a. PDF electronic file.

E. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.03 INFORMATIONAL SUBMITTAL PROCEDURES

A. NE-CHPS Submittals: Comply with requirements specified in Section 01 81 13 "Sustainable Design Requirements."

B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

C. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

D. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

E. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

F. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

G. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

H. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

I. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

J. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
   1. Name of evaluation organization.
   2. Date of evaluation.
   3. Time period when report is in effect.
   4. Product and manufacturers' names.
   5. Description of product.
   6. Test procedures and results.
   7. Limitations of use.

K. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

L. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

M. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

2.04 DELEGATED-DESIGN SERVICES

A. 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.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
   1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.01 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Project Manager.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action. In reviewing submittals, the Architect shall be entitled to rely upon the Contractor's representation that the information given is correct and accurate.
   1. In reviewing submittals, the Architect shall be entitled to rely upon the Contractor's representation that the information given is correct and accurate.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
   1. "Approved": Contractor may proceed with procurement, fabrication, or installation, as applicable.
   2. "Approved as Corrected": Make changes noted to the actual item prior to fabrication and installation; the shop drawing, product data or sample need not be resubmitted.
   3. "Revise and Resubmit": Make corrections or changes indicated by the Architect in the submittals and resubmit.
   4. "Not approved": Indicates non-conformance with requirements. Resubmit in conformance with Contract Documents.

C. Project Manager's Review of Action Submittals: Project Manager will provide separate review of each submittal and affix separate stamp.

D. Informational Submittals: Architect and Project Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect and Project Manager will forward each submittal to appropriate party.

E. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect and Project Manager.

F. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

G. Submittals not required by the Contract Documents will not be reviewed and may be discarded or returned without action.

H. The Architect will return paper submittals by first class or priority mail, which may take up to 3 days for delivery, unless the Contractor specifically requests and pays the costs of courier, Express Mail, or other expedited delivery service.

END OF SECTION 01 33 00

SECTION 01 78 23
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
   1. Operation and maintenance documentation directory.
   2. Emergency manuals.
   3. Operation manuals for systems, subsystems, and equipment.
   4. Product maintenance manuals.
   5. Systems and equipment maintenance manuals.

B. Related Requirements:
   1. Section 01 33 00 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
   2. Section 01 91 13 "General Commissioning Requirements" for verification and compilation of data into operation and maintenance manuals.

1.03 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.04 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
   1. Architect and Commissioning Authority will comment on whether content of operations and maintenance submittals are acceptable.
   2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:
   1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.

a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
b. Enable inserted reviewer comments on draft submittals.

2. Paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect and Commissioning Authority will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.01 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Directory: Prepare a single, comprehensive directory of emergency, operation and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Subcontractors and Suppliers: List major subcontractors and suppliers with addresses and telephone numbers. Organize alphabetically by systems and subsystems, and alphabetically by name of entity.

D. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

E. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

F. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.02 REQUIREMENTS FOR OPERATION, EMERGENCY, AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Project manager.
   7. Name and contact information for Architect.
   8. Name and contact information for Commissioning Authority.
   9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
   1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
   1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
   2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
   1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf or post-type binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with

clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.03 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:
   1. Type of emergency.
   2. Emergency instructions.
   3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
   1. Fire.
   2. Flood.
   3. Gas leak.
   4. Water leak.
   5. Power failure.
   6. Water outage.
   7. System, subsystem, or equipment failure.
   8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:
   1. Instructions on stopping.
   2. Shutdown instructions for each type of emergency.

3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.04 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.05 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   4. Material and chemical composition.
   5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
   1. Inspection procedures.
   2. Types of cleaning agents to be used and methods of cleaning. Include recommendations for sustainable cleaning products complying with NE-CHPS.
   3. List of cleaning agents and methods of cleaning detrimental to product.
   4. Schedule for routine cleaning and maintenance.
   5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

2.06 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
   1. Standard maintenance instructions and bulletins.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.01 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
   1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
   2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
   1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
   1. Do not use original project record documents as part of operation and maintenance manuals.
   2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."

G. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 81 13
SUSTAINABLE DESIGN REQUIREMENTS – BASE BUILDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes general requirements and procedures for compliance with certain prerequisites and credits needed for Project to obtain Northeast Collaborative for High Performance Schools certification; (NE-CHPS Version 3.1), Criteria for New Construction and Renovation.

B. This Project is committed to meeting selected prerequisites and credits where indicated. Comply with specific sustainability requirements where indicated in this Section, and in other Sections. Certification will be required through the Rhode Island School Building Authority.
   1. Additional NE-CHPS prerequisites and credits needed to obtain the designated points depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.
   2. NE-CHPS prerequisites and credits needed to obtain NE-CHPS certification may not be specifically identified as NE-CHPS requirements.
   3. Compliance with requirements needed to obtain NE-CHPS prerequisities and credits will be used as criteria to evaluate substitution requests and comparable product requests.
   4. Definitions included in the "NE-CHPS Version 3.1 for New Construction and Renovations" and online amendments apply to this Section.

C. Related Sections:
   1. Divisions 01 through 28 Sections identify sustainability requirements specific to the work of each of these Sections. Requirements may or may not include reference to NE-CHPS.
   2. Section 01 32 00 "Construction Progress Documentation" for construction photographic and video documentation.
   3. Section 01 33 00, "Submittal Procedures."
   4. Section 01 50 50, "Temporary Facilities and Controls" for erosion and sedimentation control during construction.
   5. Section 01 50 60, "Temporary Heating, Ventilating and Moisture Control" for dust control and moisture and mold control during construction.
   6. Section 01 57 33 "Indoor Air Quality Control for Occupied Facilities."
   7. Section 01 74 19 "Construction Waste Management and Disposal."
   8. Section 01 78 23, "Operation and Maintenance Data."

1.03 DEFINITIONS

A. Airborne Toxic Control Measure (ATCM), established by California Air Resources Board (CARB), for the emissions testing and requirements of reduced formaldehyde emissions from composite wood products including no-added formaldehyde (NAF) and ultra-low emitting formaldehyde (ULEF) products.

B. Bio-Based Materials: Materials that meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Bio-based raw materials shall be tested using ASTM D 6866 and be legally harvested, as defined by the exporting and receiving country.

C. CDPH Standard Method v1.1: California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, v. 1.1–2010, for the emissions testing and requirements of furniture, furnishings, flooring systems, ceiling systems, wall systems, adhesives, sealants, paints and coatings.

D. Chain-of-Custody (COC): A procedure that tracks a product form the point of harvest or extraction to its end use, including all successive stage of processing, transformation, manufacturing, a distribution.

E. Chain-of-Custody Certificates: Certificates signed by manufacturers and fabricators certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.

F. Composite Wood and Agrifiber: Products made of wood particles and/or plant material pressed and bonded with adhesive or resin such as particleboard, medium density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates, and door cores.

G. Health Product Declaration Open Standard (HPD): A standard format for reporting product content and associated health information for building products and materials.

H. Indoor Air Quality (IAQ) Management Plan: Plan developed by the Contractor to provide a healthy indoor environment for workers and building occupants during construction. Plan must meet or exceed the recommendations of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) "IAQ Guidelines for Occupied Buildings Under Construction."

I. Material Cost: The dollar value of materials being provided to the site, after Contractor mark-ups, including transportation costs, taxes, fees, and shop labor, but excluding field equipment and field labor costs.

J. Materials Reuse: Reuse includes salvaged, refurbished, or reused products.

K. Recycled Content: Recycled content is the sum of postconsumer recycled content plus one-half the preconsumer recycled content, based on cost. The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

1. "Postconsumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
2. "Preconsumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials, such as rework, regrind, or

scrap, generated in a process and capable of being reclaimed within the same process that generated it.

L. Regional Materials: Materials that are extracted, harvested, recovered, and manufactured within a radius of 500 miles from the Project site.

M. South Coast Air Quality Management District (SCAQMD) Standard Method Rule 1113 (2011), for the emissions testing and requirements of paints and coatings.

N. South Coast Air Quality Management District (SCAQMD) Standard Method Rule 1168 (2011), for the emissions testing and requirements of adhesives and sealants.

O. Volatile Organic Compounds (VOC) Emissions Test: Refer to CDPH Standard Method v1.1 definition.

1.04 INFORMATIONAL SUBMITTALS

A. Prerequisite II 1.0.1 Preconstruction Construction Documents Workshop:
1. Submit Preconstruction Meeting Minutes, to document coordination reviews of high performance features into the project.

B. NE-CHPS Action Plan: Provide preliminary submittals within 14 days of date established for the Notice to Proceed indicating how the following requirements will be met:
1. Credit MW 2.1.1: Construction and demolition waste management plan; to recycle, reuse, and/or salvage at least 75% of non-hazardous construction and demolition waste (by weight) and complying with Division 01 Section "Construction Waste Management and Disposal."
2. Credits EQ 1.1, EQ 5.1.1, EQ 5.1.2, EQ 5.1.3, EQ 5.2 and EQ 6.1: Construction indoor-air-quality management plan complying with Section 01 50 00 "Temporary Facilities and Controls" and Section 01 57 33 "Temporary Indoor Air Quality Control."
   a. Submit Product Data for materials used to partition off and clean construction or adjacent occupied areas.
      1) HEPA Filters
      2) Vacuum Cleaners
      3) Plastic Partitions
      4) Cleaning Solvents
      5) Temporary Ventilation
   b. Submit Schedule for cleaning of the site signed by Superintendent.
   c. Describe flush out procedures: Plan must comply with EQ 5.1.3.
      1) Provide narrative of compliant flush methods used signed by site superintendent certifying the events will occur after the completion of Phases 1C, 2 and 3 and during the application of volatile materials.
      2) Provide a schedule of dates that building filters were changed after construction phases prior to occupancy.
      3) Product data for filtration media used during flush-out and during occupancy.
      4) IAQ testing reports.
3. Prerequisite EQ 8.1 Low Radon: Construction Site Testing Plan complying with EPA 402-R-92-014.

a. Owner to coordinate how and when testing is to confirming compliant radon air concentrations at the end of Phase 3. Coordinate testing needs with Action Plan.

C. NE-CHPS submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated NE-CHPS requirements, with completed NE-CHPS Submittal Form attached to this Section.

1. NE-CHPS "Scorecard" is provided with this specification listing Prerequisites and Credits required.
2. Submit "Sustainable Materials Attributes Submittal Form" provided reporting for each prerequisite and credit listed within the Scorecard.
3. Submittals received without a completed Sustainable Materials Attributes Submittal Form will be returned marked "No Action."
4. Submit Documentation for the following Prerequisites and Credits:
   a. Sustainable Material Attributes Requiring Reporting:
      1) Prerequisite EQ 7.0, Credit EQ 7.1: Low Emitting Materials
         a) Product Type
         b) Product Name
         c) Manufacturer
         d) Certification Program
         e) Certificate Number
         f) Expiration Date
         g) VOC Content in g/l
         h) List Compliance Criteria Reference from Below
      2) Credit MW 3.1 Single Attribute – Recycled Content
         a) Product Type
         b) Product Name
         c) Manufacturer
         d) Weight of All Material
         e) Total Cost of Material
         f) Percentage Pre-Consumer Recycled Material
         g) Percentage Post-Consumer Recycled Material
      3) Credit MW 5.1 Single Attribute – Certified Wood
         a) Product Type
         b) Product Name
         c) Manufacturer
         d) Forest Stewardship or NWFA Responsible Procurement Program
         e) Chain of Custody Certificate Number
         f) Material Cost
      4) Credit MW 11.1 Locally Produced Materials
         a) Product Type
         b) Product Name
         c) Manufacturer
         d) Location of Final Point of Assembly
         e) Distance from Project Site
         f) Material Cost

D. Project Materials Cost Data: Provide statement indicating total cost for building materials used for Project.

E. NE-CHPS Progress Report Submittal: Concurrent with each Application for Payment, submit Sustainable Design Form A comparing actual construction and purchasing activities with NE-CHPS action plans for the following:

1. Credit MW 2.1.1: Waste reduction progress reports complying with Section 01 74 19 "Construction Waste Management and Disposal."
2. Credit MW 3.1:
   a. Materials with recycled content.
3. Credits EQ 5.1.1 & EQ 5.1.2:
   a. Submit photographs of erosion and sedimentation control measures to minimize site dust.
   b. Photographs are to be labeled with the date and captioned to describe methods used.
4. Credit EQ 6.1
   a. Submit photographs of staff vacuuming soft surfaces around construction site, schedule of daily cleaning activities, signed by site superintendent.
5. Credits EQ 5.1.1, EQ 5.1.2 and EQ 6.1
   a. Construction indoor-air-quality reports complying with Section 01 50 00 "Temporary Facilities and Controls."
   b. Photographic Documentation: Submit annotated and dated photographs of the following.
      1) Prevent mold problems during construction.
      2) Use IAQ best practices.
      3) Construction management – provide ventilation.
      4) Construction management – protect ductwork.
      5) Construction management- HEPA vacuuming.
      6) Construction management – Building Flushout
         a) Provide narrative of compliant flush methods used signed by site superintendent certifying the events occurred.
         b) Provide a schedule of dates that building filters were changed after construction phases prior to occupancy.
         c) Product data for filtration media used during flush-out and during occupancy.
         d) IAQ testing reports.
         e) Provide annotated and dated photographs of the strategies used.

F. NE-CHPS Audit and Close Out Documentation Submittal:

1. Prerequisite II 1.0.1, II 1.0.2 and Credit II 1.1.1
   a. Submit Preconstruction Meeting Minutes, to document coordination reviews of high performance features into the project.
   b. Submit Coordination Review Workshop minutes and coordination review documentation.
2. Prerequisite OM 1.0 Facility Staff Training
   a. Refer to Section 01 78 23 “Operation and Maintenance Data” for more information.
   b. Submit Training Manual used for Facility Staff and Faculty Training.

a) Digital Presentations submitted to be printed with instructions on how to access online link.

c. Submit sign-in sheet, agenda, and meeting minutes from staff training presentations.

d. Systems Manual, as outlined under 3.04 Enhanced Commissioning, shall be submitted to the Design Team for review in conjunction with Training Manual.

3. Credit OM 2.1 Post-Occupancy Transition
   a. Refer to Section 01 77 00 Close Out Procedures
   b. Attend meeting one weather season after completion of project to assess building performance after each project phase.
   c. Submit sign-in sheet, agenda, meeting minutes and action items list from post occupancy meeting.

4. Credit OM 5.1 Systems Maintenance Plan
   a. Submit an inventory of building systems, including
      a) Mechanical
      b) Electrical
      c) Plumbing
      d) Building Envelope
   b. Submit a maintenance plan that includes information on preventative maintenance presented in a tabular format featuring the follow items: Schedule of tasks, frequency to perform task, priority ranking for each task, date task to be completed, possible problems for trouble shooting, and special training required for specific tasks.

5. Prerequisite EQ 1.0 HVAC Design, EQ 1.1 Enhanced Filtration, EQ 1.2 Dedicated Outdoor Air System
   a. Submit approved submittal for compliant air filters.

6. Credit EQ 2.0.1, 2.0.2, 2.0.3, 2.0.4, & 2.0.6
   a. Submit photographs & shop drawings showing associated equipment

7. Prerequisite EQ 3.0 Outdoor Moisture Management
   a. Submit letter signed by installer that the drain trap and gravity drainage system have been tested to show that water flows as designed.
   b. Submit pictures of installed system elements.

8. Credits EQ 5.2, EQ 5.1.1, EQ 2.1, EQ 5.1.2, EQ 6.1:
   a. Photographic Documentation: Submit annotated and dated photographs of the following.
      1) Prevent mold problems during construction.
      2) Use IAQ best practices.
      3) Construction management – provide ventilation.
      4) Construction management – protect ductwork.
      5) Construction management- HEPA vacuuming.
      6) Construction management – Building Flush-out
         a) Provide narrative of compliant flush methods conducted, signed by site superintendent certifying the events occurred.
         b) Provide a schedule of dates that building filters were changed after construction phases after flush-out and prior to occupancy.

c) Product data for filtration media used during flush-out and during occupancy.
d) IAQ testing reports.
e) Provide annotated and dated photographs of the strategies used.

9. Credit EQ 7.0, 7.1: Product data for the following categories of materials indicating VOC content of each product used. Indicate VOC content in g/L calculated according to the following performance guidelines for products used inside the weatherproofing system:
   a. South Coast Air Quality Management District (SCAQMD) Rule 1113 for the following:
      1) Paints and Coatings
         a) Sealers
         b) Stains
         c) Clear Wood Finishes
         d) Floor Sealers and Coatings
         e) Waterproofing Sealers
         f) Non-Flat Paints and Coatings
         g) Rust Preventative Coatings
   b. CDPH Standard Method V1.1 (2010) for:
      1) Flooring Systems
   c. South Coast Air Quality Management District (SCAQMD) Rule 1168 and CDPH Standard Method V1.1 (2010) for the following:
      1) Adhesives & Sealants including, but not limited to:
         a) Carpet, Resilient, and Wood Flooring adhesives
         b) Aerosol Adhesives
         c) Adhesive Primers
         d) Acoustical Sealants
         e) Fire Stop Sealants
         f) HVAC Duct Sealants
         g) Sealant Primers
         h) Caulks
   d. Formaldehyde Emission Standards: Product data for the following material must comply with applicable CARB ATCM formaldehyde emission standards:
      1) Products include, but not limited to:
         a) Hardwood Plywood (HWPW)
         b) Particleboard (PB)
         c) Medium Density Fiberboard (MDF)
         d) Engineered Wood Floors, Doors, Trim/Molding, Cabinetry, and Countertop
      2) Submit product data including the items below:
         a) No-added formaldehyde (NAF) or ultra-low emitting formaldehyde (ULEF).
         b) Product Labels
         c) Product Data Sheets
         d) Chain-of-Custody Documentation

   e. Agrifiber Products: Product data for the following material must comply with applicable CARB ATCM formaldehyde emission standards:
      1) Products include:
         a) Engineered wood floors

b) Doors
c) Trim/molding
d) Cabinetry
e) Countertops.

2) Submit product data including the items below:
a) No-added formaldehyde (NAF)
b) Product Labels
c) Product Data Sheets
d) Chain-of-Custody Documentation

10. Credit EQ 10.1: Controllability of Systems
a. Submit photographs of installed temperature control devices and/or operable windows.

11. Credit EQ 11.1: Daylighting:
a. Submit photographs of installed light controls.

12. Credit EQ 13.2: Superior Electric Lighting Performance
a. Submit receipts, proof of purchase or installation for the required lighting system.
b. Submit pictures of installed lighting system in typical classroom.

13. Prerequisite EE 7.0: Local Energy Efficiency Incentives and Assistance
a. Complete, File, and Distribute documentation demonstrating compliance and participation with local incentive provider. Local incentive provider is to be selected by the owner prior to the start of the project.

14. Prerequisite WE 1.0: Minimum Reduction in Indoor Potable Water Use
a. Submit photographs of installed fixtures and metering systems, manufacturer receipts, proof of purchase, and approved submittals for the water-efficient products purchased.

15. Credit SS 11.1: Reduce Heat Islands: Cool Roofs
a. Submit pictures of the installed cool roof.

16. Credit SS 12.1 Avoid Light Pollution and Unnecessary Lighting:
a. Submit manufacturer receipts or proof of purchase for compliant light fixtures.
b. Submit pictures of installation.

17. Prerequisite MW 2.01: Waste reduction progress reports complying with Section 01 74 19 "Construction Waste Management and Disposal."
a. Submit All Waste and Recycling Weight Slips
b. Submit Final Recycling Rate in Tabular Form.
1) Table to include the following information:
a) Waste Removal Date
b) Name of Waste or Recycling Material Hauler
c) Location of Recycling Center
d) Location of Landfill
e) Waste Receipt Number
f) Type of Waste
g) Total Garbage Material (in Tons) in each collection instance
h) Total Salvaged Material (in Tons) in each collection instance
i) Total Recycled Material (in Tons) in each collection instance
j) Total Overall Garbage Material (in Tons)
k) Total Overall Salvaged Material (in Tons)

l) Total Overall Recycled Material (in Tons)
m) Total Project Recycled Percentage Rate (in Tons)

18. Credit MW 3.1 – Single Attribute – Recycled Content, Performance Approach, achieving weighted average recycled-content value of at least 10%.
    a. Submit product data, including quantity of each material component, cost of material, percentage of pre-consumer and post-consumer recycled content.
        1) Exceptions include:
            a) Fly Ash generated from municipal solid waste incinerators
            b) Fly Ash generated from a plant fired by hazardous waste, medical waste, or tire-derived fuel.
            c) Materials with a mercury concentration of more than 5.5 ppb (.0055mg/L).
    b. Submit Final Weighted Average of Recycled Value demonstrating achievement of at least 10% over the project.
        1) Table to include the following information:
            a) Product Name
            b) Product Manufacturer
            c) Specification Section
            d) Material Cost
            e) Percentage of Pre-Consumer Recycled Content
            f) Weighted Average Recycled Content Value for Pre-Consumer Recycled Content
            g) Percentage of Post-Consumer Recycled Content
            h) Weighted Average Recycled Content Value for Post-Consumer Recycled Content
            i) Total Material Cost
            j) Total Recycled Content Value
            k) Weighted Value of Recycled Content Value Percentage

19. Credit MW 5.1 – Single Attribute – Certified Wood, achieving use of at least 50% of certified wood based materials, by cost.
    a. Submit product data for all materials, Certificates of Chain-of-Custody signed by manufacturers, proof of purchase.
    b. Submit Final Wood Material Portion Percentage in tabular format.
        1) Table to include the following information:
            a) Product Type
            b) Product Name
            c) Destination of Product
            d) Manufacturer
            e) Forest Stewardship or NWFA Responsible Procurement Program Affiliation
            f) Chain of Custody Certificate Number
            g) Certified Wood Material Cost for each instance
            h) Non-Certified Wood Material Cost for each instance
            i) Total Overall Cost of Total New Wood for the Project
            j) Total Overall Cost of Total Certified Wood for the Project
            k) Total Certified Wood Percentage, by cost

20. Credit MW 11.1 – Locally Produced Materials – achieving use of at least 20% of building materials by cost that are manufactured within a 500-mile radius.

a. Submit product data for all materials and proof of purchase.
b. Submit Final Local Product Percent in tabular format.
1) Table to include the following information:
a) Product Type
b) Product Name
c) Manufacturer
d) Location of Final Point of Assembly
e) Distance from Project Site
f) Local Product Material Cost for each instance
g) Overall Local Product Material Cost
h) Overall Material Cost, including all products
i) Overall Local Product Percentage, by cost

21. Green Building Post Construction Certification Form: Submit signed "Green Building Post Construction Certification Form" state that all prerequisites and credits noted in the Contract Documents have been carried out.

22. Low VOC products must be certified by one of the programs below or equivalent:
a. Greenguard Certification Program.
b. Scientific Certification Systems.
c. Indoor Advantage – Gold.
d. Carpet and Rug Institute.
e. Green Label Plus.

23. Materials Selection: Product data for composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin.

G. Green Building Post Construction Certification Form – Provide signed "Green Building Post Construction Certification Form." State that specified prerequisites and credits have been completed.

H. Photographic Documentation of Prerequisites and Credits: Submit photographs required by each prerequisite and credit for record. Annotate photographs as specified in Section 01 32 33 Photographic Documentation.

1.05 QUALITY ASSURANCE

A. Pre-Construction Meeting: Conduct conference at the Project site in accordance with Division 01 Section "Project Management and Coordination," to discuss NE-CHPS requirements. Require representatives of all affected subcontractors to attend. Discuss the prerequisites and credits which are part of the Contract, how they will be achieved and how conformance will be documented. Schedule meeting at a time convenient to Owner and Architect within 21 days prior to commencement of the work. Advise Architect, Owner's Commissioning Authority, and Owner's Project Manager of scheduled meeting dates.
1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Project Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss NECHPS plan for the project, submittal procedures, and Contractor’s action plan for achieving and documenting prerequisites and credits for the project.

3. Minutes: Record and distribute minutes to attendees and other entities with responsibilities for obtaining NECHPS Prerequisites and Credits.

B.

PART 2 - PRODUCTS

2.01 RECYCLED MATERIALS

A. Credits MW 3.1, Recycled Content: Provide materials with recycled content. Calculate individual materials' and overall project recycled content in accordance with NECHPS performance method.

2.02 LOW-EMITTING MATERIALS

A. Prerequisite and Credit EQ 7.0, EQ 7.1, Low-Emitting Materials: Provide low-VOC materials where specified in individual Sections, and for the following products where not indicated in other Sections.
   1. Adhesives, sealants and concrete sealers
   2. Paint and Coatings applied to walls, floors and ceilings.
   3. Furniture & Furnishings
   4. Flooring Systems
   5. Composite Wood and Agrifiber Products
   6. Ceiling & Wall Systems

B. Low-Emitting Materials, General Emissions Requirements: Products must demonstrate they have been tested and determined compliant in accordance with California Department of Public Health, (CDHP), Standard Method v1.1-2010, using the applicable exposure scenario. Manufacturer's documentation demonstrating compliance must state the range of total VOCs (tVOC) after 14 days measured as specified in the CDPH Standard Method v1.1 as follows:
   1. 0.5mg/m3 or less,
   2. between 0.5 and 5.0 mg/m3 or,
   3. 0.50 mg/m3 or more.

C. Low VOC Requirements for Adhesives, and Sealants Used on the Project in Quantities of 2.5 Gallons or more: For field applications that are inside the weatherproofing system, use adhesives, sealants, and concrete sealers that comply with the following limits for VOC content when calculated according to South Coast Air Quality Management District Rule 1168, requirements in effect on July 1, 2005, and rule amendment date January 7, 2005:

Architectural Applications:	Allowable VOC Content (g/L):
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesives	100

Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Dry wall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single ply roof membrane adhesives	250
Specialty Applications:	Allowable VOC Content (g/L):
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Computer diskette manufacturing	350
Contact adhesive	80
Special purpose contact adhesive	250
Tire retread	100
Adhesive primer for traffic marking tape	150
Structural wood member adhesive	140
Sheet applied rubber lining operations specialty	850
Top and Trim adhesive	250
Substrate Specific Applications:	Allowable VOC Content (g/L):
Metal to metal substrate specific adhesives	30
Plastic foam substrate specific adhesives	50
Porous material (except wood) substrate specific adhesives	50
Wood substrate specific adhesives	30
Fiberglass substrate specific adhesives	80
Sealants:	
Architectural sealant	250
Marine deck sealant	760
Nonmember roof sealant	300
Roadway sealant	250
Single-ply roof membrane sealant	450
Other sealant	420
Sealant Primers:	Allowable VOC Content (g/L):
Architectural non-porous sealant primer	250
Architectural porous sealant primer	775
Modified bituminous sealant primer	500
Marine deck sealant primer	760
Other sealant primer	750
Other	

Other adhesives, adhesive bonding primers, adhesive primers or any other primers	250

D. Low VOC Requirements for Adhesives, and Sealants for Flooring, Wall Covering, Wall Base Adhesives, and Sealants shall demonstrate compliance with CDPH Standard Method v1.1 and South Coast Air Quality Management (SCAQMD) Rule 116, Adhesive and Sealant Applications, and rule amendment January 7,2005.

E. VOC Requirements for Paints and Coatings: For field applications, use paints and coatings that comply with the following limits for VOC content when calculated according to South Coast Air Quality Management District Rule 1113, effective June 3, 2011, amended September 6, 2013:

Product Type:	Allowable VOC Content (g/L):
Bond Breaker	350
Clear wood finishes - Varnish	275
Clear wood finishes – Sanding Sealer	275
Clear wood finishes - Lacquer	275
Concrete – Curing compounds	100
Concrete – Curing compounds for roadways & bridges	350
Concrete surface retarder	50
Driveway Sealer	50
Dry-fog coatings	50
Faux finishing coatings - Clear topcoat	100
Faux finishing coatings – Decorative Coatings	350
Faux finishing coatings - Glazes	350
Faux finishing coatings - Japan	350
Faux finishing coatings – Trowel applied coatings	50
Fire-proof coatings	150
Flats	50
Floor coatings	50
Form release compounds	100
Graphic arts (sign) coatings	150
Industrial maintenance coatings	100
Industrial maintenance coatings – High temperature IM coatings	420
Industrial maintenance coatings – Non-sacrificial anti-graffiti coatings	100
Industrial maintenance coatings – Zinc rich IM primers	100
Magnesite cement coatings	450
Mastic coatings	100
Metallic pigmented coatings	150
Multi-color coatings	250
Non-flat coatings	50
Pre-treatment wash primers	420
Primers, sealers and undercoaters	100

Product Type:	Allowable VOC Content (g/L):
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Roof coatings, aluminum	100
Roof primers, bituminous	350
Rust preventative coatings	100
Stone consolidant	450
Sacrificial anti-graffiti coatings	50
Shellac- Clear	730
Shellac – Pigmented	550
Specialty primers	100
Stains	100
Stains, interior	250
Swimming pool coatings – repair	340
Swimming pool coatings – other	340
Traffic Coatings	100
Waterproofing sealers	100
Waterproofing concrete/masonry sealers	100
Wood preservatives	350
Low solids coatings	120

F. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).

G. VOC Requirements for Furniture and Furnishings for classrooms and administrative spaces: Furniture, shall be tested following the procedures in ANSI/BIFMA M7.1 (2011) and CDPH Standard Method V1.1 (2010). Student Seating and Workstations shall be tested individually. Administrative area and teacher workstations and seating.

H. VOC Requirements for Flooring Systems all spaces: Furniture, shall be tested following the procedures in CDPH Standard Method V1.1 (2010).

I. VOC Requirements for Composite Wood and Agrifiber: Composite Wood and Agrifiber products shall be made using no-added formaldehyde (NAF) or ultra-low emitting formaldehyde (ULEF) resins as defined in the California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or shall be made with no added formaldehyde. Products affected include:
   a. Composite Wood:
      i. Composite core plywood
      ii. Veneer hardwood plywood
      iii. Particleboard (PB)
      iv. Medium density fiberboard (MDF)
   b. Agrifiber:
      i. Material free of formaldehyde (NAF based resins)

c. Do not use composite wood or agri-fiber products or adhesives that contain urea-formaldehyde resin.

J. CLEANING EQUIPMENT & MATERIALS
1. Vacuum Cleaners must include HEPA filtration certified by The Carpet and Rug Institute's Seal of Approval from the Green Label Vacuum Cleaner Program, achieving 'Energy Efficient Rated – Gold Level'.
a. HVAC Filtration
1) Credit EQ 1.1 – Enhanced Filtration, Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 or higher.

PART 3 - EXECUTION

3.01 NONSMOKING BUILDING

A. Environmental Tobacco Smoke Control: Smoking, vaping, and other use of tobacco products is not permitted in the building, on the project site, or within 25 feet (8m) of entrances, operable windows, or outdoor-air intakes.
1. Refer to Section 01 57 31, "Indoor Air Quality Management."

3.02 CONSTRUCTION WASTE MANAGEMENT

A. Prerequisite MW 2.01: Refer to Division 01 Section "Construction Waste Management and Disposal."

3.03 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

A. Comply with Division 01 Section "Temporary Indoor Air Quality."

B. Credit EQ 5.1.1: Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."
1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 01 Section "Temporary Facilities and Controls," install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
2. Replace all air filters immediately prior to occupancy.

C. Credit EQ 5.1.2: Duct Protection:
1. During construction, seal HVAC supply and return openings to protect them from dust infiltration (for example, from gypsum board installation or wood floor sanding).
2. Where new duct systems are being installed, follow SMACNA guidelines "Duct Cleanliness for New Construction Guidelines," 2000 edition, according to "Advanced" levels of cleanliness. Comply with requirements for protecting ductwork during transportation and storage and during installation in accordance with provisions of Division 23 Section "Metal Ducts."

3.04 CREDIT EQ 5.1.3: BUILDING FLUSH OUT

A. During and after installation of VOC emitting materials.
   1. Provide maximum amount of outdoor air (design maximum outdoor air flow rate for maximum occupancy) from the air handler/energy recovery unit/makeup air unit serving the area for the maximum amount of time feasible, but not less than continuously (i.e. 24hrs/day) for seven days.
   2. Provide documentation of day/time that VOC emitting material is installed along with report detailing run-time of HVAC unit, total cfm delivered, percent outside air, temperature in space, humidity in space.

B. After construction ends, prior to occupancy
   1. Provide flush-out calculations detailing phase 1C, 2, and 3 and which HVAC unit is being utilized for approval prior to flush-out. For each HVAC unit, include area, volume, start date, end date, total air flow, percent outside air, total volume of outside air delivered. Each area served must be provide a minimum of 14,000 cu. Ft. of outdoor air per sq. ft. of gross floor area while maintaining an internal temperature of at least 60 deg. F and no higher than 80 deg. F and a relative humidity no higher than 60 percent, for all spaces except storage and corridors.
   2. Perform flush-out per HVAC unit and per phase. Record start/finish, run-time, total air flow, percent outside air, temperature, and humidity utilizing an approved method.
   3. Submit report showing compliance with flush-out calculation.
   4. Replace air filters with new filters and provide two sets of additional replacement filters prior to occupancy for all HVAC units.

C. Alternate – during occupancy
   1. Prior to occupancy, the square root of the total number of classrooms in the phase being occupied must be tested for compliance with IAQ testing. Conduct IAQ testing using the current versions of ASTM standard methods, EPA compendium methods or ISO methods for levels shown in Table 1. If there are any non-compliant rooms, they must be remedied and re-tested until they are compliant. Two additional classrooms per non-compliant classroom must also be tested in all items in Table 1 in the event of non-compliance.

Table 1. Maximum Concentration Levels, by Contaminant and Testing Method

Contaminant	Maximum Concentration	ASTM and US EPA methods	ISO method
Formaldehyde	27 ppb	AST D5197; EPA TO 011 or EPA Compendium Method IP-6	ISO 16000-3
Particulates (PM10 & PM 2.5)	PM10: 20 micrograms per cubic meter PM2.5: 12 micrograms per cubic meter	EPA Compendium Method IP-10	ISO 7708
Total volatile organic compounds (TVOCs)	500 micrograms per cubic meter	EPA TO-1, TO-15, TO-17, or EPA Compendium Method IP-1	ISO 16000-3
Target chemicals listed in CDPH Standard Method v1.1, Table 4-1, except formaldehyde	CDPH Standard Method v1.1-2010, Allowable Concentrations, Table 4-1	ASTM D5197; EPA TO-1, TO-15, TO-17, or EPA Compendium Method IP	ISO 16000-3 ISO 16000-6
Carbon monoxide	9 ppm; no more than 2 ppm above outdoor levels	EPA Compendium Method IP-3	ISO 4224
Ppb = parts per billion; ppm-parts per million; µg/cm = micrograms per cubic meter.			

2. Conduct the flush-out for 24 hours a day continuous ventilation for a 14-day flush-out during occupancy.
    a. Supply fans at maximum.
    b. Outdoor air dampers at design maximum.
    c. Thermal comfort shall be maintained per criteria in ASHRAE Standard 55.
    d. During the unoccupied hours, internal temperatures shall be maintained at the most energy efficient level above 60 deg. F and relative humidity shall be maintained no higher than 60%.
        1) Adjust fan to achieve criteria if necessary and record difference in air flow from full air flow. Extend run-time past 14-days to compensate for reduce outside air flowrate.
3. Record start/finish, run-time, total air flow, percent outside air, temperature, and humidity utilizing an approved method.
4. Submit report demonstrating compliance.

D. Post -occupancy ventilation

1. After any touch up work is performed (after or during flush-out), provide temporary ventilation during application and extend the building flush-out (per HVAC unit/phase) by a minimum of 4 days after touch-up application, with 100% tempered outdoor air for 24 hours each day.
2. Record touchup activity and start/finish day/time, flush-out start/finish, run-time, total air flow, percent outside air, temperature, and humidity utilizing an approved method.
3. Submit report demonstrating compliance.

3.05 RADON TESTING

A. Owner to coordinate Radon Testing at the Completion of the of the final phase of work. Testing to comply with EPA 402-R-92-014.

3.06 ENHANCED COMMISSIONING

A. Systems Manual: A system-focused composite document that includes the operations manual, maintenance manual, and additional information of use to the Owner during the occupancy and operations phase.

B. Provide a systems manual in addition to the O&M manuals. The systems manual should include the following for each commissioned system:
1. Final version of basis of design
2. System single line diagram
3. As built sequence of operations
4. Operating instructions for integrated building systems
5. Recommended schedule of maintenance reflective of the schedule of maintenance in the O&M manual
6. Recommended schedule for retesting commissioned systems
7. Recommended schedule for recalibrating sensors and actuators.

C. Systems Manuals shall be submitted to the Design Team for review in conjunction with Training Manual.

3.07 FACILITY STAFF TRAINING

A. Training Manuals used for Facility Staff and Faculty Training.
1. Format: Digital Presentations submitted to be printed with instructions on how to access online link.
2. Training Manual for Facility Staff to include the following content:
   a. Operation and Maintenance of all Building Systems
   b. Operation and Maintenance System Manual Organization
   c. Scheduling for Maintenance Procedures
   d. Overview of Project Warranties
   e. Recommendations for Development of Systems Maintenance Plan
3. Training Manual for Teachers to include the following content:
   a. Basic Operation of Classrooms Systems
   b. Window and Door Impacts on Systems
   c. Observing Maintenance Needs and Coordinating with Facility Staff

END OF SECTION 01 81 13

SECTION 32 92 00
TURF AND GRASSES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Procurement and Contracting Requirements and Division 01 General Requirements apply to this Section.

1.02 SUMMARY

A. Provide all labor, materials, equipment, services, and perform all operations necessary to complete the work of this section as indicated within the drawings and specified herein which shall include, but is not limited to, the following:
   1. Seeding.
   2. Hydro seeding.
   3. Planting soils.
   4. Soil amendments.
   5. Maintenance.

1.03 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil for seeding and surface of thatch for sod.

B. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil or Loam: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and fertilizers to produce a soil mixture best for plant growth.

D. Subgrade: Surface or elevation of subsoil remaining after excavation is complete or top surface of a fill or backfill before planting soil is placed.

1.04 SUBMITTALS

A. Soil Test Reports:
   1. For existing native surface topsoil.
   2. Imported or manufactured topsoil.

B. Qualification Data: For qualified landscape Installer.

C. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

D. Product Certificates: For soil amendments and fertilizers, from manufacturer.

E. NE-CHPS Submittals:
1. Complete “Sustainable Materials Attributes Submittal Form” attached to Section 01 81 13 “Sustainable Design Requirements NE-CHPS.”
2. Provide supporting documentation, as required in Section 01 81 13, from manufacturer for materials attributes data submitted.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A single qualified landscape Installer specializing in this work and employing only experienced workers, familiar with planting procedures, and under the full time supervision of a qualified supervisor. The Contractor must show previous evidence of having successfully installed and maintained landscape projects of similar scope with regards to quantity and complexity whose work has resulted in successful turf.
1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: Five years' minimum experience in turf installation in addition to requirements in Division 01 Section "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Topsoil Testing and Analysis: The Contractor shall submit representative samples of topsoil to a soil testing laboratory for testing and analysis, in conformance with the Standards of the Association of Official Agricultural Chemicals and the USDA Textural Classification and have testing report sent directly to the Architect.
1. Test and analyze topsoil from the from the following sources:
    a. 5 samples from the on-site stripped and stockpiled topsoil.
    b. 5 samples from each individual off site loam source.
    c. 5 samples from the constructed bioswale planting medium.
2. Soil test report that shall include;
    a. Mechanical sieve analysis with soil classification.
    b. Organic content.
    c. Chemical analysis which shall include: pH (1:1 soil-water ratio), buffer pH, Soluble Salts (1:2 soil-water ratio), Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Aluminum, Magnesium, Manganese, Ferric Iron, Sulfate and toxins including but not limited to lead, cadmium, arsenic, and mercury.
    d. Inform the Soil Testing Laboratory that soil tests are for specific applications, i.e.; tree and shrub plantings, turfgrass, wetland restoration and retention areas.
3. Test and analysis reports shall include the laboratory’s recommendations for amending the topsoil, if necessary, to meet these Specifications herein for each planting area.
4. Obtain written approval from the Architect before delivering materials to the site. Do not use topsoil until test results have been received by the Architect and amendments per specifications and laboratory recommendations required have been completed.

D. The Architect reserves the right to request topsoil testing and analyses (up to 10 additional tests) after the material have been placed on site, during the maintenance period or during the guarantee period. All testing shall be paid by the Contractor at no additional cost to the Owner.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

1.07 PROJECT CONDITIONS

A. Seeding Restrictions: Complete seed operations during one of the following periods. Coordinate seeding periods with maintenance periods to provide required maintenance.
   1. Spring Seeding: April 15 through June 15.
   2. Fall Seeding: August 15 through October 15.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.08 MAINTENANCE SERVICE

A. Turf Maintenance: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
   1. Seeded Turf: 90 days from date of completion of seeding operations and the following:
      a. Seeding operations completed between September 1 through September 15 will continue maintenance during next planting season until April 30.
      b. Seeding operations completed between September 16 through September 30 will continue maintenance during next planting season until May 15.
      c. Seeding operations completed by October 1 through April 15 will continue maintenance during next planting season until June 30.

B. Notify the Architect in writing upon the completion of the installation of the seeding and sodding operations, the beginning date of the maintenance period and the anticipated completion date of the maintenance period.

PART 2 - PRODUCTS

2.01 PLANTING SOILS

A. Topsoil: Topsoil shall be natural, fertile, friable soil, without admixture of subsoil, clean and reasonably free from clay, lumps, stones, stumps, roots or similar materials and free from debris or other objects which might be a hindrance to planting operations, and as follows:
   1. Utilize previously stripped and stockpiled topsoil prior to obtaining additional topsoil from off- site sources. If the quantity of stockpiled topsoil is insufficient, provide additional topsoil as required to complete the landscape work.

a. All on-site stockpiled topsoil shall be screened and made to comply with the specifications herein for new topsoil (off site) and per laboratory recommendations prior to use.

2. Obtain off-site topsoil from local sources and are from naturally, well drained sites where topsoil occurs at a depth of not less than 4 inches.
3. Texture: Topsoil shall be a "sandy loam" as determined by mechanical analysis and based on the "USDA Textural Classification" and it shall conform to the following grain size distribution:

a. Percent passing by weight:

U.S. Standard Sieve	Minimum	Maximum
5/8"	100	
#10	81	93
#18	66	87
#35	52	82
#60	35	66
#140	12	34
#300	5	18
Silt	4	13
Clay	1	5

1. pH value: Portion of the sample that passes a ¼ inch sieve shall fall within a range of pH 5.5 to pH 7.0.
2. Organic Matter: General seeded areas.
   a. Portion of the sample which passes ¼ inch sieve shall contain not less than 5 percent nor more than 7 percent organic matter, as determined by the wet combustion method on a sample directed at 105°C.
   b. To adjust organic matter content, the soil may be amended, prior to site delivery, by the addition of composted humus. Use of organic amendments is acceptable only if random soil sampling indicates thorough incorporation.

B. Bioretention Swale Soils
1. Bioretention swale soils shall be a blending of the following soil mixtures:
   a. 30% approved loam with 10% organic soil mixture.
   b. 20 % approved loam with 5% organic matter content soil mixture.
   c. 50% sand.

2. Organic Matter
   a. Portion of the sample which passes ¼ inch sieve shall contain not less than 12 percent nor more than 15 percent organic matter, as determined by the wet combustion method on a sample directed at 105°C.
   b. To adjust organic matter content, the soil may be amended, prior to site delivery, by the addition of composted humus. Use of organic amendments is acceptable only if random soil sampling indicates thorough incorporation.

2.02 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Lawn Seed Mix: State-certified seed of grass species as follows:

Seed Variety	Proportion by Weight	Germination Minimum	Purity Minimum
Chewings Fescue (3 Varieties)	70%	90%	95%
Perennial Rye (2 varieties	20%	90%	95%
Kentucky Bluegrass	10%	90%	95%

1. Seed mixture shall be applied at the rate of 7 pounds per 1,000 square feet.

C. Bioretention / Dry Swale Seed Mix:
1. As indicated in the “General Planting Notes” on the Planting Plan.
2. Seed mixture shall be applied per supplier’s specified recommendations.

2.03 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
2. Provide lime in form of ground dolomitic limestone.

B. Aluminum Sulfate: Commercial grade, unadulterated.

C. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.

D. Sand: Gravelly sand that meets ASTM D 422 is clean, washed, natural or manufactured and free of toxic materials.
1. Percent passing by weight:

U.S. Standard Sieve	Minimum	Maximum
½”		100
3/8”		100
#4	95	100
#8	80	100
#16	50	85
#30	25	60
#50	5	30
#100	0	10
#200	0	5

2.04 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
   1. Organic Matter Content: 50 to 60 percent of dry weight.

B. Sphagnum Peat: Humus or Peat Moss shall be natural humus, reed peat or sedge peat, finely divided peat, decomposed and free of fibers with a minimum 60 per cent Sphagnum composition by volume. pH range approximately 5.5 pH to 7.5 pH and the organic matter shall be not less than 85% as determined by loss on ignition. The minimum water absorbing ability shall be 200% by weight on an oven-dry basis.

C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.

D. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.05 FERTILIZERS

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.

B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
   1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
   2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.06 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.

C. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.02 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install 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.

3.03 TURF AREA PREPARATION

A. Install soil per the following specifications with the exception of the Bioretention swale soils which shall be installed per detail and Architects field directives.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 14 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
1. Spread planting soil in 2 lifts for a total minimum depth of 8 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.
b. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil to a depth of at least 8 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
a. Apply superphosphate fertilizer directly to surface soil before loosening.
3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.04 INCORPORATION OF ADDITIVES

A. Soil additives shall be spread and thoroughly incorporated into the layer of loam by harrowing or other methods approved by the Architect. The following soil additives shall be incorporated.
1. Ground limestone as required by soil analysis to achieve a pH of 6.0 to 6.5, with a minimum application of 60 pounds per 1,000 square feet and a maximum application of 100 pounds per 1,000 square feet per season
2. Fertilizer as required by soil analysis with a minimum application of 20 pounds per 1,000 square feet of 10-10-10
3. Superphosphate at the rate of 20 pounds per 1,000 square feet.

3.05 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
1. Do not use wet seed or seed that is moldy or otherwise damaged.
2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Sow seed at a total rate of indicated in Paragraph 2.02 “Seed”.

C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets and 1:6 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.

F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
   1. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal. /1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.06 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
   1. Mix slurry with nonasphaltic tackifier.
   2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.07 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
   1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
   2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
   1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
   2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
   1. The first mowing shall not be attempted until the grass height has reached a minimum of 3 inches or as directed by the Architect. Turf height shall be maintained at 2-1/2 inch

height unless otherwise specified. Thereafter grass shall be mowed at least once a week until written acceptance by the Architect

D. Turf Post fertilization: Apply fertilizer after initial mowing and when grass is dry.
   1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

E. Liming: : If more than one initial application of limestone is required by the soils analysis to bring the pH of the stockpiled topsoil/loam borrow to a specified range, the Contractor shall be responsible for all additional required lime applications

F. Protection:
   1. Protect turf areas from trespassing and damage of any kind by the use of temporary fences. Repair any damage including those resulting from erosion and washouts. Replant bare spots with the specified sod. Secure orange flagging to the temporary fencing/barriers
   2. Barriers shall be raised immediately after seeding operations and shall be maintained until acceptance.

3.08 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:
   1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

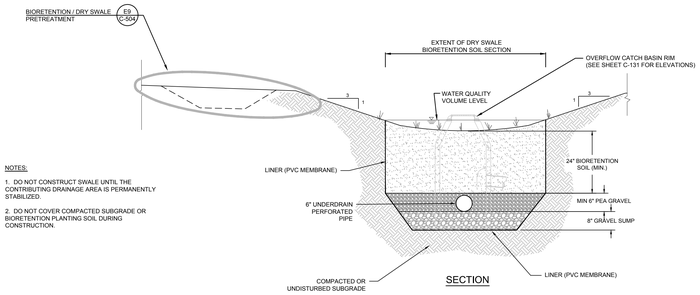
3.09 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 32 92 00



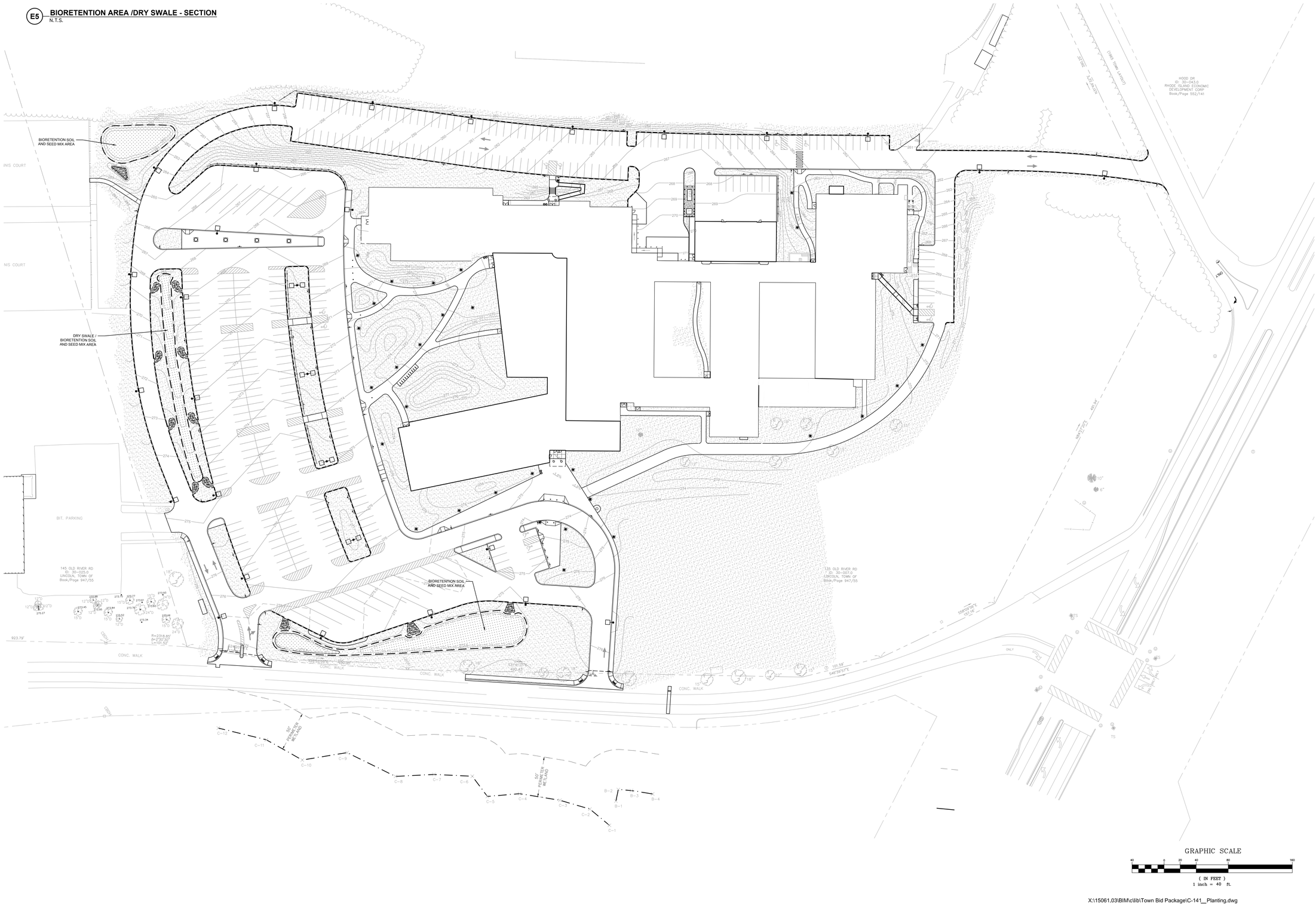
E5 **BIORETENTION AREA /DRY SWALE - SECTION**
N.T.S.

General Planting Notes

1. BIOSWALE/BIORETENTION SEED MIX IS AS PROVIDED BY NEW ENGLAND WETLAND PLANTS AND CONTAINS THE FOLLOWING SPECIES: Fox Sedge (Carex vulpinoidea), Lurid Sedge (Carex lurida), Blunt Broom Sedge (Carex scoparia), Blue Vervain (Verbena hastata), Fowl Bluegrass (Poa palustris), Hop Sedge (Carex lupulina), Green Bulrush (Scirpus atrovirens), Creeping Spike Rush (Eleocharis palustris), Fringed Sedge (Carex crinita), Soft Rush (Juncus effusus), Spotted Joe Pye Weed (Eupatorium maculatum), Rattlesnake Grass (Glyceria canadensis), Swamp aster (Aster puniceus), Blueflag (Iris versicolor), Swamp Milkweed (Asclepias incarnata), Square stemmed Monkey Flower (Mimulus ringens).
2. ROUGH GRADING TO SUBGRADE OF PLANTING SOIL WILL BE BY OTHERS. DO NOT INSTALL LOAM & SEED BEFORE ROUGH GRADING OF SUBGRADE HAS BEEN ACCEPTED.
3. TREES SHALL BEAR THE SAME RELATIONSHIP TO GRADE AS THEY BORE TO PREVIOUS GRADE.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-SEEDING AREAS THAT DID NOT GERMINATE OR AREAS IN DECLINE, UNTIL COMPLETION OF MAINTENANCE PERIODS OR GUARANTEE PERIODS.
5. ASSUME APPROXIMATELY 256,000 S.F. OF AREA FOR LOAM AND SEED.
6. ASSUME APPROXIMATELY 15,100 S.F. OF AREA FOR BIORETENTION / DRY SWALE AREAS.
7. USE NO BARK MULCH IN BIORETENTION / DRY SWALE PLANTING AREAS.
8. BIORETENTION / DRY SWALE SOIL TO BE COMPOSED OF 40% SAND, 40% TOPSOIL, AND 20% ORGANIC COMPOST.
9. LAWN AREAS TO BE SEEDED SHALL RECEIVE EIGHT INCHES (8") OF LOAM, MEASURED AFTER COMPACTION, PRIOR TO SEEDING.
10. BIORETENTION / DRY SWALE AREAS TO RECEIVE TWENTY-FOUR INCHES (24") OF BIORETENTION SOIL MIX, MEASURED AFTER COMPACTION, PRIOR TO SEEDING.
11. IN ADDITION TO LOCATIONS DEFINED FOR SEED ON THE PLANTING PLAN, ALSO SEED GRASS AREAS WHICH HAVE BEEN DISTURBED BY THE CONSTRUCTION.
12. BIORETENTION AND DRY SWALE AREAS TO BE EXCAVATED, LINED, AND HAVE GRAVEL SUMP, UNDERDRAIN PIPE, OVERFLOW CATCH BASINS, AND PEA GRAVEL INSTALLED BY OTHERS

Plant Legend

Symbol	Type
	Bioretention Planting Zone
	Lawn



GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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MARK:	DATE:	DESCRIPTION:
ISSUE LOG		
△	09/16/2019	LANDSCAPE PACKAGE
△ = CLOUDED CHANGE		

SCALE	1" = 40'
DRAWN BY	AWE
CHECK BY	
PRO.I.ARCH./ENGR.	CJR
PROJ. MRG.	JGS
JOB NO.	15061.03

LANDSCAPE PLAN

C-141