

PROJECT MANUAL

**COTUIT ELEMENTARY SCHOOL
DEMOLITION**

140 Old Oyster Road
Cotuit MA

BID DOCUMENTS

February 27, 2026

ARCHITECT
ICON Architecture
141 Tremont Street
Boston, MA 02111
617-451-3333

CIVIL/LANDSCAPE
Tighe & Bond
177 Corporate Drive
Portsmouth, NH 03801
603-433-8818

PROJECT MANUAL

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INVITATION TO BID

Project: Demolition and Abatement
Cotuit Elementary School
140 Old Oyster Road
Cotuit, Massachusetts

Owner: Cotuit Fire District
Prudential Committee
64 High Street
Cotuit, Massachusetts 02635

Architect: Icon Architecture Inc.
141 Tremont Street, 7th Floor
Boston MA 02111
Tel: (617) 451-3333

Completion
Time: 82 calendar days from receipt of a Notice to Proceed.

**In an earlier version of the advertisements, it was noted bids would be accepted Hard Copy only. We have now changed this for the convenience of all bidders. Bids will now be accepted electronically only.*

THIS PROJECT IS BEING ELECTRONICALLY BID (E-BID) ONLY. All bids should be submitted online at www.projectdog.com. Hard copy bids will not be accepted by the Awarding Authority. Please review the instructions in the bid documents on how to register as an electronic bidder.

The bids are to be prepared and submitted at www.projectdog.com. Tutorials and instructions on how to complete the electronic bid documents are available online (click on the "Tutorial" tab at the bottom footer). Log in and enter the Project Code #873071 in the search box and select "Acquire Documents" for a free, downloadable bid set.

The Cotuit Fire District, Awarding Authority, invites sealed bids from Trade Contractors for the Cotuit Elementary School Demolition, Abatement, and Restoration of Site in Cotuit Massachusetts, in accordance with the documents prepared by Icon Architecture Inc., February 27, 2026.

Drawings and Project Specifications will be available to bidders starting **Wednesday, March 11, 2025**.

An optional pre-bid walkthrough will be held on **Thursday, March 19, 2026, between 11:00 A.M. and 12:00 P.M.** at the Cotuit Elementary School at 140 Old Oyster Road, Cotuit, Massachusetts 02635.

All bids for this Project are subject to the provisions of Massachusetts General Laws, M.G.L., c.149, § 44A through 44L and to minimum wage rates as required by M.G.L. c.149 §§26 to 27H inclusive.

Bids for the General Contractors will be received until **Thursday, March 26, 2025 at 5:00 P.M.** and publicly opened, forthwith online.

All Bids are to be submitted electronically online at www.projectdog.com and received no later than the date and time specified above.

Any Addenda for this project will be posted on Project Dog Online and posted to the District Website www.cotuitfiredistrict.org/bids-and-rfps/. It is the responsibility of bid document holders to check and download any Addenda prior to submitting Bids.

The Trade Contractor Bidders will be required to furnish a Performance Bond in the amount of one hundred percent (100%) of their total bid, and a Labor and Materials Payment Bond in the amount of one hundred percent (100%) of their total bid.

Attention is directed to the fact that no less than the minimum wages as set forth in Document 00 43 43 Prevailing Wage Rates of the Contract Documents must be paid on this Project and that no sales tax shall be included in their bids. Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 149, Sections 26 to 27D inclusive of Massachusetts General Laws.

All bids shall remain in effect for sixty (60) days, Saturdays, Sundays and legal holidays excluded, after the opening of Bids.

The Awarding Authority reserves the right to waive any informalities and to reject any or all Bids not deemed to be in the best interest of the Town. Bids do not represent the Bid of a person competent to perform the Work as specified or that less than three (3) such bids were received. (C.149, Sec.44E)

Refer to "Instructions to Bidders" of the Bid Documents for additional bidding requirements.

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INSTRUCTION TO BIDDERS

PART 1 - GENERAL

1.01 THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED. Please review the instructions in the bid documents on how to register as an electronic bidder. The bids are to be prepared and submitted at www.projectdog.com . Tutorials and instructions on how to complete the electronic bid documents are available online (click on the “Tutorial” tab at the bottom footer).

1.02 GENERAL INFORMATION

A. All questions during the bidding process must be submitted in writing by e-mail. These may be sent to the Owners Project Manager, to the attention of Kayla Gallo (kayla.gallo@leftfieldpm.com).

Deadline for submission of questions or clarification by Bidders is until **12:00 P.M. on Friday, March 20, 2026**

B. OWNER’S REPRESENTATIVE

The Owner (Awarding Authority) is represented on this project by an Owner’s Project Manager,

Kayla Gallo
LeftField Project Management
101 Federal Street, Suite 1900
Boston, MA
Cell: (978) 436-0700

kayla.gallo@leftfieldpm.com
www.leftfieldpm.com

1.03 BIDDING PROCEDURE

A. Bids for the work are subject to the provisions of General Laws, Chapter 149, Sections 44A-44L inclusive, as amended. Regulations governing the bidding procedures as set forth in the above mentioned amended General Laws must be followed.

B. In the event of any inconsistencies between any of the provisions of these Contract Documents and of the cited statute, anything herein to the contrary notwithstanding, the provisions of the said statute shall control.

C. No Bid received by the Awarding Authority after the time respectively established herein for the opening of Bids will be considered, regardless of the cause for the delay in the receipt of any such bid.

- D. It is the Bidder's responsibility to obtain the necessary forms from DCAMM and make application in sufficient time for evaluation of the application and issuance of a Certificate of Eligibility prior to bid.
- E. Forms and Bid Preparation
1. All bidders must complete and submit the electronic bidder registration form (Electronic Bidder Signature Authorization Form – hard copy) to Projectdog. The form must be received by Projectdog. at least three business days prior to the bid opening for processing. The Awarding Authority, the Designer or Projectdog. will not be held accountable if the bidder fails to submit the electronic bidder registration form in a timely manner. Instructions to submit the form are in these Bid Documents following this section and are available at www.projectdog.com (click on the “Tutorial” tab at the bottom footer).
 2. All entries on the bid form are to be made online. Any documents that are attached to the bid must be in a pdf format.
 3. Sums shall be expressed in both words and figures in the space indicated on the bid form. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control. Note: The electronic bid forms match the “word” amount to the numeric “figure” amount entered.
 4. The Trade Contractor Bidders will be required to furnish a Performance Bond in the amount of one hundred percent (100%) of their total bid, and a Labor and Materials Payment Bond in the amount of one hundred percent (100%) of their total bid.
 5. Costs for Trade Contractor's bond premiums shall be paid for by the Contractor in accordance with M.G.L. c.149 §44F.
- F. Electronic Submission of Bids
1. Date and time for receipt of bids is set forth in the Advertisement.
 2. Timely submission of a bid online shall be the full responsibility of the Bidder. Note: The project countdown clock on the website is the official clock that will determine when the bids are due.
- G. Addenda
1. All modifications to the bid documents will be issued via an addendum. Any Addenda for this project will be posted on ProjectDog. It is the responsibility of bid document holders to check and download any Addenda prior to submitting Bids.

Hard copies of the addenda will not be forwarded to the plan holders. The bidder is solely responsible for reviewing all addenda posted on the project website. The bidder must acknowledge all addenda have been reviewed by selecting “yes” or “no” as part of the e-

bidding process. If the bidder selects “no”, the bidder will automatically be directed to the Addenda icon on the project page.

1.04 WITHDRAWAL OF BIDS

A. Before Opening of Bids

1. Any bid may be withdrawn (retracted) prior to the designated deadline by selecting “Retract My E-Bid” from the project’s E-Bidding page. Upon retracting, the Bidder will receive a convenience email for informational purposes only. It is the Bidder’s responsibility to review and confirm online that their bid has been retracted successfully.
2. Withdrawn bids may be modified and resubmitted up to the time designated for the receipt of bids.

B. After Opening of Bids

Bidders may withdraw a bid, without penalty, any time up to the time of Award as defined in paragraph 1.04A, and upon demonstrating, to the satisfaction of the Awarding Authority, that a bona fide clerical error was made during the preparation of the bid. Failure to conclusively demonstrate a bona fide clerical error may result in forfeiture of the bid deposit.

- C.** In the event of a general bid withdrawal after opening of bids, the Awarding Authority shall consider the bid from next lowest eligible and responsible bidder.

1.05 INTERPRETATION OF CONTRACT DOCUMENTS

- A.** No oral interpretation will be made to any bidder. All questions or requests for interpretations must be made in writing to the Owners Project Manager.
- B.** Every interpretation made to a bidder will be in the form of an Addendum, to the drawings and/or specifications.
- C.** All such addenda shall become a part of the Contract Documents.

1.06 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A.** Each bidder shall visit the site of the proposed work and fully acquaint themselves with conditions as they exist, and shall also thoroughly examine the Contract Documents. Failure of any bidder to visit the site and acquaint themselves with the Contract Documents shall not relieve any bidder from any obligation with respect to his bid.
- B.** By submitting a bid, the bidder agrees that the Contract Documents are adequate and that the required result can be produced. The successful bidder shall furnish any and all labor, materials, insurance, permits and all other items needed to produce the required result to the satisfaction of the Awarding Authority.

1.07 BID SECURITY

- A. Bid Security in the form of a Bid Bond shall be submitted with your E-Bid online at www.Projectdog.com. In lieu of an insurance Bid Bond certificate, Bid Security in the form of cash, or a certified check, treasurer's, or cashier's check issued by a responsible bank or trust company and made payable to the Owner, and a completed Bid Deposit Affidavit form must be received by the Owner before the bidding deadline. In addition, the Bidder must also submit the completed Cash Bid Bond Affidavit form with their E-Bid online at www.Projectdog.com
- B. The General Contractor's and Trade Contractor's bid must be accompanied by bid security in the amount of five percent (5%) of the bid.

At the option of the bidder, the security may be bid bond, cash, certified, treasurer's or cashier's check issued by a responsible bank or trust company. No other type of bid security is acceptable. Bid Bonds shall be issued by a Surety Company qualified to do business under the laws of the Commonwealth of Massachusetts.

- C. Certified, Treasurer's or Cashier's check shall be made payable to the Cotuit Fire District, Massachusetts.
NOTE: Checks and cash securities must be physically delivered to the Cotuit Fire District Headquarters at 64 High Street, Cotuit MA 02635 prior to the bid opening.
- D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder.
- E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after notice of award has been mailed to them or fail within such time to furnish a Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through their Bid Bond, Cash, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the Cotuit Fire District Massachusetts as liquidated damages; provided that, the amount of the bid deposit which becomes the property of the Cotuit Fire District, Massachusetts shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, their deposit shall be returned to them.

1.08 AWARD OF CONTRACT

- A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the procedure set forth in the provision of Section 44B-44L inclusive, as amended or inserted, by Chapter 149 of the General Laws of the Commonwealth of Massachusetts.
- B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid in accordance with Section 44F, an award shall be made to the next lowest responsible and eligible bidder.

- C. The words "lowest responsible and eligible bidder" shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary to the faithful performance of the work and who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, on the work. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.
- D. Action on the award will be taken within thirty (30) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.

1.09 SECURITY FOR FAITHFUL PERFORMANCE

- A. The successful bidder must deliver to the Awarding Authority simultaneously with their delivery of the executed contract, an executed Performance Bond, and also a Labor and Materials or Payment Bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (100%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connections therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.
- B. Premiums are to be paid by the General Contractor and are to be included in the Contract Price.

1.10 EQUAL OPPORTUNITY

- A. The Cotuit Fire District is an Equal Opportunity employer.

1.11 OTHER PROJECTS AT THE SITE(S)

- A. There are other construction projects that may be underway at the same time as the work of this project. The awarded General Contractor and all Subcontractors shall work in harmony with any and all other General Contractors and Trades and shall not impede any other work being performed by the Cotuit Fire District.

1.12 EQUALITY

- A. Except where otherwise specifically provided to the contrary, the words "or equal" are hereby inserted immediately following the name or description of each article, assembly, system, or any component part thereof, in the Contract Documents. It is the contractor's responsibility to provide all the research and documentation that would prove a product or assembly is "equal". Failure to provide research or documentation does not alleviate the contractor's responsibility to meet the schedule.

1.13 TAX FREE NUMBER

- A. The Cotuit Fire District has a tax free number (provided to the successful bidder upon request)

1.14 ARBITRATION

- A. The Cotuit Fire District does not use Arbitration. Any and all references to arbitration are

stricken from the contract.

- B. The Cotuit Fire District does not use Mediation. Any and all references to mediation are stricken from the contract.

1.15 SCHEDULE

- A. All work shall be substantially completed within **Eighty-Two (82)** calendar days of the Notice to Proceed
- B. The Contractor is advised that because of the bidding schedule, there is more than enough time to order all the material in advance of the work so that all the construction can occur between the date of the Notice to Proceed and the Substantial Completion date. Special notice is given that all the long lead time items can and must be ordered well in advance of site mobilization in order to meet the schedule. No exceptions will be made nor allowed if the contractor fails to properly plan the procurement of all items in advance of the work. Late fees will be imposed if the construction is not done on time.

1.16 LATE FEES

- A. If the work is not Substantially Complete by the agreed upon date listed in the contract, the Contractor shall be charged a maximum of **Five Hundred (\$500.00)** per calendar day to pay for consulting fees, testing fees, Designer fees, Owner's Project Management fees, Resident Engineers fees, Attorney fees to manage and arrange for the completion of the project. Late fees will be deducted from moneys that are due or might become due or if moneys are insufficient then the contractor or surety shall pay the awarding authority.

1.17 WEEKLY JOB MEETINGS

- A. There will be a job meeting at the site on the same agreed upon day and time weekly to discuss and view the progress of the work and to answer questions. The Contractor's job superintendent and Project Manager shall attend each meeting.

1.18 PROJECT SUPERINTENDENT

- A. The Contractor shall provide the same person as Superintendent for the entire duration of the project. Failure to maintain the same person in this position shall result in a \$1,000 penalty (per incident) which shall cover the Architect's and Owner's Project Manager's time to re-orient new personnel.

1.19 AWARD

- A. The awarding authority reserves the right to reject any or all bids, if it be in the public interest to do so, and to act upon the bids and make its award in any lawful manner.

1.20 MINIMUM WAGE SCHEDULE

- A. Bids shall be made on the basis of the Minimum Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of Chapter 149, Section 26 to 27D inclusive, of the Massachusetts General Laws.
- B. All Bids shall be accompanied by the Bidder's Certification regarding payment of

prevailing wage rates on the form included with the Form for General Bid.

1.21 CONFLICT OF INTEREST

- A. A bidder filing a proposal thereby certifies that the proposal is made in good faith, without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is completing solely on its own behalf without connection with, or obligation to, any undisclosed person or firm.

1.22 PROCEED ORDERS

- A. No bidder is to proceed without a proceed order as set out in the contract.

1.23 STAGING

- A. The General Contractor shall provide all the vertical access (which includes staging, vertical lifts, etc.) and hoisting for all the work of their trade. Contract includes complete coverage of all wall areas receiving work and shall provide full decks and complete access for subcontractors, as well as the Owner's Project Manager, and Architect to review the work at any time. See the General Conditions for additional information.
- B. Access to all parts of the Construction is included in the base contract, including time for the Contractor to run the rig or erect ladders if necessary. Access shall be granted to the Architect, the Owner's Project Manager, and the Clerk at any time.

1.24 CONSTRUCTION BARRICADES

- A. The General Contractor shall provide all barricades to enclose the work area to prevent unauthorized access to the site.
 - 1. The barricades shall provide enough room for all construction activities to be performed while separated from pedestrians, and staff on site.
 - 2. Safety is the sole responsibility of the Contractor and any barricades necessary to protect the work and the public shall be provided.
 - 3. Provide entrance tunnel protection.

1.25 INSURANCE

- A. Refer to Section 00 72 13 - General Conditions of the Contract, Article XIV: Insurance Requirements.
- B. The Village of Cotuit, Icon Architecture Inc., LeftField Project Management shall be listed as Additional Insured with a Waiver of Subrogation on the General Liability, Motor Vehicle, All-Risk, and Umbrella insurance policies for this project.

1.26 SITE ACCESS

- A. The General Contractor shall gain access to the site via routes approved by the Owner.
 - 1. The General Contractor as part of the bid price will restore all roads, curbs, driveways, walks and grassed or landscaped areas damaged during construction.

1.27 CONSTRUCTION OFFICE TRAILERS

- A. See Section 00 72 13 – General Conditions, Paragraph 11 for information regarding Contractor and Owner Office trailers.

1.28 BUILDING PERMIT FEES

- A. Building permit fees will not be waived for this project.

1.29 COMPLETE BID FORMS

- A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is “zero dollars” or “not applicable”. Also, please acknowledge all Addenda even if they do not pertain to your trade.

1.30 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

- A. Before a contract may be executed by the Cotuit Fire District, the successful Bidder will be required, in accordance with the provisions of M.G.L. Chapter 62C, Section 49A, to execute and file with the Town the following certificate:

“Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, I certify under the penalty of perjury that I, to the best of my knowledge and belief have filed all state tax returns and paid all the state taxes required under law.

Signature of Individual or Corporate Name

By: EXAMPLE

(Signature of Corporate Officer if applicable)

Title: _____

Social Security Number or Federal Identification Number _____

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DOCUMENT 00 41 13

FORM FOR GENERAL BID

Date: _____

Project: Demolition/ Abatement/ Site Restoration

Cotuit Elementary School
140 Old Oyster Road
Cotuit, Massachusetts

Owner: Cotuit Fire District
64 High Street
Cotuit, Massachusetts 02635

Submitted by:

Company Name (Bidder): _____

Address: _____

Telephone: _____

Contact: _____

() a corporation, organized and existing under the laws of the state of _____

() a partnership

() a joint venture

() an individual

1. **BID**

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders, and in the Bid Documents prepared by Catalyst Architecture/Interiors for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum noted below:

_____ (\$ _____.)
(written, and numerically)

We have included the Bid Security in the above Bid Sum as required by the Invitation to Bid.

2. The following Addenda (if any) have been received. The modifications to the Bid Documents noted in the Addenda have been considered and all costs are included in the Bid Sum.

Addendum No. 1, dated _____

Addendum No. 2, dated _____

Addendum No. 3, dated _____

Addendum No. 4, dated _____

Addendum No. 5, dated _____

Hard Copy Submissions Will Not Be Accepted
ELECTRONIC BID
Use form provided by Projectdog.com

3. PERFORMANCE BOND

The performance bond and payment bond shall be in an amount at least equal to one hundred percent (100%) of the contract price in accordance with Section 00 61 13 - Performance and Payment Bonds, and as stipulated in Section 00 72 13 - General Conditions and any supplemental general conditions thereto.

4. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty (60) calendar days from the bid closing date. If the Owner accepts this bid within the time stated above, we will:

- Execute the Agreement subject to compliance with the Invitation to Bid.
- Furnish the required bonds in compliance with amended provisions of the Instructions to Bidders.
- Commence work within seven (7) days after the signing of the Contract.

5. BID SECURITY DEPOSIT

Bid security is attached in the sum of five percent (5%) of the total bid in accordance with the conditions of Section 00 21 13 – Instructions to Bidders. If this bid is accepted within the time stated, and we fail to commence the Work, or we fail to provide the required Bonds, the Bid Security Deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required Bid Security Deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

6. CONTRACT TIME

If this Bid is accepted, we will achieve Substantial Completion of the Work in **Eighty-Two (82)** calendar days from receipt of the Notice to Proceed.

7. LIQUIDATED DAMAGES

In as much as time is of the essence, if we fail to achieve certification of Substantial Completion at the expiration of the agreed upon Contract Time, we acknowledge we will be assessed Liquidated Damages of **five hundred dollars (\$500.00)** for each calendar day the project continues to be in default past the Substantial Completion date.

8. GENERAL CONDITIONS

- A. The undersigned agrees that, if s/he is selected as general contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth, and satisfactory to the Awarding Authority, and each in the sum of the contract price, the

premiums for which are to be paid by the general contractor and are included in the contract price; provided however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

ELECTRONIC BID
Hard Copy Submissions Will Not Be Accepted
Use form provided by Projectdog.com

- B. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employees; and the he will comply with all laws and regulations applicable to awards made subject to section 44A.
- C. The undersigned as Bidder certifies that if this proposal is accepted, they will furnish to the Town of Avon with the invoice for the material or equipment supplied two paper copies and one pdf copy which will be provided to the emergency dispatch center of any and all Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".
- D. The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As under in this section, the work "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.
- E. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule of regulation promulgated thereunder.

9. BID FORM SIGNATURE(S)

Sincerely,

(Bidder)

(Address of Bidder)

By:

(Title - Owner*, Partner*)

(Seal, if Corporation)

By:

(If Corporation - Name and Office)

* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.

END OF DOCUMENT

DOCUMENT 00 4113

FORM FOR TRADE CONTRACTOR BID

(Insert Trade)

To all Bidders (Except those Excluded):

A. The Undersigned proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described contract documents for the project known as Cotuit Elementary School Demolition, Abatement, and Restoration of Site for the Cotuit Fire District, all the work specified in Specification Section No(s) _____ of the Project Manual and on any drawings referenced in such section, for the contract sum of:

\$(figures)

_____dollars

(words)

B. This bid includes addenda numbered _____.

C. This bid

may be used by any general bidder except:

may only be used by the following general bidders:

[To exclude general bidders, insert "X" in one box only and fill in blank following that box. Do not answer paragraph C if no general bidders are excluded.]

D. The undersigned agrees that, if they are selected as a Trade Contractor, they will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the Construction Manager, executed a subcontract in accordance with the terms of this sub-bid, and contingent upon the execution of the general contract, and, if requested so to do in the general bid by the Construction Manager, who shall pay the premiums therefor, furnish a performance and payment bond of

a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority, in the full sum of the subcontract price.

E. The names of all persons, firms and corporations furnishing to the undersigned labor or labor and materials for the class or classes or part thereof of work for which the provisions of the section of the specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on their own payroll and in the absence of a contrary provision in the specifications, the name of each such class of work or part thereto and the bid price for such class of work or part thereof are:

| Name | Class of Work | Bid Price |
|-------|---------------|-----------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

[Do not give bid price for any class or part thereof furnished by undersigned.]

F. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described contract documents and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the Awarding Authority.

G. The undersigned further agrees to be bound to the Construction Manager by the terms of the hereinbefore described contract documents, and to assume toward themselves all the obligations and responsibilities that they, by those documents, assume toward the Owner.

H. The undersigned offers the following information as evidence of their qualifications to perform the work as bid upon according to all the requirements of the drawings and project manual.

1. Have been in business under present business name _____ years.
2. Ever failed to complete any work awarded: _____ (yes/no)
3. List three or more recent buildings with names of the General Contractor and Architect on which you served as a subcontractor for work of similar character as required for the above-named building.

| Building | Architect | General Contractor | Amount of Contract |
|-----------|-----------|--------------------|--------------------|
| (a) _____ | _____ | _____ | _____ |
| (b) _____ | _____ | _____ | _____ |
| (c) _____ | _____ | _____ | _____ |
| (d) _____ | _____ | _____ | _____ |
| (e) _____ | _____ | _____ | _____ |

4. Bank reference _____

I. The undersigned hereby certifies that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that they will comply fully with all laws and regulations applicable to awards of subcontracts subject to section 44F.

J. The undersigned further agrees that, if the undersigned fails to perform their agreement to execute a subcontract with the Construction Manager and furnish a performance and payment bond as requested to do so, the bid deposit accompanying the copy of this bid filed with the Awarding Authority shall become and be the property of the Awarding Authority as liquidated damages. The undersigned understands that, if they so execute a subcontract with the Construction Manager and furnish a performance and payment bond, if requested to do so, the bid deposit will be returned within five (5) days after execution of the contract.

K. The undersigned represents that this proposal is made in good faith without fraud, collusion or connection of any kind with other bidder for the same work, that the undersigned is competing solely in their own behalf without connection with, or obligation to, any undisclosed person or corporation, that no other person or corporation has any interest in the profits of the contract, that the undersigned has read the form of contract attached hereto and is fully informed in regard to all provisions thereof and to the plans and specifications therein referred to, and that the undersigned has visited the premises described in said form of contract and made their own examination of the place where the work is to be done and of all conditions pertaining to the work, has made their own estimates and from such examination and estimate makes this proposal.

L. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

M. The Federal Social Security Identification Number of the Trade Contractor (the number used on Employer's Quarterly Federal Tax Return, US Treasury Department Form 941) is:

DATE

Sub Bidder _____
(Company Name)

By: _____
Signature of Authorized Representative

Title: _____

(Affix Seal)

Business Address: _____

City and State: _____

Telephone No. _____

END OF DOCUMENT

Hard Copy Submissions Will Not Be Accepted
ELECTRONIC BID
Use form provided by Projectdog.com

DOCUMENT 00 41 14

TRADE CONTRACTOR BID CERTIFICATIONS

- A. The undersigned further agrees that, if the undersigned fails to perform their agreement to execute a subcontract with the Construction Manager and furnish a performance and payment bond if requested to do so in the general bid by the general bidder, the bid deposit accompanying the copy of this bid filed with the Awarding Authority shall become and be the property of the Awarding Authority as liquidated damages. The undersigned understands that, if they so execute a subcontract with the Construction Manager and furnish a performance and payment bond, if requested to do so, the bid deposit will be returned within five (5) days after execution of the contract.
- B. The undersigned represents that this proposal is made in good faith without fraud, collusion or connection of any kind with other bidder for the same work, that the undersigned is competing solely in their own behalf without connection with, or obligation to, any undisclosed person or corporation, that no other person or corporation has any interest in the profits of the contract, that the undersigned has read the form of contract attached hereto and is fully informed in regard to all provisions thereof and to the plans and specifications therein referred to, and that the undersigned has visited the premises described in said form of contract and made their own examination of the place where the work is to be done and of all conditions pertaining to the work, has made their own estimates and from such examination and estimate makes this proposal.
- C. The Federal Social Security Identification Number of the Trade Contractor bidder (the number used on Employer's Quarterly Federal Tax Return, US Treasury Department Form 941) is:

D. BIDDER'S CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGES

The undersigned bidder hereby certifies, under penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Industries. The undersigned bidder agrees to indemnify the Awarding Authority for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the project work, arising out of or as a result of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the Trade Contractor, to pay laborers employed on the project the said applicable prevailing wage rates.

DATED: _____

NAME OF BIDDER: _____

BY: _____

NAME: _____

TITLE: _____

TRADE CONTRACTOR BID CERTIFICATIONS

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DOCUMENT 00 43 13

BID BOND

AIA Document A310 - Bid Bond, 2010 Edition - Electronic Format, is included, following this page, as an integral part of the Bid documents, for use in fulfilling Bid Security requirements in lieu of submitting a certified check.

END OF DOCUMENT

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Cotuit Fire District
64 High Street
Cotuit, MA

BOND AMOUNT: \$

PROJECT:
(Name, location or address, and Project number, if any)
Cotuit Elementary School Demolition, Abatement, and Site Restoration
140 Old Oyster Road
Cotuit, MA

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

the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or 04/22/2025 under Order No.4104241481 which expires on 05/21/2025, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents' Terms of Service. To report copyright violations, e-mail docinfo@aiacontracts.com.

User Notes:

(3B9ADA2C)

legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this day of ,

| | | |
|------------------|----------------------------------|---------------|
| _____ | _____ | _____ |
| <i>(Witness)</i> | <i>(Contractor as Principal)</i> | <i>(Seal)</i> |
| _____ | _____ | _____ |
| | <i>(Title)</i> | |
| _____ | _____ | _____ |
| | <i>(Surety)</i> | <i>(Seal)</i> |
| _____ | _____ | _____ |
| | <i>(Title)</i> | |

DOCUMENT 00 43 40

LABOR REGULATIONS

1. WAGE RATES

- a. The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the work shall not be less than the rate of wages in the attached "Minimum Wage Rates" as determined by the Massachusetts Deputy Director of the Department of Labor and Workforce Development.
- b. This Schedule shall continue to be the minimum rate of wages for said employees during the life of this Contract.
- c. Keep a legible copy of the Schedule posted on the site.
- d. Keep the wage rates and classifications of labor employed on this work on file so they may be available for inspection by the Awarding Authority and Architect.
- e. Apprentices employed pursuant to this determination of wage rates must be registered and approved by the Massachusetts State Apprenticeship Council wherever rates for journeymen or apprentices are not listed.
- f. Pay reserve police officers employed on the work the prevailing rate of wages paid to regular police officers as required by M.G.L. c.149, §34B, as amended; such police officers shall be covered by Workmen's Compensation Insurance and Employers Liability Insurance by the Contractor.
- g. When requested by the Awarding Authority, the Contractor and all Subcontractors shall provide certified payroll affidavits verifying compliance with M.G.L. c.149, §27, §27A, and §27B.
- h. The Contractor and all Subcontractors shall provide a Statement of Compliance within 15 days of the completion of its portion of the work; submitted to the Awarding Authority on the Form included as part of the Commonwealth of Massachusetts Department of Labor and Occupational Safety, Minimum Wage Rates, Weekly Payroll Records Report & Statement of Compliance.

END OF DOCUMENT

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DOCUMENT 00 43 43

PREVAILING WAGE RATES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Wage Rate Schedule appended to this Document following this page, obtained by the Awarding Authority for this Project, is current as published by the Commonwealth of Massachusetts, Department of Labor and Occupational Safety.
- B. The Wage Rate Schedule establishes the minimum rate per hour to be paid in compliance with requirements of Document 00 43 40, Labor Regulations.

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DOCUMENT 00 45 46

PRIME/GENERAL CONTRACTOR UPDATE STATEMENT FORM

The Massachusetts Prime/General Contractor Update Statement form is included following this page.

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SPECIAL NOTICE TO AWARDING AUTHORITY
BIDDERS' UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)

EFFECTIVE MARCH 30, 2010

Commonwealth of Massachusetts
Division of Capital Asset Management
PRIME/GENERAL CONTRACTOR
UPDATE STATEMENT
TO ALL BIDDERS AND AWARDING AUTHORITIES

A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.

Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.

AWARDING AUTHORITIES

If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability, and integrity necessary to perform the work on the project, it must reject the bid.

BIDDER'S AFFIDAVIT

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

Bid Date

Print Name of Prime/General Contractor

Project Number (or
name if no number)

Business Address

Awarding Authority

Telephone Number

SIGNATURE ⇨

Bidder's Authorized Representative

INSTRUCTIONS

INSTRUCTIONS TO BIDDERS

- This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. **MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.**
- **This Update Statement must include all requested information that was not previously reported on the Application used for your firm's most recently issued (not extended or amended) Prime/General Contractor Certificate of Eligibility. The Update Statement must cover the entire period since the date of your Application, NOT since the date of your Certification.**
- You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: www.mass.gov/dcam.
- If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
- See the section entitled "Bidding Limits" in the *Instructions to Awarding Authorities* for important information concerning your bidding limits.

INSTRUCTIONS TO AWARDING AUTHORITIES

Determination of Bidder Qualifications

- It is the awarding authority's responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder's Update Statement in making this determination. **Remember:** this information was not available to the Division of Capital Asset Management at the time of certification.
- The bidder's performance on the projects listed in Parts 1 and 2 must be part of your review. Contact the project references.
- **AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER'S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.**

Bidding Limits

Single Project Limit: The total amount of the bid, including all alternates, may not exceed the bidder's Single Project Limit.

Aggregate Work Limit: The annual value of the work to be performed on the contract for which the bid is submitted,

when added to the annual cost to complete the bidder's other currently held contracts, may not exceed the bidder's Aggregate Work Limit. Use the following procedure to determine whether the low bidder is within its Aggregate Work Limit:

Step 1 Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

Step 2 Determine the annual dollar value of the work to be performed on your project. This is done as follows:

(i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.

(ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

Step 3 Add the annualized value of all of the bidder's incomplete contract work (the total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. **The total may not exceed the bidder's Aggregate Work Limit.**

Correction of Errors and Omissions in Update Statements

Matters of Form: An awarding authority shall not reject a contractor's bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.05(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor's Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor's bid. [810 CMR 8.05(2)].

PART 1 - COMPLETED PROJECTS

LIST ALL PUBLIC AND PRIVATE *BUILDING* PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) DCAM CERTIFICATE OF ELIGIBILITY. YOU MUST REPORT ALL REQUESTED INFORMATION NOT PREVIOUSLY REPORTED ON THAT DCAM APPLICATION*.

| PROJECT TITLE & LOCATION | WORK CATEGORY | CONTRACT PRICE | START DATE | DATE COMPLETED |
|--------------------------|---------------|----------------|------------|----------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Attach additional sheets if necessary

*If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

| PROJECT TITLE | COMPANY NAME | CONTACT PERSON | TELEPHONE |
|---------------|--------------------|----------------|-----------|
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship? YES NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? YES NO

If you have answered YES to either question, explain. _____

PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE BUILDING AND NON-BUILDING *CONSTRUCTION* PROJECTS YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------------------------|---------------|---------------------|------------------------|----------------|----------------|---|---|--|
| PROJECT TITLE & LOCATION | WORK CATEGORY | START AND END DATES | ON SCHEDULE (yes / no) | CONTRACT PRICE | % NOT COMPLETE | \$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6) | NO. OF YEARS REMAINING (see note below) | ANNUALIZED VALUE OF INCOMPLETE WORK (col. 7 ÷ col. 8) (divided by) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

ANNUALIZED VALUE OF ALL INCOMPLETE CONTRACT WORK (Total of Column 9)

\$ _____

Column 8

- If less than one year is left in the project schedule, write 1.
- If more than 12 months are left in the project schedule, divide the number of months left in the project schedule by 12 (calculate to three decimal places).

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

| PROJECT TITLE | COMPANY NAME | CONTACT PERSON | TELEPHONE |
|---------------|--------------------|----------------|-----------|
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |
| | OWNER: Owner | Contact Person | Telephone |
| | DESIGNER: Designer | Contact Person | Telephone |
| | GC: GC | Contact Person | Telephone |

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? YES NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? YES NO

If you have answered YES to either question, explain. _____

PART 3 - PROJECT PERFORMANCE

For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information you provide herein must supplement the Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.].

| | YES | NO |
|--|--------------------------|--------------------------|
| 1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Has your firm failed or refused to complete any punch list work under any contract? | | |
| 4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy? | | |
| 5. Has your surety taken over or been asked to complete any of your work under any contract? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic's lien against property in connection with work performed or materials supplied under any of your contracts? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Have there been any deaths of an employee or others occurring in connection with any of your projects? | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year? | <input type="checkbox"/> | <input type="checkbox"/> |

PART 4 - Legal or Administrative Proceedings; Compliance with Laws

Please answer the following questions. Information must supplement all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) since your firm’s Application for your most recently issued (not extended or amended) Certificate of Eligibility. You must report all requested information not previously reported on that DCAM Application for Prime/General Certificate of Eligibility.

The term “administrative proceeding” as used in this Prime/General Contractor Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.).

| | YES | NO |
|---|--------------------------|--------------------------|
| 1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law? | <input type="checkbox"/> | <input type="checkbox"/> |

PART 4 - Legal or Administrative Proceedings; Compliance with Laws (continued)

| | YES | NO |
|---|--------------------------|--------------------------|
| 5. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker's compensation? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA's Web Site at www.osha.gov | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects? | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract? | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Are there any other issues that you are aware which may affect your firm's responsibility and integrity as a building contractor? | <input type="checkbox"/> | <input type="checkbox"/> |

PART 5 - SUPERVISORY PERSONNEL

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

| NAME | TITLE OR FUNCTION |
|------|-------------------|
| | |
| | |
| | |
| | |

PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued? Yes No
If YES, attach a separate page providing complete details.

PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT.

Attach here a copy of the list of completed construction projects which was submitted with your firm’s DCAM Application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. The Attachment must include a complete copy of the entire Section G – “Completed Projects” and the final page – “Certification” (Section J) containing the signature and date that the Completed Projects list (Section G) was submitted to the Division of Capital Asset Management.

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DOCUMENT 00 52 13

OWNER - CONTRACTOR AGREEMENT

COTUIT FIRE DISTRICT

**STANDARD VERTICAL CONSTRUCTION CONTRACT
For Projects Over \$100,000 Subject to M.G.L. c149, §44A -F**

Awarding Authority:

This agreement ("Contract") is made as of the __ day of __, 20__, by and between the Awarding Authority identified above with a principal place of business at ____, and , a ____ with a principal place of business at , hereinafter called the "Contractor."

Terms used in this Owner - Contractor Agreement which. are defined in the General Conditions of the Contract shall have the meanings designated therein.

The Awarding Authority and the Contractor agree as follows:

Article 1. Scope of Work. The Work under this Contract is defined as all work required by the Contract Documents for the construction of the Cotuit Fire Station Renovations/Addition Project, Contract No. _____, in accordance with and as described in the Plans and Specifications dated _____, 20__, prepared by Catalyst Architecture/Interiors as Project/Contract # _____, modified by Addenda Nos. _____, dated 20__.

Article 2. Time for Completion. The Contractor shall commence the Work under this Contract on the date specified in the written "Notice to Proceed," and shall, within _____ calendar days after such date, bring the Work to Substantial Completion and to the point at which a Certificate of Occupancy may be issued, and shall bring the Work to Final Acceptance within 45 days after the *date* specified for Substantial Completion.

Article 3. Contract Price. The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Approved Change Order(s), the Contract Price of dollars (\$ *Insert contract price*). The Unit Prices, if any, approved by the Awarding Authority are those included in the Contractor's Bid.

Article 4. Approved Subcontractors. The Trade Contractors listed in the Construction Manager's Bid submitted by the CM have been approved for the performance of the specified portions of the Work subject to the Trade Contractors verification that they have complied with state corporation and partnership registration laws. No other Trade contractors and no Sub- Subcontractors shall be used for these or any other portions of the Work without the prior written approval of the Awarding Authority.

Article 5. Certifications. Pursuant to M.G.L. c. 62(c), s.49 (a), the individual signing this Contract on behalf of the CM hereby certifies, under the penalties of perjury, that to the best of his or her knowledge and belief the CM has complied with any and all applicable state and federal tax laws. The individual signing this Contract on behalf of the CM further certifies under penalties of perjury that the CM is not presently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c. 29, s. 29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated there under and is not presently debarred from doing public construction work by any agency of the United States.

Article 6. The Contract Documents: The following documents form the Contract, are incorporated by reference herein, and are referred to as the "Contract Documents:"

- The Instructions to Bidders
- The Bid submitted by the Construction Manager.
- This Owner — Contractor Agreement
- The General Conditions of the Contract
- The Supplementary General Conditions
- The Drawings and Specifications, including Addenda identified in Article 1 above
- All Approved Change Orders issued after execution of this Owner - Contractor Agreement

Article 7. Not Used

Article 8. Liquidated Damages. For the purposes of Article VI of the General Conditions of the Contract, liquidated damages for delay shall be as follows:
\$ 500.00 per calendar day

Article 9. Additional Insurance Provisions. The insurance requirements set forth in Article XIV of the General Conditions of the Contract.

In witness whereof, the parties hereto have caused this instrument to be executed in triplicate under seal as of the date set forth above.

CONTRACTOR:

By _____
(signature and seal)

Name _____
(print name)

Title: _____
(print title)

Date: _____

AWARDING AUTHORITY:

By executing this Agreement, the undersigned authorized signatory of the Awarding Authority, who incurs no personal liability by reason of the execution hereof or anything herein contained, hereby certifies under penalties of perjury that this Contract is executed in accordance Massachusetts General Laws, further certifies under the penalties of perjury that all the applicable provisions of M.G.L. c.149, §44J, have been complied with.

By _____
(signature and seal)

Name _____
(print name)

Title: _____
(print title)

Date: _____

By _____
(signature and seal)

Name _____
(print name)

Title: _____
(print title)

Date: _____

By _____
(signature and seal)

Name _____
(print name)

Title: _____
(print title)

Date: _____

Approved as to Form:

By _____
(signature and seal)

Name _____
(print name)

Title: _____
(print title)

Date: _____

DOCUMENT 00 61 13

PERFORMANCE BOND; PAYMENT BOND

1. PERFORMANCE BOND

AIA Document A312 - Performance Bond - 2010 Edition is included, following this page, as an integral part of the Bid documents, and issues of this form, signed and executed by the successful Bidder and Surety, will be bound into the executed Contract copies of the Project Manual.

2. PAYMENT BOND

AIA Document A312 - Payment Bond - 2010 Edition is included, following this page, as an integral part of the Bid Documents, and issues of this form, signed and executed by the successful Bidder and Surety, will be bound into the executed Contract copies of the Project Manual

END OF DOCUMENT

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AIA® Document A312' 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Cotuit Fire District
64 High Street
Cotuit, MA

CONSTRUCTION CONTRACT

Date:
Amount: \$
Description:
(Name and location)
Cotuit Elementary School Demotion
140 Old Oyster Road
Cotuit, MA

BOND
Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*
Signature: _____
Name and Title:

SURETY
Company: *(Corporate Seal)*
Signature: _____
Name and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party.-)

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural

where applicable.

Init.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .J the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- 2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- 3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____
Signature: _____
(Corporate Seal)

SURETY

Company: _____
Signature: _____
(Corporate Seal)

Name and Title: _____
Address: _____

Name and Title: _____
Address: _____

User Notes:

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Document A312' - 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

Cotuit Fire District
64 High Street
Cotuit, MA

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

Cotuit Elementary School Demolition
140 Old Oyster Road
Cotuit, MA

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond:

None

See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

Signature:

SURETY

Company: *(Corporate Seal)*

Signature:

Name and
Title:

Name and
Title:

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party. ')

ADDITIONS AND DELETIONS:

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

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

Any singular reference to

Contractor, Surety, Owner or other party shall be considered plural where applicable.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

- § 5.1 Claimants, who do not have a direct contract with the Contractor,
- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 1.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

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3

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 47 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: *(Corporate Seal)*

Company: *(Corporate Seal)*

Signature:

Signature:

Name and Title: _____

Name and Title: _____

Address:

Address:

DOCUMENT 00 65 16

CONTRACTOR'S PARTIAL WAIVER AND SUBORDINATION OF LIEN
(Contractor)

(To be submitted with each application for payment)
(M.G.L. c. 254, §32)

Application for Payment No. _____

OWNER: _____

CONTRACTOR: _____

PROJECT _____

ADDRESS: _____

PROJECT: _____

LENDER/MORTGAGEE:

- 1. Original Contract Amount: \$ _____
 - 2. Approved Change Orders: \$ _____
 - 3. Adjusted Contract Amount (Line 1 plus Line 2): \$ _____
 - 4. Work Completed to Date: \$ _____
 - 5. Less Retainage: (\$ _____)
 - 6. Total Payable to Date (Line 4 less Line 5): \$ _____
 - 7. Less Previous Payments: (\$ _____)
 - 8. Current Amount Due (Line 6 less Line 7): \$ _____
- Pending Change Orders: \$ _____
- Disputed Claims: \$ _____

The undersigned Contractor, who has a contract with Owner for furnishing labor or materials, or both labor and materials, and/or rental equipment, appliances or tools for the erection, alteration, repair and/or removal of the building(s) and/or structure(s) or other improvement of real property known and identified as _____ located in _____, _____ County,

Massachusetts and owned by Owner, upon receipt of _____ Dollars (\$ _____) in payment of an invoice/requisition/application for payment dated _____ and does hereby:

- (a) waive, release, discharge and relinquish any and all liens and claims or rights of lien on such real property for labor or materials, or both labor and materials, and/or rental equipment, appliances or tools, performed or furnished through the following date:

_____ (the "payment period"), except for retainage, unpaid agreed or pending change orders, and disputed claims as stated above; and

- (b) subordinate any and all liens and claims or rights of lien to secure payment for such unpaid, agreed or pending change orders and disputed claims, and such further labor or materials, or both labor and materials, and/or rental equipment, appliances or tools, except for retainage, performed or furnished at any time through the twenty-fifth day after the end of the above payment period, to the extent of the amount actually advanced by the above lender/mortgagee through such twenty-fifth day.

The undersigned individual represents and warrants that he/she is the duly authorized representative of the Subcontractor/Supplier, empowered and authorized to execute and deliver this document on behalf of the Subcontractor/Supplier and that this document shall be binding upon the undersigned.

Signed under the penalties of perjury this ____ day of _____, 20__.

CONTRACTOR: _____

BY:

Name:

Title:

Hereunto duly authorized

COMMONWEALTH OF MASSACHUSETTS

_____ County, ss.

On this _____ day of _____, 20__, before me, the undersigned notary public, personally

appeared _____, the _____ of _____, proved to me through satisfactory evidence of identification, which was (a current driver's license) (a current U.S. passport) (my personal knowledge of the identity of the principal), to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily, in such capacity, for its stated purpose.

Notary Public

My commission expires:

DOCUMENT 00 65 19

GENERAL RELEASE AND WAIVER OF LIEN
(Contractor)

NAME: _____
(Contractor)

ADDRESS: _____

To: Cotuit Fire District Date: _____
64 High Street
Cotuit, Massachusetts 02635

Project: Cotuit Elementary School Demolition Abatement and Site Restoration
140 Old Oyster Road
Cotuit, Massachusetts 02635

We, the undersigned, in consideration of payments made to us, hereby waive and release all actions, debts, claims, and demands against _____(Contractor) and Cotuit, on account of all work, services, equipment, and materials performed or furnished by us in connection with the construction of a building, improvements, and facilities on real property owned by the Cotuit Fire District at 64 High Street and in connection with the Fire Department Headquarters, or pursuant to our contract, dated__made with the Cotuit Fire District, and amendments and change orders thereto; and

We hereby waive and release any mechanics', materialman's, or like lien, and all rights to file any such lien in the future, against said real property on account of said work, services, equipment and materials performed or furnished by us.

Date: _____

By: _____

Title: _____

(Seal)

DOCUMENT 00 65 20

GENERAL RELEASE AND WAIVER OF LIEN
(Sub-Contractor/Material Supplier)

NAME: _____
(Sub-Contractor/Material Supplier)

ADDRESS: _____

To: Cotuit Fire District Date: _____
64 High Street
Cotuit, Massachusetts 02635

Project: Cotuit Elementary School Demolition Abatement and Site Restoration
140 Old Oyster Road
Cotuit, Massachusetts 02635

We, the undersigned, in consideration of payments made to us, hereby waive and release all actions, debts, claims, and demands against _____ (Sub- Contractor) and Cotuit, on account of all work, services, equipment, and materials performed or furnished by us in connection with the construction of the building, improvements, and facilities on real property owned by the Cotuit Fire District at 64 High Street and in connection with the Fire Department Headquarters, or pursuant to our contract, dated _____ made with the Cotuit Fire District, and amendments and change orders thereto; and

We hereby waive and release any mechanics', materialman's, or like lien, and all rights to file any such lien in the future, against said real property on account of said work, services, equipment and materials performed or furnished by us.

Date: _____

By: _____

Title: _____

(Seal)

DOCUMENT 00 70 62

TAX EXEMPTION USAGE REQUIREMENTS

PART1-GENERAL

1.1 SUMMARY

- A. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Document Includes, without limitation, requirements for usage of:
 - 1. Owner's tax exemption.
- C. Tax exemption: The Owner is exempt for the payment of sales taxes on materials and products permanently incorporated into the work.
- D. Extent of Contractor responsibilities for tax exemption usage, without limitation, includes:
 - 1. Notices & verification:
 - a. Obtain from Owner their tax exempt documentation and obtain.
 - b. Complete forms required by the state Department of Revenue.
 - c. Comply with state filing and regulatory requirements.
 - 2. Records: Providing Owner with one copy of each purchase order, invoice, and receipt which used the Owner's tax exemption certificate number.
 - 3. Certification: Upon Contract completion, provide a notarized certification to the Owner stating that all purchases made under the Owner's tax exemption certificate number were legitimate, for this Contract, and entitled to the exemption.
- E. Penalties: Pay all penalties assessed by authorities having jurisdiction for the Contractor's improper or illegal use of the Owner's tax exemption certificate number.

END OF DOCUMENT

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CONTRACT DOCUMENTS

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DOCUMENT 00 72 13

GENERAL CONDITIONS

AIA Document A201, General Conditions of the Contract for Construction - 2017 Edition, is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplemented remain in full force and effect.

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AIA[®] Document A101[®] – 2017

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

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

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

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

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

Cotuit Elementary School Demolition
140 Old Oyster Rd., Cotuit, MA 02635
Demolition of existing former elementary school building and site restoration.

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

ICON Architecture
141 Tremont St.
Boston, MA 02110
Telephone Number: 617-451-3333

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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User Notes:

(3B9ADA32)

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
 - 2 THE WORK OF THIS CONTRACT
 - 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
 - 4 CONTRACT SUM
 - 5 PAYMENTS
 - 6 DISPUTE RESOLUTION
 - 7 TERMINATION OR SUSPENSION
 - 8 MISCELLANEOUS PROVISIONS
 - 9 ENUMERATION OF CONTRACT DOCUMENTS
- EXHIBIT A INSURANCE AND BONDS**

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

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

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

Init.

/

(Check one of the following boxes and complete the necessary information.)

Not later than () calendar days from the date of commencement of the Work.

By the following date:

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

| Portion of Work | Substantial Completion Date |
|-----------------|-----------------------------|
|-----------------|-----------------------------|

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be Zero Dollars and Zero Cents (\$ 0.00), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

| Item | Price |
|------|-------|
|------|-------|

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

| Item | Price | Conditions for Acceptance |
|------|-------|---------------------------|
|------|-------|---------------------------|

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

| Item | Price |
|------|-------|
|------|-------|

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

| Item | Units and Limitations | Price per Unit (\$0.00) |
|------|-----------------------|-------------------------|
|------|-----------------------|-------------------------|

§ 4.5 Liquidated damages, if any: (Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

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

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

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

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

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

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

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

§ 5.2 Final Payment

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

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

§ 5.3 Interest

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

(Insert rate of interest agreed upon, if any.)

%

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with a building information modeling exhibit, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 Building information modeling exhibit, dated as indicated below:
(Insert the date of the building information modeling exhibit incorporated into this Agreement.)

.5 Drawings

| Number | Title | Date |
|--------|-------|------|
|--------|-------|------|

.6 Specifications

| Section | Title | Date | Pages |
|---------|-------|------|-------|
|---------|-------|------|-------|

.7 Addenda, if any:

| Number | Date | Pages |
|--------|------|-------|
|--------|------|-------|

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

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:

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(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

| Title | Date | Pages |
|-------|------|-------|
|-------|------|-------|

Supplementary and other Conditions of the Contract:

| Document | Title | Date | Pages |
|----------|-------|------|-------|
|----------|-------|------|-------|

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Init.

Additions and Deletions Report for **AIA® Document A101® – 2017**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 11:59:02 ET on 02/25/2026.

PAGE 1

Cotuit Elementary School Demolition
140 Old Oyster Rd., Cotuit, MA 02635
Demolition of existing former elementary school building and site restoration.

...

ICON Architecture
141 Tremont St.
Boston, MA 02110
Telephone Number: 617-451-3333

PAGE 3

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be Zero Dollars and Zero Cents (\$ 0.00), subject to additions and deductions as provided in the Contract Documents.

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Ned Collier Principal, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 11:59:02 ET on 02/25/2026 under Order No. 2114501046 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ - 2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

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SECTION 00 72 25

SUPPLEMENTARY CONDITIONS

Amending the General Conditions of the Contract for Construction
AIA Document A201 (2017 edition)

I. SUPPLEMENTARY CONDITIONS

The following addendum supplements, modifies, deletes and/or adds to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or Subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

II. MODIFICATIONS TO VARIOUS ARTICLES OF THE AIA CONDITIONS.

ARTICLE 1 GENERAL PROVISIONS

- 1.1.1 In the first sentence, delete “are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and” after “The Contract Documents”.

Insert “between the Owner and Contractor (hereinafter the Agreement)” after “consist of the Agreement”.

In the last sentence:

Delete “Unless specifically enumerated in the Agreement”.

Delete “not” after “Contract Documents do”.

Delete “other” after “sample forms,”.

Delete “or” after “or proposal,” and insert “and”.

Delete “bidding or proposal requirements” after “relating to” and insert “those documents.”

1.1.8 Delete “Claims” and insert “claims”.

Delete “and shall not be liable for results of interpretations or decision rendered in good faith.”.

1.2.1.2 Add to the end of the sub-section:

All Work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

1.2.1 Add to the end of the sentence:

, except that the performance of filed sub-trade work shall comply with the provisions of chapter 149 of the General Laws of the Commonwealth of Massachusetts. The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the Sections of the Specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the indicated results.

1.2.4 Add the following new sub-sections 1.2.4 to 1.2.11 as follows:

-1.2.11

§ 1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

§ 1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

§ 1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in

accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

§ 1.2.8 The Mechanical, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installations will comply with the preceding sentence. A copy of the drawings shall be submitted to the Architect, and the Contractor shall revise and resubmit the drawings if so directed by the Architect.

§ 1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.

§ 1.2.10 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architects in the design of the Project or Work. The Owner does not hold out such information to the Contractor as a completely accurate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed except as provided in subparagraph 3.7.4.

§ 1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified. Owner provided drawings showing existing conditions or construction are based on available documents and are not guaranteed to show actual existing conditions.

1.5.1 Delete 1.5.1 and replace as follows:

§ 1.5.1 All Drawings, Specifications and copies thereof furnished by the Owner are and shall remain the Owner's property. They are to be used only with respect to this Project and are not to be used on any other project without the prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements

or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.

- 1.8 Delete “using or relying party’s” in Section 1.8 and replace with “Contractor’s”.

ARTICLE 2 OWNER

- 2.1.2 Delete sub-section 2.1.2.

- 2.2.1 - Delete subsections 2.2.1 through 2.2.4
2.2.4

- 2.3.5 Delete the last sentence.

- 2.3.6 Add to the end of the sub-section as follows:

All additional copies will be furnished upon request at the cost of reproduction.

- 2.4 Delete from the last sentence “, except to the extent required by Section 6.1.3” and add as follows:

The Contractor shall resume the Work after such stoppage promptly upon written notice to do so from the Owner. The Contractor shall remain responsible for maintaining the progress of the Work and shall not be entitled to any increase in the Contract Sum or Contract Time. The Contractor shall be responsible for all costs incurred by the Owner attributable to such an order to stop the Work.

- 2.5 Add to the end of the section as follows:

The rights of the Owner hereunder are in addition to any other rights set forth in the Contract Documents or available at law or in equity.

ARTICLE 3 CONTRACTOR

- 3.2.1 Delete “generally” after “the site, become”.

Add to the end of the sub-section as follows:

The Contractor shall not be entitled to any change in the Contract Time or Contract Sum on account of its failure, or that of any Subcontractor, to comply with the foregoing requirements.

3.2.2 Delete the beginning of the second sentence as follows:

These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however,

Delete the last sentence and replace as follows:

If the Contractor performs any construction activity that it knows or should know involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear responsibility for the costs of any required correction.

3.2.3 Delete “not” after “Contractor is”.

Delete “, but” after “public authorities” and create new sentence beginning with “The Contractor shall promptly”.

3.2.4 Delete “claims” after “the Contractor shall submit” and insert “a claim”.

Delete the last sentence.

3.2.5 Add new sub-section 3.2.5 as follows:

§ 3.2.5 Any claim by the Contractor or Subcontractors that, in submitting their respective bids, they did not include all items as shown in the Contract Documents will be given no consideration for an adjustment of any kind. If any item is specified in a Section which would not normally furnish this item it shall be the responsibility of the Contractor to coordinate the situation with the Subcontractor, and if the item under consideration is not to be provided by the Subcontractor it shall be the responsibility of the Contractor to provide the work in question, without any additional cost to the Owner.

3.3.1 Add to the end of the first sentence as follows:

which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall adequately staff the Project to properly and thoroughly manage, schedule and supervise all construction activities.

3.3.2 Add the last sentence as follows:

This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the Work.

3.4.3 Add to the end of the second sentence as follows:

, and the Contractor shall ensure that all workers to be employed on the Project have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) of at least 10 hours. The Contractor shall be responsible for maintaining all safety precautions at and around the Project site. On the Owner's request, the Contractor shall permanently remove from the Project site any employee of the Contractor or any Subcontractor who fails to comply with the requirements of the Contract Documents or whose presence or behavior is deemed by the Owner to be adverse to the success of the Project or the Owner's interests.

3.5 Add to the end of the first sentence as follows:

and, promptly after written notification of non-conformance, shall be repaired or replaced by the Contractor with Work conforming to such requirements.

Delete the second to last sentence.

3.5.3 Add new sub-sections 3.5.3 to 3.5.9 as follows:

-3.5.9

§ 3.5.3 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

§ 3.5.4 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in

writing of the nature of such deviations at the time the material is submitted for approval and request approval of the deviation. The Architect shall judge the design and appearance of proposed substitutes, and may refuse to approve any substitute which, in the Architect's opinion, would be out of character or otherwise inconsistent with the character or quality of design of the Project.

§ 3.5.5 In informing the Architect of deviations or substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable in accordance with the Contract Documents. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

§ 3.5.6 Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

§ 3.5.7 The warranty provided in this paragraph 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

§ 3.5.8 The Contractor shall procure and deliver to the Architect, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract Documents. Delivery by the Contractor shall constitute the Contractor's guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.

§3.5.9 The Contractor shall guarantee all Work for a period of one year after Date of Substantial Completion, or by the terms of any special guarantee required by the Contract Documents. The Contractor shall, upon written notice from the Owner, promptly correct defective Work or Work not in accordance with the Contract Documents.

3.6.1 Add new sub-section 3.6.1 as follows:

§ 3.6.1 The project is exempt from the Massachusetts Sales Tax to the extent permitted by G.L. c.64H, §6(f). The exemption number will be provided by the Awarding Authority to the Contractor.

3.7.2 Add to the end of the sub-section as follows:

If any of the Work is required to be inspected or approved by any public authority, the Contractor shall cause such inspection or approval to be performed and shall comply with any instructions or corrections ordered by the public authority.

3.7.3 Delete “knowing it” after “performs Work” and replace with “it knows or should know”.

3.7.4 Delete sub-section 3.7.4 and replace as follows:

§ 3.7.4 Concealed or Unknown Conditions. Claims for concealed or unknown conditions shall be governed by Chapter 30, Section 39N of the General Laws of the Commonwealth of Massachusetts, as amended.

3.7.5 Delete second and last sentences.

3.8 Delete section 3.8 in its entirety.

3.9.1 In the first sentence:

Insert “, in accordance with the Contract Documents,” after “shall employ”.

Insert “at all times” after “the Project site”.

3.9.4 Add new sub-sections 3.9.4 and 3.9.5 as follows:
-3.9.5

§ 3.9.4 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

§ 3.9.5 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time to time wish to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including

costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives.

3.10.1 In the first sentence delete “promptly” after “The Contractor” and replace with “within twenty (20) days”.

In the second sentence, insert “or as requested by the Architect” after “conditions of the Work and Project”.

Add to the end of the sub-section as follows:

The construction schedule shall be in such form and contain such information as the Architect and Owner require. The construction schedule shall be resource loaded for the Contractor and all subcontractors, with each resource identified by name, description, unit of measure, and calendar assignment. For each class of work included in the Contractor’s schedule of values, the construction schedule shall show the percentage of completion to be obtained and the total dollar value of the work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of work in place, but not including the value of materials delivered but not in place.

3.10.3 Add to the end of the sub-section as follows:

The Contractor’s compliance with the construction schedule is a material obligation of the Contract.

3.10.4 Add new sub-sections 3.10.4, 3.10.5, and 3.10.6 as follows:

-3.10.6

§ 3.10.4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The construction schedule shall be updated every month (or more frequently if requested by the Owner) to reflect actual conditions (such updates are sometimes referred to in these General Conditions as "progress reports"). In the event any progress report indicates delays in achievement of any milestone date set forth in such schedule, the Contractor shall propose in written form an affirmative plan (the "Recovery Schedule") to correct the delay, including overtime and/or additional labor, if necessary, which Recovery Schedule shall indicate the date by which the progress of the Work will comply with the construction schedule, and shall be subject to the approval of the Owner and the Architect. In no event shall any progress report or Recovery Schedule constitute an adjustment in the construction schedule, Contract Time or any milestone date unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 In the event (i) that the performance of the Work, as of a milestone date, has not progressed or reached the level of completion required by the construction schedule, and (ii) the progress of the Work is not brought back into compliance with the construction schedule on the date proposed by the Recovery Schedule, or the Contractor otherwise fails to comply with the Recovery Schedule, the Owner shall have the right to order the Contractor to take corrective measures to expedite the progress of the Work, including, without limitation, (1) supplying additional manpower, equipment, and facilities, (2) working additional shifts or overtime, (3) working additional days, and (4) other similar measures (hereinafter referred to collectively as "Corrective Measures"). Such Corrective Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents.

§ 3.10.6 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Corrective Measures required by the Owner under or pursuant to Section 3.10.5. The Owner may exercise the rights furnished the Owner under or pursuant to Section 3.10.5 as frequently as reasonably necessary to ensure that the Contractor's performance of the Work complies with the milestone dates set forth in the construction schedule.

3.12.6 Add to the end of the sub-section as follows:

By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.12.10 Add to the end of the last sentence as follows:

, except as provided in Section 3.2.

3.12.10.2 Add to the end of subsection 3.12.10.2 the following:

When professional certification of materials, systems or equipment is required by the Contract Documents, the Owner shall be entitled to rely

upon such certifications, and neither the Owner nor the Architect shall be expected to make an independent examination with respect to the performance of such materials, systems or equipment.

3.13 Add to the end of the section as follows:

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Owner shall not be liable to the Contractor, the Subcontractors, their employees, or anyone else with respect to the conditions of the premises, except only for a condition caused directly and solely by the negligence of the Owner.

3.15.1 Add “site” to the end of the second sentence.

3.15.2 Add to the end of the sentence as follows:

, and may deduct all costs thereof from any payment due the Contractor.

3.16 Insert “, Owner’s representatives” after “provide the Owner”.

3.18.1 Delete the first sentence and replace as follows:

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

ARTICLE 4 ARCHITECT

4.1.2 In the first sentence delete “, Contractor” after “consent of the Owner”.

In the second sentence insert “of the Owner” after “Consent”.

- 4.1.3 Delete sub-section 4.1.3.
- 4.2.3 In the first sentence delete “reasonably” after “will keep the Owner”.
- 4.2.4 Delete the second sentence.
- 4.2.10 Delete sub-section 4.2.10.
- 4.2.11 Add to the end of the sub-section as follows:

The parties agree that the Architect’s duties under this subparagraph shall be governed by Chapter 30, Section 39P of the General Laws of the Commonwealth of Massachusetts, as amended.

- 4.2.12 Delete the second sentence.

ARTICLE 5 SUBCONTRACTORS

- 5.2.1 Delete the last sentence.
- 5.2.2 In the second sentence insert “and legally permissible” after “has made reasonable”.
- 5.2.3 Delete the last two sentences and replace as follows:

No increase in the Contract Sum or Contract Time shall be allowed for such change.

- 5.2.4 Add to the end of the sub-section as follows:

The applicable provisions of Chapter 149, Section 44F of the General Laws of the Commonwealth of Massachusetts shall apply to filed sub-bid subcontractors.

- 5.4.1 In sub-heading .1 delete “Section 14.2” and replace with “Article 14”.

Add new sub-heading .3 as follows:

.3 The Owner may further assign the subcontract to a successor contractor or other entity.

Delete last sentence of sub-section.

- 5.4.2 Delete sub-sections 5.4.2 and 5.4.3.
- 5.4.3

ARTICLE 6 CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

6.1.1 At the end of the second sentence delete “including those provisions of the Conditions under the Contract related to insurance and waiver of subrogation”.

6.1.4 Delete sub-section 6.1.4 and replace as follows:

§ 6.1.4 The Owner reserves the right to enter any part of the Project site at any time to inspect the Work or to perform other work with its own forces or separate contractors, or to address any emergency situation. Such access is not to be construed to mean partial occupancy by the Owner and no claim for increase in the Contract Time or Sum will be considered unless such Owner’s contractors have delayed or damaged the Contractor’s Work. The Contractor shall permit the Owner to place and install as much furniture, equipment and other material during the progress of the Work as is possible before completion of the various parts of the Work and agrees that such placing and installation of equipment shall not in any way evidence the completion or acceptance of the Work or any portion of it.

6.2.2 Delete the last sentence.

6.2.3 Delete the last sentence.

6.2.5 Delete sub-section 6.2.5.

ARTICLE 7 CHANGES IN THE WORK

7.2.2 Add new sub-section 7.2.2 as follows:

§ 7.2.2 Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of material, and the number of hours of work and hourly rate for each class of labor, as well as a description and the amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of material shall be shown if required by the Architect. The Contractor shall promptly revise and resubmit each estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishing any material

included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the Contractor's expense. The Contractor shall state in the estimate any extension of time required for the completion of the Work if the change or extra work is ordered.

7.3.3 Delete the first sentence of the sub-section and replace as follows:

If the Construction Change Directive provides for an adjustment to the Contract Sum, and if the Contract Documents include a unit price for the work that is the subject of such directive, such unit price shall be the basis of the adjustment to the Contract Sum, unless the Owner, in its sole discretion, chooses another method. If, however, the Contract Documents do not include a unit price for such work, the adjustment shall be based on one of the following methods, as selected by the Owner:

In sub-heading .2 delete “stated in the Contract Documents or” after “Unit prices”.

7.3.4 Delete first sentence and replace as follows:

If the proposed method of adjustment in the Contract Sum is based on unit prices that are stated in the Contract Documents, such unit prices shall be the basis of any adjustment to the Contract Sum, unless the Owner has chosen another method pursuant to subparagraph 7.3.3. If the proposed method of adjustment is not based on such unit prices and the Contractor objects to the proposed method of adjustment, the Contractor must notify the Architect of such objection in writing within five (5) calendar days from Contractor’s receipt of the Construction Change Directive. Failure to so object will irrevocably waive any such objections and claims on account of such method of adjustment, and the Construction Change Directive shall be deemed and shall constitute a Change Order. If the Contractor does so object, the adjustment to the Contract Sum shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit.

In sub-heading .4 insert “and” after “and insurance,” and delete “, and sales, use or similar taxes related to the Work” after “permit fees”.

Delete sub-heading .5 and replaces as follows:

.5 A reasonable allowance for overhead and profit.

7.3.6 In the first sentence add after “the Work involved and” as follows:

, within five (5) calendar days from receipt of the Construction Change Directive,”

Insert “by written notice” after “advise the Architect”.

Add to the end of the sub-section as follows:

Failure to so advise the Architect within such 5-day period (1) shall be interpreted as Contractor’s agreement with the proposed method of adjustment; (2) shall constitute an irrevocable waiver of any right of the Contractor to submit a claim on account of the method of adjustment; and (3) shall cause the Construction Change Directive to be deemed and constitute a Change Order.

7.3.7 In the second sentence delete “recorded as” after “immediately shall be” and replace with “deemed and shall constitute”.

7.3.9 Delete the end of the first sentence starting after “Directive to the Owner,” and replace as follows:

amounts for such changes in the Work shall not be included in Applications for Payment. Such amounts shall only be included in an Application for Payment after the adjustment for the Construction Change Directive has been included in a Change Order signed by the Owner and the Contractor.

ARTICLE 8 TIME

8.2.2 In the first sentence delete “, except by agreement or instruction of the Owner”

8.2.4 Add new sub-sections 8.2.4 and 8.2.5 as follows:

-8.2.5

§ 8.2.4 Unless specifically required by law, no payment under this Contract shall be due until the construction schedule, required by Section 3.10, and conforming to the requirements of the General Requirements has been accepted by the Architect.

§ 8.2.5 If the Architect in reviewing any Application for Payment determines that the amount of completed Work in place as certified by the Architect is less than 90% of the Work in place required by the Contractor’s construction schedule or schedule of values provided for in Section 9.2, or that there have been delays to critical paths and the Contract completion date will not be met, or that, in the Owner’s sole discretion, there is reasonable concern that the Work will not be

Substantially Complete by the date required in the Contract Documents, the Contractor shall be required to submit a recovery schedule with a written description of the steps the Contractor intends to take to put the Project back on schedule. At the Owner's option, the Contractor shall take some or all of the following actions at no additional cost to the Owner:

- .1 Increase the number of workers on the site, in such quantities and trades as will substantially eliminate the backlog of work;
- .2 Increase the number of working hours per shift, shifts per day, working days per week, amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate backlog of work; or
- .3 Reschedule activities so that the completion dates initially scheduled will be met.

8.3.1 Insert "(except weather)" after "casualties" and delete "adverse weather conditions documented in accordance with Section 15.1.6.2"

Delete "pending mediation and binding dispute resolution" after "delay authorized by Owner".

Add to the end of the sub-section as follows:

, and this shall be the Contractor's sole remedy for such delay. Under no circumstances will the Contractor be entitled to an increase in the Contract Sum, or to any other damages, on account of or in connection with any delay, regardless of the cause of such delay, and Contractor agrees not to make any claim for such damages, including, but not limited, claims for damages on account of having to perform out-of-sequence work, claims for damages on account of loss of production, and claims for damages on account of hindrances or interference with the work.

8.3.3 Delete sub-section 8.3.3.

8.3.4 Add new sections 8.3.4 and 8.3.5 as follows:

-8.3.5

§ 8.3.4 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

§ 8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any

hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise, except as and to the extent expressly provided in G.L. c. 30, §39N. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

8.4 Add new section 8.4 as follows:

§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 It is expressly understood and agreed, by and between the Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of same, taking into consideration the average climatic range and usual industrial and/or residential conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the Work within the times herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner \$500.00, not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated for completing the Work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be deducted by the Owner from periodic payments.

ARTICLE 9 Payments and Completion

9.1.2 Delete subsection 9.1.2 and replace with the following:

§9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that, in the opinion of the Architect, application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner, the applicable unit prices shall be equitably adjusted.

9.2 Add to the end of the section as follows:

, and shall be revised if later found by the Architect to be inaccurate. In addition, the Contractor shall submit to the Architect, at least 14 days before the first Application for Payment, a Cash Flow Schedule that shows the percentage completion to be obtained and the total dollar value of Work to be completed as of the first of each month until Substantial

Completion. All calculations in the Cash Flow Schedule shall be on the basis of Work in place and shall exclude the value of materials delivered but not in place.

9.2.1 Add new sub-section 9.2.1 as follows:

§ 9.2.1 The Cash Flow Schedule shall be based on an orderly progression of the Work allowing adequate time for each operation (including adequate time for submission and review of submittals) and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Cash Flow Schedule will be reviewed by the Architect for compliance with the requirements of the Contract Documents. Unless specifically required by law, no payment under this Contract shall be due until the Cash Flow Schedule has been reviewed and approved by the Architect. The Architect's review of the Cash Flow Schedule shall not impose any duty on the Architect or the Owner with respect to the timing, planning, scheduling or execution of the Work. In particular if the Contractor proposes a Cash Flow Schedule indicating a date of Substantial Completion which is earlier than the Contract Time the Contractor shall not be entitled to additional payment or compensation of any kind if for any reason the full Contract Time is required to achieve Substantial Completion of the Work.

9.3.1.1 Delete sub-section 9.3.1.1.

9.3.2 Add to the end of the sub-section as follows:

The Owner may deduct the amount of such costs from payments due the Contractor.

9.4.1 Insert at the beginning of the first sentence as follows:

Subject to the Contractor's compliance with Section 9.3 and the provisions of Section 9.6,

9.5.1 Add new sub-headings .8, .9, .10, .11, and .12 as follows:

.8 failure of the Contractor or mechanical or electrical trade subcontractors to comply with requirements of the General Requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition;

.9 failure of the Contractor to provide required warranties under Section 9.3, claims for direct payment, or reasonable evidence indicating probable filing of such claims;

- .10 costs incurred by the Owner under Section 10.2.5;
- .11 failure of the Contractor to submit prerequisite documentation required by the General Requirements; or
- .12 liquidated damages due the Owner pursuant to Section 8.4.

9.5.2 Delete “Claim” and replace with “claim”.

9.5.3 Delete sub-section 9.5.3.

9.6.4 Delete “If the Contractor fails to furnish such evidence within seven days,” from the beginning of the second sentence.

9.6.5 Delete sub-section 9.6.5.

9.6.7 Delete sub-section 9.6.7.

9.6.9 Add new sub-section 9.6.9 as follows:

§ 9.6.8 Notwithstanding the provisions of Section 9.6 all progress payments shall be made in accordance with Chapter 30, Sections 39F, 39G and 39K (as appropriate) of the General Laws of the Commonwealth of Massachusetts, as amended.

9.7 Delete section 9.7.

9.8.1 Add to the end of the sub-section as follows:

In addition, Substantial Completion for the entire Project shall be achieved only when: (1) the Owner has beneficial occupancy and use of the entire Project for all its intended uses; (2) all Project systems included in the Work are operational and acceptable to the Owner; (3) all governmental inspections for the Project have been successfully completed, all governmental approvals and related paperwork have been delivered to the Owner, and final and unconditional certificates of occupancy for the entire Project have been delivered to the Owner, (4) the only remaining Work to be performed is minor in nature and the remaining Work may reasonably be performed without having a material adverse effect on or materially interfering with the Owner’s occupancy and use of the Project and (5) all prerequisites to Substantial Completion defined in the Contract Documents have been completed.

9.8.2 Add to the end of the first sentence as follows:

together with the estimated value of completing or correcting such items (the “Punchlist”) and (2) the permits and certificates referenced in Section

13.5. The Architect shall have the right to modify and supplement the Punchlist, including the estimated value of completion or correction.

9.8.5 Delete sub-section 9.8.5 and replace as follows:

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor by the Architect. The certificate shall state the date of substantial completion, shall state any consequent responsibilities of the Contractor and the Owner in accordance with the Contract Documents. The Contractor shall complete and correct any incomplete and defective work within forty-five (45) calendar days from the date of Substantial Completion

9.8.6 Add new sub-section 9.8.6 as follows:

§ 9.8.6 Services provided by the Architect to conduct more than three (3) inspections of completed Work and any inspections beyond sixty (60) days after the date of substantial completion of any portion of the Work as stated in the Agreement shall be paid by the Contractor to the Owner. The Owner may deduct the cost of such services and inspections from payments due the Contractor.

9.9.1 Delete the end of the first sentence starting after “Work at any stage”.

Delete the second sentence and replace as follows:

Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner has accepted in writing the responsibilities assigned to it and the Contractor for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance.

Delete the second to last sentence.

9.10.1 Add to the end of the sub-section as follows:

By Final Completion, the Contractor shall have completed its performance of all Punchlist items, completed all balancing of mechanical and other applicable systems and all seasonal system adjustments that are reasonably necessary to proper functioning of the completed Project, delivered to the Owner all operations and maintenance manuals and completed related training for such manuals, and delivered to the Owner all required warranties and guarantees.

9.10.3 Delete sub-sections 9.10.3 and 9.10.4.

-9.10.4

9.10.5 Insert “for payment for Work performed and of all other claims of which the payee knew or should have known at the time of final payment,” after “claims by that payee”

9.10.6 Add new sub-section 9.10.6 as follows:

§ 9.10.6 Notwithstanding anything in the Contract Documents to the contrary, final payment shall be made in accordance with the requirements of G.L.c.30, §39K (building projects) or §39G (public works projects), as amended.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.2.1 Add new sub-heading .4 as follows:

.4 work or property of the Owner, its tenants, or other parties at or near the Project site with the Owner's permission.

10.2.5 At the beginning and end of the first sentence:

Delete “and” after “10.2.1.2”.

Insert “and 10.2.1.4” after “10.2.1.3”.

Delete the second sentence in its entirety.

10.2.9 Add new sub-sections 10.2.9, 10.2.10, 10.2.11, 10.2.12, and 10.2.13 as follows:
-10.2.13

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

§ 10.2.10 The Contractor shall at all times protect excavations, trenches, buildings and materials from rain water, groundwater, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

§ 10.2.11 The Contractor shall remove snow and ice which might result in damage or delay.

§ 10.2.12 During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat, ventilation, and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises. The use of the permanent heating and/or ventilation systems for temporary heat and/or ventilation shall be subject to the prior written approval of the Owner and Architect.

§ 10.2.13 [G.L. c.149, §44F(1)] The Contractor shall install weather protection and furnish adequate heat in the protected area from November 1 to March 31.

10.3.1 Delete the second sentence and replace as follows:

The Contractor shall not cause or permit any introduction onto, under, or near the Owner's property of any hazardous materials or substances as defined by any applicable law, and shall not cause or permit any release, discharge, transportation, storage, or disposal of such materials or substances onto, under, or near the Owner's property or areas near the Owner's property. If the Contractor encounters or recognizes on the site any material known or reasonably believed to be hazardous, including but not limited to asbestos or polychlorinated biphenyl (PCB), the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Architect in writing. The Contractor and the Owner shall cooperate in implementing measures to remove or contain said material and the Contractor shall comply with all directions of the Architect in the implementation of such removal or containment.

10.3.2 Delete sub-sections 10.3.2, 10.3.3, and 10.3.4.

10.3.5 Delete the remainder of the sentence starting after "obligations under" and replace as follows:

Article 10 or for any violation of applicable law related to the Contractor's noncompliance with the provisions of this Article 10.

10.3.6 Delete sub-section 10.3.6.

10.3.7 Add new sub-section 10.3.7 as follows:

§ 10.3.7 The parties anticipate that certain hazardous substances and/or materials may be discovered at the site. When such conditions are set forth in the Contract Documents, the Contractor acknowledges that such conditions have been considered in establishing the Contract Time and

Contract Sum. No extension of the Contract Time or increase in the Contract Sum shall be claimed or allowed with respect to any hazardous substances or materials located at the site which were disclosed in the Contract Documents. The Contractor shall strictly comply with all laws, regulations, rules, orders, ordinances and the like related to the excavation, storage, removal and disposal of any such hazardous substances or materials.

ARTICLE 11 INSURANCE AND BONDS

11.1.1 In the last sentence insert “the Owner’s Project Manager,” after “The Owner,”.

Add the following new paragraphs to the end of Section 11.1.1:

The insurance required by this Agreement shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

All insurance shall be written on an occurrence basis, unless the Owner approves in writing coverage on a claims-made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and any further period during which coverage is required to be maintained after final payment by the Contract Documents. The Owner shall be named an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner and authorized to do business in Massachusetts. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work.

11.1.2 Delete subsection 11.1.2 and replace with the following:

§11.1.2 Contractor shall provide Performance and Payment Bonds, each in the amount of 100% of the Contract Price, and each by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and acceptable to the Owner. The attorney-in-fact who signs the bonds on behalf of the surety, must affix to each bond a certified and current copy of the power of attorney. The Performance and Payment Bonds shall be written in a form satisfactory to the Owner.

11.1.5 Add new sub-section 11.1.5:

§ 11.1.5 In no case shall the limits of liability be less than the following:

Contractor's Commercial General Liability

| | |
|------------------------------------|--|
| Bodily Injury & Property Damage | \$500,000.00 each occurrence \$1,000,000.00 general aggregate, per project |
|------------------------------------|--|

This policy shall include coverage relating to explosion, collapse, and underground property damage if blasting operations constitute part of the Work to be performed under this Contract.

Vehicle Liability

The Contractor shall provide the following minimum coverage with respect to the operations of any employee, including coverage for owned, non-owned, and hired vehicles:

Combined Single Limit: \$1,000,000.00

Worker's Compensation

The Contractor shall provide the following coverage in accordance with M.G.L. c. 149, sec. 34A and M.G.L. c. 152 as amended, unless a higher coverage is specified below:

| | |
|----------------------------------|--|
| Part One Employer's Liability | Provide Statutory Minimum \$500,000.00 each accident |
| Part Two | \$500,000.00 disease per employee \$500,000.00 disease policy aggregate |

11.1.3.1 The Contractor shall be responsible for having acceptable insurance coverage provided by or on behalf of all Subcontractors, with such insurance to be similar to that required of the Contractor under the Agreement and these General Conditions. The Contractor shall not allow any Subcontractor to commence Work on the Project prior to the Contractor's receipt of certificates of insurance that are acceptable in form and limits to the Owner; the Owner shall have no obligation to pay the Contractor for any Work performed by a Subcontractor who has not supplied acceptable insurance certificates prior to starting its Work. The Owner shall be named an additional insured on all such certificates.

11.1.3.2 All insurance policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner and other specified additional insureds for liability arising out of or resulting

from the Contractor's operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

11.2 Delete section 11.2 and replace as follows:

§ 11.2 OWNER'S LIABILITY INSURANCE

The Contractor shall procure and pay for an Owner's policy of Owner's protective liability insurance insuring the Owner and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

11.2.1 Delete sub-section 11.2.1 and replace as follows:

§ 11.2.1 The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work. Such insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim. The policy shall contain a provision that coverages afforded under policies will not be canceled or allowed to expire until at least 30 days' written notice has been given to the Owner. The Owner shall be named insured within the policy.

11.2.3 Delete sub-section 11.2.3.

11.3 - Delete Sections 11.3 and 11.4 in their entirety.

11.4

11.5.1 Delete the first sentence.

11.5.2 Delete sub-section 11.5.2

11.6.11 Add new sub-section 11.6.1 as follows:

§ 11.6.11 The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

Upon the occurrence of an insured loss, the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.2.1 Add to the end of the sub-section as follows:

The Contractor shall bear the cost of any loss or damages to the Owner resulting from such failure or defect.

12.2.2.1 Delete the third sentence.

Add to the end of the sub-section as follows:

If the correction or repair of any of the Work is required to avoid impacts to the maintenance, operation or safety of any portion of the Project site or the Owner's property, the Owner reserves the right to undertake the repairs prior to notifying the Contractor or without waiting for the Contractor to respond, without waiving the Owner's rights under the warranties and the Owner's right to correct work under Section 2.4.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 Delete the the words "by the law of", and insert the words "Commonwealth of Massachusetts" at the end of the sentence as revised.

Delete the second sentence.

13.2.1 In the second sentence delete "Except as provided in Section 13.2.2".

13.2.2 Delete sub-section 13.2.2.

13.4.4 Delete sub-section 13.5.4 and replace as follows:

§ 13.5.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the

Architect shall be a condition precedent to Substantial Completion of the Work.

13.7.1 Add new sub-section 13.7.1 as follows:

§ 13.7.1 It is expressly agreed that the obligations of the Contractor hereunder arise out of contractual duties, and that the failure of the Contractor to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

13.8 Add new section 13.8 as follows:

§ 13.8 LIMITATION OF LIABILITY

§ 13.8.1 The Owner shall be liable, if ever, only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of the Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights and obligations under a Subcontract.

13.9 Add new section 13.9 as follows:

§ 13.9 DEFENSE OF SUITS

§ 13.9.1 The Contractor shall be responsible for, shall defend and pay all costs, attorneys' fees and liabilities both direct and indirect as a result of suits arising out of this Contract.

§ 13.9.2 Neither final acceptance nor occupation of the premises by the Owner shall relieve the Contractor of responsibility for all claims for labor, materials, and equipment arising out of this Contract.

§ 13.9.3 The Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1.1 Insert in the beginning of the first sentence as follows:

Provided that the Contractor is not in breach of any of its obligations under the Contract,

Delete sub-headings .1, .2, and .4.

14.1.2 Delete sub-section 14.1.2.

14.1.3 Delete sub-section 14.1.3 and replace as follows:

§ 14.1.3 If one of the above reasons exists, the Contractor may, upon seven days written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. The payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interest.

14.1.4 Delete sub-section 14.1.4.

14.2.1 Delete “repeatedly” from the beginning of sub-headings .1 and .3.

Insert new sub-headings .4 and .5 after sub-heading .3 as follows:

.4 becomes the subject of a voluntary petition in bankruptcy or any voluntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors or becomes the subject of an involuntary petition in bankruptcy or any involuntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors.

.5 submits three successive Applications for Payment, each of which indicate that the actual Work completed is less than 90 percent of the values estimated in the construction schedule (submitted by the Contractor pursuant to Section 3.10.1) to be completed by the respective dates.

14.2.2 In the first sentence delete “, and upon certification by the Architect that sufficient cause exists to justify such action,”.

Delete the second sentence of sub-heading .3.

14.2.4 In the first sentence:

Insert “all costs and losses incurred by the Owner on account of the Contractor’s failure to comply with the Contract Documents and” after “the Work, including”.

Insert “and Owner’s Project Manager’s” after “for the Architect’s”.

Delete the last sentence of the sub-section and replace as follows:

The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner’s damages have been established, and to apply such amounts to such damages.

14.3.2 Insert “, subject to compliance with the conditions of Section 8.3.” at the end of the first sentence.

Delete the second sentence.

14.4.2 In sub-heading .3 delete “and” after “all existing contracts” and replace with “except for subcontracts, if any, that Owner elects to assume, terminate all”

14.4.3 Delete sub-section 14.4.3 and replace as follows:

§ 14.4.3 In the event that the Contract is terminated for the Owner’s convenience, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work properly performed up to the termination date, and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. Payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner’s title to such material or equipment or otherwise protect the Owner’s interest. The Contractor shall not be entitled to payment for overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

15.1.1 Delete sub-section 15.1.1 and replace as follows:

§ 15.1.1 DEFINITION

The word “Claim” shall mean a written demand by the Contractor for an increase in the Contract Time or the Contract Sum. The Contractor is responsible for substantiating its Claims. The word “Claim” shall not include claims by the Owner. The Owner may withhold from the Contractor the value of any claims against the Contractor in accordance

with Massachusetts General Laws, including, but not limited to, Sections 39G and 39K of Chapter 30.

15.1.2 Delete subsection 15.1.2

15.1.3 Delete sub-section 15.1.3 and replace as follows:

§ 15.1.3 NOTICE OF CLAIMS

Contractor must initiate Claims within fourteen (14) calendar days after occurrence of the event giving rise to such Claim by written notice to the Architect and the Owner. Such written notice must (1) be signed by the Contractor; (2) conspicuously identify on its face that the notice serves as a notice of claim; (3) explain in sufficient detail the basis of the Claim; (4) identify the date of the event giving rise to such Claim; and (5) state the exact dollar amount of the increase in the Contract Sum being requested, if any, and the number of days extension to the Contract Time sought, if any.

15.1.3.2 Delete subsection 15.1.3.2

15.1.4 Delete “Section 9.7 and” after “as provided in”.

15.1.4.2 Delete subsection 15.1.4.2

15.1.6.1 In the second sentence delete “of cost and” after “include an estimate”.

15.1.6.2 Delete sub-section 15.1.5.2.

15.1.7 Delete sub-section 15.1.7.

15.2.1 Delete the capitalized word, “Claim,” and replace with lower-case word, “claim,” in the first and fourth sentences.

In the third sentence:

Delete “mediation” after “condition precedent to” and replace with “litigation”.

15.2.2 Delete sub-section 15.2.2 and replace as follows:

§ 15.2.2 The Initial Decision Maker will review Claims and within 30 days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the Contractor; (2) notify the Contractor that the Initial Decision Maker requires additional time to resolve the Claim; and/or (3) reject the Claim in whole or in part.

15.2.3 Delete the last sentence.

15.2.4 Delete sub-section 15.2.4 and replace as follows:

§ 15.2.4 If the Architect requests the Contractor to furnish additional supporting data in connection with a Claim, the Contractor shall provide such data within ten (10) calendar days of such request. If the Contractor is of the opinion that it is impossible to provide such data within such time, the Contractor shall notify the Architect of such opinion in writing within such ten-day period. If the Architect determines that it is impossible for such data to be provided within such ten-day period through no fault of the Contractor, the Contractor shall provide such data within 30 calendar days of the Architect's request, unless the Architect fixes another date, in which case the data must be submitted by the date so fixed. Failure of the Contractor to provide such data within the time prescribed herein shall result in the irrevocable waiver of the Claim.

15.2.5 Delete the last sentence and replace as follows:

The rejection of a claim by the Architect and any decisions of the Owner with respect to the same, and the interpretations by the Architect of the plans, drawings and specifications, shall be final and binding on the Contractor in accordance with Section 39J of Chapter 30 of the Massachusetts General Laws.

15.2.6 Delete sub-section 15.2.6 in its entirety.

15.2.7 Delete the capitalized word, "Claim," and replace with lower-case word, "claim," in the first and second sentences.

15.2.8 Delete sub-section 15.2.8.

15.3 Delete sections 15.3 and 15.4 in their entirety.

-15.4

EXHIBIT A to Document A101 – 2017 is hereby deleted in its entirety and replaced with the Insurance Requirements set forth in the General Conditions and Supplementary Conditions.

END OF SECTION

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SUPPLEMENTARY TO THE GENERAL CONDITIONS

Supplementary of the General Conditions of the Contract for Construction - 2017 Edition, is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplemented remain in full force and effect.

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SUPPLEMENTAL GENERAL CONDITIONS

00 07 25

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications. The following items modify, change, delete from or add to the General Conditions. All provisions of the Contract Documents that are not so amended or supplemented remain in full force and effect.

1.2 SUPPLEMENTAL REQUIREMENTS

A. SITE LOGISTICS

1. Access

- a. Subcontractor has acknowledged Dellbrook | JKS's Construction Management Plan (CMP) and logistics plan as they may develop and will abide by the conditions of the plan.
- b. NO SMOKING WILL BE ALLOWED ANYWHERE ON THE SITE - ANY WORKER CAUGHT SMOKING IN ANY LOCATION ON CAMPUS WILL BE PERMANENTLY DISMISSED FROM THE PROJECT SITE AND WILL NOT BE ALLOWED TO RETURN. VAPING OR SIMILAR ACTIVITIES ARE TO BE TREATED THE SAME AS SMOKING.
- c. No inappropriate and/or foul language.
- d. No use of radios
- e. No use of toilets inside the buildings on campus. Temporary toilets will be provided by Dellbrook | JKS.
- f. Employees must wear monogram clothing and/or badges at all times clearly identifying their employer. Subcontractor will wear (1) uniform color hard hat. Hard hat must bear identification sticker issued during Dellbrook|JKS safety orientation.
- g. Foreman and Project Manager must be fluent in English.

2. Work Hours

- a. Work hours will be from 7:00am to 4:00pm, Monday through Saturday. Saturday work hours shall be provided at the discretion of Dellbrook|JKS. In the event that subcontractor fails to maintain schedule, Dellbrook|JKS reserves the right to direct subcontractor to work extended hours (longer days or weekends) at no additional cost to the project. In the event that subcontractor is directed to work additional hours at no expense the project, Dellbrook|JKS reserves the right to pass along direct or indirect premium time costs for additional supervision or testing/inspections costs that may be received. No work shall take place on Sunday or legal holidays unless previously authorized. No equipment or machinery generating detectable noise shall be turned on before 7:00 AM.
- b. Subcontractors will not be allowed to determine their own work schedules (i.e. working Monday thru Thursday, 10 hour days is NOT permitted) unless there are

unique circumstances such as inclement weather, etc. Changes to the work schedule will be evaluated on a case by case basis and will only be allowed with written permission of Dellbrook | JKS.

3. Neighbors
 - a. The Subcontractor will be sensitive to the close proximity of neighbors and will accommodate reasonable requests. Any access to occupied spaces must be coordinated through the Dellbrook | JKS Superintendent.
4. Parking
 - a. Subcontractor's employees, subcontractors, and agents are alerted to the fact that parking on site may be limited.
5. Deliveries
 - a. All material and equipment deliveries are to be closely coordinated with the Dellbrook | JKS Project Superintendent and will require minimum forty-eight (48) hour notice. Deliveries shall be between the hours of 8:00AM to 2:00PM to limit impact on traffic or disruption to residents. Idling of delivery or construction vehicles and/or blocking traffic along Buttermilk Way and/or Tower Lane is not permitted. All deliveries shall be made coming from Academy Drive, then via Tower Lane and to the Site. No deliveries shall be made via the Taylor's Point Neighborhood, Buttermilk Way, and other roads within the Neighborhood.
6. Staging Areas
 - a. Coordinate locations of temporary shanties and toolboxes, if allowed, with the Dellbrook | JKS Superintendent.
 - b. Coordinate storage requirements with Dellbrook | JKS's Superintendent. There will be limited ground storage. Minimal exterior lay-down and staging areas may be available and written approval by the Dellbrook | JKS Superintendent is required.
 - c. Storage of materials on the site is not allowed unless approved Dellbrook | JKS Superintendent. Subcontractor shall assume all responsibility for any additional structural reinforcing requirements due to Subcontractor's stockpiling of material and equipment location. Any costs for the same shall be included in the Subcontract. The subcontractor shall return all unused material to the stockpiles at the end of each day.
 - d. Breaks and lunches shall be at areas designated by the Dellbrook | JKS Superintendent. Trash bags and clean-up at the break areas shall be the responsibility of the subcontractors.

B. COMMUNICATION

1. Equipment
 - a. Subcontractor shall provide his foreman with cell phone for network communication between Dellbrook | JKS and other trade foremen on the job. Subcontractor shall provide foreman with daily access to a laptop, tablet or similar device as required to access project documents on Procore. Project will be hosted on Procore by Dellbrook|JKS. Cellular network access for this device is encouraged.

Subcontractors will not be allowed to begin work on the Project each day unless this requirement is met.

2. RFI's
 - a. Refer to and carefully check architectural, structural, mechanical, and electrical drawings noting locations of walls, partitions, ceilings, beams, columns, casework, mechanical shafts, equipment, electrical fixtures, and conflicts with work of other trades. Please bring any clarifications or issues to the Dellbrook | JKS Project Manager immediately. RFI's must be submitted via e-mail to Dellbrook|JKS Project Manager (with Assistant Project Manager and Superintendent cc'd). RFI responses will be provided via Procore.
3. PCO's
 - a. The Subcontractor hereby acknowledges and agrees that upon delivery by Dellbrook | JKS of a Change Order Request, he will respond no later than five (5) days from the receipt thereof, in writing (or sooner if required by Project Ownership in Owner Contract), as to the effect on the Subcontractor price and/or Subcontractor work schedule, and will provide full and complete detailed information to substantiate the effect. Profit & Overhead limitations are as called out in Owner Contract. No extra work to start unless subcontractor receives written approval by Dellbrook | JKS Project Manager ONLY. All PCO's shall contain proper material & labor breakdowns, with back-up from material suppliers to support the cost of materials.
4. T&M Work
 - a. Subcontractor to provide T&M rate sheets for review and approval by Dellbrook | JKS. Any and all additional work on this Project requires proper and complete prior notice and will require approval to perform the work, monitoring of the work and acceptance of the work by Dellbrook | JKS and the Owner. No additional work and/or payment for the work will be acknowledged without these requirements being fulfilled at a minimum.
5. Coordination
 - a. The Subcontractor is responsible for coordination of their trade scope of work including but not limited to coordination meetings, drawings and field verification of conditions prior to the start of the Work.
 - b. All coordination for MEP trades (fire protection, plumbing, mechanical – duct and pipe, and electrical/technology) is to be 3D. Weekly meetings are to be held on a regularly scheduled basis to review group progress with regular status updates posted by all trades. Weekly uploads by respective trades are to be provided through BIM360 Glue (hosted by Dellbrook|JKS). Coordination meetings are to continue with full participation by all trades as deemed required by Dellbrook|JKS until Dellbrook|JKS has determined that participation is no longer required.

C. Submittals

1. Product Data and Shop Drawings
 - a. The Subcontractor shall furnish all shop drawings, coordination drawings, as-builts,

product data, and samples and any and all other drawings or items as required in the specifications. Submit for approval, by Dellbrook | JKS, Subcontractor's shop drawing/product data submittal schedule and delivery/installation schedule. Preliminary submittals shall be delivered to Dellbrook | JKS not more than five (5) days after the issuance of the letter of intent. Every submittal, including shop drawings, required by Specifications shall be delivered to Dellbrook | JKS not more than twenty-one (21) calendar days after issuance of a letter of intent. The Submittals shall be complete, and include every product required, noting the section, paragraph and item number for each submittal. Electronic copies of the submittal package are required for proper view and distribution. Submittals will be processed via Procore. Subcontractor should e-mail pdf copies of their submittals to the Dellbrook|JKS Project Manager and Assistant Project Manager. If required by Project Specifications, any Substitution Request Forms provided shall be fully filled out by Subcontractor with the provision of the initial substitute product submittal.

- b. The Subcontractor shall furnish originals, not reproduced facsimiles, third or later generation copies, of all submittals clearly identifying specification sections and allow ample room for architects and consultants review stamps and comments.
- c. A delay in submittals is the same as a delay on-site; if Subcontractor is slow in providing submittal paperwork, Subcontractor is responsible for making up own time.
- d. Materials shall be released immediately after receipt of a fully approved submittal unless otherwise agreed by Dellbrook|JKS.

D. Meetings

1. The Subcontractor agrees to actively participate in weekly Project Manager/Foreman meetings and to coordinate their work with that of other subcontractors on the project so as to ensure that all work is completed according to the contract schedule. Failure to attend weekly Project Manager & Foreman meetings when subcontractor's work is ongoing on site may result in a fine of \$500 for nonattendance, at the discretion of Dellbrook|JKS. Meeting Minutes for said meetings will be distributed via Procore. Distribution of said minutes via Procore constitutes notification of all items discussed during the meeting; regardless of attendance. Minutes are intended to summarize only the items discussed but do not replace requirement for attendance.
2. Attend a pre-pre-construction meeting on site prior to the start of any work by this trade with Dellbrook | JKS to review the Subcontractors safety program and to address site specific safety concerns related to the Subcontractors operations.

E. Cutting

1. Subcontractor is responsible for wall and floor sleeves, and all saw-cutting and coring required to complete the work of their trade.
2. The Subcontractor must include water control for their coring operations as well as hole protection.

F. Testing

1. The Subcontractor shall cooperate with and provide access for material testing agencies and inspectors, and shall be present at tests and inspections if required. Testing and inspections that customarily require an overtime presence by the Subcontractor are included in the subcontractor amount.

G. Cleanup

1. Provide all required clean up on a daily basis, removing incidental debris after each shift a dumpster provided by Dellbrook|JKS.
2. Subcontractor is required to properly and adequately contain dust and debris within the immediate work areas. Subcontractors are required to have with them shop vacs at all times, when working in a building that has entered the "Finish" stage of the work, and vacuum the work areas upon completion. Subcontractor will provide continuous cleanup of his construction debris on a daily basis to a dumpster provided by Dellbrook | JKS. Debris removal is to be complete. Storage of debris on site will not be allowed. The Subcontractor acknowledges and agrees that Dellbrook | JKS will perform and assess back-charges for cleanup work for the Subcontractor if any area is left unclean.
3. Trash is defined as anything brought on site by this Subcontractor this is not removed by this Subcontractor for reuse and includes food and beverage containers, newspapers, garbage, etc. brought in this site by this Subcontractor's crews and other on-site personnel under the direction of this Subcontractor such as Sub-subcontractors, Fire Details, Police Details, etc.

H. Record Documents and Warranties

1. This Subcontractor shall prepare detailed as-built drawings in accordance with the Contract Documents and submit to Dellbrook | JKS. As-Builts shall be maintained on a weekly basis throughout the duration of the project by the Subcontractor and are subject to periodical review by Dellbrook | JKS. As built and/or Record Information shall be transposed on to Dellbrook | JKS's "Master Set" of record documentation on site.

I. Special Requirements

1. Subcontractors shall submit a site-specific safety program in accordance with Dellbrook|JKS Job Specific Safety Plan and OSHA requirements within five (5) calendar days of contract award and prior to the commencements of this Subcontractor's work including as minimally the following items:
 - a. Emergency contacts for the project – including the Subcontractor's Foreman, Project Manager and minimally one other contact with 24-hour availability.
 - b. Site Specific Scope of Work – listing the tasks associated with this Subcontractor's scope of work.
 - c. Activity Hazard Analysis for this subcontractor's work to be performed on the project.
 - d. Specific Procedures – as required per OSHA and SDS sheets for any items that this subcontractor will bring on site.
2. The Subcontractor is responsible for all State, Local and City permits required by authorities having jurisdiction and associated with the work of heir trade with the exception of the general building permit and demolition permit.

3. The Subcontractor shall perform and be responsible for layout, field dimensioning and engineering (engineering where customarily performed by respective trade) of the work of their Subcontract.
4. Subcontractor shall comply with Division 1 – General Requirements of the Project Specifications as it pertains to the work of their subcontract.
5. All subcontractors shall familiarize themselves with actual field conditions. The field conditions are hereby incorporated into the work (unforeseen differing subsurface site conditions excluded). All subcontractors are required to perform a field survey of the existing conditions no less than one week prior to the start of the work in each space. Subcontractors, during this survey, will layout for review by Dellbrook|JKS any cutting/patching areas needed for the work of the subcontract. The purpose of this survey is to minimize and/or eliminate possibility of work being started and then delayed due to some existing conditions.
6. Temporary power and lighting shall be provided by the Electrical Filed Subcontractor. The Electrical Subcontractor shall furnish, install, and maintain these services for the full duration of the project (starting prior to Demo, and continuous up until permanent power and lighting can be utilized.) Included are any costs for "specialty power" such as the Elevator build, welder's equipment, etc. The Electrical Subcontractor shall provide power for use during construction, as well as power to Temporary Office Trailers.
7. Temporary facilities including but not limited to enclosures, utilities, heat and consumables required for the conduct of this subcontractor's work are the responsibility of the Subcontractor.
8. Where damage or disruption to sprayed-on fireproofing is required to complete the work of a subcontract, subcontractor shall include all costs for the repair (ie due to hanger/pipe installation). Removal of spray fireproofing in a neat manner to complete this subcontractor's work is included.
9. Provide all design, engineering, labor, equipment and materials required for the proper installation of the seismic supports for this Subcontractor's Work.
10. Warranties on permanent equipment and materials installed will commence on substantial completion as determined by Architect and Owner, not upon start-up (whether for testing/commissioning of equipment or if put into service early for temporary use). This subcontractor shall be responsible to maintain and clean all systems/equipment used for temporary service prior to final turnover to owner.
11. Each Subcontractor shall be responsible for acoustical sealing and fire-safeing for their work of their trade, of all piping which passes through holes, sleeves and framed openings in drywall and masonry partitions, and floor slabs in accordance with the more stringent requirements of all local codes, sound ordinances and the Contract Documents.
12. Subcontractor shall leave all equipment and fixtures in a wiped-clean condition free of all excess sealants, packing, labels (not required to remain), dirt or residues. Subcontractor shall provide a written procedure for maintenance cleaning of all equipment provided under this subcontract.

13. Subcontractors shall include costs to furnish all access panels required for the Work, even if not shown, together with a drawing indicating the required locations. Installation of access panels in drywall and masonry work will be by those respective trades. Access doors shall be located and rated as required by governing authorities and the Contract Documents shall be installed to allow for maintenance and aesthetic acceptability.
14. Testing of all systems must be performed in the presence of Dellbrook | JKS and will require seventy-two (72) hour notice. Where required for the work of a particular trade, Subcontractor shall include testing and balancing of building systems equipment to satisfy the architect/engineer and local governing authorities for certificate of occupancy.
15. All costs for deliveries and travel are costs included in subcontractor bids. Subcontractors may elect to provide housing for their employees, if so such housing costs are included in subcontractor bids.

J. SAFETY

1. Subcontractor shall adhere to Dellbrook|JKS Subcontractor Safety & Health Requirements Exhibit.

K. FINANCES & ACCOUNTING

1. Subcontractor shall adhere to Dellbrook|JKS Payment Procedures Exhibit and comply with all requisition formatting/delivery requirements detailed therein. Subcontractor shall completely fill out and return the provided rate sheet for additional work (with regular and overtime rates provided). Subcontractor shall completely fill out the provided 2nd Tier Lien Waiver Listing sheet at the time of original contract and again with each monthly requisition. Subcontractor shall also return fully completed lien waivers as required by Dellbrook|JKS, including but not necessarily limited to the provided forms:
 - Subcontractor Payment Certification and Release
 - Sub-Subcontractor Payment Certification and Release
 - Supplier Payment Certification and Release
 - Subcontractor Final Payment Certification and Release
 - Sub-Subcontractor Final Payment Certification and Release
 - Supplier Payment Final Certification and Release

L. PROJECT TEAM

1. Subcontractors shall maintain the same Project Manager and Foreman for the duration of the project (including punch list) unless authorized in writing by Dellbrook|JKS. Should the subcontractor seek to change their assigned project team, resumes for the new project team shall be provided for review and approval prior to any reassignments.

M. COVID-19 PROCEDURES COMPLIANCE

1. All subcontractors must comply with the recommendations for Covid During Construction as issued by the Commonwealth of Massachusetts. These recommendations and any such requirements issued by the Governor's Office may change over time. Subcontractor shall adhere to all requirements outlined in the project specific Covid Safety Plan at all times.

N. SUBCONTRACTOR INSURANCE REQUIREMENTS

1. All subcontractors are expected to comply with the below listed insurance requirements

a. **INSURANCE AND BOND REQUIREMENTS:**

1. Workers' Compensation, Employer's Liability – Subcontractor shall provide Workers' Compensation insurance in applicable statutory limits and requirements and Employer's Liability insurance in the minimum amount of One \$1,000,000 each accident for bodily injury by accident and \$1,000,000 each employee for bodily injury by disease with a \$1,000,000 policy limit covering each worker used in connection with the Services. Policy shall be in accordance with statutory requirements.

2. Commercial General Liability Insurance – Subcontractor shall provide Commercial General Liability Insurance with the following minimum coverage limits: \$1,000,000 each occurrence and \$2,000,000 in the aggregate. This policy shall be written on an occurrence basis on ISO form (CG 00 01 12 07) or a substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products/completed operations (6 years beyond completion and acceptance), personal and advertising injury liability, and liability assumed under insured contract (including the tort liability of another assumed in a business contract). There shall be no modification limiting the scope of coverage for liability arising from explosion, collapse or underground property damage. For subcontractors working on residential projects (which shall include for rent and for sale dwellings of any type, including but not limited to dormitories and assisted living facilities, there shall be no exclusion for residential construction. For subcontractors furnishing or installation EIFS, there shall be no EIFS exclusion.

3. Business Automobile Liability – Subcontractor shall provide Business Automobile Liability for bodily injury and property damage liability with a combined single limit of not less than \$1,000,000 each accident. This policy should be on a standard form written to cover all owned, hired, leased and non-owned automobiles, trucks and trailers.

4. Excess Umbrella Liability Insurance – Subcontractor shall provide Excess Umbrella Liability insurance with a minimum coverage limit of \$5,000,000 per occurrence/aggregate. This policy shall be written on an excess umbrella basis over the employer's liability, commercial general liability, and comprehensive general automobile liability coverages described herein without any gaps in coverage.

5. Equipment/ Installation Floater – Subcontractor shall provide an equipment and installation floater in the broadest coverage form available covering Subcontractor's tools and materials not accepted by Owner. Contractor shall have no liability to Subcontractor for risk of loss or damage to or security of materials, equipment, tools, or any other property of Subcontractor at the job site, all of which shall be stored and used there solely at the risk of Subcontractor. Without limitation, Subcontractor shall insure the same to the extent of its replacement cost with policies of insurance covering fire and the so-called extended coverage casualties. Subcontractor shall comply with all security rules of general applicability promulgated by Contractor.

6. All Risk Property Insurance – Builders Risk policy is to be provided by Owner. If the Builders Risk policy does not provide coverage for materials off site or in transit,

Subcontractor shall provide coverage for all its material off-site or in transit. Subcontractor shall be responsible for payment of any deductibles associated with such property insurance.

7. Professional Liability Insurance – In the event that Subcontractor's Work includes delegated responsibility for engineering or other professional design services, Subcontractor shall furnish a certificate of insurance from each design professional certifying to professional liability insurance coverage for such design professional in an amount not less than \$1,000,000 per claim/annual aggregate or such greater amount as required by the Contract Documents.

8. Pollution Liability Insurance – For subcontractors whose scope of work includes: plumbing, roofing, siding, masonry, air vapor barrier, water proofing/caulking, windows, fire protection, or gypcrete, minimum coverage limits of \$2M per occurrence/aggregate are required. For subcontractors whose scopes of work involve site work, demolition, abatement, remediation, hazardous materials or mold exposures minimum coverage limits of \$5M per occurrence/aggregate are required. This insurance shall include coverage for asbestos, lead and PCBs, and include coverage for transportation of hazardous materials or pollutants by waste hauling vehicles if applicable.

9. General Requirements Related to Insurance:

a. All insurance requirements included in this Exhibit D is required of all sub-subcontractors, and Subcontractor is required to incorporate these requirements into its lower tier Subcontractor Agreement. Subcontractor must submit evidence of equivalent insurance coverage from each of its sub-subcontractors before their work commences.

b. All insurance policies must be endorsed to provide that the insurer will give Contractor at least thirty (30) days prior written notice of cancellation, nonrenewal or modification, except 10 days prior written notice of cancellation due to nonpayment of premium..

c. Subcontractor will furnish Contractor Certificates of Insurance at least ten (10) days prior to commencement of any Work and copies of all insurance policies as requested. Certificates will identify all endorsements to the insurance policies with copies of any non-standard or manuscript endorsements being furnished with each certificate, including copies of the required Additional Insured endorsements and any Residential Exclusions attached to the policy.

d. All insurance policies, except for Workers' Compensation and Professional Liability, shall be endorsed to include Owner, Contractor and their respective officers, directors, agents and employees as additional insureds (collectively "Indemnitees") covered for liability arising out of any ongoing and completed operations on a primary non-contributing basis. Additional insured status shall be secured using ISO Additional Insured Endorsement CG 20 10 (11/85 edition only) or endorsements CG 20 10 10/01 AND CG 20 37 10/01 combined or an endorsement providing equivalent coverage to the additional insureds. Non-ISO endorsements must provide coverage equivalent to the specific ISO form editions and be approved by Contractor. Copies of Additional Insured endorsements must be provided for all insurance policies, except for Workers' Compensation and Professional Liability.

- e. All insurance policies shall contain express waivers by the insurance company of its rights of subrogation against the Indemnities identified in the Subcontract. Copies of waiver of subrogation endorsements must be provided for all policies.
- f. No insurance policy shall have a deductible or the deductible amount must be disclosed on the Subcontractor's certificate of insurance and approved by Contractor.
- g. The General Liability and Umbrella/Excess Liability General Aggregate shall apply on a per project basis.
- h. All insurance policies shall be primary and non-contributing with respect to any and all other insurance that may be available to Contractor, Owner and any other person required to be named as an additional insured under this Subcontract. Copies of primary and non-contributory endorsements must be provided for all policies.
- i. All insurance policies shall be occurrence based except for professional liability.
- j. In the event Subcontractor has in force any insurance with coverages broader and/or limits higher than the minimum coverage amounts specified in this Exhibit D or on a sample certificate (a) such broader coverages and higher limits shall insure and be available to all additional insureds and (b) this Subcontract shall be deemed to require such broader coverages and higher limits.
- k. The Excess/Umbrella insurance required by this Exhibit D shall provide that it covers any party as an additional insured who qualifies as such under the underlying insurance; follows form for such additional insured coverage; and the coverage afforded to such additional insured(s) is primary and the additional insured's other insurance shall be non-contributing to any of the additional insured's other insurance, whether such insurance be primary, excess/umbrella or on any other basis.
- l. Policies must not contain privity provisions.
- m. Subcontractor shall maintain Completed Operations coverage for itself and all additional insureds for 6 years after substantial completion or acceptance of their work by Contractor.
- n. If Subcontractor performs any work or conducts any operations within 50 feet of any railroad (including light rail, fixed rail or any other rail system), Subcontractor's insurance shall be endorsed to delete any exclusion, including the Contractual Liability exclusion, for work performed within 50 feet of a railroad. A copy of such endorsement shall be provided to Contractor before work within 50 feet of the railroad commences. This shall apply to all such insurance whether primary, umbrella, or excess.
- o. Dellbrook/JKS utilizes a system called myCOI to track and verify Subcontractor's insurance coverage for compliance with the contract requirements. Upon subcontractor's receipt of this executed Agreement, subcontractor will receive an email from registration@mycoitracking.com. Subcontractor must follow the instructions contained in the email and complete the online registration. Upon completion of registration, myCOI will request proof of insurance directly from Subcontractor's insurance agent(s). In addition to other terms and conditions contained herein, Subcontractor shall not commence work and no payments shall be made to Subcontractor, unless Subcontractor is registered with myCOI and a compliant COI has been received. Subcontractor agrees to complete the registration and work with myCOI in an expeditious manner to get their insurance approved to avoid delaying the project. (See attached Appendix A – MyCOI Insurance Tracking)

10. Performance, Payment and Lien Bonds - If required by the Contract Documents or Exhibit A, Subcontractor shall, simultaneously with the execution of this Subcontract, deliver to Contractor and pay all premiums for performance, payments, and lien bonds running to Contractor and Owner in the amount of this Subcontract, with corporate sureties

satisfactory to Contractor, such bonds to be in such form and to contain such provisions as are required by Contractor. Without limitation, any such bond shall be assignable to or for the benefit of any lender to Owner. Whether or not this Subcontract shall have been signed or the Work commenced, if such bonds(s) are required of Subcontractor, it shall be a condition precedent to the obligation of Contractor to make any payments to Subcontractor hereunder for any Work performed that such bond(s) be delivered. If, after written demand therefore from Contractor to Subcontractor, such bond(s) shall not be furnished within three business days from the date of the demand, Contractor shall have the right then, or at any time thereafter until such bond(s) shall be furnished, to terminate this Subcontract in accordance with Section 14.

11. ADDITIONAL INSUREDS ARE TO INCLUDE THE FOLLOWING:

Dellbrook JK Scanlan

PROJECT OWNER: COTUIT FIRE DISTRICT

OWNER'S PROJECT MANAGER: CHA SOLUTIONS

DESIGNER: CATALYST ARCHITECTURE / INTERIORS

ANY OTHER PARTY AS REQUIRED BY THE WRITTEN CONTRACT BETWEEN
DELLBROOK JK SCANLAN AND THE PROJECT OWNER

12. SAMPLE COI

TEMPLATE ONLY

a. See below Sample COI & Endorsement Pages provided for reference.

| | | |
|---|---|-------------------------------|
|  CERTIFICATE OF LIABILITY INSURANCE | | DATE (MM/DD/YYYY) |
| | | 8/7/2019 |
| THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER. | | |
| IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s). | | |
| PRODUCER Insurance Agency Name & Address | CONTACT NAME: Jane Smith PHONE (A/C, No, Ext): (617) 999-9999 E-MAIL ADDRESS: | FAX (A/C, No): (617) 999-9999 |
| INSURED Subcontractor Name Subcontractor Address City, MA 123456 | INSURER(S) AFFORDING COVERAGE | |
| | INSURER A: | A Insurance Company |
| | INSURER B: | B Insurance Company |
| | INSURER C: | C Insurance Company |
| | INSURER D: | D Insurance Company |
| | INSURER E: | E Insurance Company |

| COVERAGES | | CERTIFICATE NUMBER: 993266416 | | REVISION NUMBER: | | | |
|--|--|--------------------------------------|----------|-------------------------|-------------------------|-------------------------|--|
| THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. | | | | | | | |
| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
| A | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> XCU <input checked="" type="checkbox"/> Contractual GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJ-ECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER: | Y | Y | 123456 | 2/1/2019 | 2/1/2020 | EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$ |
| D | <input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY | Y | Y | 246810 | 2/1/2019 | 2/1/2020 | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ |
| B | <input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$ | Y | Y | ABCDEFG | 2/1/2019 | 2/1/2020 | EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ \$ |
| C | <input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | Y/N | N/A | XYZWC12345 | 2/1/2019 | 2/1/2020 | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000 |
| E | <input checked="" type="checkbox"/> Professional Liability & Pollution Liability | | | AAABBB123456 | 2/1/2019 | 2/1/2020 | Per Claim \$2,000,000 Aggregate \$2,000,000 Retention \$10,000 |
| DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Project Name, Project Location, City, State. Dellbrook Construction LLC dba DellbrookJKS, and all other parties as required by the written contract with Dellbrook Construction LLC dba DellbrookJKS are included as Additional Insureds on primary and noncontributory basis where required by written contract with respect to the Automobile, General Liability, and Umbrella/Excess Liability policies. A Waiver of subrogation applies in favor of the additional insureds where required by written contract with respect to the Workers Compensation, Automobile, General Liability and Umbrella/Excess Liability policies. Additional Insured endorsements are issued on the ISO endorsement CG2010 11/85 OR CG201010/01 and CG2037 10-01. 30 Day notice of cancellation or material modification will be provided to Dellbrook Construction LLC dba DellbrookJKS. No residential, or X,C,U exclusions apply. No amendments (except F.1.) to the definition of an Insured Contract. | | | | | | | |

| | |
|---|--|
| CERTIFICATE HOLDER Dellbrook Construction LLC dba DellbrookJKS One Adams Place 859 Willard Street Quincy MA 02169 | CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Authorized Representative</i> |
|---|--|

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TEMPLATE ONLY



EVIDENCE OF PROPERTY INSURANCE

DATE (MM/DD/YYYY)
7/3/2019

THIS EVIDENCE OF PROPERTY INSURANCE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE ADDITIONAL INTEREST NAMED BELOW. THIS EVIDENCE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS EVIDENCE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE ADDITIONAL INTEREST.

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---|--|--------------------------|---|--------------|------------------|------------------------------|--|--|--|---|--|--|--------------------|-----------------------------------|-------------------------------------|--------------------------------------|---|--|--|--|
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">AGENCY</td> <td style="width: 30%;">PHONE (A/C, No, Ext): 617-999-9999</td> </tr> <tr> <td colspan="2">Insurance Agency Name & Address City, State Zip</td> </tr> <tr> <td>FAX (A/C, No):</td> <td>E-MAIL ADDRESS: smith@agency.com</td> </tr> <tr> <td>CODE:</td> <td>SUB CODE:</td> </tr> <tr> <td colspan="2">AGENCY CUSTOMER ID #:</td> </tr> <tr> <td colspan="2">INSURED Subcontractor Name Subcontractor Address City, MA 123456</td> </tr> </table> | AGENCY | PHONE (A/C, No, Ext): 617-999-9999 | Insurance Agency Name & Address City, State Zip | | FAX (A/C, No): | E-MAIL ADDRESS: smith@agency.com | CODE: | SUB CODE: | AGENCY CUSTOMER ID #: | | INSURED Subcontractor Name Subcontractor Address City, MA 123456 | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">COMPANY An Insurance Company</td> </tr> <tr> <td>LOAN NUMBER</td> <td>POLICY NUMBER IM1234578</td> </tr> <tr> <td>EFFECTIVE DATE 01/01/2019</td> <td>EXPIRATION DATE 01/01/2020</td> </tr> <tr> <td colspan="2" style="text-align: right;"><input type="checkbox"/> CONTINUED UNTIL TERMINATED IF CHECKED</td> </tr> <tr> <td colspan="2">THIS REPLACES PRIOR EVIDENCE DATED:</td> </tr> </table> | COMPANY An Insurance Company | | LOAN NUMBER | POLICY NUMBER IM1234578 | EFFECTIVE DATE 01/01/2019 | EXPIRATION DATE 01/01/2020 | <input type="checkbox"/> CONTINUED UNTIL TERMINATED IF CHECKED | | THIS REPLACES PRIOR EVIDENCE DATED: | |
| AGENCY | PHONE (A/C, No, Ext): 617-999-9999 | | | | | | | | | | | | | | | | | | | | | | |
| Insurance Agency Name & Address City, State Zip | | | | | | | | | | | | | | | | | | | | | | | |
| FAX (A/C, No): | E-MAIL ADDRESS: smith@agency.com | | | | | | | | | | | | | | | | | | | | | | |
| CODE: | SUB CODE: | | | | | | | | | | | | | | | | | | | | | | |
| AGENCY CUSTOMER ID #: | | | | | | | | | | | | | | | | | | | | | | | |
| INSURED Subcontractor Name Subcontractor Address City, MA 123456 | | | | | | | | | | | | | | | | | | | | | | | |
| COMPANY An Insurance Company | | | | | | | | | | | | | | | | | | | | | | | |
| LOAN NUMBER | POLICY NUMBER IM1234578 | | | | | | | | | | | | | | | | | | | | | | |
| EFFECTIVE DATE 01/01/2019 | EXPIRATION DATE 01/01/2020 | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> CONTINUED UNTIL TERMINATED IF CHECKED | | | | | | | | | | | | | | | | | | | | | | | |
| THIS REPLACES PRIOR EVIDENCE DATED: | | | | | | | | | | | | | | | | | | | | | | | |

PROPERTY INFORMATION

| |
|-----------------------------|
| LOCATION/DESCRIPTION |
|-----------------------------|

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

COVERAGE INFORMATION

| COVERAGE / PERILS / FORMS | AMOUNT OF INSURANCE | DEDUCTIBLE |
|-----------------------------|---------------------|------------|
| Scheduled Equipment | Limit | Deductible |
| Unscheduled Equipment | Limit | Deductible |
| Leased and Rented Equipment | Limit | Deductible |
| Installation Floater Limit | 1,000,000 | 1,000 |
| In Transit | 1,000,000 | 1,000 |
| Temporary Storage | 1,000,000 | 1,000 |

REMARKS (Including Special Conditions)

| |
|--------------|
| Project Name |
|--------------|

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

ADDITIONAL INTEREST

| | | | | |
|---|--|------------|--------------------------|--------------------|
| NAME AND ADDRESS Dellbrook Construction LLC dba DellbrookJKS One Adams Place 859 Willard Street Quincy, MA 02169 | <input type="checkbox"/> | MORTGAGEE | <input type="checkbox"/> | ADDITIONAL INSURED |
| | <input type="checkbox"/> | LOSS PAYEE | <input type="checkbox"/> | |
| | LOAN # | | | |
| | AUTHORIZED REPRESENTATIVE <i>K Walsh</i> | | | |

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – (FORM B)**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization:

Dellbrook JK Scanlan, the Owner and all other parties as required by the written contract with Dellbrook JK Scanlan.

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you.

TEMPLATE ONLY

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 20 10 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – SCHEDULED PERSON OR
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:

Dellbrook JK Scanlan, the Owner and all other parties as required by the written contract with Dellbrook JK Scanlan.

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. Section II – Who is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to "bodily injury" or "property damage" occurring after:

- (1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or
- (2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

TEMPLATE ONLY

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 20 37 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

| |
|--|
| Name of Person or Organization: Dellbrook JK Scanlan, the Owner and all other parties as required by the written contract with Dellbrook JK Scanlan. |
| Location And Description of Completed Operations: |
| Additional Premium: |

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

TEMPLATE ONLY

DOCUMENT 00 75 01

CONTRACT DOCUMENT PACKAGE
TRADE CONTRACTORS

Contract Document Package, Chapter 149 Trade Contractors is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplemented remain in full force and effect.

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SAFETY REQUIREMENTS

Safety Requirements should meet all state, federal, and OSHA requirements.

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DOCUMENT 00 75 04

PROJECT SCHEDULE

Project Schedule is included, following this page, as an integral part of the Bidding and Contract Documents. Provisions which are not amended or supplemented remain in full force and effect.

Cotuit Elementary School Demo

| | | 8-Dec | 15-Dec | 26-Dec | 29-Dec | 5-Jan | 12-Jan | 19-Jan | 26-Jan | 2-Feb |
|-------------------------------|-----------|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Topographic Survey | 5 Weeks | [Gantt bar: 8-Dec to 12-Jan] | | | | | | | | |
| Hazmat Assesment | 2 Weeks | [Gantt bar: 8-Dec to 15-Dec] | | | | | | | | |
| Construction Documents | 11 Weeks | [Gantt bar: 15-Dec to 19-Jan] | | | | | | | | |
| Prepual / Bid Phase | 4 Weeks | [Gantt bar: 19-Jan to 26-Jan] | | | | | | | | |
| PreBid Walkthrough | 3/18/2026 | [Dashed line: 15-Dec to 19-Jan] | | | | | | | | |
| Bid Documents Due | 3/9/2026 | [Dashed line: 19-Jan to 26-Jan] | | | | | | | | |
| Construction Phase / Closeout | 14 Weeks | [Gantt bar: 26-Jan to 2-Feb] | | | | | | | | |
| | | 9-Feb | 16-Feb | 23-Feb | 2-Mar | 9-Mar | 16-Mar | 23-Mar | 30-Mar | 6-Apr |
| Topographic Survey | 5 Weeks | [Gantt bar: 9-Feb to 16-Mar] | | | | | | | | |
| Hazmat Assesment | 2 Weeks | [Gantt bar: 9-Feb to 16-Feb] | | | | | | | | |
| Construction Documents | 11 Weeks | [Gantt bar: 16-Feb to 23-Mar] | | | | | | | | |
| Prepual / Bid Phase | 4 Weeks | [Gantt bar: 23-Mar to 30-Mar] | | | | | | | | |
| PreBid Walkthrough | 3/18/2026 | [Dashed line: 23-Mar to 30-Mar] | | | | | | | | |
| Bid Documents Due | 3/9/2026 | [Dashed line: 30-Mar to 6-Apr] | | | | | | | | |
| Construction Phase / Closeout | 14 Weeks | [Gantt bar: 6-Apr to 13-May] | | | | | | | | |
| | | 13-Apr | 20-Apr | 27-Apr | 4-May | 11-May | 18-May | 25-May | 1-Jun | 8-Jun |
| Topographic Survey | 5 Weeks | [Gantt bar: 13-Apr to 18-May] | | | | | | | | |
| Hazmat Assesment | 2 Weeks | [Gantt bar: 13-Apr to 20-Apr] | | | | | | | | |
| Construction Documents | 11 Weeks | [Gantt bar: 20-Apr to 25-May] | | | | | | | | |
| Prepual / Bid Phase | 4 Weeks | [Gantt bar: 25-May to 1-Jun] | | | | | | | | |
| PreBid Walkthrough | 3/18/2026 | [Dashed line: 25-May to 1-Jun] | | | | | | | | |
| Bid Documents Due | 3/9/2026 | [Dashed line: 1-Jun to 8-Jun] | | | | | | | | |
| Construction Phase / Closeout | 14 Weeks | [Gantt bar: 8-Jun to 15-Jul] | | | | | | | | |
| | | 15-Jun | 22-Jun | 29-Jun | 6-Jul | 13-Jul | 20-Jul | 27-Jul | 3-Aug | 10-Aug |
| Topographic Survey | 5 Weeks | [Gantt bar: 15-Jun to 20-Jul] | | | | | | | | |
| Hazmat Assesment | 2 Weeks | [Gantt bar: 15-Jun to 22-Jun] | | | | | | | | |
| Construction Documents | 11 Weeks | [Gantt bar: 22-Jun to 27-Jul] | | | | | | | | |
| Prepual / Bid Phase | 4 Weeks | [Gantt bar: 27-Jul to 3-Aug] | | | | | | | | |
| PreBid Walkthrough | 3/18/2026 | [Dashed line: 27-Jul to 3-Aug] | | | | | | | | |
| Bid Documents Due | 3/9/2026 | [Dashed line: 3-Aug to 10-Aug] | | | | | | | | |
| Construction Phase / Closeout | 14 Weeks | [Gantt bar: 10-Aug to 17-Sep] | | | | | | | | |

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Projectdog, Inc

Supplemental Instructions to Bidders for Electronic Bid Projects (E-Bid)

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Sign Up

Every user of Projectdog.com has a unique username and password for their account. **MANDATORY: All users must keep usernames and passwords PRIVATE and SECURE. Do not share accounts.**

1. Go to www.Projectdog.com.
2. Select the “Sign Up” (Fig 1).
3. Complete all required form fields and press Submit.
An automatic email will be sent to the registered email.
4. Select the confirmation link in the email to complete the registration.

Login

1. Go to www.Projectdog.com.
2. Enter a registered email address and password (Fig 1).
3. Press Login.

Logoff

1. Hover over Home (Fig 2).
2. Select “Logoff”.

Forgotten Password

1. Select “Forgot your password?” (Fig 3).
2. Enter the e-mail address.
3. Select “Send Info”. An automated e-mail will be sent with the password.

Account Information

View and edit user contact information. To change an email address, users must register a new account. Call Projectdog to have the old account removed.

1. Hover over Home (Fig 4).
2. Click “My Information”.
3. Edit information as needed.
4. Click “Save” to finalize edits.

Fig 1



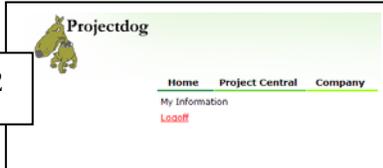
Email:

Password:

[Sign Up](#) [Forgot your password?](#) [Login](#)

Customer Support 978-499-9014

Fig 2



Projectdog

[Home](#) [Project Central](#) [Company](#)

My Information
[Logout](#)

Fig 3

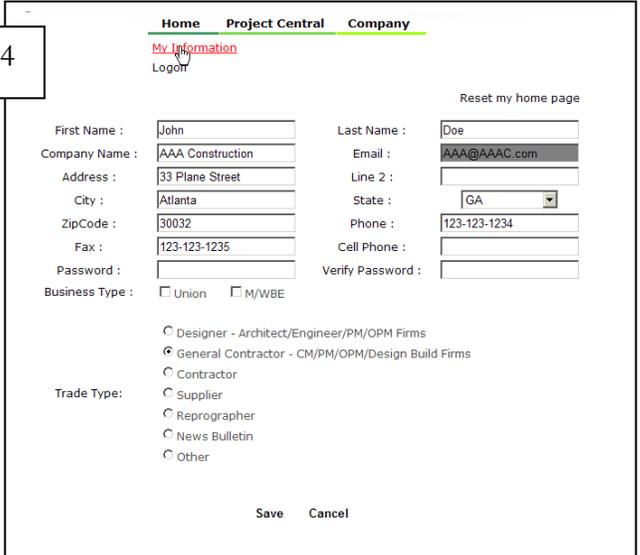


Email:

Password:

[Sign Up](#) [Forgot your password?](#) [Login](#)

Fig 4



[Home](#) [Project Central](#) [Company](#)

[My Information](#)
Logout

Reset my home page

First Name : Last Name :

Company Name : Email :

Address : Line 2 :

City : State :

ZipCode : Phone :

Fax : Cell Phone :

Password : Verify Password :

Business Type : Union M/WBE

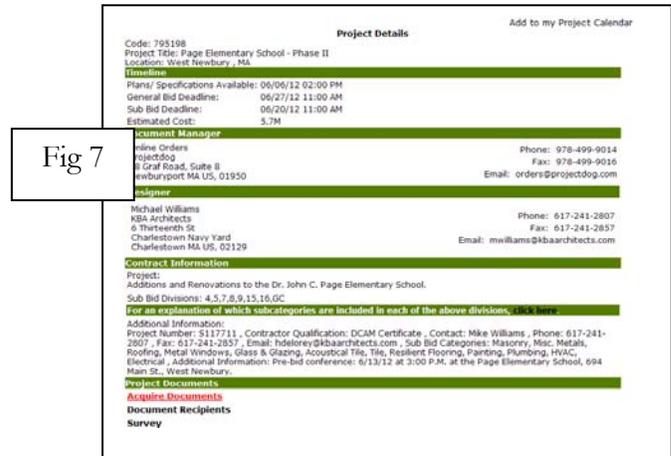
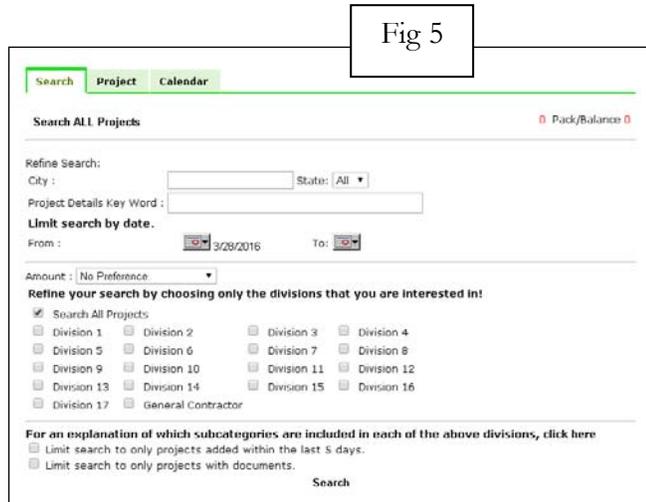
Designer - Architect/Engineer/PM/OPM Firms
 General Contractor - CM/PM/OPM/Design Build Firms
 Contractor
 Supplier
 Reprographer
 News Bulletin
 Other

Trade Type:

Save Cancel

Project Details

Utilize the search page (Fig 5) or enter a Project Code (Fig 6) to view a project's "Project Details" page (Fig 7).



Acquire Documents

Download all project documents.

1. Click "Acquire Documents" link found on a project's "Project Details" page (Fig 7).
2. Respond to the Legal Notice after reviewing.
3. Click on any file description to open, review, or save a document (Fig 8).

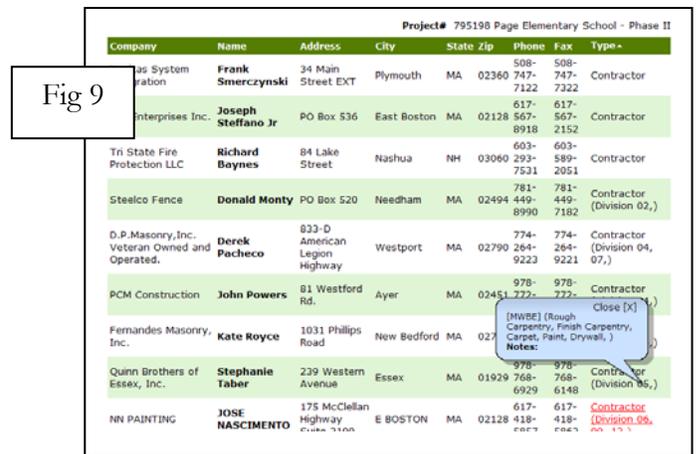
Users are automatically added to the project's "Document Recipients" list to receive update notifications upon viewing any document online.



Document Recipients

Review all plan holders who have acquired documents.

1. Click "Document Recipients" link found on a project's "Project Details" page (Fig 7).
2. All potential bidders are listed and sorted by company type (Fig 9). Click on a column title to sort alphabetically.



Electronic Bid (E-Bid)

This project is being **Electronically Bid** at www.Projectdog.com. Hard copy bids will not be accepted by the Awarding Authority. Go to www.Projectdog.com and Login with an existing account or click [Sign Up](#) to register for free. Enter a project code or search by keyword to access the “Project Details” page. Select “Acquire Documents” to download all bidding documents.

Projectdog

Enter Project Code GO

Home Project Central Company

Add to my Project Calendar

Project Details

Code: 799090
Project Title: Ebid
Location: Newburyport, MA

Timeline

Plans/ Specifications Available: 05/22/13 10:00 AM
General Bid Deadline: 06/21/13 04:00 PM
Sub Bid Deadline: 06/19/13 04:00 PM
Estimated Cost: Negotiated

Project Owner

Sales Department
Projectdog
18 Graf Road
Suite 8
Newburyport MA US, 01950
Phone: 978-499-9014
Fax: 978-499-9014
Email: sales@projectdog.com

Document Manager

Online Orders
Projectdog
18 Graf Road, Suite 8
Newburyport MA US, 01950
Phone: 978-499-9014
Fax: 978-499-9016
Email: orders@projectdog.com

Contract Information

Project:
Ebid Test Demo for Sales Department.

Additional Information:
THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED. The bids are to be prepared and submitted at www.Projectdog.com. Tutorials and instructions on how to complete the electronic bid documents are available online along with all project documentation.

Project Documents

Acquire Documents
Document Recipients
GC E-Bid
Sub E-Bid

How to Submit an E-Bid

Complete and save all required forms as PDF files. Please be sure to sign all required signatures either digitally or manually.

1. Select the **GC E-Bid** or **Sub E-Bid** link located on the “Project Details” page.

Subcontractors select a bidding trade;

General Contractors will not be able to submit an E-Bid until the official sub bid tabulation is released by the Awarding Authority.

2. Answer / enter / upload all required areas. Enter all dollar value amounts as a whole dollar values only.

3. Select “Submit My E-Bid.” Review the submitted bid package via the “View My Bid Package” link.

Bidding Trades
Please select trade(s) you are bidding.

| Section# | Description | Status | Bidding |
|----------|-------------|------------|---------|
| 220000 | Plumbing | Incomplete | GO |
| 230000 | HVAC | Incomplete | GO |
| 260000 | Electrical | Incomplete | GO |

It's that simple!

You will not be able to Submit your bid unless all mandatory fields are complete. Please allow yourself sufficient time to upload all information. You will receive an automated email once completed. Please save this for your records.

DHCD 016128 Roof Replacement & Vinyl Siding, Project #811541

Acknowledge Addendum 0, Yes No

Bid Price (Whole Dollar)

Form for General Bid (Signature page) Add File -

Bid Bond Add File -

Bidders Reference Form Add File -

Item 2 Sub-bids as follows:
There are no Sub bids for this project.

Bid Closes in:
0 Days 2 Hours 20 Minutes 20 Seconds.

Save **Submit my E-Bid** Close

You will not be able to Submit your bid unless all mandatory fields are complete. Please allow yourself sufficient time to upload all information. You will receive an automated email once completed. Please save this for your records.

DHCD 016128 Roof Replacement & Vinyl Siding, Project #811541

Acknowledge Addendum 0,1, Yes No 4/6/2016

Bid Price (Whole Dollar) twenty-five thousand Dollars.

Form for General Bid (Signature page) View File

Bid Bond View File

Bidders Reference Form View File

Item 2 Sub-bids as follows:
There are no Sub bids for this project.

Bid Closes in:
0 Days 2 Hours 11 Minutes 20 Seconds.

Retract **View My Bid Package** Close

Add File

Click “Add File” on the E-Bid page to open the Upload Assistant window. Then click “Browse” or “Choose File” to upload a PDF file.

Warning

E-Bids cannot be submitted unless all areas are complete.

Save before adding files or closing the window or E-Bid data may need to be re-entered.

Projectdog.com server time is set to industry standards at time-a.nist.gov. Bidders are encouraged to update their computer clock.

Bidders may save, submit or modify an Electronic Bid (E-Bid) at any time prior to bid close. Once submitted, a bid cannot be edited. To modify a bid the bidder must retract the bid, make any necessary changes, and then submit the bid again. Upon submitting or retracting the bidder will receive a convenience email for informational purposes only. **Bidder shall contact Projectdog if an email is not received.**

It is the bidder’s responsibility to review and confirm online that a bid has been submitted and/or retracted and that the bid is 100% true, complete and accurate. All bidders are required to review their submitted E-Bid via the “[View My Bid Package](#)” link.

If a bid is submitted prior to an addendum being issued the bidder will receive an automated email for informational purposes only stating the bidder must review the addendum, retract the bid, acknowledge all addenda, and submit the bid again. If a bidder fails to acknowledge addenda their bid may be rejected by the Awarding Authority.

Once the bid deadline has closed the E-Bid links are no longer available. All E-Bids are compiled in real time upon bid close and published forthwith on the “Project Details” page titled as “List of Bids Received”. Official bid tabulations are posted at the discretion of the Awarding Authority.

For additional assistance, call Projectdog at (978) 499-9014 (M-F, 9AM-5PM).

BID DEPOSIT AFFIDAVIT

This document is an affidavit form that is drafted to serve as a statement wherein the person (Bidder) who signs it swears under penalty of perjury that the facts and information that are identified in this affidavit are true.

In lieu of an insurance Bid Bond certificate, a hard copy of this completed Bid Deposit Affidavit AND the 5% Bid Deposit in the form of cash, certified check, treasurer's or cashier's check issued by a responsible bank or trust company MUST be received by the Awarding Authority PRIOR to the closing of the project's electronic bid.

BOTH the completed Bid Deposit Affidavit and the check (or cash) shall be enclosed in a sealed envelope with the following information plainly written on the outside:

DO NOT OPEN BEFORE: *[indicate DATE and TIME of the bid opening]*

Project Name -

Project Number -

Bidder's Name -

Business Address -

Phone Number -

It is the Bidder's responsibility to ensure that this completed Bid Deposit Affidavit AND the check (or cash) are submitted as stated above AND received by the Awarding Authority prior to the closing of electronic bids. In addition, this completed Bid Deposit Affidavit must be uploaded with the electronic bid via the project's E-Bid Add File link "Bid Deposit (Bid Bond or Affidavit)" at www.Projectdog.com.

The Bidder understands and consents that any failure to do so whether his own or other fault may result in the rejection of said bid. The Bidder is solely responsible for the accuracy and value of the Bid Deposit. If the Bid Deposit is less than the required amount as outlined in the project specifications the bid may be rejected.

Bid Deposit amount enclosed: _____ Certified check, Treasurer's or Cashier's check
Cash

Date: _____

Bidder's Name: _____

Address: _____

City, State, Zip: _____

Signature: _____

SECTION 011000

GENERAL REQUIREMENTS

| | | | |
|-----|---------------------------|------|------------------------------------|
| 1.1 | General Provisions | 1.10 | Submittals |
| 1.2 | Project Requirements | 1.11 | Warranties |
| 1.3 | Specification Information | 1.12 | Cutting and Patching |
| 1.4 | Definitions | 1.13 | Temporary Facilities and Utilities |
| 1.5 | Industry Standards | 1.14 | Products and Substitutions |
| 1.6 | Codes and Regulations | 1.15 | Delivery, Storage and Handling |
| 1.7 | Progress Schedule | 1.16 | Labels |
| 1.8 | Payment Requests | 1.17 | Record Documents |
| 1.9 | Procedures and Controls | 1.18 | Project Close Out |

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 PROJECT REQUIREMENTS

- A. Project Identification: Cotuit Elementary School Demolition, Cotuit MA
- B. Project Requirements for Temporary Utilities and Facilities:
1. Utility Costs: The Contractor shall meter and pay for cost of utility services consumed, including electricity, water, gas and temporary heat.
 2. Temporary Offices: A separate field office for the Architect and the Owner's Representative is not required.
 3. Toilet Facilities: The Contractor shall provide and maintain temporary toilets outside the building.
- C. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company backcharges required to perform the work. Submit copies to Architect.
- D. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.
- E. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- F. Existing Conditions: Notify Architect of existing conditions differing from those indicated on the drawings.

- G. Contractor's Conduct on Premises: The Contractor and their employees shall behave in a respectful, courteous and safe manner. Abusive, harassing, and lewd behavior is prohibited. Music playing is prohibited. Alcohol, tobacco, and drug use is prohibited.

- 1. Comply with Owner's security requirements.

1.3 SPECIFICATION INFORMATION

- A. These specifications are a specialized form of technical writing edited from master specifications and contain deviations from traditional writing formats. Capitalization, underlining and bold print is only used to assist reader in finding information and no other meaning is implied.
- B. Except where specifically indicated otherwise, the subject of all imperative statements is the Contractor.
- C. Sections are generally numbered in conformance with Construction Specifications Institute Masterformat System. Numbering sequence is not consecutive. Refer to the Table of Contents for names and numbers of sections included in this Project.
- D. Pages are numbered separately for each section. Each section is noted with "End of Section" to indicate the last page of a section.

1.4 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.

- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.5 INDUSTRY STANDARDS

- A. Referenced standards are part of the Contract Documents and have the same force and effect as if bound with these specifications.
- B. Except where specifically indicated otherwise, comply with the current standard in effect as of the date of the Owner/Contractor Agreement. Obtain copies of industry standards directly from publisher.
- C. The titles of industry standard organizations are commonly abbreviated; full titles may be found in Encyclopedia of Associations or consult Architect.

1.6 CODES AND REGULATIONS

- A. Comply with all applicable codes, ordinances, regulations and requirements of authorities having jurisdiction.
- B. Submit copies of all permits, licenses, certifications, inspection reports, releases, notices, judgments, and communications from authorities having jurisdiction to the Architect.

1.7 PROGRESS SCHEDULE

- A. Provide comprehensive bar chart schedule showing all major and critical minor portions of the work, sequence of work and duration of each activity. Update and reissue regularly, but not less than monthly.

1.8 PAYMENT REQUESTS

- A. Provide three copies of each request on completely filled out copies of AIA G702 and continuation sheet G703. Substantiate requests with complete documentation; include change orders to date. Provide partial lien waivers for work in progress and full lien waivers for completed work.
- B. As-Constructed Record Drawing Certification: Certify as a part of each application for payment that the project as-constructed record documents are current at the time of application is submitted. The Contractor shall require such drawings to be current as a condition of approving any payment to the trade Contractor and Subcontractor.
- C. Before first payment application, provide the following:
 1. List of subcontractors, suppliers and fabricators.
 2. Schedule of values.
 3. Progress schedule.
 4. Submittal schedule keyed to project schedule.
 5. List of Contractor's key project personnel.
 6. Copies of permits and other communications from authorities.
 7. Contractor's certificate of insurance.
 8. Performance and payment bonds if required.
 9. Unit price schedule.

- D. Before final payment application, provide and complete the following:
1. Complete closeout requirements.
 2. Complete punch list items.
 3. Settle all claims.
 4. Transmit record documents to Architect. Include statement that Architect's Supplemental Instructions, Change Orders, Construction Change Directives and minor changes in the work have been incorporated in the as-constructed record drawings.
 5. Prove that all taxes, fees and similar obligations have been paid.
 6. Remove temporary facilities and surplus materials.
 7. Change lock cylinders or cores.
 8. Clean the work.
 9. Submit consent of surety, if any, for final payment.

1.9 PROCEDURES AND CONTROLS

- A. Project Meetings: Arrange for and attend meetings with the Architect and such other persons as the Architect requests to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's field superintendent. An authorized representative of any subcontractor or sub-subcontractor shall attend such meetings if the representative's presence is requested by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives. Written reports of meeting minutes shall be prepared by the Contractor and distributed by the Contractor to attendees, the Architect, and Owner within three business days.
1. Pre-Construction Conference: Attendance by Architect, Contractor, major subcontractors. Agenda shall include: Quality of workmanship, coordination, interpretations, job schedule, submittals, approvals, requisition procedures, testing, protection of construction, indoor air quality, and construction waste management.
 2. Progress Meetings: Hold regularly before preparation of payment requests and additional meetings as requested by the Architect. Attendance by Architect, Contractor, and others as determined by Contractor. Agenda shall include work in progress and payment requests.
- B. Emergency Contacts: Furnish the Owner and Architect, in writing, the names and telephone numbers of individuals to be contacted in the event of an out-of-hours emergency at the building site. Post a similar list readily visible from the outside of the field office or a location acceptable to the Architect.
- C. Layout: Layout work and be responsible for all lines, elevations, and measurements of the building, grading, utilities and other work executed under the contract. Retain a registered professional engineer or registered land surveyor, acceptable to the Architect, to initially establish exterior lines and required elevations of all buildings and structures to be erected on the site. The registered professional engineer or registered land surveyor shall certify the actual location of the constructed facilities in relation to property lines, building lines, easements, setbacks, and other restrictive boundaries.
- D. Field Measurements: Verify measurements at the building prior to ordering materials or commencing work. No extra charge or compensation will be allowed because of differences between actual dimensions and measurements indicated on the Drawings. Differences which may be found shall be submitted to the Architect for decision before proceeding with the work.
- E. Field Measurements for Fixed Equipment: Dimensions for fixed equipment to be supplied under this Contract or separate contracts shall be determined by field measurements taken jointly by

the Contractor and the equipment supplier involved. A record of the field measurements shall be kept until time of substantial completion of the project, or until the equipment has been fully installed and accepted by the Owner, whichever is later. Responsibility for fixed equipment fabricated accurately to field measurements for proper fit and operation shall be that of the Contractor. Contractor shall pay all costs involved in correcting any misfitting fixed equipment as fabricated.

- F. Project Limit Line: The boundaries of the site do not limit the responsibility of the Contractor to perform the work in its entirety. Make utility connections as indicated.
- G. Matching: Where matching is indicated, the Architect shall be the sole and final judge of what is an acceptable match. Mockups and sample submissions are required.
- H. Observation: Notify the Architect and authorities having jurisdiction at least thirty-six hours in advance of concealing any work.
- I. Utilities: Prior to interrupting utilities, services or facilities, notify the utility owner and the Owner and obtain their written approval a minimum 48 hours in advance.
- J. Furnishings, Fixtures, and Equipment: Cooperate and permit the Owner to install their furnishings and equipment during the progress of the work. Owner's installation of furnishings or equipment does not signify Owner's acceptance of any portion of the work.
- K. Clean-Up: Frequently clean-up all waste, remove from site regularly, and legally dispose of off-site.
 - 1. Comply with requirements of Section 017400 - CONSTRUCTION WASTE MANAGEMENT.
- L. Installer's Acceptance of Conditions: All installers shall inspect substrates and conditions under which work is to be executed and shall report in writing to the Contractor all conditions detrimental to the proper execution and completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means installer accepts previous work and conditions.

- M. Coordination: The Contractor shall be fully responsible for coordinating all trades, coordinating construction sequences and schedules, and coordinating the actual installed location and interface of all work.
1. Prior to beginning mechanical, electrical and fire protection work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the mechanical, electrical and fire protection installations and demonstrating to the Contractor's satisfaction that the installations will clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. The Contractor shall be solely liable and responsible for any costs and delays resulting from the Contractor's failure to prepare such coordination drawings or from the negligent preparation of such coordination drawings.
 2. Exact locations and groupings of mechanical, electrical and fire protection fixtures, switches, heads and outlets shall be obtained from the Architect before the Work is roughed in. Work installed without such information from the Architect shall be relocated at the Contractor's expense if the Architect so requests.
- N. Request For Interpretation (RFIs):
1. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 - a. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Content of the RFI: Include a detailed, legible description of item needing interpretation.
 3. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow three working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
 4. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
- O. Existing Articles of Unusual Value: If during demolition, excavation, or disposal work articles of unusual value or of historical or archaeological significance are encountered, the ownership of such articles is retained by the Owner, and information regarding their discovery shall be immediately furnished to the Architect. If the nature of the article is such that work cannot proceed without danger of damage, work in the area shall be immediately discontinued until the Architect has determined the proper procedure to be followed. Delays in time thereby shall be a condition for which the time of the Contract may be extended. Costs incurred after discovery in the salvaging of such articles shall be borne by the Owner.

1.10 SUBMITTALS

- A. Required Submittals: Submit shop drawings, product data, initial selection samples, verification samples, calculations, coordination drawings, schedules, and all other submittals as specified in individual specification sections.
- B. Submittal Schedule: Within 30 days after award of contract and before first application for payment, prepare list of submittals in chronological sequence showing all submittals and proposed date first due at Architect's office and proposed date due to be returned to Contractor. Note relevant specification section number.
- C. Contractor's Preparation of Submittals: Modify and customize all submittals to show interface with adjacent work and attachment to building. Identify each submittal with name of project, date, Contractor's name, subcontractor's name, manufacturer's name, submittal name, relevant specification section numbers, and Submittal Schedule reference number. Stamp and sign each submittal to show the Contractor's review and approval of each submittal before delivery to Architect's office; unstamped and unsigned submittals will be returned without action by the Architect. Leave 4" x 6" open space for Architect's "action" stamp.
 - 1. Electronic Submittals: Provide a copy of all submittals in electronic format to the Architect. Architect will return a file of reviewed submittal in electronic format to the Contractor for distribution to subcontractors, suppliers, fabricators, governing authorities and others as necessary for proper performance of the Work. Unless otherwise amenable to the Architect, additional hard copies of submittals will not be reviewed by the Architect (or Consultant) and will not be returned to the Contractor.
 - 2. 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.
 - 3. Name file with submittal number or other unique identifier, including revision identifier.
 - 4. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect and Construction Manager.
 - 5. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Architect.
- D. Product Data: Provide manufacturer's preprinted literature including, without limitation, manufacturer's standard printed description of product, materials and construction, recommendations for application and use, certification of compliance with standards, instructions for installation, and special coordination requirements. Collect data into one submittal for each unit of work or system; mark each copy to show which choices and options are applicable to project.
 - 1. Installer Copy: Verify that the Installer has a current copy of the relevant product data, including installation instructions, before permitting installation to begin.
- E. Shop Drawings: Provide accurately prepared, large scale and detailed shop drawings prepared specifically for this project. Show adjacent conditions and related work. Show accurate field dimensions and clearly note field conditions. Identify materials and products in the work shown. Note special coordination required.
 - 1. After Architect's action, follow specified distribution procedure.
- F. Samples: Provide units identical with final materials and products to be installed in the work. Where indicated, prepare samples to match Architect's sample. Label each sample with description, source, generic name or manufacturer's name and model number. Architect will review samples for confirmation of visual design intent, color, pattern, texture and type only;

Architect will not test samples for compliance with other Contract requirements which shall remain the exclusive responsibility of the Contractor.

1. Initial Selection Samples Submittal Quantities: For initial selection purposes, submit 1 set of samples showing the complete range of colors and finishes available.
2. Verification Samples Submittal Quantities: For verification of an initial selection, submit 3 sets of samples; one set will be returned to Contractor to be maintained at project site for quality control comparisons.

G. Timing of Submittals: Submit submittals in a timely fashion to allow at least 10 business days for each office's review and handling. This means that submittals which have to be reviewed by the Architect and one of their consultants require at least 20 business days for review and handling. Add ten business days for each additional consultant who must review a submission.

H. Architect's Action on Submittals: Architect will review submittals, stamp with "action stamp", mark action, and return to Contractor. Architect will review submittals only for conformance with the design concept of the project. The Contractor is responsible for confirming compliance with other Contract requirements, including without limitation, performance requirements, field dimensions, fabrication methods, means, methods, techniques, sequences and procedures of construction, coordination with other work. The Architect's review and approval of submittals shall be held to the limitations stated in the Owner/Architect Agreement and the Conditions of the Contract. In no case shall approval or acceptance by the Architect be interpreted as a release of Contractor of their responsibilities to fulfill all of the requirements of the Contract Documents.

1. Required Resubmittal: Unless submittal is noted "reviewed" or "reviewed except as noted, resubmission not required," make corrections or changes to original and resubmit to Architect.
2. Distribution: When submittal is noted "reviewed" or "reviewed as noted, resubmittal not required," make prints or copies and distribute to Owner, Subcontractors involved, and to all other parties requiring information from the submittal for performance or coordination of related work.

1.11 WARRANTIES

- A. Warranties Required: Refer to individual trade sections for specific product warranty requirements.
- B. Warranty Forms: Submit written warranty to Owner through Architect for approval prior to execution. Furnish two copies of executed warranty to Owner for their records; furnish two additional conformed copies where required for maintenance manual.
- C. Work Covered: Contractor shall remove and replace other work of project which has been damaged as a result of failure of warranted work or equipment, or which must be removed and replaced to provide access to work under warranty. Unless otherwise specified, warranty shall cover full cost of replacement or repair, and shall not be pro-rated on basis of useful service life.
- D. Warranty Extensions: Work repaired or replaced under warranty shall be warranted until the original warranty expiration date or for ninety days whichever is later in time.
- E. Warranty Effective Starting Date: Guarantee period for all work, material and equipment shall begin on the date of substantial completion of the Project, not when subcontractor has completed their work nor when equipment is turned on. In addition to the one year guarantees for the entire work covered by these Contract Documents, refer to the various sections of the

specifications for extended guarantee or maintenance requirements for various material and equipment.

1.12 CUTTING AND PATCHING

- A. Limitations: Do not cut and patch any work in a manner that would result in a failure of the work to perform as intended, decreased energy performance, increased maintenance, decreased operational life, or decreased safety.
- B. Cutting and Patching Materials: Use materials identical to materials to be cut and patched. If identical materials are not available or cannot be used, use materials that match existing materials to the greatest extent possible. Provide finished work that will result in equal to or better than existing performance characteristics.
- C. Inspection: Before cutting and patching, examine surfaces and conditions under which work is to be performed and correct unsafe and unsatisfactory conditions prior to proceeding.
- D. Protection: Protect adjacent work from damage. Protect the work from adverse conditions.
- E. Cutting: Cut work using methods least likely to damage adjoining work. Use tools designed for sawing or grinding, not hammering or chopping. Use saws or drills to ensure neat, accurately formed holes to sizes required with minimum disturbance to adjacent work. Temporarily cover openings; maintain weathertightness and safety.
 - 1. Utilities: Locate utilities before cutting. Provide temporary utilities as needed. Cap, valve, or plug and seal ends of abandoned utilities to prevent entrance of moisture or other foreign matter.
- F. Patching: Patch with seams and joints which are durable and not visible. Comply with specified tolerances for similar new work; create true even planes with uniform continuous appearance. Restore finishes of patched areas and, if necessary, extend finish restoration onto adjoining unpatched area to eliminate evidence of patching and refinishing. Repaint entire assemblies, not just patched area. Remove and replace work which has been cut and patched in a visually unsatisfactory manner as determined by the Architect.
- G. Qualifications: Retain experienced and specialized firms, original installers if possible, to perform cutting and patching. Workmen shall be skilled in type of cutting and patching required.

1.13 TEMPORARY FACILITIES AND UTILITIES

- A. Scope of Temporary Work: This article is not intended to limit the scope of temporary work required under the Contract. Provide all temporary facilities and utilities needed.
- B. Permits and Fees: Obtain and pay for all permits, fees and charges related to temporary work.
- C. Codes and Authorities Having Jurisdiction for Temporary Facilities and Utilities: Comply with all requirements of authorities having jurisdiction, codes, utility companies, OSHA, and industry standards including, but not limited to the following:

1. NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.
 2. ANSI-A10 Series, Safety Requirements for Construction and Demolition.
 3. NECA National Joint Guideline NJG-6, Temporary Job Utilities and Services.
 4. Electrical Service: NEMA, NECA, and UL.
- D. Field Offices: Provide Contractor's field offices as needed. Keep current copies of all Contract Documents and project paperwork neatly on file at jobsite. Permit Architect's unrestricted use of Contractor's field office facilities including copiers, telephones, plan tables, and other equipment. Furnish, maintain, and pay for light, power, phone, fax, and other field office services.
- E. Shops and Sheds: At Contractor's option, provide shops and sheds for Contractor's use as needed. Locate shops and sheds where acceptable to Owner and authorities having jurisdiction. Prior to completion of construction, temporary storage facilities and surplus stored materials shall be removed from the site.
- F. Weather Protection: It is the intent of these Specifications to require that the Contractor shall provide temporary enclosures and heat to permit construction work to be carried on during the months of November through March. Under no circumstances shall the Contractor suspend any work during the months of November through March because of their reluctance to provide and pay for temporary weather protection. These Specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible to protect in the judgment of the Architect. Included in the preceding category, without limitation, are such items as site work, excavation, steel erection, erection of certain "exterior" wall panels, roofing, and similar operations.
1. 'Weather Protection' shall mean the temporary protection of that work adversely affected by moisture, wind, and cold, by covering, enclosing and/or heating. This protection shall provide adequate working areas during the months of November through March consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install all "weather protection" material and be responsible for all costs, including heating required to maintain a minimum temperature of 55 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials or the applicable general conditions set forth in the Contract with added regard to performance obligations of the Contractor.
 2. Within 30 calendar days after his award of contract, the Contractor shall submit in writing to the Architect for approval, his proposed methods for "Weather Protection."
 3. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices. Heating devices which may cause damage to finish surfaces shall not be used.
- G. Pumping and Drainage: Protect excavations, trenches, buildings and materials from rain water, ground water, backup or leakage of sewers, drains and other piping, and from water of any other origin. Promptly remove any accumulation of water. Provide and operate all pumps, piping and other equipment necessary for pumping, drainage and protection from water.
- H. Equipment and Tools: Provide all equipment including, but not limited to, hoists, lifts, scaffolding, machines, tools and the like, as needed for execution of the work. Provide safe access to all parts of the work.
- I. Temporary Enclosures: Provide temporary enclosures to maintain proper temperatures and to prevent weather damage. Always maintain legal means of egress.

- J. Snow and Ice: Remove all snow and ice which interferes with work or safety.
- K. Streets, Walks and Grounds: Maintain public and private roads and walks clear of debris caused by construction operations. Repair all damage caused to streets, drives, curbs, sidewalks, fences, poles and similar items where disturbed or damaged by building construction and leave them in as good condition after completion of the work as before operations started.
- L. Protection: Protect nearby property and the public from construction activities. Provide and maintain barricades, warning signs and lights, railings, walkways and similar items. Immediately repair damaged property to its condition before being damaged.
- M. Public Services: Provide temporary public services such as, street lighting, night lighting, sidewalks, covered passages, signs, signals and the like, as requested by authorities having jurisdiction.
- N. Construction Fencing: Provide construction fencing and barriers as applicable to the project and as required by code to protect personnel, the public, and to control access.
- O. Security: Secure site against unauthorized entry at all times. Provide secure, locked temporary enclosures. Protect the work at all times. Provide watchman service, if necessary, to protect the work.
- P. Signs: Erect project identification signs in compliance with details to be provided by Architect. Signs shall be minimum 4' x 8' exterior grade plywood and shall contain the names of the project, Owner, Architect, major Consultants, Contractor, and major financing institution. Except for safety and warning signs, no other signs are permitted. Location as acceptable to the Architect.
- Q. Fire Prevention: Take every precaution to prevent fire. Provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and comply with recommendations regarding fire protection made by the representative of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

1.14 PRODUCTS AND SUBSTITUTIONS

- A. Specified Products: In all cases in which a manufacturer's name, trade name or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, whether or not the phrase "or equal" is used after such name, the Contractor shall provide the product of the named manufacturers without substitution, unless a written request for a substitution has been submitted by the Contractor and approved in writing by the Architect.
- B. Deviations from Detailed Requirements: If the Contractor proposes to use material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the materials is submitted for approval, and shall request written approval of the deviation from the requirements of the Contract Documents.
- C. Approval of Substitutions: In requesting approval of deviations or substitutions, the Contractor shall provide evidence, including, but not limited to manufacturer's data, leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that attainable if the detailed requirements of the Contract Documents were strictly followed. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a

sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

- D. Intent of Contract Documents: The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect shall judge the design and appearance of proposed substitutes on the basis of the suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Architect will not approve as equal to materials specified proposed substitutes which in the Architect's opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the Contractor shall furnish
- the substituted material in any color, finish texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.
- E. Additional Costs or Impact: Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner and the Architect. Any decrease in the cost of the substitution shall be returned to the Owner.
- F. Manufacturers: To the greatest degree possible, provide primary materials and products from one manufacturer for each type or kind. Provide secondary materials as recommended by manufacturers of primary materials.
- G. Substitution Requests: Refer to Section 016200 - SUBSTITUTION REQUEST FORM. Submit 3 copies. Identify product to be replaced by substitute by reference to specification sections and drawing numbers. Provide Contractor's certification and evidence to prove compliance with Contract Document requirements as acceptable to Architect.
- H. Substitution Conditions: Substitution requests will be returned without action unless one of the following conditions is satisfied. The Contractor shall state which of the following conditions applies to the requested substitution:
1. Request is due to an "or equal" clause.
 2. Specified material or product cannot be coordinated with other work.
 3. Specified material or product is not acceptable to authorities having jurisdiction.
 4. Substantial advantage is offered Owner in terms of cost, time, or other valuable consideration.
 5. Specified material or product is not available.
- I. Invalid Substitutions: Contractor's submittal and Architect's acceptance of shop drawings, samples, product data or other submittal is not a valid request for, nor an approval of a substitution unless the Contractor presents the information when first submitted as a Request for Substitution.
- J. Compatibility of Materials Used in the Work:
1. Ensure complete compatibility between materials.
 2. Compatibility shall include adhesion, erosion, solubility, differential thermal response, and galvanic action.
 3. Provide evidence of compatibility.
 4. Provide custom testing where evidence is not available.
 5. Where materials are not compatible, provide necessary isolation or transition materials and provide details of same.

6. Correct defects resulting from incompatibility including de-construction and re-construction of assemblies – whether materials are part of a submittal and substitution process or not.
7. Proposed substitutions may be rejected where compatibility information is not provided; or where compatibility is not adequately addressed, according to the Architect's judgment; or where incompatible materials would negatively impact the project's success.

1.15 DELIVERY, STORAGE AND HANDLING

- A. Manufacturer's Instructions: Strictly comply with manufacturer's instructions and recommendations and prevent damage, deterioration and loss, including theft. Minimize long-term storage at the site. Maintain environmental conditions, temperature, ventilation, and humidity within range permitted by manufacturers of materials and products used.

1.16 LABELS

- A. Labels, Trademarks, & Tradenames: Locate required labels on inconspicuous surfaces. Do not provide labels, nameplates, or trademarks which are not required. Provide permanent data plate on each item of equipment stating manufacturer, model, serial number, capacity, ratings and all other essential data.

1.17 RECORD DOCUMENTS

- A. Definition of As-Constructed Record Drawings: (commonly called "as-builts") are the record of the Project as constructed based on information the Contractor provides to the Owner under the contract for construction. Because the As-constructed Record Drawings will be based on the Contractor's mark-ups, the Architect is not responsible for the accuracy or completeness of the As-constructed Record Drawings.
- B. Definition of As-Designed Record Drawings: The record of everything the Architect designed for the Project, and including the original Construction Documents plus all addenda, Architect's Supplemental Instructions, Change Orders, Construction Change Directives and minor changes in the work.
- C. General: Keep as-constructed record documents neatly and accurately. Record information as the work progresses and deliver to Architect at time of final acceptance. Include in record documents all field changes made, all relevant dimensions, and all relevant details of the work. Keep record documents up to date with all Architect's Supplemental Instructions, Change Orders, Construction Change Directives and minor changes in the work clearly indicated.
- D. Drawings: Keep four separate sets of blackline prints at the site, one set each for mechanical, electrical, plumbing, and architectural/structural disciplines. Neatly and accurately note all deviations from the Contract Documents and the exact actual location of the work as installed. Marked-up and colored prints will be used as a guide to determine the progress of the work installed. Requisitions for payment will not be approved until the record documents are accurate and up-to-date.
 1. Work Outside Building: Record data outside of building to an accuracy of plus or minus 1 inch and determine and record the invert elevation of all drain lines.
 2. At completion of the work, submit one complete set of marked-up as-built prints for review. After acceptance, these marked-up as-built prints shall be used in the preparation of the as-built drawings.
 3. Architect shall furnish Contractor with AutoCAD or BIM Design Intent Model or both files for originals of the Contract Drawings. The Contractor shall make modifications to these files as shown on the marked-up prints. Remove superseded data to show the

completed installation.

4. The Contractor shall deliver the completed AutoCAD or BIM Design Intent Model or both as-constructed record drawings, in the same version as Contract Drawings, properly titled and dated to the Architect. Indicate preparer of as-built drawings. These as-built drawings shall become the property of the Owner.
- E. Specifications: Maintain one clean copy of complete specifications including addenda, modifications, and bulletins with changes, substitutions, and selected options clearly noted. Circle or otherwise clearly indicate which manufacturer and products are actually used.
- F. Operating and Maintenance Manuals: Manuals shall be submitted which contain the following:
1. Description of the system provided.
 2. Handling, storage, and installation instructions.
 3. Detailed description of the function of each principal component of the systems or equipment.
 4. Operating procedures, including prestartup, startup, normal operation, emergency shutdown, normal shutdown and troubleshooting.
 5. Maintenance procedures including lubrication requirements, intervals between lubrication, preventative and repair procedures, and complete spare parts list with cross reference to original equipment manufacturer's part numbers.
 6. Control and alarm features including schematic of control systems, control loop electric ladder diagrams, controller operating set points, settings for alarms and shutdown systems, pump curves and fan curves.
 7. Safety and environmental considerations.
- G. Copies of Operating and Maintenance Manuals: Three copies of the manuals shall be provided within sufficient time to allow for training of Owner's personnel. Submit one copy of the manuals to the Architect for review no later than 90 calendar days prior to substantial completion, or building turn over, whichever comes first. Submit the remaining five copies within 15 days after first review set is returned to contractor. Progress payment may be withheld if this requirement is not met.
- H. Additional Requirements for Operating and Maintenance Manuals: The requirements for manuals applies to each packaged and field-fabricated operating system. The manuals shall be provided in three-ring side binders with durable plastic covers. The manuals shall contain a detailed table of contents and have tab dividers for major sections and special equipment.
- I. Instructions for Owner's Personnel: Prior to final inspection, instruct the Owner's personnel in operation, adjustment and maintenance of products, equipment and systems. Provide instruction at mutually agreed upon times. Video all instruction sessions and deliver videos to Owner on thumb drive or other suitable media.
1. For equipment that requires seasonal operation provide similar instruction during other seasons.
 2. Use operation and maintenance manuals for each piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.
- J. Framed Data: Provide charts and lists of all valves, circuits, switches, controls and equipment. Install on walls under glass at locations directed by Architect.
- 1.18 PROJECT CLOSE OUT
- A. Complete the following prior to Substantial Completion:

1. Provide Contractor's Punch List of incomplete items stating reason for incompleteness and value of incompleteness.
 2. Advise Owner of insurance change over requirements.
 3. Submit all warranties, maintenance contracts, final certificates and similar documents.
 4. Obtain Certificate of Occupancy and similar releases which permit the Owner's full and unrestricted use of the areas claimed "Substantially Complete".
 5. Submit record documents.
 6. Deliver maintenance stocks of materials where specified.
 7. Make final change over of lock cylinders or cores and advise Owner of change of security responsibility.
 8. Complete startup of all systems and instruct Owner's personnel in proper operation and routine maintenance of systems and equipment.
 9. Complete clean up and restoration of damaged finishes.
 10. Remove all temporary facilities and utilities that are no longer needed.
 11. Request Architect's inspection for Substantial Completion.
- B. Architect will either issue a Certificate of Substantial Completion or notify Contractor of work which must be performed prior to issue of certificate.
- C. Complete the following prior to Final Acceptance and payment:
1. Obtain Certificate of Substantial Completion.
 2. Submit final application for payment, showing final accounting of changes in the work.
 3. Provide final releases and lien waivers not previously submitted.
 4. Submit certified copy of final punch list stating that Contractor has completed or corrected each item.
 5. Submit final meter readings, record of stored fuel and similar information.
 6. Submit Consent of Surety for final payment.
 7. Submit evidence of Contractor's continuing insurance coverage (if required by Contract Documents).

PART 2 - PRODUCTS [Not Used]

PART 3 - EXECUTION [Not Used]

END OF SECTION

SECTION 013543

ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 RELATED DOCUMENTS

- A. Asbestos Remediation.
- B. Demolition.

1.3 HAZARDOUS MATERIALS PROCEDURE

- A. Asbestos:
 - 1. Asbestos Materials Exist On-Site: There are accessible and inaccessible asbestos containing materials (ACM) in the existing building. ACM affected by the Demolition project are included under this contract.
 - 2. The Asbestos and Demolition Contractor "Demolition Contractor" to perform all required work related to HAZ MAT and demolition.
 - 3. Hidden ACM may only be found during Demolition. Refer to items 2 and 3 below.
 - 4. Unknown and inaccessible ACM: During the work of the Contract, it is possible that previously unknown ACM may be discovered in currently concealed locations.
 - 5. Notification: If the Demolition Contractor discover or encounter any ACM during the performance of the work, the Demolition Contractor shall immediately:
 - a. Stop working, notify the OPM and UEC about the presence of suspect ACM and request instructions for proper action, and
 - b. Take whatever steps and measures are necessary to reduce, control or eliminate the risk of exposure of workers and the public to the ACM.
 - c. Every effort will be made to obtain DEP (12 working day notification period) waivers to remove hidden or unforeseen ACM. The Demolition Contractor shall allow sufficient time for the removal of the ACM at no additional charges to the owner for delays and should waivers be denied.
 - 6. Responsible Person On-Site: The Demolition Contractor shall designate one of its senior on-site employees to be in charge of coordination between the Architect, OPM, UEC and all subcontractors with respect to hazardous materials issues.
 - 7. Responsibility for Hazardous Material Discovery: It is the sole responsibility of the Demolition Contractor and its Subcontractor to undertake whatever measures, methods or procedures are necessary, required or otherwise appropriate to safeguard the health and safety of all workers and members of the public with respect to identification and discovery of previously unknown hazardous materials during the work of the Project.
 - 8. Roofing materials was assumed to contain asbestos. The Demolition Contractor shall properly remove and dispose of the entire roofing system as ACM per DEP 310 CMR 7.15 and DLS 454 CMR 28. The Demolition Contractor may retain the services of a licensed asbestos inspector to sample the roof at no additional cost to the Owner.
 - 9. Foundation and building flashing (including under window systems, door systems, roofing systems and walls) were found to exist and found to contain asbestos. If it is needed, the Demolition Contractor shall retain the services of a licensed asbestos

- abatement contractor for proper removal and disposal at no additional cost to the Owner in accordance with all federal and state regulations. The Demolition/Asbestos Contractor is solely responsible for means and methods and techniques used to properly remove and dispose of the ACM and shall comply with all federal, state and OSHA regulations. The Demolition Contractor shall include in his bid the disposal of 500 tons of the ACM. UEC will record daily all quantities removed. The Demolition Contractor will be required to do the same. At the completion of the Demolition project should quantities of ACM removed were found to be less than 500 tons, the Demolition Contractor will be required to issue a credit to the owner based on \$275.00 per ton or will be paid \$300.00 per ton should quantities of ACM coated walls removed were found to be greater than the listed above. The unit price includes all applicable costs. It is also the Demolition Contractor's responsibility to comply with DEP 310CMR 7.15.
10. Damproofing, including but not limited to vapor barrier, paper, glue daubs on Styrofoam/foam insulation board were found to exist and found to contain asbestos. Hidden ACM including sandwiched between interior and exterior walls, and under building slab might exist and therefore, the Demolition Contractor shall separate/segregate ACM coated building materials from non-ACM and to perform the removal work at no additional cost to the Owner in accordance with all federal and state regulations. The Demolition Contractor is solely responsible for means and methods and techniques used to properly remove and dispose of the ACM and shall comply with all federal, state and OSHA regulations. The Demolition Contractor shall include in his bid the disposal of 1,000 tons of ACM coated walls/columns and beams. UEC on-site project monitor will record daily all quantities removed. The Demolition Contractor will be required to do the same. At the completion of the Demolition project, quantities of ACM coated walls/columns and beams removed should be found to be less than 1,000 tons, the Demolition Contractor will be required to issue a credit to the owner based on \$275.00 per ton or will be paid \$300.00 per ton should quantities of ACM coated walls/columns and beams removed be found to be greater than the listed quantity above. The unit price includes all applicable costs including but not limited to site preparation, demolition, segregation, transportation, and disposal. It is also the Demolition Contractor's responsibility to comply with DEP 310CMR 7.15. Certain interior walls (previously exterior due to additions) might be coated with ACM and shall be properly removed and disposed. The Demolition Contractor shall provide equipment and tools to perform destructive testing throughout at no additional cost to the Owner.
 11. Quantities for materials included above in items 9 and 10 are in addition to the scope required to demolish/dispose of the building per the demolition sections and only to be used for additions and deduction. Credit shall be given to the owner for all quantities listed above multiplying by the credit prices should less ACM was found. The Demolition Contractor shall carry all costs related to demolition and disposal in his bid as non-ACM and all scope and quantities listed above in items 9 and 10. The Demolition Contractor shall own the cost for any loss of salvage values of the columns and beams at no additional cost to the owner should ACM was found.
 12. UEC will prepare and submit to the DEP for approval Non-Traditional Work Plan (NTWP) for damproofing and flashing at no additional cost to the contractor in accordance with DEP 310CMR 7.15. UEC will be providing on-site air monitoring during demolition per DEP requirements at no additional cost to the Contractor. Contractor shall fully comply with the plan at no additional cost to the owner.
 13. Transite and ACM insulated pipes were assumed to exist underground. The Demolition Contractor shall excavate around the pipes to expose the pipes at no additional cost to the owner for removal by the asbestos contractor.
 14. The Demolition Contractor will not be allowed to charge for any lost value should ACM coated columns or beams are found and shall dispose per item 9 above.
 15. Indemnification: To the fullest extent permitted by law, the Demolition Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including, but

not limited to, attorneys' fees arising out of or relating to the performance of the Work, including the discovery or identification of any hazardous materials, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to damage to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom; and is caused in whole or in part by any negligent act or omission of the Demolition Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

B. Lead:

1. The Demolition Contractor shall be made aware that Lead Based Paint exists on painted surfaces.
2. All the work of this Contract shall conform to the standard set by all applicable Federal, State and Local laws, regulations, ordinance, and guidelines in such from in which they exist at the time of the work on the Contract and as may be required by subsequent regulations.
3. The Demolition Contractor is solely responsible for means and methods, and techniques used for demolition and lead control. The Demolition Contractor shall collect and control lead contaminated debris and to properly remove and dispose of lead contaminated soil around the building due to demolition activities.
4. The Demolition Contractor shall at his own cost and expense comply with all laws, ordinance, rules, and regulations of Federal, State, Regional and Local authorities during demolition, prepping, sanding, cutting, burning, scraping, painting over, grinding and regarding handling, storing, and disposing of lead and lead contaminated waste material.
5. The Demolition Contractor shall submit to the Architect prior to commencing of work the following:
 - a. Written respiratory and notification program
 - b. Written lead compliance program in accordance with OSHA regulations including:
 1. Training requirement certifications.
 2. Supervisor qualifications.
 3. Respirators fit test records.
 4. Medical surveillance certificates.
6. The EPA and the DEP require demolition debris with lead to be tested in accordance with the Toxicity Characteristic Leaching Procedure (TCLP) to determine the potential for significant amounts of lead to leach out of the waste. If the results are below the DEP standard (5.0 ppm), the waste may be disposed of in a conventional landfill for demolition debris. If, however, the TCLP results are above the DEP standard, the waste must be disposed of in a DEP approved, hazardous waste landfill. The Demolition Contractor shall at own cost and expense perform all required testing of waste by the TCLP. The Demolition Contractor must submit to the Owner copy of tests performed and all waste shipment records prior to disposing of debris. The Owner reserves the right to have own TCLP samples collected to verify results. All disposal costs shall be at the Demolition Contractor responsibility.
7. The following references are cited as current applicable publications. This project is subject to compliance with all regulations including but not limited to:
 - a. Commonwealth of Massachusetts, Department of Labor Standards.
 - b. Commonwealth of Massachusetts, Department of Environmental Protection.
 - c. U. S. Department of Labor, Occupational Safety and Health Administration Title 29 CFR 1910.1025 and 29 CFR Part 1926.62.
8. All above regulations are applicable to this project. Where there is a conflict between this section and the applicable regulations, the more stringent requirement shall prevail.

C. Other Hazardous Materials:

1. The Demolition Contractor shall be made aware that other hazardous materials are found inside/outside the building.
2. The Demolition Contractor shall be responsible for quantifying, removal, and proper disposal of all remaining hazardous materials, including but not limited to PCB's, mercury and Freon inside air conditioners, switches, exit signs, thermostats, and other related items.

D. Polychlorinated Biphenyls (PCB's):

1. The Demolition Contractor made aware that building materials including but not limited to caulking, painted surfaces, glue, coatings, and other building materials might contain >1 ppm of PCB's.
2. No testing was performed, and no testing will be permitted to be performed.
3. The Demolition Contractor shall properly demolish and properly dispose and collect all related debris at no additional cost to the owner.
4. All the work of this Contract shall conform to the standard set by all applicable Federal, State and Local laws, regulations, ordinance, and guidelines.
5. The Demolition Contractor is solely responsible for means and methods, and techniques used for demolition, control, and disposal. The Demolition Contractor shall collect and control possible PCB's contaminated debris and soil due to demolition activities.
6. The Demolition Contractor shall at his own cost and expense comply with all laws, ordinance, rules, and regulations of Federal, State, Regional and Local authorities during prepping, sanding, cutting, burning, scraping, grinding and regarding handling, storing, and disposing of contaminated waste material and during demolition.

E. Silica Dust:

1. The Demolition Contractor shall be made aware that building materials (Material) may contain Silica.
2. Due to the difficulty associated with exhaustive testing, the Owner has elected to direct the Demolition Contractor to assume that Silica was found.
3. The Demolition Contractor shall review and comply with most recent US Department of Labor Final Rule and shall take extra precautions to protect workers and other personnel on site.

PART 2 – (PRODUCTS) Not Used

PART 3 – (EXECUTION) Not Used

END OF SECTION

SECTION 01 57 00

TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Erosion Control Barrier
 - 2. Sediment trapping devices
 - 3. Mulch
 - 4. Dust control
 - 5. Drainage and erosion control
 - 6. Erosion Control Barrier
- B. Related Requirements
 - 1. Section 32 92 00 – Lawns

1.2 SUBMITTALS

- A. Informational Submittals
 - 1. Storm Water Pollution Prevention Plan (SWPPP)
 - 2. Materials proposed for use in dust control
 - 3. Erosion control barrier, mulch, and sediment trapping devices

1.3 COMPLIANCE WITH EPA PHASE II STORMWATER PROGRAM

- A. The Project involves an overall disturbance of greater than 1 acre and is therefore under jurisdiction of the Environmental Protection Agency's (EPA) Phase II Stormwater Program. Contractor shall comply with the program in accordance with EPA's 2022 Construction General Permit with subsequent revisions including the following:
 - 1. Prepare a SWPPP and maintain a copy on site throughout construction period. The SWPPP must be kept current and shall be amended according to the conditions described in the permit.
 - 2. Submit a Notice of Intent (NOI) 14 days prior to commencement of earth disturbing work.
 - 3. Post a sign or other notice of permit coverage .
 - 4. Comply with SWPPP including control of stormwater and non-stormwater discharges through use of structural and non-structural best management practices, inspections, maintenance and corrective action activities, spill prevention and emergency response.
 - 5. Submit a Notice of Termination following completion of all construction activities and having met permit requirements for termination.

PART 2 PRODUCTS

2.1 EROSION CONTROL BARRIER

- A. Straw wattles shall be dense 9" diameter tubes, made with certified noxious weed-free straw bound by netting of the type normally used for siltation or erosion control or construction projects.

2.2 SEDIMENT TRAPPING DEVICES

- A. Sediment trapping devices shall be Siltsack®, Dandy Bag II®, or equal.

2.3 MULCH

- A. Hay mulch shall consist of mowed cured grass, clover, alfalfa, timothy, oats, or wheat. No salt hay shall be used.

PART 3 EXECUTION

3.1 DUST CONTROL

- A. Control dust during the Work. Use a mechanical street sweeper as necessary.
- B. Prevent dust from becoming a nuisance or hazard. During construction, excavated material and open or stripped areas are to be policed and controlled to prevent spreading of the material.
- C. Control dust during the work on-site using calcium chloride and/or water.
- D. During the Work on-site, all paved road and driveway surfaces shall be scraped and broomed free of excavated materials on a daily basis. The surfaces shall be hosed down or otherwise treated to eliminate active or potential dust conditions and the natural road or wearing surface shall be exposed.
- E. Submit for approval materials proposed for use for dust control, prior to start of the Work.

3.2 DRAINAGE AND EROSION CONTROL

- A. Control erosion and siltation during the construction through mulching, haybales, siltation fencing, diversion and control of storm water run-off, ponding areas and similar methods.
- B. Provide and maintain sediment trapping systems.
- C. Discharge surface runoff from any disturbances to the site into silt containment basins. Utilize siltation prevention measures including haybale and geotextile fences before discharge to drainage systems.
- D. Install sediment trapping devices in catch basins located in existing paved areas with sediment trapping devices to minimize the transport of sediment through the subsurface stormwater collection system.

3.3 RESTORATION

- A. Provide erosion control, seed and mulch and netting for surface restoration of areas disturbed during construction activities.
- B. Provide temporary stabilization of disturbed areas that remain inactive greater than 14 consecutive days to minimize erosion. Methods to minimize erosion may include but are not limited to:

1. Spreading straw and/or providing temporary planting stabilization.
 2. Installing jute netting.
 3. Preparing surfaces to increase the runoff flow path, reduce the runoff flow velocity, or create small storage pockets to retain surface flows. Methods of accomplishing this include using mechanical devices such as track equipment or sheep's foot rollers.
- C. Restore the ground surface in brush and/or woodland areas by machine spreading of existing stripped surface soils (loam and humus), liming, fertilizing, seeding and mulching, as well as installing jute netting where required by steep slopes.
- D. Salvage existing loam and topsoil and stockpile this material for re-spreading where originally removed. On backfilling, grading shall be returned to preconstruction contours and the stockpile of loam shall be spread over areas disturbed during construction activities.
- E. Place mulch on seeded areas. Use jute netting on areas having a slope greater than 3 horizontal to 1 vertical, to anchor the mulch until a satisfactory growth is obtained. If seeding is not possible because of the time of the year, apply mulch and netting to stabilize the area until such time as seed can be sown.
- F. Provide grading, refertilizing, reseeding, remulching and/or netting to maintain the restored areas until the Work is accepted by the Owner.
- G. Seed shall be as specified under Section 32 92 00.
- 3.4 CLEANING
- A. Remove any sediment that builds up around the haybales or catchbasins.
 - B. Clean sediment trapping devices periodically during the Work. Devices shall be cleaned on a weekly basis, or more frequently if the devices become clogged.
 - C. Clean catchbasins that collect sediment as a result of the Work.

END OF SECTION

SECTION 017400

CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

- A. This Section includes requirements for the Contractor's implementation of waste management controls and systems for the duration of the Work.
- B. Develop a waste management plan, quantifying material diversion by either weight or volume to recycle and/or salvage non-hazardous construction and demolition debris.

1.3 INTENT

- A. The Owner and Architect have established that this Project shall generate the least amount of waste practical and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
- B. With regard to these goals the Contractor shall develop, for the Architect's review, a Construction Waste Management Plan (CWMP) for this Project.
- C. Each Subcontractor shall be responsible for segregating his own waste into different dumpsters as directed by the Contractor.
- D. Contractor shall be responsible for ensuring that debris will be disposed of at appropriately designated licensed solid waste disposal facilities, as defined by MGL Chapter 111, Section 150A.

1.4 SUBMITTALS

- A. Waste Management Plan (WMP): Submit within 21 calendar days after receipt of Notice to Proceed, in a format acceptable to the Owner.
 - 1. Analysis of the proposed jobsite waste to be generated, including types and rough quantities.
 - 2. Landfill Options: The name of the landfills where trash and building debris will be disposed of, the applicable landfill tipping fees, and the projected cost of disposing of all Project waste in the landfills.
 - 3. Landfill Certification: Contractor's statement of verification that landfills proposed for use are licensed for types of waste to be deposited and have sufficient capacity to receive waste from this project.

4. Alternatives to Landfilling: A list of each material proposed to be salvaged or recycled during the course of the Project. Include the following and any additional items proposed:
 - a. Cardboard and paper products.
 - b. Clean dimensional wood.
 - c. Beverage containers.
 - d. Concrete.
 - e. Slurry wall materials.
 - f. Bricks and masonry.
 - g. Asphalt.
 - h. Metals from framing, banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - i. Mechanical and electrical equipment.
 - j. Building components which can be removed relatively intact from existing construction.
 - k. Packaging materials, including cardboard, boxes, plastic sheet and film, polystyrene packaging, wood crates, plastic pails.
 - l. Glass.
 - m. Scraps from new gypsum wall board.
 - n. Carpet and pad.
 - o. Acoustical ceiling panels.
 - p. Plastics.
 5. Meetings: A description of the regular meetings to be held to address waste management.
 6. Materials Handling Procedures: A description of the means by which any waste materials identified above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
 7. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.
- B. Waste Management Progress Reports: Concurrent with each Application for Payment, submit a written Waste Management Progress Report in the same format as required for Final Report.
- C. Waste Management Final Report: Prior to Substantial Completion, submit a written Waste Management Final Report summarizing the types and quantities of materials recycled and disposed of under the Waste Management Plan. Include the name and location of disposal facilities.
1. Material category.
 2. Generation point of waste.
 3. Total quantity of waste, by weight.
- D. Other Submittals:
1. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
 2. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
 3. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.

4. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.
5. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.5 CONTRACTORS

- A. Contractor may subcontract work of this Section to a sub-contractor specializing in recycling and salvaging of construction waste.
- B. Gypsum Wallboard Recycling: New, paper-faced gypsum wallboard scrap (cuts from construction - not demolition waste) generated at project shall be recycled. Keep scrap dry.
- C. Acoustical Ceiling Panel Recycling: Demolition and construction waste pulvable mineral fiber ceiling panels may be recycled by Armstrong World Industries and US Gypsum. Contact Armstrong at 1-877-ARMSTRONG (1-877-276-7876) or www.armstrong.com or contact USG at 1-800-USG-4YOU or www.usg.com, to coordinate recycling efforts, apply for product approvals, and receive reclamation procedure requirements.
- D. Carpet Recycling: Demolition and construction waste carpet and carpet padding may be recycled by Carpet America Recovery Effort (CARE). Visit www.carpetrecovery.org to locate carpet reclaimers in local project area and reclamation procedure requirements.

PART 2 - PRODUCTS [Not Used]

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement Waste Management Plan as approved by the Architect. Provide containers, storage, signage, transportation, and other items as required to implement WMP for the entire duration of the Contract.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: The Contractor shall designate an on-site person responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.
- B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner and the Architect.
- C. Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.
- D. Separation Facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. Location shall be acceptable to the Architect.

- E. Hazardous Wastes: Any unforeseen hazardous wastes shall be separated, stored, and disposed of according to local regulations and as directed by the Owner.

END OF SECTION

SECTION 022820

ASBESTOS REMEDIATION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. The work includes the complete removal and disposal of all ACM as indicated in Part 3 of this Section.
- B. The Massachusetts licensed Asbestos Abatement "Contractor" shall perform all ACM related work.
- C. The Contractor shall provide a lump sum bid for all required services included in Part 3. Unit prices included at the end of this Section shall be part of this bid subject to addition and deductions to the lump sum bid.

1.3 RELATED DOCUMENTS

- A. Environmental Procedures.
- B. Demolition

1.4 POTENTIAL ASBESTOS HAZARD & DEBRIS

- A. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect all buildings occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state, and local agencies.
- B. If the Contractor failed to comply with the requirements of the specifications, the Owner's Representative (Project Monitor) may present a written stop of work order. The Contractor must immediately and automatically stop all work until authorized in writing by the Project Monitor to commence work. All costs related to delays shall be at the Contractor's expense.

1.5 DEFINITIONS

- A. Abatement: Procedures to control fiber release. Includes encapsulation, enclosure, and removal.
- B. Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period.

- C. Area Monitoring: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area, which is representative of the airborne concentrations of asbestos fibers, which may reach the breathing zone.
- D. Asbestos: The name given to several naturally occurring hydrated mineral silicates that possess a unique crystalline structure are incombustible and are separable into fibers. Asbestos includes Chrysotile, Crocidolite, Amosite, Anthophyllite, and Actinolite.
- E. ACM: Any material containing more than 1% or greater by weight of asbestos of any type or mixture of types. State laws may vary in their definition of asbestos containing material.
- F. Critical Barrier: A solid, asbestos impermeable partition erected to constitute a work area closure; the outer perimeter of an asbestos work area, usually erected across corridors or other open spaces to complete containment.
- G. Designer: Commonwealth of Massachusetts licensed Designer Ammar Dieb, Universal Environmental Consultants (AD-900326).
- H. Enclosure: All herein specified procedures necessary to complete enclosure of all ACM behind airtight, impermeable, permanent barriers.
- I. Friable Asbestos Material: Material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- J. HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.
- K. Project Monitor: A Project Monitor certified in the Commonwealth of Massachusetts to perform air monitoring.
- L. Removal: All specified procedures necessary to strip all ACM from the designated areas and to dispose of these materials at an acceptable site.
- M. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- N. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
- O. Wet Cleaning: The process of eliminating asbestos contamination from buildings surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos contaminated waste.
- P. Work Area: Any area indicated on the Drawings as asbestos abatement areas or as areas containing friable asbestos material.

1.6 CONTRACTOR'S USE OF THE EXISTING BUILDINGS

- A. always Keep existing driveways and entrances serving the premises clear and available to the Owner and his employees. Do not use these areas for parking or storage of materials, unless authorized in writing by the Owner.

- B. Smoking or open fires will not be permitted within the building's enclosure or on the premises.

1.7 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Provide a full-time Supervisor with all appropriate state licenses, who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for buildings and personnel, disposal procedures and other related. This person is the Competent Person as required by 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state, and local regulations, particularly those relating to asbestos. This person shall have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures, have had a minimum of two years on the job training and meet all additional requirements set forth in 29 CFR 1926 for a Competent Person.
- B. The Site Supervisor must be certified by the State of Massachusetts.

1.8 SPECIAL REPORTS

- A. Except as otherwise submit special reports directly to the Project Monitor within one day of occurrence requiring special report, with copies to all others affected by the occurrence.
- B. When an event of unusual and significant nature occurs at the site (examples: failure of negative pressure system, rupture of temporary enclosures, unauthorized entry into work areas), prepare and submit a special report listing date and time of event, chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise the Project Monitor in advance at earliest possible date.

1.9 SUBMITTALS

- A. No work shall commence until the Contractor forward a completed set of submittals not less than 10 working days prior to commencement of the work, but not more than 30-days prior to start. The submittals shall include the following:
 1. Submit all licenses and certification required.
 2. Submit written evidence that the landfill to be used for disposal of asbestos is approved for disposal of asbestos by the EPA.
 3. Submit all required items previously listed.
 4. Secure necessary permits in conjunction with asbestos removal, hauling, and disposition and provide timely notification as may be required by federal, state, regional, and local authorities. Notify the Department of Environmental Protection (DEP) and the Massachusetts Department of Labor and Standards (DLS) and provide copies of the notification.
 5. Notify the local fire, police, and Health Departments, in writing, of proposed asbestos abatement work. Advise the fire department of the nature of the asbestos abatement work, and the necessity that all firefighting personnel who may enter the work site in the case of fire wear self-contained breathing apparatus. Provide one copy of the notices.
 6. Submit proof that all required permits, site location, and arrangements for transport and disposal of asbestos containing or contaminated materials, supplies, and the like have been obtained.
 7. The Contractor shall submit a plan for managing the waste including all collection, storage, disposal, and decontamination practices/waste disposal.

8. Submit medical examinations for all employees in accordance with 29CFR 1926.1101 (m). All employees hired by the Asbestos Contractor after start of work shall have medical examinations in accordance with this paragraph before being put to work.
9. Provide MSDS for all used products on this Project.

1.10 PERMIT AND COMPLIANCE

- A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local laws, rules, and regulations pertaining to Work practices, protection of Workers, authorized visitors to the site, persons, and property adjacent to the Work.
- B. The Contractor must maintain current certificates of training, licenses, or registrations pursuant to OSHA, DEP and EPA regulations for all Work related to this Project, including the removal, handling, transport, and disposal of asbestos waste.

1.11 SAFETY COMPLIANCE

- A. Comply with laws, ordinances, rules, and regulations of federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials.
- B. Comply with the applicable requirements of the current issue of 29CFR 1926.1101 and 40CFR 61, Subparts A and B. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work.

1.12 PERSONNEL PROTECTION

- A. Prior to commencement of work, workers shall be instructed in and shall be knowledgeable of the hazards of asbestos exposure; use and fitting of respirators; use of showers; entry and exit from work areas, and all aspects of work procedures and protective measures.
- B. All abatement workers shall receive training and shall be accredited as required by 40 CFR 763.90(g). Training and accreditation shall be in accordance with 40 CFR 763, Appendix C to Subpart E. Training shall also be provided to meet the requirements of OSHA Regulations contained in 29 CFR 1926.
- C. Maintain complete and accurate records of employee's medical examinations during employment and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary of OSHA, the Director of The National Institute for Occupation Safety and Health (NIOSH), authorized representatives of either of them, and an employee's physician upon the request of the employee or former employee.
- D. Provide personnel exposed to concentrations of asbestos fibers with fire retardant disposable protective whole-body clothing, head coverings, gloves, and foot coverings. Make sleeves secure at the wrists and make foot coverings secure at the ankles using tape. Contractor should require and monitor the use of complete protective clothing. A competent person designated by the Asbestos Contractor in accordance with 29CFR 1926.1101 shall periodically examine protective clothing worn by employees in the work area for rips or tears.
- E. Provide goggles to personnel engaged in asbestos operations when the use of a full-face respirator is not required.

- F. Provide all persons with personally issued and marked respiratory equipment approved by NIOSH and OSHA. The appropriate respiratory protection shall be selected according to the most recent Massachusetts regulations.
- G. Select respirators from those approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health, and Human Services. All personnel wearing negative pressure respirators shall have respirator fit tests within the last six months and signed statements shall be available.

1.13 REFERENCE STANDARDS

- A. Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Requirements of this Section shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise shown or specified. Where conflict among requirements or with this Section exists, the more stringent requirements shall apply.
- B. Department of Labor, Occupational Safety and Health Administration, (OSHA) requirements, which govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- C. Environmental Protection Agency (EPA) requirements, which govern asbestos abatement work or hauling and disposal of asbestos waste materials.
- C. Massachusetts Department of Environmental Protection (DEP) 310 CMR 7.15.
- D. Massachusetts Department of Labor and Standards (DLS) 454 CMR 28.

1.14 REPORTING

- A. Maintain on site a daily log documenting the dates and time of the following items, as well as other significant events:
 - 1. Minutes of meetings: purpose, attendees, and brief discussion
 - 2. Visitations: authorized and unauthorized
 - 3. Personnel: by name, entering and leaving the work area
 - 4. Special or unusual events
 - 5. Personnel air monitoring tests and results
- B. Documentation with confirmation signature of the Project Monitor of the following:
 - 1. Inspection of work area preparation prior to start of removal and daily thereafter.
 - 2. Removal of any polyethylene barriers.
 - 3. Removal of waste materials from work area and transport and disposal at approved site.
 - 4. Decontamination of equipment.
 - 5. Waste Shipment Records. No final payment will be approved until all above documents have been submitted.
- C. Provide two bound copies of this log to the Project Monitor with the application for final payment.

1.15 AIR MONITORING

- A. Throughout the entire removal and cleaning operations, air monitoring may be conducted to ensure that the Contractor is complying with the EPA and OSHA regulations and any applicable state and local government regulations. The Owner will provide a Project Monitor (Universal Environmental Consultants) to take air samples at the job site at no cost to the Asbestos Contractor.
- B. The purpose of the Project Monitor's air monitoring will be to detect faults in the work area isolation such as:
 - 1. Contamination of the buildings outside of the work area with airborne asbestos fibers,
 - 2. Failure of filtration or rupture in the negative pressure system,
 - 3. Contamination of the exterior of the buildings with airborne asbestos fibers.
 - 4. Should any of the above occur the Asbestos Contractor should immediately cease asbestos abatement activities until the fault is corrected! Work shall not be recommended until authorized by the Project Monitor.
- C. The Asbestos Contractor shall be responsible for providing his/her own personnel monitoring within the work area as required to meeting CFR 1926.1101.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Plastic Sheet: 6 mil minimum thickness, unless otherwise specified, in sizes to minimize the frequency of joints.
- B. Tape: Capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under dry and wet conditions, including use of amended water. Provide tape, which minimizes damage to surface finishes. The Contractor shall repair any damage caused.
- C. Cleaning Materials: Use materials recommended by manufacturer of surface to be cleaned. Use cleaning materials only on surfaces recommended by the cleaning material manufacturer.
- D. Fire Stop Foam: Use combination fire stop foam and fire stop sealant equivalent to Dow Corning Fire Stop Foam and Dow Corning Fire Stop Sealant at all wall openings found above the ceiling system. Material shall be applied in accordance with manufacturer's recommendations.
- E. Encapsulant (Wetting Agent): 50% polyoxyethylene ether and 50% polyoxyethylene ester, or equivalent, and mixed with water to provide a concentration of one-ounce surfactant to 5 gallons of water.
- F. Impermeable Containers: Suitable to receive and retain any asbestos containing or contaminated materials until disposal at an approved site. Containers must be both air and watertight.
- G. Provide metal or fiber drums with tightly fitting lids and double thickness 6 mil plastic bags capable of being sealed and sized to fit within the drums.

2.2 EQUIPMENT

- A. Supply the required number of asbestos air filtration units to the site in accordance with these specifications.

2.3 DANGER SIGNS AND LABELS

- A. Display danger signs at each location where airborne concentrations of asbestos fibers may be in excess of 0.010 fibers/cc. Post signs at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.
- B. The sign shall also contain a pictorial representation of possible danger or hazard, such as a skull and cross bone, or other suitable warning as approved by the Project Monitor. Sign shall meet the requirements of 29CFR 1926.1101(k) (7). A sample of the signs to be used shall be submitted to the Project Monitor for approval prior to beginning work area preparation.
- C. Affix danger labels to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers.

2.4 PERSONNEL DECONTAMINATION UNIT

- A. Prior to any asbestos abatement work, including placement of plastic on walls that will contact or disturb asbestos containing surfaces, or removal of light fixtures or any items on asbestos containing surfaces, construct a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Shower Room, and Equipment Room. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose.
- B. Build suitable framing or use existing rooms, with the Project Monitor written approval, connected with framed in tunnels if necessary; line with 6 mil plastic; seal with tape at all lap joints in the plastic for all enclosures and decontamination enclosure system rooms. Decontamination units and access tunnels constructed outside shall be constructed with tops made of 5/8" plywood or approved equal. In all cases, access between contaminated and uncontaminated rooms or areas shall be through an airlock. In all cases, access between any two rooms within the decontamination enclosure systems shall be through a curtained doorway.
- C. Provide a changing (clean) room for the purpose of changing into protective clothing. Construct using polyethylene sheeting, at least 6 mil in thickness, to provide an airtight seal between the Clean Room and the rest of the buildings. Locate so that access to work area from Clean Room is through Shower Room. Separate Clean Room from the buildings by a sheet polyethylene flapped doorway.
- D. Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and don respiratory protection equipment. Do not allow asbestos contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

- E. An existing room may be utilized as the changing room if it is suitably located and of a configuration whereby workmen may enter the Clean Room directly from the Shower Room. Protect all surfaces of room with sheet plastic. Authorization for this shall be obtained from the Project Monitor in writing prior to start of construction.
 - 1. always Maintain floor of changing room dry and clean. Do not allow overflowing water from shower to wet floor in Changing Room.
 - 2. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
 - 3. Provide a continuously adequate supply of disposable bath towels.
 - 4. Provide posted information for all emergency phone numbers and procedures.
 - 5. Provide 1 storage locker per employee.
 - 6. Provide all other components indicated on the Contract drawings.

- F. Provide a completely water-tight operational shower to be used for transit by cleanly dressed workers heading for the work area from the changing room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

- G. Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
 - 1. Separate this room from the rest of the buildings with airtight walls fabricated of 6-mil polyethylene.
 - 2. Separate this room from the Clean and Equipment Rooms with airtight walls fabricated of 6-mil polyethylene.
 - 3. Provide showerhead and controls.
 - 4. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.
 - 5. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.
 - 6. Arrange so that water from showering does not splash into the Clean or Equipment Rooms.
 - 7. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.
 - 8. Provide flexible hose shower head.
 - 9. Pump wastewater to drain and provide 20 micron and 5-micron wastewater filters in line to drain or waste water storage. Locate filter hose inside shower unit so that water lost during filter changes is caught by shower pan and pumped to exterior filtering system.

- H. Provide equipment room for contaminated area; work equipment, footwear and additional contaminated work clothing are to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6-mil polyethylene flap doorway.
 - 1. Separate this room from the rest of the buildings with airtight walls fabricated of 6-mil polyethylene.
 - 2. Separate this room from the Shower Room and work area with airtight walls fabricated of 6-mil polyethylene.

- I. Separate work area from the equipment Room by polyethylene barriers. If the airborne asbestos level in the work area is expected to be high, add an intermediate cleaning space between the Equipment room and the work area.

2.5 EQUIPMENT DECONTAMINATION UNITS

- A. In areas with only one access, it may be impossible to utilize a separate Equipment Decontamination Unit. In this case, all equipment and waste materials will exit through the Personnel Decontamination Chambers.
- B. When two accesses to the work area are available, provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, Clean Room, Holding Room, Wash Room for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through Equipment Decontamination Unit.
- C. Provide an enclosed shower unit located in work area just outside Wash Room as equipment, bag, and container cleaning station.
- D. Provide Wash Room for cleaning of bagged or containered asbestos containing waste materials passed from the work area. Construct Wash Room of 2 by 4-inch (minimum) wood framing and polyethylene sheeting, at least 6-mil in thickness and located so that packaged materials, after being wiped clean can be passed to the Holding Room. Separate this room from the work area by flaps of 6-mil polyethylene sheeting, or rigid self-closing doors.
- E. Provide Holding Room as a drop location for bagged ACM passed from the Wash Room. Construct Holding Room of 2 by 4-inch (minimum) wood framing and polyethylene sheeting, at least 6-mil in thickness and located so that bagged materials cannot be passed from the Wash Room through the Holding Room to the Clean Room.
- F. Provide Clean Room to isolate the Holding Room from the building's exterior. Construct Clean Room of wood framing and polyethylene sheeting, at least 6-mil in thickness and locate to provide access to the Holding Room from the building's exterior. Separate this room from the exterior by flaps of 6 mil polyethylene sheeting, or rigid self-closing doors.

PART 3 - EXECUTION

3.1 SCOPE OF WORK

It is anticipated that the asbestos abatement project will be performed in one phase. It is the asbestos contractor's responsibility to comply with the phasing schedule prepared by the Architect and shall comply with the commencement and completion dates allocated. Changing, decreasing, and increasing of phases, size, location, and scope of work shall not constitute compensation by the Owner or any of his representatives.

The project monitor(s) will record on a daily basis all quantities removed. The asbestos contractor will be required to do the same. Both the contractor and the monitor must sign UEC daily logs ONLY. No work will continue until all logs are signed daily. At the completion of the total project, should quantities removed were found to be less than the listed below, the asbestos contractor will be required to issue a credit to the owner based on unit prices or will be paid at the unit prices should quantities removed were found to be greater than the listed below. Quantifications will be based on UEC logs only.

| LOCATION | TYPE OF MATERIAL | APPROXIMATE QUANTITY |
|------------------------------|---------------------------------------|----------------------|
| Throughout/Various Locations | Flooring Materials Caulking in CMU | 13,500 SF 600 LF |

| | | |
|-------------------------|---------------------------------------|-----------|
| | Wood Fire Doors | 3 Total |
| | Sinks | 8 Total |
| | Round Light Fixtures | 2 Total |
| | Pipe and Hard Joint Insulation | 100 LF |
| | Hidden Pipe and Hard Joint Insulation | 500 LF |
| | Demolition to Access ACM | 6,500 SF |
| | Light Fixtures | 450 Total |
| Stage | Hardwood Flooring, Paper, and Mastic | 650 SF |
| Gymnasium | Flooring, Tiles, Paper, and Mastic | 2,400 SF |
| Kitchen Mechanical Loft | Duct Insulation/Glue | 320 SF |
| Crawl Space | Pipe and Hard Joint Insulation | 4,500 LF |
| | Soil/Debris | 18,000 SF |
| Exterior | Windows | 185 Total |
| | Unit Vent Grilles | 10 Total |
| | Doors | 7 Total |
| Site | Transite Sewer Pipe | 500 LF |

Specific Notes:

1. It is the Asbestos Contractor's responsibility to inspect the site and confirm condition prior to the submission of his/her bid package. It is also the Asbestos Contractor's responsibility to review the demolition drawings, notes, and phasing configurations. The Asbestos Contractor must include in his/her bid the entire scope of work listed above. Means and methods of removal will be at the discretion of the Asbestos Contractor with prior approval by the onsite monitor and designer.
2. For the purposes of these specific notes and throughout this entire section, any plumbing, mechanical or electrical demolition that is required and any/all mechanical/electrical work listed shall be done by licensed personnel. The contractor shall retain the services of electricians, HVAC technicians and plumbers if needed to perform the work at no additional cost to the owner
3. For the purposes of these specific notes and throughout this entire section, all work shall be performed as an asbestos abatement activity including disposal.
4. Disconnect and remove all ceiling mounted apparatus including but not limited to lighting fixtures, fire alarm equipment, speakers, wireless routers, and others on ceiling prior to abatement/demolition. Disconnect, remove, and/or make safe any fire sprinkler heads or piping prior to the abatement/demolition of ceiling.
5. In all areas where ACM pipe and hard joint insulation has to be removed, ACM debris is included in the scope of work and has to be removed and disposed of as ACM at no extra cost to the Owner.
6. Remove and dispose as ACM of all ACM pipe and hard joint insulation found in the building and ACM that might be found in concealed and hidden locations including all ACM debris that might be found.
7. Remove and dispose as ACM of flooring materials listed above, including but not limited to multiple layers of vinyl floor tiles, linoleum floor covering, carpet, resilient baseboard, stair treads, transition strips, leveling compound, cementitious leveler, plywood, paper under plywood, and mastic under all above items. Removal must be done which leave substrate smoothly (in similar condition to that which existed prior to Mastic application). Use of

Chemicals will be permitted. Once all mastic has been removed, the Asbestos Contractor shall shoot blast the concrete floors. Should wood flooring is present the Asbestos Contractor remove the wood flooring (if exist). The Asbestos Contractor will be required to disconnect services (gas, water) and remove and dispose of fixed objects to access ACM. Should ACM be found underneath objects not previously removed, the Asbestos Contractor will be required to perform abatement at no additional cost to the owner for re-mobilization. Multiple layers are found. Quantities listed above are for flooring surfaces.

8. Disconnect, remove, and dispose of the wood fire doors and all related attachments as ACM.
9. Disconnect, remove, and dispose of the sinks as ACM.
10. Disconnect, remove, and dispose of the round light fixtures.
11. Remove and properly dispose of interior caulking. Caulking was found to contain asbestos and assumed to contain >1ppm of PCB's.
12. Remove and dispose of as ACM of wood fire doors.
13. Remove, decontaminate, and dispose of all stored items in the crawl spaces.
14. Remove and dispose of as ACM of a minimum of 3 inches of soil in the crawl spaces.
15. The Asbestos Contractor shall make spot demolition in walls/ceilings to uncover hidden ACM that may be found prior to the demolition activities. The Asbestos Contractor shall perform needed demolition at no additional cost to the owner to remove all ACM (Walls and Ceilings Demolition to Access ACM). Refer to Section 01 35 43 regarding Silica Dust.
16. Remove and dispose as ACM of the stage flooring system including paper/mastic. Refer to 7 above.
17. Lower, remove and dispose of as ACM of duct insulation, wrap, and glue.
18. Disconnect, remove, and properly dispose of light fixtures. Ballasts were assumed to contain PCB's and tubes assumed to contain mercury. Retain the services of a licensed electrician.
19. Remove and properly dispose of all windows, curtain walls system, including but not limited to multiple layers of transited panels, stone panels, hidden transite panels, skylight windows, screens, windows, doors, glass, glass blocks, multiple layers of frames, sash, casings, sills, louvers, unit vents grille, shims, fasteners, anchors, sealant, and flashing. Wire-brush all adjacent surfaces to insure the complete removal of caulking. Framing and glazing caulking was found to contain asbestos and assumed to contain >1ppm of PCB's.
20. Remove and dispose as ACM of transite and ACM insulated pipe and debris that might be found during excavation/demolition. The Site/Demolition Contractor will perform excavation as needed to expose the pipe. The Asbestos Contractor will be required to perform additional excavation (if needed) to remove the ACM.

3.2 JOB CONDITIONS

- A. Do not commence asbestos abatement work until:
 1. Arrangements have been made for disposal of waste at an acceptable site.
 2. Arrangements have been made for containing and disposal of wastewater resulting from wet stripping or filtering through a 5-micron filter.
- B. All materials resulting from abatement work, except as specified otherwise shall become the property of the Asbestos Contractor and shall be disposed of as specified herein.

3.3 INSPECTION AND PREPARATION

- A. Examine the areas under which asbestos will be abated and notify the Project Monitor in writing of conditions detrimental to the proper and timely completion of the work.

- B. Before any work commences, post danger signs in and around the Work Area to comply with 29CFR 1926.1101 (k) (7) as required by federal and state regulations, and as specified herein.
- C. All materials resulting from demolition work, except as specified otherwise shall become the property of the Contractor and shall be disposed of as specified herein.
- D. Pre-clean all areas prior to setting up containment and remove all visible ACBM debris.
- E. Clean all route areas from the work areas leading to the dumpster and or trucks.

3.4 WORK PROCEDURE

- A. Perform asbestos related work in accordance with 29CFR 1926.1101 and as specified herein. Use wet removal procedures. Personnel shall wear and utilize protective clothing and equipment as specified herein. Personnel of other trades not engaged in the removal and demolition of asbestos shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection provisions of this specification are complied with by the trade personnel. Provide and post, in the Equipment Room and the Clean Room, the decontamination and work procedures to be followed by workers, as described hereinafter.
- B. Each worker and authorized visitor shall, upon entering the job site, remove street clothes in the Clean Change Room and put on a respirator and clean protective clothing before entering the equipment room or the work area. All workers should remove gross contamination before leaving the work area. All clothing (coveralls, head covers, boots) shall be removed and properly disposed of before leaving equipment room. With the exception of bathing suites and respirators, the workers shall proceed to the Shower Room. Under the shower, respirators shall be removed and cleaned. Cleaned respirators shall be placed in suitable clean plastic bags and carried by employees to Clean Room. Soap, towels, shall be furnished by the Asbestos Contractor. The Asbestos Contractor shall maintain proper sanitary conditions. The Asbestos Contractor's designated competent person shall insure that these practices are being adhered to.
- C. Following showering and drying off, each worker and authorized visitor shall dispose of towels as contaminated waste and proceed directly to the Clean Change Room and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the work area from the Clean Change Room, each worker and authorized visitor shall put on the applicable respirator and shall dress in clean protective clothing. Contaminated work footwear should be stored in the equipment room when not in use in the work area.
- D. Contaminated work footwear shall be stored in the equipment room when not in use in the work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or double bag for use at next site.
- E. Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the holding area from outside wearing a respirator and dressed in clean coveralls. No worker shall use this system to leave or enter the washroom or the work area.

- F. Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbance of asbestos containing or contaminated materials and until final cleanup is completed. This includes the removal of any equipment in contact with ACM such as lights, and HVAC grills.

3.5 PREPARATION OF THE WORK AREA

- A. Seal off the work area by sealing large openings such as open doors with a critical barrier. The critical barrier shall constitute the outermost boundary of the asbestos abatement project work area. Plastic sheeting on open framing is not a suitable critical barrier.
- B. Prior to any asbestos abatement work, clean the proposed work areas using HEPA filtered vacuum equipment and wet cleaning methods as appropriate. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters will not be permitted. Dispose of all cloths which are used for cleaning as contaminated waste.
- C. Place all tools, scaffolding, staging necessary for the work in the area to be isolated prior to erection of plastic sheeting temporary enclosure.
- D. Shut down electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements. Provide 24-volt safety lighting and provide ground-fault interrupter circuits as power source for lights and electrical equipment.
- E. Seal off all openings, including but not limited to corridors, doorways, windows, skylights, ducts, grills, diffusers, and any other penetrations of the work areas, with 6-mil plastic sheeting and sealed with tape.
- F. Prior to any abatement activities seal all floor and ceiling openings or penetrations that have not already been sealed. This includes penetration through ceiling and floor slabs, both empty holes and holes accommodating items such as cables, pipes, ducts, conduit and expansion joints in floors and wall and floor slab assemblies.
- G. Use combination fire stop foam and fire stop sealant equivalent to Dow Corning Fire Stop Foam and Dow Corning Fire Stop Sealant at all walls found above the ceiling system. Material shall be applied in accordance with manufacturer's recommendations.
- H. Maintain emergency and fire exits from the work areas, or establish alternative exits satisfactory to the local fire officials. Coordinate work with local fire and police departments and Project Monitor.
- I. Shut down and isolate heating, cooling, ventilating air systems in the contaminated areas to prevent contamination and fiber dispersal to other areas of the structure. During the work, seal vents within the work area with solid barriers, such as plywood and tape and plastic sheeting, or as indicated on the drawings.
- J. Before work begins, clean all items which can be removed without disrupting the asbestos material. Pre-clean movable furniture, [carpeting, clocks, speakers, books, and other objects] within the proposed areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate; remove such objects from work areas to a temporary location.

- K. Pre-clean non-removable furniture, book shelving, equipment, heat fans, fire alarms, pipes, ductwork, wires and conduits, lockers, skylights, speakers, and other fixed objects within the proposed work areas, using HEPA filtered vacuum equipment and wet cleaning methods as appropriate prior to abatement activities, and enclose with minimum 6 mil plastic sheeting sealed with tape.
- L. The Asbestos Contractor should supply an asbestos certified plumber to be available should any questions or problems arise inside a containment.

3.6 MAINTENANCE OF ENCLOSURE SYSTEMS

- A. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning of each work period.
- B. Use smoke methods to test effectiveness of barriers in the presence of the Project Monitor.

3.7 CONTROL ACCESS

- A. Permit access to the work area only through the Decontamination Unit. All other means of access shall be closed off, warning signs displayed on the clean side of the sealed access.
- B. Large openings such as open doorways and passageways shall be sealed as a critical barrier.
- C. Plastic sheeting on open framing is not a suitable critical barrier. All cracks, seams, and openings in critical barriers shall be caulked or otherwise sealed, to prevent the movement of asbestos fibers out.

3.8 ISOLATION OF WORK AREA

- A. Separate the work area from other portions of the buildings, and the outside by sheet plastic barriers at least 6 mil in thickness, or by sealing with duct tape.
- B. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seal until all work including work area decontamination is completed. All lighting fixtures shall have had power shut off.
- C. Provide sheet plastic barriers at least 6 mil in thickness as required to complete seal openings from the work area into adjacent areas. Seal the perimeter of all sheets plastic barriers with duct tape.

3.9 COVERING OF FLOOR AND WALL SURFACES

- A. Clean all contaminated furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning prior to being moved or covered. All equipment, furniture, and other stored items in work area is to be deemed contaminated unless specifically declared as uncontaminated on the Drawings or in writing by the Project Monitor. Clean all surfaces in work area with a HEPA filtered vacuum or by wet wiping prior to the installation of any sheet plastic.

- B. Cover floor of work area with 2 individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, turned up walls at least 12 inches. Form sharp right angle-bend at junction of floor and wall so that there is no radius, which could be stepped on causing the wall attachment to be pulled loose. Duct tape all seams in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.
- C. Remove all general construction items such as cabinets, casework, doors and window trim, moldings, ceilings, trim, other items which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall, unless otherwise indicated, all such materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.
- D. Cover all walls in work area with two (2) layers of polyethylene sheeting, at least 6- mil in thickness, mechanically supported and sealed with duct tape. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the Contract Documents or in writing by the Project Monitor. There shall be no seams in the plastic sheet at wall to floor joints.
- E. If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the work area, enclose it as required by this section and decontaminate it as specified herein.

3.10 NEGATIVE PRESSURE

- A. Establish negative pressure in the work area by installation of High Efficiency Particulate Air (HEPA) filter air-purifying devices. Comply with ANSI Z9.2, Local Exhaust Ventilation Requirements. Maintain system in operation 24 hours per day until decontamination of the work area is completed.
- B. Size negative air pressure system(s) to provide a minimum of one air change every 15 minutes for the area under negative pressure. Locate the exhaust unit(s) so that makeup air enters the work area primarily through the decontamination unit and traverses the work area as much as possible. The intent is to provide the air change specified in each work area (room), not just the specified negative pressure. Place the end of the unit or its exhaust duct through an opening in the plastic barrier or wall covering. Seal the plastic around the unit or duct with tape.
- C. The system shall maintain an air pressure differential of minus 0.02 inches of water. Test the negative pressure system prior to any abatement actions to ensure that the 0.02-inch differential is present. The Project Monitor may require the use of ventilation smoke tubes to check the system performance.

3.11 REMOVAL OF ASBESTOS CONTAINING MATERIALS

- A. Thoroughly wet ACM to be removed prior to stripping to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal Encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal Encapsulant to penetrate material thoroughly. If a removal Encapsulant is used, apply in strict accordance with manufacturer's written instructions.
- B. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.

- C. Remove saturated ACM in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags bend over and seal with minimum three wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit.

3.12 DECONTAMINATION OF WORK AREA

- A. Maintain premises and public properties free from accumulation of waste, debris, and rubbish, caused by operations. Remove visible accumulations of asbestos material and debris. Wet clean all surfaces within the work area.
- B. Remove the first layer of plastic sheets from walls and floors only. Take proper care in folding up plastic sheeting to minimize dispersal of residual asbestos containing debris.
- C. Leave the windows, doors, and HVAC vents sealed. Maintain HEPA filtered negative air pressure systems, air filtration, and decontamination enclosure systems in service.
- D. Remove all debris from floor of work area. This includes all trash, scraps of lumber, pipes, stored items, and all visible asbestos debris. The asbestos debris is primarily deteriorated pipe insulation that has fallen to the ground. Dispose of all debris removed as asbestos contaminated waste. HEPA vacuumed the entire floor.
- E. Clean all surfaces in the work area and any other contaminated areas with water and with HEPA filtered vacuum equipment. After cleaning the work area, wait 24 hours to allow for settlement of dust, and again wet clean and clean with HEPA filtered vacuum equipment all surfaces in the work area. After completion of the second cleaning operation, perform a complete visual inspection of the work area to ensure that the work area is free of visible asbestos debris.
- F. Include sealed drums, and all equipment used in the work area in the cleanup and removed from work areas, via the equipment decontamination enclosure system, at an appropriate time in the clean sequence.
- G. Conduct cleaning and disposal operations to comply with applicable ordinances and antipollution laws. Do not burn or bury rubbish and waste materials on job site. Do not dispose of volatile waste in storms or sanitary drains. Do not dispose of waste into streams or waterways.
- H. Store volatile waste in covered metal containers during work hours and remove from premises at end of workday. Prevent accumulation of waste, which create hazardous conditions. Provide adequate ventilation during use of volatile or noxious substances.
- I. If the Project Monitor, within 24 hours after the second cleaning, finds visible accumulations of asbestos debris in the work area, repeat the wet cleaning until the work area is complying, at no additional expense to the Owner.
- J. Remove the first layer of plastic sheet from walls and floors only. Take proper care in folding up plastic sheeting to minimize dispersal of residual asbestos containing debris.
- K. Leave the windows, doors, and HVAC vents sealed. Maintain HEPA filtered negative air pressure systems, air filtration, and decontamination enclosure systems in service.

- L. Following the final visual inspection by the Project Monitor, after the removal of asbestos-containing materials and decontamination of work areas, and while space enclosures systems remain in place, seal all surfaces from which asbestos-containing material have been removed to assure immobilization of any remaining fibers. Use a colored sealant so that complete coverage may be ensured by a visible inspection by the Project Monitor to verify that asbestos-containing material has been adequately removed. Apply sealer in accordance with manufacturer's recommendations using airless spray equipment.
- M. Clearance air samples will be taken by the Project Monitor using aggressive air sampling.

3.13 WORK AREA CLEARANCE

- A. The work is complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below. When this has occurred, the Asbestos Contractor will notify the Project Monitor that the area is ready for clearance.
- B. The number and volume of air samples taken, and analytical methods used by the Project Monitor may vary depending upon the analytical instruments used.
- C. Phase Contrast Microscopy (PCM) will be used for air sampling clearance.
- D. The Owner will pay for the initial testing required for clearance. Should the initial testing fail, the Contractor will reimburse the Owner for the cost of all additional testing based on \$90.00 per hour for project monitor and \$30.00 per each PCM.

3.14 DISPOSAL OF ACM AND ASBESTOS CONTAMINATED WASTE

- A. To prevent exceeding available storage capacity on site, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.
- B. Comply with 29 CFR 1926.1101.
- C. Seal all asbestos and asbestos contaminated waste material with double thickness 6-mil, sealable plastic bags. Label the bags; transport and disposal of all in accordance with the applicable OSHA and EPA regulations. At the conclusion of the job, place all polyethylene material, tape, cleaning material and clothing in the drum. Seal, correctly label, and dispose of asbestos waste material.
- D. Transport the bags to the approved waste disposal site. Asbestos Contractor shall obtain trip tickets at the landfill to document disposal of asbestos containing materials. A form shall be signed, not initially, by all parties. Copies of all trip tickets shall be submitted to the Project Monitor.
- E. If a rental vehicle is used to transport asbestos waste, Asbestos Contractor shall provide to the vehicle's owner a written statement as to the intended use of the vehicle. A copy of such notice, signed by the vehicle owner, shall be provided to the Project Monitor prior to transporting materials in the vehicle. Two layers of 6-mil plastic sheet shall be placed on the floor and walls of the rental vehicle prior to loading any containers of asbestos waste.
- F. Consider wastewater from showers and sinks to be contaminated waste and disposed of in accordance with this Section unless water has been filtered through a 5-micron filter.

3.15 DISPOSAL OF NON-CONTAMINATED WASTE

- A. Remove from the site all non-contaminated debris and rubbish resulting from demolition operations. Transport materials removed from demolished areas and disposed of off-site in a legal manner.
- B. During progress of work, cleaning site, and public properties, and dispose of waste materials, debris, and rubbish. Provide on-site containers for collection of waste materials, debris, and rubbish. Remove waste materials, debris, and rubbish from site and legally dispose of it at public or private dumping areas off Owner's property.

3.16 FINAL CLEAN UP

- A. Employ experienced workers or professional cleaners for final cleaning. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from exposed to view interior and exterior finished surfaces. Polish surfaces so designated.

3.18 UNIT PRICES

- A. All quantities listed in 3.01 are approximate. It is the Asbestos Contractor's responsibility to inspect the site and confirm condition and quantities prior to the submission of his/her bid package. It is also the Asbestos Contractor's responsibility to review the demolition drawings, notes, and phasing configurations.
- B. The contractor must include in his/her bid the entire scope of work listed in 3.01. The Contractor must agree and accept all unit prices listed below. Means and methods of removal will be at the discretion of the contractor with prior approval by the on-site monitor and designer.
- C. Units prices listed below are inclusive of all related costs.

| | Addition | Deduction |
|--------------------------|------------------|------------------|
| 1. Hard Joint Insulation | \$ 50.00 each | \$ 45.00 each |
| 2. Pipe Insulation | \$ 50.00 per LF | \$ 45.00 per LF |
| 3. Interior Caulking | \$ 10.00 per LF | \$ 8.00 per LF |
| 4. Joint Compound | \$ 8.00 per SF | \$ 7.00 per SF |
| 5. Flooring | \$ 8.00 per SF | \$ 7.00 per SF |
| 6. Duct Insulation | \$ 25.00 per SF | \$ 20.00 per SF |
| 7. Debris/Soil | \$ 3.00 per SF | \$ 2.50 per SF |
| 8. Transite Pipe | \$ 115.00 per LF | \$ 100.00 per LF |

End of Section

SECTION 02 41 00

SITE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Demolition of structures and items within the Limit of Work indicated on the Drawings.
2. This section does not include building demolition.

B. Related Sections

1. Section 01 57 00 – Temporary Controls
2. Section 31 23 00 – Excavation, Backfill, Compaction and Dewatering
3. Section 32 92 00 – Lawns
4. Section 33 05 29 – Pipeline and Underground Structure Abandonment

1.2 DEFINITIONS

- A. Demolish – To tear down, segregate waste streams and lawfully recycle or dispose of all debris generated in the process including structure contents.
- B. Limit of Work – Area delineated on Drawings that defines the extent of demolition work under the Contract.

1.3 SUBMITTALS

A. Informational Submittals

1. Methods of demolition and equipment proposed to demolish structures. This submittal should be sufficient to demonstrate a thorough understanding of the Work to be completed and the means that will be implemented to safely complete the demolition within the Contract Time without damage to surrounding structures or resources.
2. Waste Management Plan to indicate the types of wastes to be generated and the proposed disposal or recycling locations. Include back-up disposal facilities.
3. Copies of any authorizations and permits required to perform the Work, including disposal/recycling facility permits.

- B. The following records and disposal documentation must be maintained and kept current throughout the Project. These documents will be maintained in chronological order in a 3-ring binder with appropriate tabbed dividers. The binder will be reviewed for completeness at each progress meeting. Requests for periodic payments may be rejected, in whole or in part, if documentation is not current.

1. Records of the amounts of waste generated, by waste type.
2. Evidence of lawful disposal or recycling of all wastes generated.
3. Documentation of underground structures and utilities.

SITE DEMOLITION

4. Copies of any analytical results generated as a result of waste stream characterization.

1.4 REGULATORY REQUIREMENTS

- A. Contractor is solely responsible for obtaining permits or approvals which may be required to perform the work of this section, including all costs, fees and taxes required or levied.
- B. Notify and obtain such permits or approvals from agencies having jurisdiction over demolition prior to starting work.
- C. Complete, sign and submit a Notice of Intent to be covered under EPA's General Permit for Construction Activity. Prepare and comply with the requirements of a site-specific Stormwater Pollution Prevention. Refer to Specification 01 57 00.
- D. Comply with all applicable federal, state, and local environmental, safety and health requirements regarding the demolition of structures and other site features and recycling or disposal of demolition debris, as applicable.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 PROJECT MANAGEMENT

- A. Provide a full-time Project Superintendent who shall serve as a direct communication among the Contractor, subcontractors, and the Owner.
- B. Require all subcontractors to provide a foreman or superintendent. That individual must be on site at all times that the subcontractor is working.

3.2 EXAMINATION

- A. Verify site conditions before proceeding with demolition work. Field check the accuracy of the Drawings and inspect structures and utilities prior to start of work and notify the Engineer in writing, of any hazardous conditions and/or discrepancies. Primary structures and other site features are shown on the Drawings; other smaller structures, including, but not limited to, concrete walks and pads, miscellaneous signs, lamp posts, railings, and fencing may not be shown on the Drawings, but may exist within the Limit of Work and shall be demolished.
 1. Unknown Site Conditions - The information provided on the Drawings and in the Specifications is believed accurate. Field verify all information. Bear full responsibility for obtaining all locations of underground structures, utilities and their connections. Maintain services to buildings outside the limits of work.

3.3 PREPARATION

- A. Remove and/or stabilize all overhead hazards, prior to commencing work near any building. Where hazards cannot be stabilized, mark and control areas below hazards to prohibit access below the hazards. This shall be performed with caution tape, saw horses, safety fence or other types of barricades as determined by applicable safety codes. Similarly, all holes through the floors or weak sections of the floor shall either be covered or clearly marked to prohibit entry. Floor coverings shall be capable of supporting heavy equipment use.
- B. Terminate and discontinue utilities serving the individual structures to be demolished, prior to demolition in accordance with Section 33 05 29.

- C. Plug and abandon all sewer lines and sewer manholes as indicated on Drawings before any plumbing fixtures or traps are removed from buildings.

3.4 HAZARDOUS MATERIALS

A. Lead Paint

1. A number of state, federal and local agencies regulate work which involves lead paint. Paint coatings on the structures to be demolished that contain lead. This lead could present a hazard to workers and requires regulatory compliance with 29 CFR 1926.62 "Lead in Construction."
2. Of specific concern is the cutting of steel components using torch methods. If the Contractor intends to torch cut painted steel, lead paint must be removed from the area to be cut with a chemical stripper or other means prior to cutting. Sufficient paint must be removed from the area to prevent volatilization of lead during the heating of the steel. Other means of controlling worker exposure to lead will be acceptable provided that they meet the requirements of 29 CFR 1926.62.
3. Where activities may generate leaded dust or impact a leaded surface, regulate work area so that dust migration is contained properly within the regulated area. Once the work is complete, properly clean up and dispose of leaded dust and materials.

B. Oil and Hazardous Material Contamination

1. There is no known soil contamination at the site. However, contaminated soil may be encountered during excavation. In the event that contaminated soil is encountered, handle such material in accordance with local, state, and federal regulations.

3.5 DEMOLITION

A. Building demolition is not covered in this specification.

B. Demolish underground utilities and related appurtenances by methods that will not cause damage to surrounding structures, underground and overhead utilities, or other existing items and structures that are to remain in place.

C. Promptly and properly manage all debris as the demolition progresses. Construct and/or prepare material staging/stockpile areas at locations approved by the Engineer.

D. Miscellaneous Site Structures and Features

1. Concrete Slabs – Demolish all concrete slabs including patios, aprons, steps, and parking pads and associated foundation walls (if any) within the Limit of Work, whether or not they are specifically shown on the Drawings.
2. Fences and Other Structures – Demolish all fences, structures, sheds, etc. within the Limit of Work, whether or not they are specifically shown on the Drawings.
3. Trees – Trees are an important resource and shall be treated as such. Unless specifically noted to be demolished, protect all trees and obtain approval of the Engineer prior to removing or pruning any other trees.

3.6 BITUMINOUS CONCRETE PAVEMENT REMOVAL

- A. Remove bituminous concrete pavement within Limit of Work as indicated on the Drawings.

3.7 DISPOSAL

- A. Legally dispose of or recycle all materials from demolition as well as equipment and other materials that are within the buildings. The disposal site shall be permitted to accept the waste stream by the applicable State Agency. Perform the loading of demolition materials in a manner that prevents materials and activities from generating excessive dust and ensures minimum interference with roads, sidewalks and streets both onsite and offsite.
- B. Provide evidence that the demolition materials have been received at a legal disposal, recycle, reuse or salvage location. Such proof may include truck weigh slips from an approved disposal facility or documentation of transfer of title. Transport of all materials off site shall be in accordance with applicable Department of Transportation Regulations. All materials leaving the site shall become the property of the Contractor.

3.8 SITE RESTORATION

- A. Prior to any backfilling, document the location of any structures that remain in place through construction photographs and by obtaining swing ties to and elevations of any structures to be buried. Progress payments may be withheld if current documentation is not maintained.
- B. Backfill foundation areas and areas from which structures were removed to achieve the final grades indicated on the Drawings. Backfilling shall be conducted in accordance with Section 31 23 00.
- C. Restore damaged areas of the site or neighboring properties and stabilize slopes in accordance with the erosion and sedimentation control requirements of the Contract and the stormwater permit.
- D. Loam and seed all disturbed areas in accordance with Section 32 92 00.

END OF SECTION

SECTION 024110

DEMOLITION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. Work Included:

1. Demolition and removal of buildings and structures and as required for new work. Refer to the Drawings for additional requirements.
2. Demolition and removal of selected site elements and as required for new work. Refer to the Drawings for additional requirements.
3. Salvage of existing items to be reused or turned over to the facility.
4. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at their expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
5. Maintenance, watering and care of trees designated to remain by a certified arborist during the construction period.
6. Demolition and removal work shall properly prepare for alteration work and new construction to be provided under the Contract.
7. Scheduling and sequencing operations without interruption to utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and the Owner.

B. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 011000 - GENERAL REQUIREMENTS for temporary facilities and controls, for maintenance of access, for cleaning during construction, and for dust and noise control.
2. Section 017419 - CONSTRUCTION WASTE MANAGEMENT for waste management and recycling.
3. Section 018120 - CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT for indoor air quality control procedures.
4. Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL:
 - a. Waste management and recycling.
 - b. Disconnecting, capping and otherwise making inactive existing fire protection services in areas where demolition and removal work is required.
 - c. Disconnecting, capping and otherwise making inactive existing plumbing services in areas where demolition and removal work is required.
 - d. Disconnecting, capping and otherwise making inactive existing HVAC services in areas where demolition and removal work is required.

- e. Disconnecting, capping and otherwise making inactive existing electrical services in areas where demolition and removal work is required.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to the Owner ready for reuse, at a location designated by the Owner. Protect from weather until accepted by Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain property of the Owner as applicable. Carefully remove each item or object in a manner to prevent damage and deliver promptly to a location acceptable to the Owner.

1.5 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity. Ensure Owner's on-site operations are uninterrupted if applicable.
 - 2. Coordination for shutoff, capping, and continuation of utility services.
- B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged, and turned over the Owner.
- C. Predemolition Video and Pictures: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 01 requirements. Submit before Work begins.

1.6 QUALITY ASSURANCE

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the

existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.

- B. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.
- E. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Section 011000 - GENERAL REQUIREMENTS, Project Meetings. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 SALVAGING

- A. Salvaged for Storage: Materials indicated on the Drawings or designated in the field by the Owner to be salvaged and stored shall be carefully removed and delivered to the Owner at locations determined by Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Engage a professional engineer registered in the state that the project is located to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- F. Survey of Existing Conditions: Record existing conditions by use of preconstruction videotapes.
 - 1. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies and Owner.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
 - 4. Prior to commencing cutting work in existing surfaces, take all precautionary measures to assure that mechanical and electrical services to the particular area have been made inactive. Coordinate with Fire Suppression, Plumbing, HVAC, and Electrical subcontractors. Only licensed tradesmen of that particular trade shall disconnect and cap existing mechanical and electrical items that are to be removed, abandoned and/or relocated.
 - 5. If, during the process of cutting work, existing utility lines are encountered which are not indicated on the Drawings, regardless of their condition, immediately report such items to the Architect. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Section 011000 - GENERAL REQUIREMENTS, Temporary Facilities and Controls.
 - 2. Maintain adequate passage to and from all exits at all times. Before any work is done which significantly alters access or egress patterns, consult with the Architect and obtain approval of code required egress. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.

- B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
 - 2. Remove temporary shoring, bracing and structural supports when no longer required.
 - 3. Post warning signs and place barricades as applicable during placement and removal of temporary shoring.

- C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 - 4. Maintain adequate ventilation when using cutting torches.
 - 5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 6. Remove structural framing members by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 8. Maintain clear unimpeded passage through the work area for safety and emergency egress.
 - 9. Saw cut overruns in concrete and masonry for new door, window and other finish openings is not permitted. Core drill corners and finish square to match required opening.
 - 10. Dispose of demolished items and materials promptly.
 - a. Comply with requirements in Section 017400 - CONSTRUCTION WASTE MANAGEMENT.

- B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to storage area designated by the Owner.
5. Protect items from damage during transport and storage.

C. Items for Re-use and Preservation of Existing Surfaces to Remain:

1. The Contractor shall inspect closely each item specifically designated to be relocated, re-used, or turned over to the Owner prior to its removal, and immediately report damages and defects to the Architect and the Owner. The Contractor shall be responsible for any subsequent damage to the same other than latent defects not readily apparent from close inspection, and shall bear responsibility for its repair or same replacement as directed by the Architect, to the satisfaction of the Owner.
2. Unless special surface preparation is specified under other Specification Sections, leave existing surfaces that are to remain in a condition suitable to receive new materials and/or finishes.

3.5 PROTECTION OF PUBLIC AND PROPERTY

- A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Owner's employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Owner.
- C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.
- D. Every precaution shall be taken to protect against movement or settlement of the building, of adjacent buildings, sidewalks, roads, streets, curbs and pavements. Provide and place at the Contractor's own expense, all necessary bracing and shoring in connection with demolition and removal work.
- E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.
- F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

3.6 DISCOVERY OF HAZARDOUS MATERIALS

- A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work, cease work in affected area only and

immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

- B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.7 CUTTING

- A. Perform all cutting of existing surfaces in a manner which will ensure a minimal difference between the cut area and new materials when patched. Use extreme care when cutting existing surfaces containing concealed utility lines which are indicated to remain and bear full responsibility for repairing or replacement of all such utilities that are accidentally damaged.
- B. Provide a flush saw cut edge where pavement, curb and concrete removals abut new construction work or existing surfaces to remain undisturbed.
- C. All slurry and water shall be contained and managed to avoid damage to existing conditions when using a wet saw or wet core driller.
- D. Obtain and pay for a hot work permit and arrange to have on-site a Fire Watch when using a cutting torch or similar item.

3.8 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Comply with requirements of Section 017400 - CONSTRUCTION WASTE MANAGEMENT and the following:
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

3.9 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Premises shall be left in a clean condition and ready to accept alteration work and new construction.

END OF SECTION

SECTION 31 05 13

BORROW MATERIAL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Gravel Borrow
 - 2. Granular Fill
 - 3. Sand Borrow
- B. Related Sections
 - 1. Section 31 23 00 – Excavation, Backfill, Compaction and Dewatering

1.2 REFERENCES

- A. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- B. ASTM C117 - Standard Test Method for Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing
- C. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
- D. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb./ft³)
- E. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head)
- F. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- G. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- H. Massachusetts “Standard Specification for Highways and Bridges”

1.3 SUBMITTALS

- A. Representative Samples of borrow materials taken from the source. Tag, label, and package the Samples as requested by Engineer. Provide access to the borrow site for field evaluation and inspection.
- B. Provide sieve analysis (ASTM C136) and permeability analysis (ASTM D2434) from certified soils testing laboratory for all borrow materials. Take and test a sample, at no additional cost to the Owner for each 1,500 c.y. of borrow material placed.
- C. Provide modified proctor analysis (ASTM D1557) from certified soils testing laboratory for all borrow materials.
- D. The Engineer reserves the right to require more frequent testing than that which is specified above should the borrow characteristics change.

1.4 QUALITY ASSURANCE

- A. No borrow shall be placed prior to the approval of Samples by the Engineer.

1.5 PROJECT/SITE CONDITIONS

- A. Existing Conditions
 - 1. Comply with any environmental requirements and restrictions.
 - 2. Keep all public and private roadway surfaces clean during hauling operations and promptly and thoroughly remove any borrow or other debris that may be brought upon the surface before it becomes compacted by traffic. Frequently clean and keep clean the wheels of all vehicles used for hauling to avoid bringing any dirt upon the paved surfaces.

PART 2 PRODUCTS

2.1 GRAVEL BORROW

- A. Gravel Borrow shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials. The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

Gradation requirements for Gravel Borrow shall be determined by AASHTO-T11 and T27 and shall conform to the following:

| Sieve | Percent Passing |
|--------------|------------------------|
| ½ inch | 50 – 85 |
| No. 4 | 40 – 75 |
| No. 50 | 8 – 28 |
| No. 200 | 0 - 10 |

Maximum size of stone in Gravel Borrow shall be 2 inches.

2.2 GRANULAR FILL

- A. Granular Fill to be used as fill shall consist of inert material that is hard, durable stone and sand, free from loam and clay, surface coatings and deleterious materials. The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

- B. Gradation requirements for Granular Fill shall conform to the following:

| Sieve Size | Percent by Weight Passing Through | |
|-----------------------------|--|----------------|
| | Minimum | Maximum |
| 2/3rds loose lift thickness | 100 | -- |
| No. 10 | 30 | 95 |
| No. 40 | 10 | 70 |
| No. 200 | 0 | 15 |

2.3 SAND BORROW

- A. Sand Borrow material shall be supplied from an off-site borrow area approved by the Engineer. Testing of the off-site Sand Borrow shall be at the Contractor's expense.
- B. Sand Borrow shall consist of clean, inert, hard, durable grains of quartz or other hard, durable, rock, free from loam or clay, surface coatings and deleterious materials. The allowable amount of material passing a No. 200 sieve as determined by ASTM-C117 shall not exceed 10% by weight.
- C. Material shall consist of a clean, non-plastic, granular material conforming to the requirements of a SW, SP or SM under the Unified Soil Classification System (USCS) (ASTM D2487).
- D. The material shall have the characteristics that when placed and compacted, the soil particles will bind together so as to form a solid, stable surface capable of supporting rubber-tired vehicular traffic during wet weather periods as well as extended dry weather periods. The borrow material shall not contain fines to the extent that the surface layer becomes "greasy" when wet.
- E. The material shall not contain stones larger than 3/8 inch in diameter.
- F. Material consisting of frozen clogs, ice and snow will be rejected.
- G. All sand borrow material to be used shall be subject to approval by Engineer, and Engineer reserves the right to reject any borrow material from the job that does not meet the above requirements.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Prior to the placement of borrow material, site preparation shall be completed as required by the Contract Documents, and approved by the Engineer.
- B. Ensure that all materials are properly stockpiled on site to prevent contamination by other materials.
- C. Place borrow material over the entire area in uniform lifts and compact in accordance with Section 31 23 00.
- D. Utilize on-site soils prior to using off-site borrow provided on-site soils meet the requirements of the specifications.
- E. Utilize gravel borrow in all locations where a surface treatment has not been specified but requires a firm finish surface.
- F. Processed gravel for pavement subbase is intended to provide a stable foundation for driveways, sidewalk and roadway repair where a gravel base has been specified.
- G. Borrow shall be used as a replacement for unsuitable materials where poor soil conditions are encountered during the progress of the work, where approved by the Engineer. Borrow type will be determined by the Engineer. Borrow material used as a replacement for unsuitable soil is not intended to be an aid to dewatering.
- H. Shape borrow used for pipe foundation material so that it supports the pipe properly and will not damage the pipe, bells, collars, or the pipe fittings.
- I. Place all borrow to keep it free of other materials and to prevent segregation.

- J. Maintain and repair all eroded areas during the life of this contract at no additional cost to the Owner.

END OF SECTION

SECTION 312300

EXCAVATION, BACKFILL, COMPACTION AND DEWATERING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Excavation, backfill and compaction for the abandonment of existing pipe and removal of existing structures.
2. Temporary dewatering systems

B. Related Sections

1. Section 01 57 00 - Temporary Controls
2. Section 31 05 13 - Borrow Materials

1.2 REFERENCES

- A. ASTM D1557-07 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
- B. Federal Register 40 CFR Part 122, United State Environmental Protection Agency (USEPA) Administered Permit Programs (National Pollution Discharge Elimination System or NPDES), Storm Water Discharge
- C. ASTM D2487-06e1 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- D. ASTM D6938-08a - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- E. 29 CFR Part 1926 Subpart P - OSHA Excavation Regulations 1926.650 through 1926.652 including Appendices A through F
- F. 520 CMR 14.00 Excavation and Trench Safety
- G. Commonwealth of Massachusetts Department of Transportation "Standard Specifications for Highways and Bridges," Current Edition as amended

1.3 DEFINITIONS

- A. Benching - A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.
- B. Earth Retention Systems - Any structural system, such as sheeting and bracing or cofferdams, designed to retain in-situ soils in place and prevent the collapse of the sides of an excavation in order to protect employees and adjacent structures.
- C. Excavation - Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
- D. Protective System - A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of

adjacent structures. Protective systems include earth retention systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

- E. Registered Professional Engineer - A person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.
- F. Licensed Site Professional - A person who is registered by the Commonwealth of Massachusetts to render Hazardous Waste Site Cleanup Activity Opinions.
- G. Shield System - A structure that is designed to withstand the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either pre-manufactured or job-built in accordance with 29 CFR 1926.652(c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."
- H. Sloping - A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.
- I. Temporary Dewatering System – A system to lower and control water to maintain stable, undisturbed subgrades at the lowest excavation levels. Dewatering shall be provided for all pipelines, structures and for all other miscellaneous excavations.
- J. Trench - A narrow excavation (in relation to its length) made below the surface of the ground, of at least three feet in depth. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m).

1.4 SUBMITTALS

- A. Performance data for the compaction equipment to be utilized
- B. Construction methods that will be utilized for the removal of rock
- C. Modified Proctor Test (ASTM D1557) results and soil classification (ASTM D2487) for all proposed backfill materials at the frequency specified below:
 - 1. For suitable soil materials removed during Excavation, perform one test for every 1,000 cubic yards of similar soil type. Similarity of soil types will be as determined by the Engineer.
 - 2. For borrow materials; perform tests at frequency specified in Section 31 05 13, Borrow Materials.
- D. Compaction test results (i.e. ASTM D6938 or ASTM D1556) at a frequency of one test for every 100 cubic yards of material backfilled or at a minimum of one test per lift. The Engineer will determine the locations and lifts to be tested. The Contractor shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.
 - 1. Methods and equipment proposed for compaction shall be subject to prior review by the Engineer. Compaction generally shall be done with vibrating equipment. Static

rolling without vibration may be required by the Engineer on sensitive soils that become unstable under vibration. Displacement of, or damage to existing utilities or structure shall be avoided. Any utility or structure damaged thereby shall be replaced or repaired as directed by the Engineer.

2. Additional compaction testing may be required when there is evidence of a change in the quality of moisture control or the effectiveness of compaction.
 - a. Any costs associated with correcting and retesting as a result of a failure to meet compaction requirements shall be borne by the Contractor.
3. If all compaction test results within the initial 25% of the total anticipated number of tests indicate compacted field densities equal to or greater than the project requirements, the Engineer may reduce frequency of compaction testing. In no case will the frequency be reduced to less than one test for every 500 cubic yards of material backfilled.
4. The Contractor is cautioned that compaction testing by nuclear methods may not be effective where trenches are so narrow that trench walls impact the attenuation of the gamma radiation, when adjacent to concrete that impacts the accuracy of determining moisture content, or where oversize particles (i.e. large cobbles or coarse gravels) are present. In these cases, other field density testing methods may be required.

1.5 QUALITY ASSURANCE

- A. All Excavation, Trenching, and related Earth Retention Systems shall comply with the requirements of OSHA excavation safety standards (29 CFR Part 1926 Subpart P), 520 CMR 14.00, and other State and local requirements. Where conflict between OSHA and State regulations exists, the more stringent requirements shall apply.

1.6 PROJECT CONDITIONS

- A. Notify Dig Safe and obtain Dig Safe identification numbers.
- B. Notify utility owners in reasonable advance of the work and request the utility owner to stake out on the ground surface the underground facilities and structures. Notify the Engineer in writing of any refusal or failure to stake out such underground utilities after reasonable notice.
- C. Make explorations and Excavations to determine the location of existing underground structures, pipes, house connection services, and other underground facilities in accordance with Paragraph 3.2.D of this Section.
- D. In accordance with 520 CMR 14.00, no person shall, except in an emergency, make an excavation in any public way, public property, or privately owned land until a permit is obtained from the appropriate designated permitting authority.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. Fill material is subject to the approval of the Engineer and may be either material removed from excavations or borrow from off site. Fill material, whether from the excavations or from borrow, shall be of such nature that after it has been placed and properly compacted, it will make a dense, stable fill.

- B. Satisfactory fill materials shall include materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, SW, and SP. Additional requirements are included in Section 31 05 13.
- C. Satisfactory fill materials shall not contain trash, refuse, vegetation, masses of roots, individual roots more than 18 inches long or more than 1/2 inch in diameter, or stones over 6 inches in diameter. Unless otherwise stated in the Contract Documents, organic matter shall not exceed minor quantities and shall be well distributed.
- D. Satisfactory fill materials shall not contain frozen materials nor shall backfill be placed on frozen material.
- E. Excavated surface and/or pavement materials such as gravel or trap rock that are salvaged may be used as a sub-grade material, if processed to the required gradation and compacted to the required degree of compaction. In no case shall salvaged materials be substituted for the required gravel base.

2.2 DEWATERING MATERIALS

- A. Provide silt sock in accordance with Section 01 57 00.
- B. Provide silt filter bags (Dandy Dewatering Bag, Dirtbag, JMP Environ-Protection Filter Bag, or equal) of adequate size to match flow rate.
- C. Provide dewatering equipment and materials for engineered dewatering systems.

PART 3 EXECUTION

3.1 PREPARATION

- A. Public Safety and Convenience
 - 1. Adhere to the requirements of 520 CMR 14.00 for all excavation work.
 - 2. Take precautions for preventing injuries to persons or damage to property in or about the Work.
 - 3. Provide safe access for the Owner and Engineer at site during construction.
 - 4. Do not obstruct site drainage, natural watercourses or other provisions made for drainage.

3.2 CONSTRUCTION

- A. Excavation
 - 1. Perform excavation to the lines and grades indicated on the Drawings. Backfill unauthorized over-excavation in accordance with the provisions of this Section, at no additional cost to the Owner.
 - 2. Excavate with equipment selected to prevent damage to existing utilities or other facilities. Hand excavate as necessary to locate utilities or avoid damage.
 - 3. Sawcut the existing pavement in the vicinity of the excavation prior to the start of excavation in paved areas, so as to prevent damage to the paving outside the requirements of construction. The sawcut shall be neat in appearance with no ragged lines; trim pavement as necessary.

4. Perform excavation in such a manner as to prevent disturbance of the final subgrade. The Engineer or Owner may require the final six inches of excavation be performed by hand, with the use of a smooth-faced bucket, or other means acceptable to the Engineer or Owner, at no additional cost if subgrade disturbance is considered excessive as judged by the Engineer or Owner.
5. During excavation, material satisfactory for backfill shall be stockpiled in an orderly manner at a distance from the sides of the excavation equal to at least one half the depth of the excavation, but in no case closer than 2 feet.
 - a. Excavated material not required or not suitable for backfill shall be removed from the site and disposed of in accordance with local, State and Federal laws and regulations.
 - b. Perform grading to prevent surface water from flowing into the excavation.
 - c. Pile excavated material in a manner that will endanger neither the safety of personnel in the excavation nor the Work itself. Avoid obstructing sidewalks and driveways.
 - d. Hydrants under pressure, valve pit covers, valve boxes, manholes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible until the Work is completed.
6. Grade or create berms or swales to direct surface water from excavations to appropriate structures designed to accommodate storm water. If no structures exist, direct water to areas that minimize impacts to adjacent structures and properties.

B. Backfill and Compaction

1. Unless otherwise specified or indicated on the Drawings, use satisfactory material removed during excavation for backfilling trenches. The Engineer may require stockpiling, drying, blending and reuse of materials from sources on the Project.
2. Spread and compact the material promptly after it has been deposited. When, in the Engineer's judgment, equipment is inadequate to spread and compact the material properly, reduce the rate of placing of the fill or employ additional equipment.
3. Prior to backfilling or placement of structures, excavated subgrades shall be proof compacted with either 10 passes of a 10-ton vibratory drum roller for open excavations or 6 passes of a large, reversible, walk behind vibratory compactor capable of exerting a minimum force of 2,000 pounds in trench or pit excavations. Soft or weak spots shall be over-excavated and replaced with compacted Granular Fill or compacted Crushed Stone wrapped in a non-woven geotextile, as directed by the Owner or their representative. If proof compaction will prove detrimental to the subgrade due to the presence of groundwater, static rolling may be allowed at the discretion of the Engineer or Owner.
4. When excavated material is specified for backfill and there is an insufficient amount of this material at a particular location on the Project due to rejection of a portion thereof, consideration will be given to the use of excess material from one portion of the Project to make up the deficiency existing on other portions of the Project.
 - a. Use borrow material if there is no excess of excavated material available at other portions of the Project.

5. Backfilling and compaction methods shall attain 92% of maximum dry density at optimum moisture content as determined in accordance with ASTM D1557.
6. Do not place stone or rock fragment larger than six inches in greatest dimension in the backfill.
7. Maximum loose lift height for backfilling existing or borrow material shall be 12 inches, unless satisfactory compaction is demonstrated otherwise to the Engineer through field-testing. In no case shall loose lift height for backfilling exceed 3 feet.

C. Dewatering

1. Obtain the following construction dewatering permits, as required:
 - a. US EPA Dewatering General Permit
2. Provide, operate and maintain adequate pumping, diversion and drainage facilities in accordance with the approved dewatering plan to maintain the excavated area sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction procedures nor cause excessive disturbance of underlying natural ground. Locate dewatering system components so that they do not interfere with construction under this or other contracts.
3. Conduct operations so as to prevent at all times the accumulation of water, ice and snow in excavations or in the vicinity of excavated areas so as to prevent water from interfering with the progress or quality of the work.
4. Take actions necessary to ensure that dewatering discharges comply with permits applicable to the Project. Dispose of water from the trenches and excavations in such a manner as to avoid public nuisance, injury to public health or the environment, damage to public or private property, or damage to the work completed or in progress.
5. Repair any damage resulting from the failure of the dewatering operations and any damage resulting from the failure to maintain all the areas of work in a suitable dry condition, at no additional cost to the Owner.
6. Exercise care to ensure that water does not collect in the bell or collar holes to sufficient depth to wet the bell or collar of pipes waiting to be jointed.
7. Take precautions to protect new work from flooding during storms or from other causes. Control the grading in the areas surrounding all excavations so that the surface of the ground will be properly sloped to prevent water from running into the excavated area. Where required, provide temporary ditches for drainage. Upon completion of the work, all areas shall be restored to original condition.
8. Brace or otherwise protect pipelines and structures not stable against uplift during construction.
9. Do not excavate until the dewatering system is operational and the excavation may proceed without disturbance to the final subgrade.
10. Unless otherwise specified, continue dewatering uninterrupted until the structures, pipes, and appurtenances to be installed have been completed such that they will not float or be otherwise damaged by an increase in groundwater elevation.

11. Temporarily lower the groundwater level at least two feet below excavations to limit potential “boils”, loss of fines, or softening of the ground. If any of these conditions are observed, submit a modified dewatering plan to the Engineer within 48 hours. Implement the approved modified plan and repair any damage incurred at no additional cost to the Owner.
12. When subgrades are soft, weak, or unstable due to improper dewatering techniques, remove and replace the materials in accordance with Section 31 05 13 at no additional cost to the Owner.
13. Notify the Engineer immediately if any settlement or movement is detected of survey points adjacent to excavations being dewatered. If settlement is deemed by the Engineer to be related to the dewatering, submit a modified dewatering plan to the Engineer within 24 hours. Implement the approved modified plan and repair any damage incurred to the adjacent structure at no additional cost to the Owner.
14. Dewatering discharge:
 - a. Install sand and gravel, or crushed stone, filters in conjunction with sumps, well points, and/or deep wells to prevent the migration of fines from the existing soil during the dewatering operation.
 - b. Do not discharge water into any sanitary sewer system.
 - c. Provide separately controllable pumping lines.
 - d. The Engineer reserves the right to sample discharge water at any time.
15. Install erosion/sedimentation controls for velocity dissipation at point discharges onto non-paved surfaces.
16. Removal
 - a. Do not remove dewatering system without written approval from the Engineer.
 - b. Backfill and compact sumps or ditches with screened gravel or crushed stone in accordance with Section 31 05 13.
 - c. Remove well points and deep wells. Backfill abandoned well holes with cement grout having a water cement ratio of 1 to 1 by volume.

3.3 PROTECTION

A. Protection of Existing Structures

1. All existing foundations, conduits, wall, pipes, wires, poles, fences, property line markers and other items which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the Contractor. Should such items be damaged, they shall be restored by the Contractor to at least as good condition as that in which they were found immediately before the Work began.

B. Accommodation of Traffic

1. Streets and drives shall not be unnecessarily obstructed. The Contractor shall take such measures at his own expense to keep the street or road open and safe for two-way traffic unless otherwise indicated.

2. Construct and maintain such adequate and proper bridges over excavations as may be necessary or as directed for the safe accommodation of pedestrians and vehicles. Provide substantial barricades at crossings of trenches, or along the trench to protect the traveling public.
 3. Where deemed necessary, such additional passageways as may be directed shall be maintained free of such obstructions. All material piles, open excavations, equipment, and pipe which may serve as obstructions to traffic shall be protected by proper lights, signage, or guards as necessary.
 4. All traffic controls shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition.
- C. Erosion and Sedimentation Control
1. Take all necessary steps to prevent soil erosion.
 2. Plan the sequence of construction so that only the smallest practical area of land is exposed at any one time during construction.
 3. Temporary vegetation and/or mulching shall be used to protect critical areas exposed during construction as judged by the Engineer.

END OF SECTION

SECTION 329000

PLANTING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the Contract and General conditions and all Sections within Division 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Planting trees, shrubs, groundcovers, and other woody and herbaceous plant materials.
 - 2. Staking, guying and anchoring trees.
 - 3. Fertilizing, incorporating of planting additives, pruning, mulching, fertilizing and watering new plantings.
- B. Related Sections include the following:
 - 1. Section 31 23 00 – Excavation, Backfill, Compaction and Dewatering
 - 2. Section 32 19 14 – Planting Soils
 - 3. Section 32 92 00 – Lawns
 - 4. Section 32 93 53 – Planting Maintenance

1.3 REFERENCES

- A. Comply with applicable requirements of:
 - 1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridge Construction, Department of Public Works, latest edition.
 - 2. Town of Barnstable, of the Commonwealth of Massachusetts, and of other authorities having jurisdiction. Provide labor, materials, equipment and services to comply with requirements.
 - 3. ASTM: American Society of Testing Materials:
 - a. ASTM: American Society of Testing Materials.
 - b. AAN: American Association of Nurserymen.
 - c. ISA: International Society of Arboriculture.
 - d. ANSI: American National Standards Institute.
 - e. AOAC: Association of Official Agricultural Chemists.
 - f. USDA: United States Department of Agriculture.

1.4 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil..
- B. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

1.5 SUBMITTALS

A. Product Data: Submit most recent printed information from manufacturers for:

- 1. Antidesiccant
- 2. Root Barrier
- 3. Liquid Seaweed Concentrate
- 4. Plant Growth Biostimulant
- 5. Mycorrhizae Granules

B. Samples: Submit samples of:

- 1. Organic Mulch: Submit one cubic foot sample and manufacturer/supplier's name.
- 2. Tree Guying Accessories: One set.
- 3. Tree Wrap (for protection during transport only)

C. Certificates:

- 1. Submit certification of Massachusetts state arborist.

D. Plant List:

- 1. Within 30 days of receipt of Contract, submit plant list for review by Owner's Representative which includes:
 - a. Plant materials proposed for project and corresponding nursery source where plants are to be selected.
 - b. Written documentation indicating nursery(s) have available the plants in the species, quantity and size(s) shown on Drawings.
- 2. Schedule for review at nursery source by Owner's Representative with Contractor present.
- 3. Substitutions: plant list shall indicate unavailable materials and document a thorough search for materials. For unavailable materials list sources contacted with telephone number, date and person's name at source.

E. Schedules

- 1. Submit planting schedule for approval.

1.6 QUALITY ASSURANCE

- A. Planting shall be performed by a certified landscape contractor with a minimum of five years planting work experience and under full time supervision of a qualified supervisor.

1.7 SELECTION AND INSPECTION OF PLANTS

- A. Plants shall be selected by Owner's Representative at place of growth for conformity to specification requirements as to quality, size and variety. Such approval shall not impair right of inspection and rejection upon delivery at site or during progress of work. Cost of replacement shall be borne by Contractor.
- B. Notify Owner's Representative in writing upon selection of planting subcontractor. State name, address, telephone number and supervisor for planting subcontractor.
- C. Schedule selection and tagging of nursery stock so Owner's Representative can tag trees and representative shrubs for project at place of growth. Advise Owner's Representative of schedule a minimum of one month (30 day minimum) in advance of selection/tagging dates so Owner's Representative and Owner can make proper travel arrangements. If Contractor fails to provide one month (30 day minimum) notice, any additional travel expenses shall be backcharged to Contractor. If Owner's Representative has to make additional trips to select/tag plants in the event that inadequate, insufficient or unacceptable plant material was available at the inspection location, then additional travel expenses shall be backcharged to Contractor.
- D. Contractor to pay for Designer's travel expenses: air fare, car rental, automobile mileage and tolls; meals and overnight accommodations if necessary, for Designer's during time period required to select and tag plant material. Planting subcontractor shall provide representative to travel with Designer while tagging plant material.
- E. Notify Designer a minimum of five business days prior to each shipment of proposed arrival of plant material on site.
- F. Layout tree locations, bed outlines and individual planting on site for inspection by Designer prior to planting. Arrange for adequate manpower and equipment on site at time of plant material inspection and installation to provide complete staked layout and to unload, open and handle plant material during inspection

1.8 DELIVERY, STORAGE AND HANDLING OF FERTILIZER AND MULCH

- A. Packing and Shipping: deliver materials in unopened containers bearing manufacturer's name and guaranteed statement of analysis. Transport materials without damage. Protect finishes from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.
- B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.
- C. Storage and Protection:
 - 1. Materials shall be uniform in composition, dry and free flowing. Store materials in dry place, on pallets, off ground; protect from sun. Store materials in a manner which does not diminish their usability and effectiveness.
 - 2. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

1.9 DELIVERY, STORAGE AND HANDLING OF PLANTS

- A. Plants during shipping and delivery and plants requiring storage on site shall be properly wrapped and covered to prevent wind-drying and desiccation of branches, leaves, or buds. Plant balls shall be firmly bound, unbroken, reasonably moist to indicate watering prior to delivery and during storage. Trees shall be free from fresh scars and damage in handling. Root masses of container grown plants shall be kept moist and containers screened from direct sun.
- B. Wrap tree trunks at nursery prior to shipping, then unwrap for inspection by Owner's Representative prior to installation. Report damaged plants to Owner's Representative.
- C. Apply antidessicant to plants before digging at nursery and/or as directed by Owner's Representative once plants are delivered to site.

1.10 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: do not deliver or handle soils when dry, wet, or frozen.
 - 1. Field Test
 - a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
 - b. If the soil will not retain shape it is too dry and should not be worked.
 - c. If the soil retains shape and will not crumble, it is too wet and should not be worked.
 - B. Planting Season: planting seasons shall be those indicated below. Plants planted out-of-season shall receive special attention as directed. Out-of-season planting and or transplanting shall be at Contractor's risk and expense No planting shall be done in frozen or muddy ground or when snow covers the ground, or soil is otherwise in an unsatisfactory condition for planting.
 - 1. Seasons for Planting:

| | |
|---------|--|
| Spring: | Deciduous materials - March 21 - May 1 Evergreen Materials - April 15 - June 1 |
| Fall: | Deciduous materials - October 1 - December 1 Evergreen Materials - August 15 - October 15 |

1.11 SEQUENCING AND SCHEDULING

- A. No plantings to be installed prior to acceptance of rough grading.

1.12 SUBSTANTIAL COMPLETION

- A. See SECTION 329353 – PLANTING MAINTENANCE.

1.13 MAINTENANCE

- A. See SECTION 329353 – PLANTING MAINTENANCE.

1.14 ACCEPTANCE

- A. See SECTION 329353 – PLANTING MAINTENANCE.

1.15 GUARANTY

- A. Start of Guaranty Period: when Designer issues letter of acceptance.
- B. Term: two years for trees, shrubs, groundcovers, grasses and vines.
- C. Requirements: plant material to be alive and in healthy, vigorous condition.
 - 1. Quarterly reviews will be made with Contractor and Designer during guaranty period. Reviews will assess condition of installed plant materials.
 - 2. Replace plants that are dead or, as determined by Designer, are in an unhealthy or unsightly condition, and have lost their natural shape due to dead branches, or other causes.
- D. End of Guaranty Period: when Designer issues letter of Final Acceptance, two years from date of substantial completion.

1.16 FINAL ACCEPTANCE

- A. Designer reviews work and finds it complete and in accordance with Drawings and Specifications.
- B. Designer will issue a letter of Final Acceptance, at which time project becomes responsibility of Owner.

PART 2 - PRODUCTS

2.1 PLANTS

- A. Plant Identification and Standards: Nomenclature conforms to current edition of Standardized Plant Names, published by American Joint Committee on Horticultural Nomenclature. Plants conform to varieties and sizes specified in plant list, and to code of standards set forth by American Association of Nurserymen, Inc. in American Standard for Nursery Stock, ANSI Z60.1 - latest edition. Substitutions shall not be permitted without consent of Owner's Representative. Plants shall be properly identified with plant labels securely attached to plants, in order to identify plants on site. Information regarding sources of plant material shall be furnished to Owner's Representative.
- B. Plant List: If there are discrepancies between the quantities shown on plant list and work shown on Drawings, Contractor shall supply plants necessary to complete work as intended on Drawings. Where size of plant on the plant list is a variation between a minimum and maximum dimension, the sizes of plants furnished shall be equal to average of two dimensions. Where a single dimension is given, dimension represents the minimum size of plants to be furnished.
- C. General Plants: Unless specified otherwise, plants shall be nursery grown under climatic conditions similar to those in locality of project and shall have been previously been transplanted or root pruned at least once in last three years. Plants shall possess a normal balance between height and spread. Plants shall be typical of their species and variety with a normal habit of growth, densely foliated when in leaf, and a well-developed branch structure with a fibrous, healthy root system with no girdling roots. Plants shall be sound and healthy, free from dead wood, defects, disfiguring knots, sun scald, injuries or abrasions of roots or bark. Plants shall be freshly dug. No

heeled-in plants or plants from cold storage shall be used. Parts of plant shall be moist and show active green cambium when cut. Plants shall be free of plant diseases, insects, pests, eggs, larvae, and forms of infestations.

- D. **Balled and Burlapped Plants:** Plants designated on plant list as "B&B" shall be healthy, vigorous, well-rooted exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth to encompass fibrous and feeding root system necessary for healthy development of plants recommended by ANSI Z60.1 For type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1. Balls shall be wrapped firmly with biodegradable material, and bound carefully with twine or cord. Tree balls may also be placed in a wire basket of diameter suitable for the size of the root ball. No plant shall be accepted when ball of earth surrounding roots has been badly cracked or broken, either before or during process of planting, or after burlap, ropes, etc., required for transplanting have been unfastened. Plants and root balls shall remain intact as a unit during operations. Plants that cannot be planted at once must be protected and watered.
- E. **Bare Root Plants:** Plants designated "BR" on the plant list shall be dug while dormant. Bare root plants shall be maintained in a healthy condition during storage, transportation, and operations.
- F. **Container-Grown Stock:** Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container without being in a rootbound condition. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required. Container plants shall have been acclimatized for one growing season in container. Plants shall remain in container until planted.
- G. **Trees:** Trees to be hand dug and balled and burlapped rootballs. Root balls shall be custom dug to special widths and depths to accommodate shallow soil conditions of this Project. Trees, except when a clump form is designated, shall be straight and symmetrical with a crown having a persistent single, main leader, and growing from a single, unmutilated crown of roots. No part of trunk shall be conspicuously crooked as compared with normal trees of same variety. Trunk shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire, or other causes. No pruning wounds shall be present having diameter of more than two inches (2") and wounds must show vigorous bark on edges. Pruning wounds over 3/4 inch in diameter must be completely calloused over. Evergreen trees shall be branched to within one foot of ground. Height of trees, measured from crown of roots to top of top branch, and caliper, measured as specified herein, shall not be less than minimum size designated in plant list. Take caliper measurements 6 in. above ground on trees up to and including 4 in. caliper, and at 12 in. above ground for larger sizes.
- H. **Shrubs and Small Plants:** Shrubs and small plants, unless otherwise designated, shall be well-formed and bushy with well-spaced side branches, and shall have a crown and stem(s) typical of species and variety. Plants shall be well-branched to ground. Plants shall meet requirements for spread and/or height stated in Plant List. Measurements for height are to be taken from ground level to average height of top of shrub and not to longest branch. Thickness of each shrub shall correspond to trade classification "No. 1". Single stemmed or thin plants will not be accepted.
- I. **Plants larger than those specified in the Plant List may be used if approved by Owner's Representative, but use of such plants shall not increase the Contract Price. If use of larger plants is approved, spread of roots or ball of earth shall be increased in proportion to size of plant.**

2.2 PLANTING ADDITIVES

- A. Liquid Seaweed Concentrate: Dry, water soluble seaweed extract powder from *Ascophym nodosum*. Stress-X as manufactured by North Country Organics, Bradford, Vermont 05033. Phone: 802.222.4277.
- B. Plant Growth Biostimulant: Dry, water soluble plant growth biostimulant made from beneficial bacteria humic extracts, cold water sea kelp extract, essential amino acids, vitamins, root growth factors and sugars. Bio- Magic as manufactured by North Country Organics, Bradford, Vermont 05033. Phone: 802.222.4277.
- C. Mycorrhizae granules: transplant granules for inoculating plants with beneficial mycorrhizal fungi prior to planting. Myco-Magic as manufactured by North Country Organics, Bradford, Vermont 05033. Phone: 802.222.4277.

2.3 BARK MULCH

- A. Bark mulch: shredded granular outer bark of evergreen trees and minimum of hardwood bark and shall be aged for period of at least 6 months and not longer than two years. Bark mulch shall not have been subjected to anaerobic conditions and must be partially decomposed and dark brown in color, Bark chunks shall average 1/2 inch to 2 inches in length and no chunks three inches or more in size and thicker than 1/4 inch shall be left on site. Moisture content shall be 40 percent or more, retained with normal watering and/or rainfall. Mulch shall be free of dirt, leaves, twigs, and other materials deleterious to plant life. Mulch shall not contain chipped construction materials.

2.4 POST PLANTING FERTILIZER

- A. Post Planting Fertilizer:
 - 1. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition
 - 2. Pro Gro 5-3-4 manufactured by North Country Organics, Bradford, Vermont 05033. Phone: 802.222.4277.
 - 3. Fertilizer to be delivered in original unopened standard size bags showing weight, analysis ingredients and manufacturer's name.

2.5 WATER

- A. Water: furnished by Contractor, suitable for irrigation and free from ingredients harmful to plant life, until available from on-site source. Hose and other watering equipment required for work shall be furnished by Contractor.

2.6 GUYING AND STAKING MATERIALS

- A. Guying and Staking: Contractor responsible for providing a guying and staking system at their discretion to maintain plants in a plumb condition and in order to withstand the severe environmental conditions of the site adjacent to the harbor. Contractor to submit system for Owner's Representative's information.

- B. Wood or Metal Stakes: If Contractor chooses to stake or guy trees with an above grade solution consisting of wood or metal stakes, then wood stakes shall be fabricated from smooth, straight wood and wood or metal surfaces shall be painted or stained as approved by Owner's Representative.
- C. Below Grade Guying: If Contractor chooses to guy with a below grade guying system, then guys should have ribbons attached to guys to make pedestrians aware of presence of guys.
- D. Materials for guying and anchoring trees shall be in accordance with the following schedule. Specific applications shall be governed by Drawings.

1. Schedule:

| Tree Caliper | Guying Cable | Turnbuckle Size |
|--------------|--------------|-----------------|
| 2"-3-1/2" | 1/8" (7x19) | 5/16"x4" |
| 4"-7-1/2" | 3/16" (7x19) | 3/8"x6" |

- E. Guying and Staking System for supporting trees: a subsurface system anchoring system resulting in only the guy wires being visible above finish grade.
- F. Wire for tree bracing and guying: pliable 12-gauge galvanized soft steel wire.
- G. Turnbuckles: galvanized. Thread diameter and body size indicated in schedule above.
- H. Hose: New Two-Ply fiber-bearing garden hose, not less than 1/2 in. inside diameter, 12 in. long. Color shall be black.
- I. Vine supports to support vines on walls shall be soft lead hooks or green plastic disks with green vinyl-coated wire ties manufactured specifically for that purpose and fastened to a galvanized steel polyester resin adhesive anchoring system, spaced in accordance with the manufacturer's recommendations.

2.7 ANTIDESSICANT

- A. Antidesiccants: emulsions or materials which provide a protective film over plant surfaces permeable enough to permit transpiration and specifically manufactured for that purpose. Antidesiccant shall be delivered in manufacturer's containers and used according to manufacturer's instructions.

2.8 CHEMICALS, HERBICIDES, FUNGICIDES AND INSECTICIDES

- A. Provide chemicals, herbicides, fungicides and insecticides as needed for fungus or pest control. Chemicals and insecticides shall be approved by Massachusetts Department of Environmental Protection for intended use and application rates. No pesticides shall be used on site without knowledge and approval of Owner's Representative. Pesticides shall be handled by State licensed operators only.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: in the event field conditions are not in conformance with Contract Documents, notify Owner's Representative in writing.
 - 1. Spot and Invert Elevations: verify field elevations of site improvements such as drainage and utility fixtures, pavements, existing plantings, and subsurface piping conform to Drawings.
 - 2. Finish Grade: verify specified elevations and prior grading operations have shaped, trimmed, and finished gradients.

3.2 PREPARATION

- A. Protection:
 - 1. Contact "Dig Safe" prior to doing excavation on site. If work is to be done around underground utilities, appropriate authority of utility must be notified of impending work. Hand excavate areas adjacent to utilities. Contractor shall be responsible for damages done by himself or his personnel to existing utilities, which shall be repaired or paid for by Contractor.
 - 2. Dust Control: upon acceptance of finish grades provide dust control.
 - 3. Erosion Control: upon acceptance of finish grades provide erosion control.
 - 4. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.

3.3 DIGGING, HANDLING, AND PROTECTION OF PLANTS

- A. Dig balled and burlapped (B & B) plants with firm natural balls of earth, of sufficient diameter and depth to include fibrous roots and conforming to standards of American Nurserymen Association. No synthetic burlap will be accepted. No plant moved with a ball will be accepted if ball is cracked or broken before or during planting operations.
- B. Protect roots or balls of plants from sun and drying winds.
- C. Set plants on ground in shady location and protect with soil, bark mulch, or other acceptable materials, balled and burlapped plants which cannot be planted immediately upon delivery. Water stored plants and regularly verify rootballs are moist. Owner's Representative will reject stored plants found with dried rootballs.
- D. Open bundles of plants immediately and plants and separate before roots are covered. Care shall be taken to prevent air pockets among roots. During planting operations, bare roots shall be covered with canvas, hay or other suitable material. No plant shall be bound with wire or rope as to damage the bark or break branches.

3.4 OBSTRUCTIONS BELOW GROUND

- A. If rock, underground construction work, or other obstructions are encountered in plant pit excavation work, alternate locations may be selected by Owner's Representative at no additional cost to Owner.

- B. Where locations cannot be changed, obstruction shall be removed, subject to Owner's Representative's approval, to a depth of not less than three feet (3') below grade and no less than six inches (6") below bottom of ball or roots when plant is properly set at required grade.
- C. Contractor shall be paid extra for removal of rock or underground obstructions encountered. See payment items in SECTION 312000 – EARTH MOVING.

3.5 PREPARATION AND PLACEMENT OF PLANTING SOILS

- A. See SECTION 321914 – PLANTING SOILS.

3.6 FINE GRADING

- A. See SECTION 312219 – FINE GRADING.

3.7 PLANTING OPERATIONS

- A. Stake out locations of plants and secure Owner's Representative's approval before excavating plant pits.
- B. Excavating
 - 1. Place tree next to tree pit excavation and remove burlap from top of root ball. If trunk flair is not visible gently loosen and remove soil with a blunt tool or air spade until trunk flair and large horizontal lateral roots are located. Use care not to damage root system. Following removal of excess soil over root ball measure depth of root ball to determine depth of tree pit excavation.
 - 2. Dig tree pits and plant pits by hand and take care not to disturb utilities. If utilities are disturbed during planting operation, Contractor shall repair damage at Contractor's expense.
 - 3. Excavate plant pits with sloping sides so planting hole is saucer shaped. Plant pit shall be no deeper than root ball.
 - 4. Tree pits shall be four times diameter of soil ball in width.
- C. Setting, Backfilling and Fertilizing
 - 1. In the event trees are containerize in wire baskets, lay tree on its side and cut the bottom of the cage off, roll the tree into the hole and remove the sides of the wire basket.
 - 2. Set plants in center of pits plumb, straight and at an elevation where after settlement the root flare and lateral roots of plant will be at surrounding finished grade. Root ball shall not be broken. When trees are set, compact base material under the root balls to fill voids and support plants at proper height. Remove burlap and rope from upper two thirds of balls and have Designer inspect removal prior to backfilling.
 - 3. Remove groundcovers and perennials from containers immediately before planting. Handle plants carefully to prevent damaging roots. Groundcover plants may be planted after bark mulch is placed.

4. Sprinkle michorrhizal granules continuously around perimeter of root ball as well as incorporating granules into top of rootball following removal of top 1/3 of burlap in accordance with manufacturer's recommend
5. Mix liquid seaweed concentrate or plant growth bio-stimulant with water at a rate of 3 grams of liquid seaweed concentrate powder per gallon of water or 1 teaspoon of plant growth biostimulant per gallon of water.
6. Backfill hole around plants to two-thirds full, firm soil, flood with water mixed with additives, after water has drained away backfill to finished grade without additional firming. Immediately after plant pit is backfilled, a shallow basin slightly larger than pit shall be formed with ridge of soil to facilitate and contain water. After planting, cultivate soil in shrub beds between shrub pits, rake smooth and outline beds neatly.

3.8 DRAINAGE TEST

- A. Perform drainage test on trees and in representative shrub beds.
 1. After excavation, fill pit twice successively with water.
 2. Water shall drain out of plant pit minimum 2 inches per hour.
 3. Plant pits draining slower than 2 inches per hour will require provision for drainage.
- B. Documentation: note on the planting plan, pits that pass drainage test and plants that fail drainage test.

3.9 FIELD QUALITY CONTROL

- A. Observation:
 1. Owner's Representative to review plant pits without positive drainage.
 2. Owner's Representative to review plant pit excavation and planting.

3.10 GUYING, AND STAKING

- A. Guying and staking plants is not required though Contractor responsible for maintaining plants in upright, vertical position and for maintaining guying and staking materials. If Contractor determines guying and staking is required, Contractor shall submit recommendations for Designer's approval.

3.11 PRUNING

- A. Prune trees and shrubs only with approval of Owner's Representative. Prune according to American Nurserymen's' Association Standards to preserve natural character of plant and as directed by Owner's Representative. No leaders shall be cut.
- B. Pruning shall be done with clean, sharp tools. Dead wood or suckers and broken or badly bruised branches shall be removed back to live bud, branch, or stem.

3.12 MULCHING

- A. Immediately after planting operations are completed, cover tree and shrub pits and planting beds with a two inch layer of specified mulch. Taper depth of mulch to be two inches at mulched perimeter and decreasing in depth toward trunk to be flush where trunk or stem meets root ball. Do not place mulch against trunk or stem. Cover tree, shrub and groundcover planting beds with bark mulch.

3.13 WATERING

- A. Flood plants with water twice within first 24 hours of time of planting, and water plants during the maintenance period at least twice per week. Contractor shall be responsible for watering all plants during the guaranty period at least once per week, until Final Acceptance, except when the ground is frozen. At each watering thoroughly saturate the soil around each tree or shrub. If sufficient moisture is retained in soil, as determined by Owner's Representative, required watering may be reduced. Each tree will require a minimum of ten gallons of water.

3.14 POST PLANTING FERTILIZER

- A. Apply uniform application of Post Planting Fertilizer (5-3-4) at rate of 5 lbs. per 1000 square feet, 30 days after planting.

3.15 CLEANING

- A. Wash and sweep clean paving, site improvements and building surfaces. Clean spills and overspray immediately. Remove and dispose off-site excess planting mixture, soil and debris.
- B. Following Acceptance at the end of 90 Maintenance Period of planting areas, remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations which do not interfere with Owner's maintenance of accepted lawns or other construction operations.

END OF SECTION

SECTION 329115
PLANTING SOILS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the Contract and General conditions and all Sections within Division 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Acceptance of subgrade condition and elevations prior to placing soils.
 - 2. Planting soil material acquisition.
 - 3. Testing and analysis for specification conformance.
 - 4. Layout and installation of Drainage Layer below planting soils.
 - 5. Preparation of mixes and testing for conformance.
 - 6. Mock Ups.
 - 7. Installation and placement of soils.
 - 8. De-compaction and re-compaction of soils.
 - 9. Final in-place testing of soils.
 - 10. Coordination with other contractors.
 - 11. Clean-up.

- B. Related Sections include the following:

- 1. Section 329300 – Planting
- 2. Division 31 – Earthwork

1.3 QUALITY ASSURANCE/DEFINITIONS

- A. Definitions:
 - 1. Refer to Section 329300 Planting
 - 2. ASA: American Society of Agronomy.
 - 3. Subgrade: Soil material and levels resulting from the approved rough grading work. Cultivation of all subgrade areas prior to placing planting soil is included in this Section.
 - 4. Planting Soils: Planting Soils are composed of a blend of three base components: base loam, organic material and sand. The term Planting Soils refers to all soils that are planted within, including, but not limited to Horticultural Subsoil, Planting Bed Soil, and Subsoil etc. The quality of the blend depends on the quality of the original

components. Locate and obtain approval of sources for base loam, organic material and sand that meet the Specification requirements. The Contractor or their accepted Soil Supplier is then responsible for mixing the components. Approximate mixing ratios are provided, but may require adjustment, depending on the final materials and with the approval of the Architect or their representative, in order to meet Specification requirements for each blend.

- B. Testing/Testing Agency
1. Refer to Division 31 Earthwork.
 2. Refer to Section 329300 Planting
 3. Refer to this section, 1.4 B.
- C. Contractor is solely responsible for quality control of the Work.
- D. The installer shall be a firm having at least 5 years of successful experience of a scope similar to that required for the Work, including the preparation, mixing and installation of custom Planting Soil and planting mixes in urban locations.
1. The installing Contractor shall be the same firm that is installing planting as described in Section 329300 – Planting.
 2. Installer Field Supervision: Installer to maintain an experienced full-time supervisor on Project site when any Planting Soil preparation work is in progress.
 3. The installer's crew shall be experienced in the installation of soil, grading and interpretation of grading plans in urban areas.
 4. Candidate Contractor shall submit written documentation of at least five years of contracting and landscape construction experience completing projects of similar scope, complexity and value.
 5. Candidate Contractor shall submit written documentation of at least five projects in which engineered blended horticultural soil was used.
 6. Candidate Contractor shall submit at least three project references including project address, dollar value, owner's and landscape architect's contact information (name, phone, and email).
- E. Soil work shall be performed by a firm that has sufficient earthwork machinery at the job site simultaneously to amply provide for the vigorous execution of the site work without interruption or delay, except for unforeseen circumstances, such as weather. Machinery operators shall be well experienced in this type of work.
- F. Comply with applicable requirements of the laws, codes, ordinances and regulations of Federal, State and municipal authorities having jurisdiction. Obtain necessary approvals from all such authorities.
- G. Comply with all requirements for control of silt and sediment during soil installation work as indicated in the contract documents. Provide additional silt and sediment control to maintain silt and sediments within the working area as required by the progress of the work or as directed by the Landscape Architect.
- H. Pre-installation Conference: Conduct conference at project site prior to the start of any work related to Planting Soil preparation and shall meet the requirements of this Section 3.1(D).
- I. Layout and Grading:

1. Permanent benchmarks shall be established by a registered land surveyor or professional civil engineer, at the Contractor's expense. The Contractor shall maintain established bounds and benchmarks and replace them, if any are destroyed or disturbed.
2. The Contractor shall maintain at the site, sufficient surveying equipment to accurately excavate to the required subgrade and install soil to the required finish grade. The Contractor shall be responsible to install soil profiles at the elevations and thickness shown on the Plans.

1.4 TESTING, SUBMITTALS, MOCK-UPS AND INSPECTIONS

- A. Submittals: in accordance with Section 011000 – General Requirements, 1.11.
- B. Testing for Subgrade, Planting Soil Components and Planting Soil Mixes: Testing is required at the following intervals:
 1. Testing of individual components (Base Loam, Sand, and Compost) for planting soil mixes prior to blending of any soils for use at the Project Site. Tests are as described in this Section.
 2. After test results for components have been accepted, create sample Planting Soil Mixes of each planting soil mix and perform tests described in this Section.
 3. After the test results for each Planting Soil Mix have been accepted, and during the production of planting soils, test every 200 cubic yards of every Planting Soil Mix blended for: organic matter content, gradation, and pH. Before shipping of any Planting Soil Mix, the Contractor shall confirm that the Landscape Architect has accepted the mix. Testing applies to all soil layers of the planting profile. After three consecutive compliant tests, the Contractor may increase the interval of testing to 500 cubic yards.
 4. After horticultural tests have been approved, contractor shall submit representative samples of each soil blend to a geotechnical testing laboratory for ASTM 698 Standard Proctor tests to obtain optimum moisture content and maximum dry density values. Proctor test must be submitted for review and approval.
 5. In-place tests: Compaction tests of each type of material (soil layer) placed shall be in accordance with this Section. Infiltration tests shall be in accordance with this Section.
 6. Testing of Subgrade: At any areas of planting on subgrade, prior to placement of the planting soil profile, test the subgrade as described in this Section. Coordinate the testing of the subgrade with the Earthwork Contractor before the planting soil profile is placed.
- C. Test Reports: Submit certified reports for tests as described in this Section.
 1. Mechanical gradation (sieve analysis) shall be performed for sand, silt, and clay content and compared to the USDA Soil Classification System using sieve size numbers: 10, 18, 35, 60, 140 and 270. The silt and clay (0.002 mm) content shall be determined by a Hydrometer Test (ASTM D-422-63) of soil passing the #270 sieve.
 2. Chemical analysis shall be undertaken for Phosphorus, Potassium, Calcium, Magnesium, Aluminum, Iron, Manganese, Lead, Cation Exchange Capacity, Soluble Salts, organic matter content, acidity (pH) and buffer pH.
 3. Tests shall be conducted in accordance with Recommended Soil Testing Procedures for the Northeastern United States, 2nd Edition, Northeastern Regional Publication No. 493; Agricultural Experiment Stations of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York,

Pennsylvania, Rhode Island, Vermont and West Virginia. Tests include the following:

- a. Test for soil Organic Matter by loss of weight on ignition, as described in Northeastern Regional Publication No. 493.
 - b. Test for soil CEC by exchangeable acidity method as described in Northeastern Regional Publication No. 493.
 - c. Test for soil Soluble Salts shall be by the 1:2 (v:v) soil:water Extract Method as described in Northeastern Regional Publication No. 493.
 - d. Test for Buffer pH by the SMP method as described in Northeastern Regional Publication No. 493.
 - e. Tests for pH shall be conducted on a 1:1 soil to distilled water ratio.
4. Certified reports on analyses from producers of composted organic materials shall be required and new test reports shall be submitted when compost sources are changed. Analyses shall include all tests for criteria specified in 2.1, K.
 5. Saturated Hydraulic Conductivity: Test procedure ASTM D5856.
 - a. Hydraulic Conductivity tests shall be performed on samples during QA/QC testing at the Soil Supplier's facility.
 6. Testing Agencies: The following firms are acceptable testing agencies for the various components and blends.
 - a. Leaf Yard Waste Compost Comprehensive Analysis, Herbicide Bioassay and Stability Test: Woods End Research Laboratory, P.O. Box 297, Mt. Vernon, ME, 04352, tel: 201.293.2457, or other STA Certified Testing Laboratory by the US Composting Council, www.compostcouncil.org.
 - b. Mechanical Gradation, Chemical Analysis and Organic Matter Content, All Soil Components and Planting Soil Mixes: University of Massachusetts, 203 Paige Laboratory, 161 Holdsworth Way, Amherst, MA 01003, <http://soiltest.umass.edu>, tel: 413.545.2311, or approved equal.
 - c. Standard Proctor Test (ASTM 698), Certified Testing Laboratory, Bordentown, NJ, 609-298-3225, certifiedtestinglabs.com.
 7. Laboratory Density Testing: Standard Proctor ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 - a. Density tests shall be performed on samples collected at the Soil Supplier's facility, to obtain the optimum moisture content and maximum dry density values.
- D. In-Place Testing
1. Density Tests: ASTM D6938-08a Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), after obtaining ASTM D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. (Standard Proctor).
 - a. In-place density tests shall be carried out at a rate of one test per each plant bed.
 - b. Soil density shall meet the requirements specified herein, see PART 3.

2. As required by the Landscape Architect, in-place infiltration tests shall be performed using Turf-Tec IN2-W Infiltrometer utilizing manufacturer's operating instructions, or by the bucket test method described in Section 3.6(E).
 3. At the direction of the Landscape Architect, in-place planting soil blends shall be sampled and tested for compliance with gradation and organic matter content as specified herein. Non-compliant materials shall be removed from the site or amended as specified by the outside contracted the Soil Scientist.
- E. Samples: Prior to ordering the below listed materials, submit representative composite samples to the Landscape Architect for selection and approval. Representative composite samples shall be composed of at least five equal-sized subsamples mixed thoroughly and resampled for submittal. Do not order materials until Landscape Architect's acceptance has been obtained. Delivered materials shall closely match the approved samples.
1. Components
 - a. Compost: duplicate samples of 1 gallon.
 - b. Base Loam: duplicate samples of 1 gallon.
 - c. Medium to Coarse Sand: duplicate samples of 1 gallon.
 2. Test Blends
 - a. Planting Bed Soil: duplicate samples of 1 gallon.
 - b. Lawn Soil: duplicate samples of 1 gallon.
 - b. Horticultural Subsoil: duplicate samples of 1 gallon.
 3. Production Stockpiles
 - a. Planting Bed Soil: duplicate samples of 1 gallon.
 - b. Horticultural Subsoil: duplicate samples of 1 gallon.
- F. Sources for Base Loam, Sand, and Compost: Submit information identifying sources for all soil components and the firm responsible for mixing of planting soil mixes.
1. Landscape Architect and Owner shall have the right to reject any soil supplier or mixing facility.
 2. Soil mix supplier shall have a minimum of five years experience at supplying custom planting soil mixes.
 3. Submit supplier name, address, telephone and fax numbers and contact name.
 4. Submit certification that accepted supplier/ mixer is able to provide sufficient quantities and qualities of materials for the entire project.
 5. Final approval of soil supplier/ mixer shall be made after on-site review of supplier's and mixer's facility(ies).
- G. Mock Up and Inspection
1. At the beginning of site work, the contractor shall demonstrate methods for placement of sand blanket and planting soils that achieve the requirements of this Section without damage to drainage provisions or over compaction of soil layers. All subsequent operations shall be in accordance with approved methods.
 2. The Contractor shall not place Planting Soil, or Horticultural Subsoil on prepared subgrade or Drainage Layer prior to inspection and approval of Landscape Architect

for compliance with depth, compaction and percolation rate. The Contractor shall request inspection before proceeding at least ten working days prior to placement of soils.

3. The Contractor shall not plant any plant material prior to inspection and approval of Landscape Architect for compliance with soil depth and compaction specifications. The Contractor shall request inspection before proceeding at least ten working days prior to placement of soils.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Refer to Division 31 Earthwork for overall material handling requirements.
- B. In addition, the following provision is established: Material shall not be handled or hauled, placed or compacted when it is wet as after a heavy rainfall, early spring or if frozen. Soil shall be handled only when the moisture content is compliant with Section 32 91 15 1.6.H. The Landscape Architect and the Owner shall be consulted to determine if the soil is too wet to handle.
- C. Store and handle packaged materials in strict compliance with manufacturer's instructions and recommendations. Protect all materials from weather, damage, injury and theft.
- D. Sequence deliveries to avoid delay. On-site storage space is permissible only with written notice from Construction Manager. Deliver materials only after preparations for placement of planting soil have been completed.
- E. Prohibit vehicular and pedestrian traffic on or around stockpiled planting soil.
- F. Planting Soil that is to be stockpiled longer than two weeks, whether on or off site, shall not be placed in mounds greater than six feet high.
- G. Vehicular access to the site is restricted. Before construction, the Contractor shall submit for approval a plan showing proposed routing for deliveries and site access.
- H. Soil Moisture Content
 1. Contractor shall not move, blend or grade soil when moisture content is so great that free moisture is apparent, nor when it is so dry that dust will form in the air or that clods will not break readily, nor when it is frozen. Apply water, if necessary, or allow to dry to bring soil moisture between 60% of optimum moisture content and optimum moisture content as determined by ASTM D698 prior to compaction, grading or planting.
 2. Field Soil Moisture Test procedure is applicable for general soil moving and placement only and shall not be considered appropriate for compaction of soils, nor is a replacement for the above testing procedure.
 - a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
 - b. If the soil will not retain shape it is too dry and should not be worked.
 - c. If the soil retains shape and will not crumble, it is too wet and should not be worked.
 - d. If the soil glistens or free water is observed when the sample is patted in the palm of hand the soil is too wet and should not be worked.

PART 2 – PRODUCTS

2.1 SOIL AND LANDSCAPE MATERIALS

A. General

1. All plant mix material shall fulfill the requirements as specified and be tested to confirm the specified characteristics.
2. Samples of individual components of soil mixes in addition to blended soil mixes including mulch materials shall be submitted by the Contractor for testing and analysis to the approved testing laboratory. Comply with specific materials requirements specified.
 - a. No base component material or soil components for soil mixes shall be used until certified test reports by an approved soil testing laboratory and have been received and approved by the Landscape Architect.
 - b. As necessary, make any and all soil mix amendments and resubmit test reports indicating amendments until approved.
3. The Landscape Architect may request additional testing by Contractor for confirmation of mix quality and/or soil mix amendments at any time until completion. Changes in mix ratios may be required.

B. Soil Testing and Soils Testing Report Submittal

1. All testing of the soil mix components shall be carried out by the Soils Testing Laboratory. Recommendations for amending and/or correcting the soil mix shall be provided by the Laboratory.
2. Failure of any material by testing and/or amendment procedure to meet Specification requirements, including University required environmental testing shall require the Contractor to seek another source for the failed material and the initiation of all testing procedures for the new replacement material shall immediately take place.
3. The Contractor shall be responsible for recognizing that these critical project materials warrant timely and serious attention, that the testing process to achieve Approved materials should be considered a lead time item, and that under no circumstance shall failure to comply with all specification requirements be an excuse for “staying on project construction schedule.”

C. Soil Samples: Contractor is responsible for paying costs for testing. Submit 1 gallon planting soil samples in two phases. Submit samples concurrent with horticultural soil test reports in both phases. Submit as phase one, planting soil base components for approval. Only after approval of phase one components, submit as phase two, soil blend mixes / mediums for approval.

1. All reports must be from recent analyses, less than 90 days old, and represent materials that are available for delivery to the site.
2. Base component materials should be blended into soil blends within 90 days of test reports. Soil blends should be delivered to the project site or be reserved for project use at designated areas within 90 days of test reports for each soil blend. Soil blends may mixed, approved by the Design team and stockpiled in advance. If

- stockpiling occurs, the Construction and Design teams should be notified and the acceptance period shall up to 360 days.
3. Pre-blended and accepted stockpiles should be stored in accordance with the Specification Requirements and be labeled and protected.
 4. If base component test reports expire beyond the 90 day limit while soil blends are being manufactured, the contractor shall submit certification to the design team that the materials are the same materials that were tested and accepted initially and may continue blending using the accepted submittals up to a maximum of 180 days at which time new samples and laboratory tests must be submitted.
 5. Phase One Submittals of Planting Soil Base Components:
 - a. Base Loam (Topsoil)
 - b. Organic Amendment Materials (Compost)
 - c. Coarse Sand for Drainage and Amending Soil
 6. Phase Two Submittals of Planting Mediums: mixing and batching of soil mediums to be submitted in the same manner as bulk soils and will be prepared prior to delivery to site.
 - a. Horticultural Subsoil
 - b. Planting Bed Soil
 - c. Lawn Soil
 7. Phase Three Submittals shall be identical to Phase Two Submittals and be conducted initially for each 200 cubic yards, and after three consecutive compliant tests, for each 500 cubic yards of soil material prepared for the project site.
 8. Submit reports for each of the above samples: Submit sample from each proposed source for testing and approval. Deliver samples to both the testing laboratory and the project soil scientist and pay costs. Send report directly to Owner's Representative.
 9. Soil Sample Submittals: Sampling shall be done by the Contractor. The size of the samples and method of sampling shall be as follows: Samples shall be representative of the material to be brought to the site. Each sample shall be a Composite Sample, which consists of 5 separate sub samples taken from a minimum of (5) different locations at each source and mixed together to make the test sample.
 10. The Contractor shall schedule this testing in order to permit reasonable time for testing, evaluation, and approvals prior to scheduled installation. Allow for a minimum of 4 weeks to perform testing and obtain approvals.
- D. Base Loam
1. Base Loam shall be Stripped Existing Topsoil or Imported Base Loam and shall be free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots or other objectionable, extraneous matter or debris. Base Loam shall be from a natural source without admixture of compost, sand or any other extraneous material. Base Loam shall also be free of quack-grass rhizomes, Agropyron Repens, and the nut-like tubers of nutgrass, Cyperus Esculentus, and all other primary noxious weeds. Base Loam shall not be delivered or mixed while in a frozen or muddy condition. Base Loam for

mixing shall conform to the following grain size distribution for material passing the #10 sieve:

| U.S. Sieve Size Number | Minimum | Maximum |
|------------------------|---------|---------|
| 10 | --- | 100 |
| 18 | 85 | 100 |
| 35 | 70 | 95 |
| 60 | 50 | 85 |
| 140 | 36 | 53 |
| 270 | 32 | 42 |
| 0.002mm | 3 | 8 |

2. Maximum size shall be one inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
3. The organic content shall be between 3.0 and 8.0 percent.
4. The pH shall be 7.5 or less.

E. Coarse Sand

1. Sand for Planting Soil Blends, protection of filter fabric/drainage board, bottom of bioretention areas and for drainage as required, shall be uniformly graded medium to coarse sand consisting of clean, inert, rounded to sub-angular grains of quartz or other durable rock free from loam or clay, mica, surface coatings and deleterious materials with the following grain size distribution for material passing the #10 sieve:

| U.S. Sieve Size Number | Percent Passing | |
|------------------------|-----------------|---------|
| | Minimum | Maximum |
| 10 | 100 | -- |
| 18 | 60 | 80 |
| 35 | 25 | 45 |
| 60 | 8 | 20 |
| 140 | 0 | 8 |
| 270 | 0 | 3 |
| 0.002mm | 0 | 0.5 |

2. Maximum size shall be one-inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.
3. The ratio of the particle size for 70% passing (D70) to the particle size for 20% passing (D20) shall be 3.0 or less (D70/D20 <3.0). Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422.
4. pH shall be less than 7.5.

F. Organic Amendment (Compost)

1. Organic Matter for amending planting soils shall be a stable, humus-like material produced from the aerobic decomposition and curing of Leaf and Yard Waste Compost, composted for a minimum of one year (12 months). The leaf yard waste compost shall be free of debris such as plastics, metal, concrete or other debris. The leaf and yard waste compost shall be free of stones larger than 1/2", larger

branches and roots. Wood chips over 1" in length or diameter shall be removed by screening. The compost shall be a dark brown to black color and be capable of supporting plant growth with appropriate management practices in conjunction with addition of fertilizer and other amendments as applicable, with no visible free water or dust, with no unpleasant odor, and meeting the following criteria as reported by laboratory tests.

- a. The ratio of carbon to nitrogen shall be in the range of 12:1 to 25:1.
- b. Stability shall be assessed by the Solvita procedure. Protocols are specified by the Solvita manual (version 4.0). The compost must achieve a maturity index of 6 or more as measured by the Solvita scale. Stability tests shall be conducted by Woods End Research Laboratory, Mt. Vernon, Maine, or approved alternate laboratory.
- c. Organic Content shall be at least 20 percent (dry weight). One hundred percent of the material shall pass a 1/2-inch (or smaller) screen. Organic content shall be determined by weight loss on ignition for particles passing a number 10 sieve.
- d. pH: The pH shall be between 6.5 to 7.4 as determined from a 1:1 soil-distilled water suspension using a glass electrode pH meter.
- e. Salinity: Electrical conductivity of a one to five soil to water ratio extract shall not exceed 2.5 mmhos/cm (dS/m).
- f. The compost shall be screened to 1/2-inch maximum particle size and shall contain not more than 3 percent material finer than 0.002mm as determined by hydrometer test on ashed material.
- g. Nutrient content shall be determined by the University of Massachusetts Soil Testing Laboratory or equivalent laboratory and utilized to evaluate soil-required amendments for the mixed soils. Chemical analysis shall be undertaken for Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Aluminum, Magnesium, Iron, Manganese, Lead, Soluble Salts, Cation Exchange Capacity, soil reaction (pH), and buffer pH.

2.3 PLANTING SOIL MIXES

- A. All existing vegetation shall be removed from stockpiles prior to blending. Uniformly mix ingredients by windrowing/tilling on an approved hard surface area or by alternately processing materials through a screening plant. All soil components and organic amendment shall be maintained moist, not wet, during mixing. Amendments shall not be added unless approved to extent and quantity by the owner and additional tests have been conducted to verify type and quantity of amendment is acceptable. Percentages of components are approximate and will be verified upon completion of individual test results for components of the various mixes. Due to variability of soil materials, mix ratios may require adjustment and re-submittal at the expense of the Contractor.
- C. Planting Bed Soil
 - 1. Planting Bed Soil shall consist of a combination of approximately equal parts by volume Base Loam, Coarse Sand and Organic Amendment/Compost (1L:1S:1C) to create a uniform blend which meets the following requirements.
 - 2. Gradation for material passing a Number 10 Sieve shall be achieved in the final mix.

| U.S. Sieve Size No. | Percent Passing | |
|---------------------|-----------------|---------|
| | Minimum | Maximum |
| 10 | 100 | |
| 18 | 85 | 95 |

| | | |
|----------|----|----|
| 35 | 60 | 85 |
| 60 | 42 | 65 |
| 140 | 21 | 44 |
| 270 | 18 | 24 |
| 0.002 mm | 2 | 4 |

3. Maximum size shall be one half-inch largest dimension. The maximum retained on the #10 sieve shall be 10% by weight of the total sample.
4. The ratio of the particle size for 80% passing (D₈₀) to the particle size for 30% passing (D₃₀) shall be 6 or less (D₈₀/D₃₀ <6).
5. The final mix shall have an organic content between 5 and 7 percent by weight.
6. The final mix shall have a hydraulic conductivity of not less than 1.5 inches per hour according to test procedure ASTM D5856-95 (2000) when compacted to a minimum of 86 percent Standard Proctor ASTM D 698. Tests shall be by combined hydrometer and wet sieving in compliance with ASTM D422 after destruction of organic matter by ignition.
7. Chemical analysis shall be undertaken for Phosphorus, Potassium, Calcium Magnesium, Aluminum, Iron, Manganese, Lead, Cation Exchange Capacity, Soluble Salts, acidity (pH) and buffer pH.

D. Lawn Soil

- A. Base Loam, Sand and Compost, each as specified above, shall be combined in an approximate mix ratio of three parts by volume Sand to two parts by volume Base Loam to one and one half parts by volume Compost (3S:2L:1.5C) to create a uniform blend which meets the following requirements.
- B. Gradation for Material Passing the Number 10 Sieve:

| U.S. Sieve Size Number | Percent Passing | |
|------------------------|-----------------|---------|
| | Minimum | Maximum |
| 10 | 100 | - |
| 18 | 70 | 95 |
| 35 | 46 | 74 |
| 60 | 30 | 56 |
| 140 | 17 | 26 |
| 270 | 14 | 18 |
| 0.002mm | 1 | 2 |

1. Maximum size shall be one inch largest dimension. The maximum retained on the #10 sieve shall be 15% by weight of the total sample.
2. Ratio of the particle size for 80% passing (D₈₀) to the particle size for 30% passing (D₃₀) shall be 5.0 or less. (D₈₀/D₃₀ <5.0)
3. Saturated hydraulic conductivity of the mix: not less than 3 inches per hour according to ASTM D5856-95 (2000) when compacted to a minimum of 86% Standard Proctor, ASTM 698.
4. Organic content: between 4.0 and 5.0 percent by weight.
5. The pH of the mix shall be between 6.5 and 7.2.

E. Horticultural Subsoil

1. Horticultural Subsoil for the lower layer of planting soil in Planting Beds shall consist of a combination of approximately 2 parts by volume Coarse Sand to one part by volume Base Loam (2S:1L:0.5C).

2. Gradation for material passing the #10 sieve:

| U.S. Sieve Size No. | Percent Passing | |
|---------------------|-----------------|---------|
| | Minimum | Maximum |
| 10 | 100 | -- |
| 18 | 85 | 95 |
| 35 | 55 | 80 |
| 60 | 30 | 60 |
| 140 | 20 | 33 |
| 270 | 12 | 17 |
| 0.002mm | 1 | 3 |

3. Maximum size shall be one-inch largest dimension. The maximum retained on the #10 sieve shall be 20% by weight of the total sample.

4. Ratio of the particle size for 80% passing (D₈₀) to the particle size for 30% passing (D₃₀) shall be 6.5 or less (D₈₀/D₃₀ <6.5).

5. Saturated hydraulic conductivity of the mix: not less than 2 inches per hour according to ASTM D5856-95 (2000) when compacted to a minimum of 86% Standard Proctor, ASTM 698.

6. Organic content: between 1.5 and 3.0 percent by weight.

7. pH shall be between 6.0 and 6.8

PART 3 – EXECUTION

3.1 PRE-INSTALLATION EXAMINATION AND PREPARATION

A. Reference Other Sections as necessary.

B. Coordinate activities with other project contractors so that there is no soil disturbance from traffic or other construction activities subsequent to placement.

C. Pre-Installation Examination Required: The Contractor shall examine previous work, related work, and conditions under which this work is to be performed and shall notify Landscape Architect and Soil Scientist in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, previous work, and conditions. The Contractor shall not place any planting soil until all work in adjacent areas is complete and approved by the Landscape Architect.

D. Kickoff Meeting: At least 10 working days prior to the start of work, the contractor shall request a landscape construction kickoff meeting with the owners' representative, landscape architect and any other parties involved with landscape construction. The contractor must demonstrate familiarity with this Section 32 91 15 Planting Soils, and other relevant sections of the construction documents. The contractor shall articulate the means and methods of soil blending, subgrade preparation, soil placement and other steps outlined in the Specification.

- E. Examination of Subgrade: The subgrade shall be accepted by the Owner prior to the beginning of soil placement operations and shall be examined by the Contractor prior to the start of soil placement and planting. Any deficiencies shall be noted and related to the Landscape Architect and Owner in writing prior to acceptance by the Landscape Contractor. Deficiencies include, but shall not be limited to the following:
1. Construction debris present within the planting areas.
 2. The subgrade is at incorrect depths for installing the designed soil profile.
 3. Incomplete irrigation and/or subsurface drainage installation.
 4. Incomplete lighting and exterior electrical installation.
 5. Conflict with utilities.
 6. Subgrade or drainage mat contaminated with oils, compressible material, silt or clay
 7. Subgrade must infiltrate water at the rate of at least one inch per hour. If subgrade infiltration is less than one-inch per hour, additional work and/or installation of drainage layers and piping is required.
- F. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations shall slope parallel to the finished grade and/or toward the subsurface drain lines as shown on the drawings.
1. All areas to be filled with Planting Soil shall be free of construction debris, refuse, vegetation, compressible or decayable materials, concrete washout or soil crusting films of silt or clay that reduces or stops drainage from the Planting Soil into the subsoil or drainage systems; and/or standing water. Such material shall be removed from the site.
 2. Contractor is responsible for confirming subgrade elevations are confirmed and per the Plans to accommodate the full thickness of the soil and finished profiles.
- G. Do not proceed with the installation of Planting Soils, until all utility work in the area has been installed.
1. The Contractor shall identify the locations of underground utilities prior to proceeding with soil work and shall protect all utilities from damage.
- H. Planting Soil Preparation: Refer to Section 329115, 2.2 for planting soil and mixtures. Examine soil and remove foreign materials, stones and organic debris over 1/2" in size. Remove all vegetation from stockpiles prior to blending. Mix-in fertilizers and amendments as required by tests and as approved by the Landscape Architect. All preparation and mixing shall be accomplished when the soil moisture content is compliant with Section 329115, 1.6.H and at a moisture content approved by the Landscape Architect. If lime or acidulant is to be added, it shall be mixed with dry soil before fertilizer is added and mixed.
- 3.2 EXCAVATION AND REMOVAL
- A. Refer to Division 31 Earthwork
- 3.3 MIXING OF PLANTING SOIL MIXES
- A. Soil blends shall be produced with equipment that blends together each component in a thorough and uniform manner. This may be accomplished by a minimum of three handling events on a hard-surfaced area with earth moving equipment or by alternately passing soil components through a screener.

- B. Base components and Soil Mix stockpiles should be protected from wind and rain and shall not be permitted to be stored in standing water.

3.4 WORKING AROUND UTILITIES

- A. Carefully examine the civil, record, and survey drawings to become familiar with the existing underground conditions before digging.
- B. Known underground and surface utility lines are indicated on the utilities drawings – See Civil and Architect’s plans. Contact the local Dig Safe organization and give them their required time to respond and mark the property. Determine location of underground utilities and perform work in a manner that will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until parties concerned mutually agree upon removal.
- C. Perform work in a manner that will protect utilities from damage. Hand excavate as required and provide adequate means of support and protection of utilities during soil installation operations. Maintain grade stakes set by others until parties concerned mutually agree upon removal. The Contractor shall repair all utilities damaged by soil operations at the Contractor’s expense.

3.5 SUBGRADE PREPARATION, INSPECTION AND PERCOLATION TESTING

- A. After subgrade levels have been reached, the Landscape Architect shall observe de-compaction and preparation of the subgrade according to this Section and inspect soil conditions to evaluate subsurface drainage conditions. Heavy Site Subgrade Compaction Mitigation is not required in areas of drainage layer.
- B. Coordinate the following scarification work to eliminate subgrade compaction when located in Planting areas. Maintain 12” clearance from any underground utilities during subgrade de-compaction.

1. Heavy Site Subgrade Compaction Mitigation:

- a. Heavily compacted subgrade areas such as, but not limited to, temporary parking areas, material stockpile areas, temporary roadways, construction areas and areas around structures and other similar areas.
- b. Prior to establishing the final subgrade, these areas shall be dug up or ripped to a depth of (18) inches to break up the soil hard pan, then re-compacted with two passes of the tracks of a wide track bulldozer size D-6 or smaller, or other approved equipment. Vibratory compaction of subgrade in areas is prohibited except in areas with sand-based structural soil.

2. General Site Subgrade Compaction Mitigation for all general Planting areas that are not heavily compacted and would be mitigated as specified in Item 1 above:

- a. Immediately prior to placing Planting Soil, the entire subgrade shall be loosened to a minimum depth of 8-inches using the teeth of a backhoe or other suitable equipment, then re-compacted with two passes of the tracks of a wide track bulldozer size D-6 or smaller, curled bucket of an excavator, or other approved equipment. Vibratory compaction of subgrade in planted areas is prohibited.

- C. After Subgrade has been scarified as described above, it shall be recompressed by using the curled bucket of an excavator. Verify the subgrade passes water at or greater than the minimum requirement.
- D. Remove all stones or debris greater than 6" in any dimension from the subgrade prior to placing Planting Soils.
- E. After the subgrade has been prepared, Percolation Tests shall be performed according to the following test procedures. Planting Soils may also be tested for infiltration capacity by this method as required.
 - 1. Utilize perforated canisters or buckets seven to ten inches in diameter and a minimum of six inches high.
 - 2. A test hole shall be hand dug at the soil horizon to be tested approximately one-inch larger than the diameter of the test canister and approximately six inches deep. The sides of the test hole shall not be smoothed.
 - 3. Place one-half inch of clean coarse sand in the bottom of the hole and place the canister firmly into the hole. The space around the canister shall then be filled with coarse sand. Tamp the coarse sand to firmly fill any void space around the test canister.
 - 4. Fill the canister with water to the soil horizon level and allow to drain until approximately one inch of water remains, or a minimum of 1 hour.
 - 5. Refill the canister to the soil horizon level. After the water level drops approximately one inch, start the test. Record time versus water level as the water level drops. The percolation rate is the length of time for the water level to drop per inch. The field scientist shall record the rate of percolation for a minimum of two hours or until the water level has dropped a minimum of three inches after the start of measurements.
 - 6. The subgrade must be capable of infiltrating water at least one inch per hour (1"/hr) in planted areas and 2"/ hour in bioinfiltration areas. If subgrade fails to pass water at the minimum rate, drainage provisions shall be required.

3.6 BACKFILLING OF HORTICULTURAL SOIL LAYERS

- A. Soil Placement Preparation:
 - 1. Verify that on the subgrade have been accepted and all areas are approved for placement of planting soils.
 - 2. Verify that the subgrade preparations have been reviewed and accepted, including de-compaction and removal of large stones.
 - 3. Notify the Landscape Architect of soil placement operations at least seven calendar days prior to the beginning of work.
 - 4. Verify that the subgrade passes the minimum water infiltration requirement.
 - 5. Do not proceed with the installation of Planting Soils, until all utility work in the area has been installed.
 - 6. The Contractor shall identify the locations of utilities prior to proceeding with soil work and shall protect all utilities from damage.
 - 7. Do not begin Planting Soil installation until all drainage, irrigation main lines, lateral lines, subgrade preparations and irrigation risers shown on the drawings are viewed and approved by the Landscape Architect.
 - 8. Protect adjacent walls, walks and utilities from damage or staining by the soil. Use plywood and/or plastic sheeting as directed to cover existing asphalt, concrete, metal and masonry work.

- a. Clean up any soil or dirt spilled on any paved surface, including at the end of each working day.
 - b. Any damage to the paving or architectural work shall be repaired by the Contractor at the Contractor's expense.
- B. After subgrade soils have been loosened, re-compressed and inspected and has been approved. Planting Soils may be spread by using conveyor systems, bags or may be dumped and spread with the bucket of mini loader. No rubber-tired equipment or heavy equipment may pass over placed planting soils. Any placed that soils are to be traversed to place additional soils must be adequately protected to prevent damage or contamination to prevent over compaction of planting soils.
- C. Placement of Planting Bed Soil, Lawn Soil and Horticultural Subsoil:
 1. Placement of Planting Bed Soil and plant stock shall be carried out simultaneously to prevent excessive traffic over soil lifts and to maintain the integrity of the soil layers. The contractor shall install plants simultaneously with the installation of the lower soil layers. The upper soil layers shall not be installed before all plants are installed and before the acceptance by the Landscape Architect.
 - a. After soil placement approval, in areas of tree and shrub planting with rootballs 12" in diameter or greater, crate a transition layer and place and compact Horticultural Subsoil as described in this Section.
 - b. After inspection and approval of Horticultural Subsoil, place trees and shrubs in locations shown on the plans and at the proper elevations.
 - c. Create a transition layer as described in this Section. Place and compact Planting Bed Soil around trees and shrubs as described in this Section.
 2. Planting Bed Soil and Horticultural Subsoil shall be placed in lifts not to exceed 8 inches in thickness and compacted to meet minimum and maximum requirements as specified below:
 - a. Horticultural Subsoil shall be compacted to between 83 and 85 percent Standard Proctor, except soils beneath the rootballs shall be compacted to between 87 and 90 percent Standard Proctor to create a firm pedestal and prevent settlement of the rootballs.
 - b. Planting Bed Soil shall be compacted to between 82 and 84 percent Standard Proctor.
 - c. Planting Soils shall not be compacted with vibratory equipment.
 4. In all cases, the soil being placed shall be in a dry to damp condition. No wet soils shall be placed. Soil moisture content must be compliant with Section 32 91 115 1.6.H prior to compaction. All testing of in-place density for planting materials shall be made by the soil scientist or according to ASTM D6938-10 Nuclear Methods after conducting ASTM D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 5. Prevention of compacted soils can be accomplished by beginning the work in corner, against walls, or the center of isolated beds, and progressing outwards towards the borders. Haul roads on placed planting soils are not permitted for placement of horticultural soils.
 6. Planting Soils shall never be moved or worked when wet or frozen.

7. The Contractor shall place barricades or steel plates as required to prevent any unnecessary compaction of planting soil from vehicles, equipment, or pedestrian traffic.
8. After Planting Soils have been spread, and immediately prior to planting, it shall be carefully prepared by hand raking. Stones and debris over one inch in any direction shall be removed from the premises. Fine grade planting beds to a smooth even surface with loose uniformly fine texture. Remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas that can be planted immediately after grading. Maintain the finished surfaces at the grades shown and spread additional soil to correct settlement or erosion. Surface drainage shall be maintained. Soil shall be damp and free from frost during fine grading operations.

3.7 PROTECTION

- A. The Contractor shall protect landscape work and materials from damage due to landscape operations, operations by other Contractors or trespassers. Maintain protection during installation until acceptance. Treat, repair or replace damaged Planting Soil installation work immediately.
- B. Provide all means necessary, including fences, to protect all soil areas from compaction and contamination by trash, dust, debris, and any toxic material harmful to plants or humans after placement. Any area that becomes compacted, shall be de-compacted and tilled to the extent determined by the soil scientist and recompressed to the density ranges specified. Any uneven or settled areas shall be filled, re-graded and re-compacted to meet the requirements of this Specification. Soil that becomes contaminated shall be removed and replaced with specified soil material.
- C. Phase the installation of the planting soil blends such that equipment does not have to travel over already installed planting soil.
- D. Apply filter fabric covering and planking or other engineering controls over soil to minimize compaction and collect dust and debris in any area where the Contractor must work after the installation of Planting Soil.
- E. Till compacted Planting Soil and replace Planting Soil that has become contaminated as determined by the Landscape Architect. Planting Soil shall be tilled or replaced by the Contractor at no expense to the Owner.

3.8 CLEAN-UP

- A. During installation, keep pavements clean and work area in an orderly condition.
- B. Keep the site free of trash and debris at all times. Immediately dispose of wrappings or waste materials associated with products necessary for the completion of the work.
- C. All trash and debris shall be kept in a central collection container. Do not bury trash and debris in back-fill.
- D. Once installation is complete, remove any excess soil from pavements or embedded in fixtures.

3.9 COORDINATION AND EXCESS MATERIALS

- A. Coordinate activities with other project contractors so that there is no soil disturbance from traffic or other construction activities subsequent to placement.
- B. Excess Planting Soil Mixtures and Materials: Remove the excess planting soil mixture and materials from the site at no additional cost to the Owner unless otherwise requested.

3.10 POST-INSTALLATION TESTING

- A. In-place density testing is required in all areas. Placed planting soils must be inspected for compaction level by the following acceptable Density Test Methods: ASTM D1556 Density of soil and rock in place using Sand Cone Method, ASTM D6938-10 Nuclear Methods, ASTM D2167-08 Rubber Balloon method, after ASTM D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.
- C. Placed Planting Soils must be capable of infiltrating water at the minimum rate provided in this Specification for each type of planting soil

END OF SECTION

SECTION 329200

LAWNS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. This section includes the following:
1. Seeded Lawn.
 2. Watering, fertilizing and mowing and maintenance of lawn.
- B. Related Sections include the following:
1. Section 31 23 00 – Excavation, Backfill, Compaction, and Dewatering
 3. Section 32 91 15 – Planting Soils
 4. Section 32 90 00 – Planting
 5. Section 32 93 53 – Planting Maintenance

1.3 REFERENCES

- A. Comply with applicable requirements of:
1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridge Construction, Department of Public Works, latest edition.
 2. Town of Barnstable, of the Commonwealth of Massachusetts, and of other authorities having jurisdiction. Provide labor, materials, equipment and services to comply with requirements.
 3. ASTM: American Society of Testing Materials:
 - a. ASTM: American Society of Testing Materials.
 - b. ANSI: American National Standards Institute.
 - c. AOAC: Association of Official Agricultural Chemists.
 - d. USDA: United States Department of Agriculture.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's information for:
1. Maintenance Fertilizer
 2. Seed Mixture

3. Protective fencing materials.
4. Erosion control blanket.

C. Certificates: Submit:

1. Seed grower's certification: Submit manufacturer's certificates of compliance with each shipment of each seed type. Certificate from seed supplier shall indicate seed is true to variety indicated on packaging. Certificates shall include guaranteed percentages of purity, weed content and germination of seed, net weight and date of shipment. No seed may be sown until certificates have been submitted.

D. Schedules: Submit:

1. Seeding installation schedule for approval.

1.5 QUALITY ASSURANCE

- A. Qualifications: Contractor shall have minimum five years experience in seed and sod installation.

B. Regulatory Requirements

1. Secure permits, licenses, and pay fees including traffic control.
2. Comply with laws, regulations, and quarantines for agricultural and horticultural products.

1.6 DELIVERY, STORAGE AND HANDLING OF SEED, FERTILIZER AND SOIL AMENDMENTS

- A. Packing and Shipping: deliver materials in unopened containers bearing the manufacturer's name and guaranteed statement of analysis. Transport materials without damage. Protect finishes from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.

- B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.

C. Storage and Protection:

1. Materials shall be uniform in composition, dry and free flowing.
2. Store materials in dry place, on pallets, off the ground; protect from sun. Store materials in a manner, which does not diminish their usability and effectiveness.
3. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

1.7 PROJECT CONDITIONS

- A. Environmental Requirements: do not deliver, handle or place soils when dry, wet, or frozen.

1. Field Test

- a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
- b. If soil will not retain shape it is too dry and should not be worked.
- c. If soil retains shape and will not crumble, it is too wet and should not be worked.

B. Seed Planting Seasons:

1. April 15 to May 15
2. September 1 to October 15.
3. Seeding other than within the above season shall be allowed only when ordered by Owner's Representative or when Contractor submits written request for permission to do so and permission is granted. Newly seeded areas, if seeded out of season, must be continuously watered according to good practice if seeding is done between June 1 and September 1. Seeding done outside dates established above shall be solely at Contractor's risk.

1.8 SEQUENCING AND SCHEDULING

- A. Perform lawn work only after planting and other work affecting ground surface has been completed.

1.9 SUBSTANTIAL COMPLETION

- A. Upon completion of seed installation, request Owner's Representative's review to determine if work is substantially complete. Submit request a minimum of five days prior to anticipated inspection date. If work is substantially complete, Owner's Representative will issue a Substantial Completion letter identifying commencement of 90 day Maintenance Period.
 1. If work is not substantially complete, Owner's Representative will issue a written list of outstanding work to be done on a timely schedule agreed upon by Contractor and Owner's Representative.
 2. Contractor shall notify Owner's Representative when outstanding work is completed and ready for review. When outstanding work is complete, as determined by Owner's Representative, a letter of Substantial Completion will be issued.

1.10 90 DAY MAINTENANCE PERIOD

- A. Maintain lawn areas until Final Acceptance.

1.11 FINAL ACCEPTANCE

- A. After the 90 day maintenance period, seeded lawn areas will be reviewed for final acceptance.
- B. Conditions of Final Acceptance

1. Lawn acceptance shall be given for entire lawn area. No partial acceptance shall be given.
2. Lawns shall exhibit uniform, thick, well- developed stand of grass. Lawn areas shall have no bare spots in excess of four inches in diameter and bare spots shall comprise no more than two percent of total area of lawn.
3. No lawn areas shall exhibit signs of damage from erosion, washouts, gullies, or other causes.
4. Pavement surfaces and site improvements adjacent to lawn areas shall be clean and free of spills from placing or handling of loam borrow and seeding operations.

C. Inspection and Final Acceptance

1. Upon completion of 90 Day Maintenance Period, request Owner's Representative's review to determine if work is acceptable. Submit request a minimum of five days prior to anticipated inspection date. If work is acceptable, Owner's Representative will issue a Final Acceptance letter. From this date forward, lawn maintenance will be the responsibility of the Owner. Following acceptance of lawns, Owner will be given access to lawn areas for maintenance work.
 - a. If work is not accepted, Owner's Representative will issue a written list of outstanding work. Maintenance period to be extended until completion of work.
 - b. Contractor shall notify Owner's Representative when outstanding work is completed and ready for review. When work is complete, as determined by Owner's Representative, a letter of Final Acceptance will be issued.

PART 2 - PRODUCTS

2.1 LANDSCAPE SOILS AND AMENDMENTS

- A. See SECTION 329115 – PLANTING SOILS.

2.2 POST PLANTING FERTILIZER

- A. Post Planting Fertilizer to be mixed with soil:

1. Complete, fertilizer made from all-natural ingredients complying with State and Federal fertilizer laws. Fertilizer shall contain the following available plant food by weight, unless soils test indicate a need for different composition:

| | Nitrogen | Phosphorus | Potash |
|-------|----------|------------|--------|
| Lawns | 5% | 3% | 4% |

2. Fertilizer: Pro Start 2-3-3 manufactured by North Country Organics, Bradford, Vermont 05033. Phone: 802.222.4277.
3. Fertilizer to be delivered in original unopened standard size bags showing weight, analysis ingredients and manufacturer's name.

2.3 WATER

- A. Water: furnished by Contractor, suitable for irrigation and free from ingredients harmful to plant life. Hose and other watering equipment furnished by Contractor.

2.4 SEED

- A. Seed mixture: fresh, clean, new crop seed. Seed can be mixed by an approved method on site or can be mixed by dealer. If seed is mixed on site, each variety shall be delivered in original containers bearing dealer's guaranteed analysis. If seed is mixed by dealer, Seeding Contractor shall furnish to the Owner's Representative the dealer's guaranteed statement of composition of mixture and percentage of purity and germination of each variety.

B. Seed Mixtures:

1. New England Logging Road Mix: New England Logging Road Mix by New England Wetland Plants, Inc., 14 Pearl Lane, South Hadley, MA 01075, Phone: (413) 548-8000. Application Rate: 20 lbs/acre or 2200 sq ft/lb.
2. Eco-Grass Mix by Prairie Moon Nursery, Winona, MN. Phone: (507) 452-1362. <https://www.prairiemoon.com/> Application Rate: 220 lbs/acre or 5lb/1000 sq ft.

2.6 TEMPORARY PROTECTIVE FENCING

- A. Protect seeded areas with snow fencing or other approved temporary fencing material. Maintain fence in place.

PART 3 - EXECUTION

3.1 LAWN WORK SCHEDULE

- A. Lawn work shall proceed on schedule in conformance with project phasing. These requirements will be strictly adhered to.
- B. Lawn work must be completed on schedule to allow at least one full growing season prior to Final Acceptance.
- C. Contractor responsible for maintenance work on installed lawn until an acceptable lawn is established for a minimum of 60 days.

3.2 EXAMINATION

- A. Verification of Conditions: in the event field conditions are not in conformance with Contract Documents, notify Owner's Representative in writing.
1. Spot and Invert Elevations: verify field elevations of site improvements such as drainage and utility fixtures, pavements, existing plantings, and subsurface piping conform to Drawings.

2. Finish Grades: verify specified elevations to ensure that fine grading operations have shaped, trimmed, and finished lawn bed true to elevation with smooth sloped parallel to finished grade.

3.3 PREPARATION AND PLACEMENT OF PLANTING SOIL

- A. See SECTION 329115 – PLANTING SOILS.

3.4 PREPARATION FOR LAWN INSTALLATION

- A. Protection:

1. Dust Control: upon acceptance of finish grade provide dust control.
2. Erosion Control: upon acceptance of finish grade provide erosion control.
3. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.

- B. Surface Preparation:

1. Clean seed bed, pavement or other site improvements prior to installation.

3.5 SOIL PREPARATION AND PLACEMENT OF PLANTING SOILS

- A. See SECTION 329115 – PLANTING SOILS.

- B. Thoroughly irrigate areas to receive seed.

- C. Scarification: cross rake areas to receive seed so surface of soil will be receptive to holding seed.

- D. Grade seed areas smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions to drain.

- E. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.

3.6 APPLICATION OF PRE PLANTING FERTILIZER

- A. Pre-plant Fertilizer application: specified in SECTION 329115 – PLANTING SOILS.

3.7 SOWING OF SEED

- A. Seeding: Seeding shall consist of soil preparation, seeding, raking, rolling, weeding, watering and otherwise providing labor and materials to secure establishment of acceptable turf.

- B. Sowing of Seed: Immediately before seed is sown, ground shall be scarified, or raked lightly until surface is smooth, friable, and of uniformly fine texture. No seeding shall be done during windy weather. Sow seed in two directions right angles to each other. Sow seed evenly using a culti-packer or approved seeding device (if culti-packer is not used, cover seed with thin layer of landscape soil by dragging, light raking or other approved method). Roll in both

directions with hand roller weighing approximately one hundred pounds per foot of width, and water with fine spray. Provide protective fencing where required to keep area undisturbed until grass is established.

- C. On slopes of 3:1 or greater, Contractor can, at his option, use erosion control blanket pre-seeded with specified mixtures. Erosion control blanket shall be installed with two staples minimum per square yard.

3.7 WATERING

- A. First Week: First Week: Provide labor and arrange for watering necessary to establish acceptable lawn. In absence of adequate rainfall, watering shall be performed daily and as necessary during first week and in sufficient quantities to maintain moist soil to two inch minimum depth.
- B. Second and Subsequent Weeks: Water lawn to maintain moisture in upper 5 inches of soil.
- C. Water with uniform coverage while preventing erosion due to application of excessive quantities over small areas, and prevent damage to finished surface by watering equipment. Provide sufficient watering equipment to apply one complete coverage to seeded areas in eight-hour period.

3.8 MAINTENANCE

- A. Maintenance begins immediately after seed is installed and continues until Final Acceptance as follows:
 - 1. a uniform, thick, well-developed stand of turf grass is established.
 - 2. Mow turf grass at seven-day intervals.
 - a. First mowing: when grass has grown to 2" to 2 1/4" height. Cut grass to 1 3/4" height.
 - b. Subsequent mowings shall cut grass to 1 3/4" height.
 - c. Mow in Autumn until growth of grass ceases, and resume in Spring when grass grows to 2 1/4" height.
 - 3. Mow sloped areas a minimum of once during maintenance period. 90 day maintenance period shall be extended to include required cutting. Cut grass to 3" height.
 - 4. Apply uniform application of Post Planting Fertilizer at rate of 44 pounds nitrogen per acre throughout maintenance period. Initial application 3 to 4 weeks after seeding. Additional applications shall occur at four week intervals or as directed Owner's Representative.
 - 5. Lawn areas shall continue to be watered as described above.
 - 6. After grass has started, areas failing to show uniform, thick, well-developed stand of grass shall be immediately re-seeded until areas are covered with satisfactory growth of grass as determined by Owner's Representative.

7. Repair damage from erosion, gullies, washouts, or other causes immediately by filling with loam borrow, tamping, re-fertilizing and re-seeding.

3.9 CLEANING

- A. Wash and sweep clean paving, site improvements and building surfaces. Clean spills and oversprays immediately. Remove and dispose off-site excess planting mixture, soil and debris.
- B. Following Final Acceptance of lawn areas, remove materials and equipment not required for other planting or maintenance work. Materials and equipment remaining on site shall be stored in locations that do not interfere with Owner's maintenance of accepted lawns or other construction operations.

3.10 PROTECTION

- A. Protect lawn areas against damage with fencing. Fencing to remain in place for minimum 30 days or as directed by owner to ensure complete establishment of lawn. Contractor to maintain fencing in upright position, stretched tightly, and neatly.

END OF SECTION

SECTION 329353

PLANTING MAINTENANCE

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the Contract and General conditions and all Sections within Division 1 – GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.
- B. Examine all other Sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Plant maintenance including pruning, drainage, irrigation, fertilizing, weed and pest control, and adjusting tree guys.
 - 2. Guaranty and replacement of unacceptable plants.
 - 3. Providing Owner with Maintenance Manual
- B. Related Sections include the following:
 - 1. Section 312300 – Excavation, Backfill, Compaction and Dewatering
 - 2. Section 321914 – Planting Soils
 - 3. Section 329000 – Planting
 - 4. Section 329200 – Lawns

1.3 REFERENCES

- A. Comply with applicable requirements of:
 - 1. Commonwealth of Massachusetts, Standard Specifications for Highways and Bridge Construction, Department of Public Works, latest edition.
 - 2. Town of Barnstable, of the Commonwealth of Massachusetts, and of other authorities having jurisdiction. Provide labor, materials, equipment and services to comply with requirements.

1.4 SUBMITTALS

- A. Materials List: provide list of materials to be used in maintenance; materials shall be the same as approved in related sections:
 - 1. Fertilizers, soil amendments, testing see Section 32 19 14 – Planting Soils.

2. Plant materials, mulch, and related materials, see Section 32 90 00 – Planting.

B. Pest and Disease Treatment

1. Submit plan for pest and disease treatment; identify proposed materials and methods.
2. Explain why a problem does or may exist.

C. Maintenance Manual

1. Provide a maintenance manual to Owner describing operations for on-going upkeep of the installed plants. The manual shall address itself to specified types and uses of plants installed, and provide information for care of both newly installed plants and long-term maintenance.
2. Provide specific information on the following items:
 - a. Watering: Watering season; diagnosis of watering need; frequency of watering; amount; time of day; methods and equipment; equipment maintenance.
 - b. Fertilization: Fertilizing seasons; analysis for fertilizer selection; application rates and methods; preparation and conditions; application times; application equipment; post-application operations and care; precautions for fertilizer use.
 - c. Liming: Liming season; analysis for liming; application rate; method and equipment for application.
 - d. Pruning: Pruning goals and purposes; methods and techniques (relate to species); equipment; season; cleanup and disposal; precautions.
 - e. Mulching of beds: Depths of mulch; refreshment and replacement of mulch.
 - f. Miscellaneous plant maintenance: Weeding and weed control; pest and disease control; leaf and litter removal; bed edging; professional assistance for plant care; and plant replacement as necessary.
3. Include a month-by-month calendar of maintenance procedures, indicating operations listed above.
4. Submit a copy of maintenance manual to Landscape Architect for approval. Submit prior to planting completion. Landscape Architect may request revisions to manual to meet intent of project design.
5. Submit three copies of manual to Owner at acceptance meeting for planting work. Acceptance shall not be granted until manual has been submitted and approved.

1.5 DEFINITIONS

- A. Maintenance: consists of keeping plants in healthy growing condition including watering, weeding, cultivating, remulching, tightening and repairing of guys, removal and replacement of dead plant material, resetting plants to proper grades or upright positions and maintaining saucer.

1.6 QUALITY ASSURANCE

- A. Qualifications: contractor shall have minimum five years experience in landscape maintenance.
- B. Regulatory Requirements
 - 1. Secure permits, licenses, and pay fees including traffic control.
 - 2. Comply with laws, regulations, and quarantines for agricultural and horticultural products.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: deliver materials in unopened containers bearing the manufacturer's name. Transport materials without damage. Protect finishes from abrasion, dirt, oils, grease, and chemicals. Pack materials to protect from weather.
- B. Acceptance at Site: verify in writing that delivered materials conform to specifications and approved submittals.
- C. Storage and Protection:
 - 1. Store materials in dry place, on pallets, off the ground; protect from sun.
 - 2. Protect materials from theft, damage, weather, dirt, oils, grease, and construction.

1.8 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: do not work soils when dry, wet, or frozen.
 - 1. Field Test
 - a. Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
 - b. If soil will not retain shape it is too dry and should not be worked.
 - c. If soil retains shape and will not crumble, it is too wet and should not be worked.
- B. Planting Seasons: see Section 329000 – Planting

1.9 SUBSTANTIAL COMPLETION

- A. Upon completion of planting, request Landscape Architect's review to determine if work is substantially complete. If work is complete, Landscape Architect will issue a letter of Substantial Completion that identifies the effective dates of the start of the 90 day Maintenance Period.
 - 1. If work is not substantially complete, Landscape Architect will make a list of outstanding work to be done on a timely schedule agreed upon by Contractor and Landscape Architect.

2. Contractor shall notify Landscape Architect when outstanding work is accomplished and ready for review. When outstanding work is complete, in the judgment of Landscape Architect, a letter of Substantial Completion will be issued.

1.10 90-DAY MAINTENANCE PERIOD

- A. Maintain plantings until the end of 90-day maintenance period and until the receipt of the Letter of Preliminary Acceptance. Annual and perennial planting may require additional weeding, fertilizing, watering, deadheading, or plant replacement during this time at Owner's discretion at Contractor's expense.

1.11 PRELIMINARY ACCEPTANCE

- A. After the 90-day Maintenance Period, work will be reviewed for completeness and start of 1-year Guaranty Period for plantings.
- B. Plantings shall be in thriving and vigorous condition at the time of review for Preliminary Acceptance. If plantings are acceptable, Landscape Architect will issue a Letter of Preliminary Acceptance establishing the effective date of the one-year Guaranty Period.
 1. If plantings are not thriving, in the judgment of Landscape Architect, remedial actions by Contractor will be required to repair or replace plantings.
 2. Remedial work shall be done immediately and in accordance with related work of other sections.
 3. At the conclusion of remedial work, Landscape Architect will review work and extend the Maintenance Period another 90 days to incorporate new plantings.

1.12 FINAL ACCEPTANCE

- A. After the 2-year Guaranty Period, plantings will be reviewed.
- B. Plantings shall be in thriving and vigorous condition at the time of review for Final Acceptance. If plantings are acceptable, Designer will issue a Letter of Final Acceptance.
 1. If plantings are not thriving, in the judgment of Designer, remedial actions by Contractor will be required to replace plantings.
 2. Remedial work shall be done immediately and in accordance with related work of other sections.
 3. At the conclusion of remedial work, Designer will review work and extend the Guaranty Period until plantings are deemed acceptable.
- D. Replace plants that are dead or, as determined by Landscape Architect, are in an unhealthy or unsightly condition, and have lost their natural shape due to dead branches, or other causes.
- E. End of Guaranty Period: two (2) years from date of Preliminary Acceptance, Landscape Architect will review plantings. If plantings are acceptable, Landscape Architect will issue a

letter of Final Acceptance. If plantings are unacceptable, plantings shall be replaced until condition of plantings are acceptable as determined by Landscape Architect.

- F. Upon receipt of letter of Final Acceptance, the project becomes responsibility of the Authority.

PART 2 - MATERIALS

2.1 MATERIALS

- A. Materials utilized during the maintenance period shall be the same specified in the work of the related sections:
1. Fertilizers, soil amendments, testing, see SECTION 321914 – PLANTING SOILS
 2. Plants, mulch, and related materials, see SECTION 329000 – PLANTING.

2.2 BIOLOGICAL, HORTICULTURAL, HERBICIDAL AND OTHER PEST CONTROL

- A. Material Specification: shall be by a licensed pest control operator, with authority to purchase, utilize, and specify agricultural chemicals and agricultural products.
- B. Use the least hazardous, least intrusive materials and methods.

2.3 EQUIPMENT

- A. Vehicles: in good working order so oil and grease does not stain pavements and poison plantings. Signs identifying the vehicles shall be clearly displayed.
- B. Machinery: in good working order so oil and grease does not stain pavements and poison plantings.

2.4 WATER

- A. Water: Furnished by Contractor, suitable for irrigation and free from ingredients harmful to plant life, until available from on-site source. Hose and other watering furnished by Contractor.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: in the event field conditions are not as shown on Drawings and outlined in the Specifications, notify Landscape Architect in writing.

3.2 PREPARATION

- A. Protection:
1. Agricultural Chemicals: protect site improvements from contact with agricultural chemicals, soil amendments, and fertilizers.

3.3 PRUNING

- A. Pruning: prune with approval of Landscape Architect.
 - 1. Remove dead branches, rubbing branches, and branch work growing towards the center of the tree.

3.4 DRAINAGE

- A. Observe drainage in plant pits with hand soil augur.
- B. Verify plant pits are draining; plant pits not draining shall be identified on the plan and brought to the attention of Landscape Architect.

3.5 PLANTS

- A. Maintain plants in vigorous condition throughout maintenance period.
- B. Replace plants that are missing, dead, not true to name or size as specified, or not in satisfactory growth, as determined by Landscape Architect. Replace plants found unacceptable within one month or in first month of next growing season, whichever comes first.
- C. Plants must show a minimum of 75% healthy head with obvious growth since planting. Signs of disease, injury, or damage shall have been successfully treated or plant shall be rejected as determined by Landscape Architect.
- D. Replacements plants shall be same kind and size as specified in plant list. Furnish and plant. Cost of replacement borne by Contractor except where it can be shown loss resulted from vandalism, fire, theft, or other causes beyond Contractor's control. Restore areas damaged or disturbed by replacement operations to their original condition.

3.6 WATERING

- A. Refer to SECTION 329000 – PLANTING, for watering requirements during the maintenance period and guaranty period.

3.7 PLANT BASINS

- A. Keep foot tamped and shaped earth dikes around plantings.

3.8 TREE GUYS

- A. Tree stakes: maintain plumb; adjust flexible ties.
- B. Guys: maintain wires taut; adjust turnbuckles; keep flags on wires.

3.9 FINISH GRADE

- A. Maintain finish grades around plantings, at pavement edges, and at irrigation fixtures.

3.10 MULCH

- A. Maintain mulch at 2" depth in planting areas with the exception of at stems and trunks of plants where mulch to be placed to a 0" depth and increasing to a depth of 2" at edge of rootballs and beyond.

3.11 TREATMENT OF PEST AND DISEASES

- A. Spray for both insect pests and diseases during maintenance period with permission of Landscape Architect. Apply herbicides, insecticides and fungicides as prescribed by their manufacturer and in accordance with The State of New Hampshire laws. Contractor shall possess from the State of New Hampshire the proper registrations and permits for application of materials or have applications made by approved, qualified firm holding registrations and permits. Furnish copies of permits in connection with materials to Landscape Architect. Spraying to be considered only after full consideration has been given to alternative pest control strategies. The least toxic approach to pest control shall be used.

3.12 ADJUSTING

- A. Re-set settled plants to proper grade and position.
- B. Restore planting saucer and adjacent material.

3.13 FIELD QUALITY CONTROL

- A. Post Plant Soil Tests: see SECTION 32 93 00 - PLANTING

3.14 CLEANING

- A. Clean up, remove and dispose of off-site excess planting mixture, soil and debris generated under work of this section.
- B. Remove and dispose of stakes, guys and other accessories at end of guaranty period.
- C. Wash and sweep clean site improvements and building surfaces. Clean spills and overspray immediately.
- D. Repair damage caused by maintenance operations.

3.15 PROTECTION

- A. Protect work of this section until Final Acceptance.
- B. Protect planted areas and soils from compaction by construction traffic and from contamination by construction materials.

END OF SECTION

SECTION 33 05 29

PIPELINE AND UNDERGROUND STRUCTURE ABANDONMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Abandonment of pipe
- B. Related Sections
 - 1. Section 31 05 13, Borrow Material
 - 2. Section 33 11 13, Ductile Iron Pipe and Fittings

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods required for proper performance of the work in this section.
- B. Use equipment of adequate size, capacity and quantity to accomplish the work of this Section in a safe timely manner.
- C. Comply with the directions of the Engineer and the requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Gravel borrow shall meet the requirements of Section 31 05 13, Borrow Material.
- B. Concrete shall have a 28-day compressive strength of 3000 psi and a maximum stone size of 1½ inches.
- C. Ductile iron pipe fittings shall be in accordance with Section 33 11 13.

PART 3 EXECUTION

3.1 ABANDONING SANITARY SEWERS AND STORM DRAINS

- A. Abandon existing pipelines and manholes upon completion of installation and successful testing of the new pipelines, manholes and appurtenances.
- B. Seal gravity pipes that are to be abandoned at each end with a concrete plug not less than 2 times the pipe diameter long in the barrel of the pipeline. For example, a 10-inch diameter pipe will require that a minimum 20-inch long plug be installed. This should be performed at the manhole unless the existing manhole is to be removed. Similarly, open ends of pressure sewers to be abandoned shall be sealed with a concrete plug no less than 1½ times the pipe diameter long in the barrel of the pipeline.

3.2 ABANDONING WATER MAINS

- A. The deactivation of the water mains shall be done upon completion of:

1. Installation and successful testing of the new pipeline including all hydrants and appurtenances.
 2. Removal and reconnection of all buildings from the existing pipelines to the new pipelines.
 3. Approval for the deactivation of the water mains by the Engineer or Owner.
- B. Excavate and remove sections of the existing water main as shown on the Drawings.
1. If the open end of the water main to be abandoned is not subject to line pressure, the end of the pipe shall be sealed with a concrete plug with a length no less than 2 times the pipe diameter. For example, an 8-inch diameter pipe will require that a minimum 16-inch long plug be installed inside the barrel of the abandoned pipe.
- C. After the pipe has been capped, the top sections of all gate boxes shall be removed and stacked, the holes filled in with suitable backfill material.

3.3 REPAIR/RESTORATION

- A. Match surface repairs to its immediate surrounding area. Complete this work in accordance with the applicable specification section.

END OF SECTION

Cotuit Fire District
Cotuit Elementary School Demolition
140 Old Oyster Road, Cotuit, MA

Bid Documents
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SECTION 33 05 33

ABANDONMENT OF SUBSURFACE DISPOSAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Abandonment of subsurface disposal systems.

B. Related Sections

1. Section 33 05 29 – Pipeline and Underground Structure Abandonment

1.2 DESCRIPTION

- A. Provide labor, materials, equipment, transportation, and incidentals necessary to complete the abandonment of existing subsurface disposal systems including septic tanks and cesspools as specified herein. The subsurface disposal systems shall be abandoned in accordance with Massachusetts 310 CMR 15, State Environmental Code, Title 5.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 ABANDONMENT OF EXISTING SUB-SURFACE DISPOSAL SYSTEM

- A. The existing sewage discharge pipe from each building to the existing septic system shall be capped and abandoned.
- B. The existing septic system shall be abandoned in accordance with Massachusetts 310 CMR 15, State Environmental Code, Title 5; and the local Board of Health Rules and Regulations. Procedures for abandoning the existing septic tank shall be as follows:
1. The septic tank or cesspool shall be completely pumped of its contents by a licensed hauler and properly disposed.
 2. Remove the septic tank in entirety and properly dispose of debris at a licensed disposal facility. Backfill excavation with compacted granular fill to finish grade in accordance with Section 31 23 00.

END OF SECTION

SECTION 33 05 97

UNDERGROUND WARNING TAPE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Underground Warning Tape

1.2 SUBMITTALS

- A. Shop Drawing Submittals
 - 1. Product Data

Part 2 PRODUCTS

2.1 MATERIALS

- A. Metallic warning tape for underground piping shall be polyethylene tape with metallic core for easy detection and location of piping with a metal detector.
- B. Tape shall be 6 inches wide.
- C. Tape shall be as manufactured by Seton Name Plate Corp., New Haven, CT; Presco Detectable Underground Warning tape, Sherman, Texas; Blackburn Manufacturing, Neligh, NE; Mercotape, Hachensach, NJ; or equal.
- D. The warning tape shall be heavy gauge 0.004 inch polyethylene and shall be resistant to acids, alkalis and other soil components. It shall be highly visible in the following colors with the associated phrases stamped in black letters and repeated at a maximum interval of 40 inches.

| Type of Utility | Color | Warning Message |
|-------------------------------|--------------|---------------------------------------|
| Sanitary Sewer | Green | CAUTION - SANITARY SEWER BURIED BELOW |
| Storm Drain | Green | CAUTION - STORM DRAIN BURIED BELOW |
| Water | Blue | CAUTION – WATER LINE BURIED BELOW |
| Electric | Red | CAUTION – ELECTRIC LINE BURIED BELOW |
| Telephone / Communications | Orange | CAUTION – TELEPHONE LINE BURIED BELOW |
| Gas | Yellow | CAUTION – GAS LINE BURIED BELOW |

- E. The tape shall be of the type specifically manufactured for marking and locating utilities.

PART 3 EXECUTION

3.1 INSTALLATION

- A. All buried pipe and fittings shall be installed with metallic-lined underground warning tape located no more than 24 inches below final grade to allow detection by a metal detector.

UNDERGROUND WARNING TAPE

Cotuit Fire District
Cotuit Elementary School Demolition
140 Old Oyster Road, Cotuit, MA

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END OF SECTION

SECTION 33 08 10

TESTING OF WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Testing of pipe, castings, fittings, valves and accessories

1.2 REFERENCES

- A. American Water Works Association, AWWA C600, AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances

1.3 SUBMITTALS

- A. List of equipment and personnel to be used for the pressure test.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 TEST PARAMETERS

- A. For water mains, the pressure test shall not be conducted until the main has been flushed clean, disinfected in accordance with Section 33 13 00 and the chlorinated water properly disposed of. After acceptable completion of the water system disinfection, the Contractor may commence pressure testing of the new water main.
- B. Run pressure test and leakage test simultaneously in accordance with ANSI/AWWA C600.
- C. Test pressure shall not be less than 1.25 times the working pressure at the highest point along the test section and not less than 1.5 times the working pressure at the lowest elevation of the test section in accordance with AWWA C600. Test pressure shall not exceed pipe or thrust-restraint design pressures.
- D. The hydrostatic test shall be of at least 2-hour duration or until such time as the Engineer indicates acceptance of the pipeline.
- E. Test pressure shall not vary by more than ± 5 psi (35 kPa or 0.35 bar) for the duration of the test.
- F. On pipelines where the elevation along the route of construction varies substantially, the Engineer reserves the right to valve off and test portions of the line.
- G. On extensive construction jobs, the Engineer reserves the right to require the testing of individual portions of the line as construction proceeds rather than await completion of the entire project in order to undertake a pressure or leakage test.
- H. Do not operate valves in either direction at differential pressure exceeding the rated valve working pressure. Use of a test pressure greater than the rated valve pressure can result in trapped test pressure between the gates of a double-disc gate valve. For tests at these pressures, the test setup should include a provision, independent of the valve, to reduce the line pressure to the rated valve pressure on completion of the test. The valve can then

be opened enough to equalize the trapped pressure with the line pressure, or fully opened if desired.

- I. Test pressure shall not exceed the rated pressure of the valves when the pressure boundary of the test section includes closed, resilient-seated gate valves or butterfly valves.

3.2 TIME FOR MAKING TESTS

- A. No pipeline is to be placed under pressure or subjected to hydrostatic pressure until at least 5 days have elapsed after the concrete thrust blocks have been installed. If high early strength concrete is used in the concrete thrust blocks, the hydrostatic pressure can be applied to the main after 2 days have elapsed from time of construction of the thrust blocks.
- B. The Contractor will be allowed to complete backfilling as hereinbefore specified, prior to undertaking the leakage and pressure tests. Backfilling prior to conducting tests will be at the option of the Contractor with the exception of intersections, driveways, crosswalks and other such locations where holding open the trench may adversely affect the public.
- C. Pipelines may be subjected to hydrostatic pressure and inspected for leakage at any convenient time after the trench has been partially backfilled. Partial backfilling shall consist of filling along the center of the pipe length and leaving the joint open for inspection.

3.3 OPERATION OF EXISTING WATER SYSTEM

- A. Do not operate any valve or other control device on the existing water system for any purpose. Do not make any tap or cut-in to the existing water system without the approval of the Engineer and unless an authorized representative of the Owner is present.
- B. When the Contractor's operations require the adjustment of any hydrant, valves, or other control device on the existing system, the Owner will provide authorized personnel for the purpose of supervising the operation of these control devices. Provide the personnel for the operation of these devices.

3.4 PREPARATION

- A. Conduct connections to the existing system under the Engineer's direction.
- B. To allow for proper filling, venting, testing, etc., install any corporation stops and/or special fittings which may be required. All such installation will be subject to the Engineer's approval.
- C. Foreign materials left in pipelines during installation often results in valve or hydrant seat leakage during pressure tests. Thorough flushing is recommended prior to a pressure test by partially opening and closing valves and hydrants several times under expected line pressure, with flow velocities adequate to flush foreign material out of the main, valves and hydrants. Flushing requirements are specified in Specification 33 13 00, Part 3.1.A.2.

3.5 PROCEDURE

- A. On completion of the pipeline or any valved section thereof, fill pipeline with water and test. Draw water from the existing water system under the direction of the Engineer and the Barnstable Water Department.
- B. Before applying the specified test pressure, expel air completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, install corporation cocks

at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, close the corporation cocks and apply the test pressure. At the conclusion of the pressure test, either remove and plug or leave in place the corporation cocks at the discretion of the Owner.

- C. Slowly fill each valved section of pipe with water, and apply the specified test pressure as described in Part 3.1 by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. The system shall be stabilized at the test pressure before conducting the leakage test.

3.6 EXAMINATION UNDER PRESSURE

- A. Examine exposed pipes, fittings, valves, hydrants, and joints carefully during the test.
- B. Repair or replace any cracked or defective pipe, fittings, valves, hydrants, or joints that are discovered following the pressure tests with sound material, and repeat the test until it is satisfactory to the Engineer.

3.7 LEAKAGE TEST

- A. Leakage is defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof to maintain pressure after the pipe has been filled with water and the air has been expelled. Testing shall include all hydrants and hydrant branches. Leakage shall not be measured by a drop in pressure in a test section over a period of time.
- B. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD \sqrt{P}}{148,000}$$

Where: L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in pounds per square inch (gauge)

This formula is based on an allowable leakage of 10.5 gpd/mi/in of nominal diameter at a pressure of 150 psi.

- C. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gph/in. of nominal valve size will be allowed.
- D. When hydrants are in the test section, the test shall be made against the closed main valve in the hydrant.
- E. Acceptance of Installation - acceptance will be determined on the basis of allowable leakage. If any test of laid pipe discloses leakage greater than that specified in this section, locate and make approved repairs as necessary until the leakage is within the specified allowance at no additional cost to the Owner.

- F. Visible leaks are to be repaired, regardless of the amount of leakage.

END OF SECTION

SECTION 33 11 13

DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Ductile iron fittings
2. Cast-in-place concrete anchor blocks and thrust blocks

B. Related Sections

1. Section 33 05 29 – Pipeline and Underground Structure Abandonment
2. Section 31 23 00 – Excavation, Backfill, Compaction and Dewatering
3. Section 33 13 00 – Disinfection of Water Distribution Systems
4. Section 33 08 10 – Testing of Water Distribution Systems

1.2 REFERENCES

A. Pipe and fittings shall conform to the latest edition of the following standards unless otherwise specified:

1. ANSI/AWWA C104/A21.4, Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water.
2. ANSI/AWWA C110/A21.10, Ductile Iron and Grey Iron Fittings 3" through 48" for Water and Other Liquids.
3. ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
4. ANSI/AWWA C150/A21.50, Thickness Design of Ductile Iron Pipe.
5. ANSI/AWWA C151/A21.51, Ductile Iron Pipe, Centrifugally Cast, for Water.
6. ANSI/AWWA-C153/A21.53, Ductile Iron Compact Fittings Water Service.
7. ANSI/AWWA C600, Installation of Ductile Iron Water Mains and their Appurtenances.
8. ANSI/AWWA C800, Underground Service Line Valves and Fittings.
9. ANSI/AWWA C651, Disinfecting Water Mains.
10. ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
11. ASTM A536, Standard Specification for Ductile Iron Castings
12. ASTM B88, Standard Specification for Seamless Copper Water Tube.
13. Ductile Iron Pipe Research Association, "Thrust Restraint Design for Ductile Iron Pipe" (Current Edition).

DUCTILE IRON PIPE AND FITTINGS

1.3 SUBMITTALS

- A. Administrative Submittals
- B. Shop Drawings
 - 1. Manufacturer's drawings and catalog cuts, including descriptive literature indicating product characteristics and conformance with specifications and code requirements. Submit shop drawings for fittings and all accessories.
 - 2. Location for each type of restrained joint or device to prevent joint separation along with installation, assembly and disassembly instructions.
- C. Quality Control Submittals
 - 1. Certificates of compliance on pipe materials.

1.4 QUALITY ASSURANCE

- A. Test pipe under pressure for defects and leakage in accordance with Section 33 08 10.

1.5 PROJECT CONDITIONS

- A. Secure permits and pay fees required to carry out the piping work. Comply with laws, ordinances, codes, rules, and regulations of the local and state authorities having jurisdiction over the Work. Where provisions of the Contract Documents are in conflict with the codes, the more stringent shall govern.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. American Cast Iron Pipe Company
- B. U.S. Pipe
- C. or equal

2.2 FITTINGS

- A. Fittings shall be ductile iron or gray iron.
- B. Fittings less than or equal to 12 inches in size shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 and shall have a 350 psi pressure rating.

2.3 GASKETS, GLANDS, NUTS, AND BOLTS

- A. Gaskets, glands, nuts, bolts and accessories shall conform to ANSI/AWWA C111/A21.11 or C153/A21.53, as appropriate.
- B. Gaskets shall be of plain tipped rubber, suitable for exposure to the liquid within the pipe.
- C. Lubricants must be suitable for the type of fluid to be carried by the pipeline, and shall be NSF approved for water service.
- D. Glands shall be ductile or cast iron.
- E. Bolts shall be high strength, low alloy.

2.4 THRUST BLOCKS AND ANCHOR BLOCKS

- A. Concrete shall have a 28-day compressive strength of 3,000 psi.

PART 3 EXECUTION

3.1 GENERAL

- A. Deliver, handle, store and install ductile iron pipe in accordance with ANSI/AWWA C600.

3.2 COORDINATION

- A. Existing mains may have to be shut down to complete the connections, as shown on the Drawings and as specified herein.
 - 1. Existing valves will only be operated by the Owner.
 - 2. Submit requests for shutdown of existing piping to the Owner at least 5 working days prior to the operations, and reschedule operations to prevent conflicts with the Owner's operations.
 - 3. The Owner reserves the right to cancel the shut-down at any time without penalty if system conditions exist in which it would be a matter of public health or safety to do so.
 - 4. The Owner does not guarantee complete shut down of valves. Make necessary provisions to do work under existing conditions.

3.3 JOB CONDITIONS

- A. Environmental Requirements
 - 1. Do not lay pipe when weather conditions are unsuitable, as determined by the Engineer, for pipe laying work.
 - 2. Equipment for pipe laying shall be maintained in good operating order.
 - 3. Job site shall be kept clean of debris and organized.
- B. Protection
 - 1. At all times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug. This provision shall apply at all times when pipe laying operations are suspended.
- C. Work Affecting Existing Pipelines
 - 1. Work on Existing Pipelines:
 - a. Prior to any work on existing pipelines, remove soils, rust and other debris from the exterior wall of the pipe a minimum of 12 inches beyond the work area.
 - b. Cut pipes as shown or required with machines specifically designed for this work.
 - c. Install temporary plugs to keep out all mud, dirt, water and debris.
 - d. Provide necessary adapters, fittings, pipe and appurtenances required.
 - e. Cut or tap existing mains at the mid span of a pipe barrel. In no case shall a pipe be cut or tapped within 24 inches of a pipe joint.

3.4 CLEANING PIPE AND FITTINGS

- A. Clean and remove foreign matter from the interior of each pipe and fitting before placing in the trench. Remove pipe and fittings whose interior has been contaminated with oil, gasoline or kerosene and replace at no additional cost to the Owner. Remove pipe and fittings whose interior has been contaminated with any material which is a regulated drinking water contaminate or which damages the cement and replace at no additional cost to the Owner. Should foreign material or contaminants be observed in previously installed pipe, cease work until foreign material or contaminated pipe is decontaminated or removed.
- B. Remove all lumps, blisters, and excess asphaltic coating from the bell and spigot ends of each pipe or fitting. The outside of the spigot and the inside of the bell shall be wire-brushed and wiped clean and be dry and free from oil and grease before the pipe or fitting is laid.
- C. On all ductile iron pipe or fittings, the bell of the pipe and the spigot of the adjacent pipe or fitting shall be wire-brushed and cleaned of rust and dirt. The bell of the pipe or fitting and the spigot of the adjacent pipe shall then be lubricated with the joint lubricant furnished with the pipe, and used in accordance with the manufacturer's directions.

3.5 PIPE INSTALLATION

A. General Requirements

- 1. Prepare the pipe trench in accordance with Section 31 23 00.
- 2. Keep trenches dewatered while installing pipe until all required pipe joints have been made and the trench has been backfilled above the water table to a point where pipe uplift will not occur when the pipe is empty.
- 3. Carefully lower pipe and fittings into the trench piece by piece by means of a crane, ropes or other tools or equipment, in such a manner as to prevent damage to pipeline materials and protective coatings and linings. Under no circumstances shall pipeline materials be dropped or dumped into the trench.
- 4. Carefully inspect pipe and fittings for cleanliness and defects prior to placing them in the trench.
- 5. Install underground warning tape over the pipe in accordance with Section 33 05 97.

B. Cutting Pipe

- 1. Furnish pipe in full lengths. Cut ductile iron pipe without damage to the pipe or cement lining. The cutting shall be done to leave a smooth end at right angles to the axis of the pipe.
- 2. Cut ductile iron pipe either by the use of compression-type chain cutters which exert an even continuous force on the wall of the pipe or by power driven abrasive wheels.
- 3. On ductile iron pipe using rubber joints, the outside edge of the cut end must be tapered back approximately $\frac{1}{4}$ inch at an angle of about 30 degrees so as to provide for the proper assembly of this joint.

3.6 CONCRETE THRUST BLOCKS

- A. Place cast-in-place concrete thrust blocks at all bends (regardless of the angle of deflection or direction), caps, offsets, hydrants, and tees, as well as in locations shown on the Drawings or directed by the Engineer. Cast-in-place thrust blocks shall be formed with wood forms; rough earth forms are not acceptable. Protect pipeline materials and fittings

from direct adherence of the concrete thrust block by wrapping in plastic, roofing felt, reinforced manila paper or similar material. The thrust block shall not bear directly on the joint and shall not interfere with future adjustments, tightening, or removal of the joint. Thrust blocks shall bear against undisturbed soil at the side or end of the trench and this undisturbed surface shall be carefully cleaned off so as to be vertical. The thrust blocks shall have a minimum horizontal thickness of 2 feet and shall have the minimum bearing area listed on the Drawings, measured perpendicular to the direction of thrust.

3.7 DISINFECTION

- A. Disinfect pipe, fittings and valves in accordance with Section 33 13 00, before placing into service.

3.8 TESTING

- A. Pipe, fittings and valves installed under this contract shall be tested in accordance with Section 33 08 10, before being placed into service.

3.9 DEACTIVATION OF WATER MAINS

- A. Excavate and remove sections of the existing water main as shown on the Drawings. Repairs and capping of the main shall be in accordance with the Drawings.
- B. After the pipe has been capped, the top sections of all gate boxes shall be removed and stacked, the holes filled in with suitable backfill material and patched with bituminous concrete in the area of the gate box.
- C. The deactivation of the water mains shall be done upon completion of:
 - 1. Approval for the deactivation of the water mains by the Engineer or Owner.
- D. Surface repair methods shall meet the requirements of the applicable surface repair items.

END OF SECTION

SECTION 33 13 00

DISINFECTION OF WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Procedures for disinfecting new and repaired water distribution systems
- B. Related Sections
 - 1. Section 33 08 10 – Testing of Water Distribution Systems
 - 2. Section 33 11 13 – Ductile Iron Pipe and Fittings

1.2 REFERENCES

- A. American Water Works Association, AWWA C651, *AWWA Standard for Disinfecting Water Mains*.
- B. American Public Health Association, American Water Works Association and Water Pollution Control Federation, *Standard Methods For the Examination of Water and Wastewater*.

1.3 SUBMITTALS

- A. A formal statement in writing to the Engineer that all crews responsible for installation and repairs within the operating distribution system have been properly trained and are aware of prescribed construction practices and disinfection procedures to avoid contamination to the operating distribution system.
- B. The name of competent person(s) responsible for the disinfection processes and performing the required bacteriological sampling. The Engineer will approve the disinfection process to be used in advance of any disinfection efforts.
- C. Certificate of compliance that the independent commercial laboratory performing the bacteriological sampling analyses is certified with the State Department of Environmental Protection and U.S. Environmental Protection Agency for analyzing public drinking water supplies.
- D. Certified results for all bacteriological sampling prior to restoring or placing the distribution system into service.
- E. For each section of pipe to be chlorinated, the Contractor shall inform the Engineer in writing of the locations for taps to be installed and utilized for the procedure.

1.4 QUALITY ASSURANCE

- A. Qualifications & Certifications
 - 1. The Contractor shall employ trained personnel aware of the need to carefully observe prescribed construction practices and disinfection procedures in order to prevent contamination to the distribution system.
 - 2. The competent person(s) responsible for the disinfection processes and bacteriological sampling shall be familiar with AWWA C651- Standards for

DISINFECTION OF WATER DISTRIBUTION SYSTEMS

Disinfecting Water Mains and experienced with the Continuous Feed Method of disinfection. The Engineer shall approve disinfection procedures in advance.

3. Bacteriological sampling shall be made in full accordance with AWWA C651 and under the supervision of the Engineer.
4. An independent commercial laboratory certified for analyzing public drinking water supplies by the State Department of Environmental Protection and U.S. Environmental Protection Agency shall analyze all bacteriological samples and provide certified results to the Engineer and/or Owner for review prior to restoring or placing the system into service.

1.5 PROJECT/SITE CONDITIONS

- A. The general procedure for disinfection and analyses is described in Part 3, Execution, of this section. If project conditions warrant the need for special disinfection procedures, obtain prior written approval from the Engineer.

PART 2 PRODUCTS

2.1 MATERIALS

- A. The forms of chlorine used in the disinfection operations shall conform to ANSI/AWWA B300. Materials Safety Data Sheets (MSDS) for the disinfectant shall be readily available for reference. The competent person responsible for the disinfection operation shall be fully trained and equipped to handle any emergency that may arise.

PART 3 EXECUTION

3.1 DISINFECTION

- A. Before being placed into service, all new water pipelines shall be chlorinated using the Continuous Feed Method specified in AWWA C651 – Section 4.4.3. The Engineer shall approve the procedure in advance.
 1. The Contractor will determine the location of the chlorination and sampling points in the field. The Contractor shall install taps for chlorinating, sampling and expulsion of air and shall uncover, backfill and plug the taps as required.
 2. Prior to disinfecting the water main, the main shall be completely filled to remove all air pockets and then flushed to remove particulate. The flushing velocity in the main shall not be less than 2.5 ft/s unless the Engineer and/or Owner determine that the conditions do not permit the required flow to be discharged to waste.

TABLE 3.1-1
 Required Flow to Flush Pipelines (40 psi residual pressure in water main)*

| Pipe Diameter (in) | Flow Required to Produce 3.0 ft/s (Approximate) Velocity in Main | Number of 2" inch Hydrant Outlets |
|-----------------------|--|---|
| 4 | 125 gpm | 1 |
| 6 | 280 gpm | 1 |
| 8 | 505 gpm | 1 |
| 10 | 775 gpm | 1 |

| | | |
|----|-----------|---|
| 12 | 1,120 gpm | 2 |
| 16 | 1,975 gpm | 2 |

**AWWA C651, AWWA Standard for Disinfecting Water Mains*

3. At a point not more than 10 feet downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will not have less than 25 mg/L (PPM) free chlorine throughout the entire section of pipe to be chlorinated.

TABLE 3.1-2

Chlorine Required to Produce 25-mg/L Concentration in 100 Feet of Pipe
 – By Diameter*

| Pipe Diameter (in) | 100 % Chlorine (Pounds) | 1% Chlorine Solution (Gals.) |
|---------------------------|--------------------------------|-------------------------------------|
| 4 | 0.013 | 0.16 |
| 6 | 0.030 | 0.36 |
| 8 | 0.054 | 0.65 |
| 10 | 0.085 | 1.02 |
| 12 | 0.120 | 1.44 |
| 16 | 0.217 | 2.60 |

**AWWA C651, AWWA Standard for Disinfecting Water Mains*

4. The chlorinated water is to remain in the new pipeline for at least 24-hours. After a contact time of 24-hours there should be a free chlorine concentration of not less than 10 mg/L (PPM). During this period, proper precautions are to be taken to prevent this chlorinated water from flowing back into the existing system.
 5. All valves and hydrants within the treated section shall be operated to ensure disinfection of the appurtenances.
- B. The Tablet Method consisting of placing calcium hypochlorite granules or tablets in the water main as it is being installed and then filling the main with potable water and allowing it to set for a contact period is not acceptable.
- C. The interior of all pipe, fittings and valves used in making a repair or tie-in shall be swabbed or sprayed with a one percent (1%) hypochlorite solution before they are installed.

3.2 FINAL FLUSHING

- A. Following the chlorination period, all treated water shall be flushed from the lines at their extremities and replaced with water from the distribution system.
 1. Flushing the main is to be accomplished at as high a velocity as possible consistent with the ability of the Contractor to collect the discharge water for proper disposal.
 2. All treated water flushed from the lines shall be disposed of by discharging to the nearest sanitary sewer or by other approved means provided in AWWA C651.

3. Flushing shall be done in strict conformance with all applicable local, state and federal regulations. No discharge of chlorinated water to any storm sewer or natural watercourse will be allowed.

3.3 BACTERIOLOGICAL ANALYSES

- A. After the 24-hour disinfection period and all chlorine solution has been thoroughly flushed, the bacteriological sampling and analysis of the replacement water may then be performed.
 1. Bacteriological sampling shall be made by the Contractor's competent person(s) in full accordance with AWWA C651- Section 5, *Bacteriological Tests* and under the supervision of the Engineer.
 2. Analysis shall be performed by an independent commercial laboratory certified by the State Department of Environmental Protection and U.S. Environmental Protection Agency for analyzing public drinking water supplies. All results shall be provided to the Engineer for review.
 3. Two consecutive sets of acceptable samples, taken at least 16-Hours apart are required prior to placing the main into service. Samples shall be collected every 1,200 ft of the new water main, plus one set from the end of the line and at least one from each branch greater than one pipe length. Failure of any one of the bacteriological test samples shall require rechlorination and retesting by the Contractor.
 4. The line shall not be placed in service until the bacteriological requirements of AWWA C651 are met.

END OF SECTION