

WARNER'S POND RESTORATION PROJECT

Contract No. 2243

CONTRACT DOCUMENTS & SPECIFICATIONS



**Division of Natural Resources
Department of Planning and Land Management
141 Keyes Road
Concord, Massachusetts 01742
(978) 318-3285**

August 8, 2022

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BIDDING AND CONTRACT REQUIREMENTS

CONCORD DIVISION OF NATURAL RESOURCES

CONTRACT No. 2243 – WARNER’S POND RESTORATION PROJECT

INVITATION TO BID
SECTION 00020

Sealed Bids for construction of **CONTRACT 2243, “WARNER’S POND RESTORATION PROJECT”** shall be received by the Town of Concord at the Assessor’s Conference Building, 24 Court Lane, Concord, Massachusetts 01742, until **2:00 PM on WEDNESDAY, AUGUST 31, 2022** and at that time shall be publicly opened and read aloud. Bids submitted after this time will not be accepted. Bids will be opened at the Assessor’s Conference Building, 24 Court Lane, Concord, Massachusetts 01742.

The work under this contract shall consist of restoration measures including limited dredging of Warner’s Pond (approximately 35,000 CY), dewatering, and relocating sediment to the Northeastern Correctional Center; creating an emergent wetland within the pond basin; resurfacing a parking lot; reconstructing a boat launch; stormwater management improvements; invasive species control; native plantings; and other associated work, if required.

Contract Documents are available for examination on or after **August 31, 2022** at the Division of Natural Resources office in the Department of Planning and Land Management at 141 Keyes Road, Concord Massachusetts, 01742, between the hours of 8:00 A.M. and 4:30 P.M., Monday through Thursday, and 8:00 A.M. and 12:00 P.M. Fridays. The Contact Person is Delia Kaye, Natural Resources Director, who can be reached at 978.318.3285 or dkaye@concordma.gov. Contract documents may also be emailed upon request. Electronic copies of permit applications submitted for this project are available upon request.

Contract Documents may be obtained at the above location upon a non-refundable deposit of \$30.00 per set. The contract documents may be sent by mail per bidder request upon an additional non-refundable payment of \$20.00 per set to cover the cost of handling and mailing. Cash or checks payable to the Town of Concord will be accepted.

Bids must be enclosed in a sealed envelope bearing the name and address of the Bidder and addressed to the Concord Budget and Purchasing Director. All Bids must be submitted on the form in the Contract Documents and clearly marked: **“CONTRACT No. 2243, WARNER’S POND RESTORATION”**.

Each Bid shall be submitted in accordance with the Instructions to Bidders and be accompanied by a Bid Security in the designated form in the amount of 5% of the Bid Price. No bidder will be considered if they are indebted to the Town of Concord, Massachusetts, for any unresolved issues regarding unpaid invoices issued by the Town of Concord, or any services and materials owed to the Town of Concord.

Complete instructions for filing Bids are included in the Instructions to Bidders (Specification Section 00100). The bidding and award of this contract will be under provisions of M.G.L. Chapter 30, Section 39M. The Town of Concord reserves the right to reject any and all Bids or parts thereof, to waive any irregularity in the Bids received, and to accept the Bid or parts thereof deemed to be most favorable to the best interest of the Town.

An optional Pre-Bid Conference will be held at **10:00 AM on Monday, August 15, 2022**. Interested parties should contact Karen Bockoven at 978.318.3285 for parking and access information. Representatives of the Owner will be present to discuss the Project and receive written questions from prospective bidders.

No oral interpretation will be made to any bidder as to the meaning of any of the Contract Documents or be effective to modify any of the provisions of the Contract Documents. Oral statements made at the Pre-Bid Conference will not be binding on the Contract or legally effective. All questions regarding this Contract must be submitted no later than 5:00 pm on Monday, August 22, 2022. All questions must be submitted in writing via email to the Owner’s Representative, EA Engineering, Science, and Technology, Inc., PBC at apatterson@eaest.com. The Owner will arrange an addendum, which shall become part of the Contract, all questions received as provided above, and the Owner’s decision regarding each. At least five (5) days prior to the receipt of bids, the Owner will send a copy of the addendum to each of those who has obtained a set of the Contract Documents.

Prevailing Wage Rates as determined by the Division of Occupational Safety under the provisions of M.G.L Chapter 149, Sections 26 and 27D, as amended, apply to this project. It is the responsibility of the contractor to obtain, as necessary, any pertinent information on Prevailing Wages for workers employed for the proposed work under this contract.

MS. DELIA KAYE
NATURAL RESOURCES DIRECTOR
CONCORD, MASSACHUSETTS

SECTION 00100

INSTRUCTIONS TO BIDDERS

PART I GENERAL

1.01 REQUIREMENTS FOR SUBMITTING BIDS

- A. Bids which are mailed or delivered should be addressed to Jon Harris, Budget and Purchasing Director, Assessor's Conference Building, 24 Court Lane, Concord, MA 01742.
- B. Bids shall be placed in sealed envelopes that are marked appropriately on the outside with the name and address of the bidder, the title of the bid and the scheduled date for the opening of bids. No responsibility will be attached to the Town staff for the premature opening of bids that are not properly identified. After the terminal time, bids become the property of the Town.
- C. Regardless of the cause of delay, no bids which are received by the Town after the terminal time recorded herein shall be given any consideration. The bidder is responsible for filing the bid before the terminal time.
- D. Telegraphic bids will not be considered. No modification of any bid will be considered unless received by the Town prior to the time established for the opening of bids.
- E. Any bid may be withdrawn on written request dispatched by a bidder in time for delivery in the normal course of business prior to the hour established for the opening of bids.

1.02 DELETED

1.03 BID FORMS

- A. All bids must be presented upon the blank proposal form included in the Contract Documents, shall state the proposed price for the work, both in words and in figures, and shall be signed by the bidder with his business address and place of residence.
- B. Bidders must not remove the bid pages from the volume of Contract Documents, but shall submit their bid bound with the complete volume of documents (excluding drawings) including all addenda.
- C. Signatures:
 - 1. If a bid is submitted by an individual, the full name and post office address of this person shall be designated.
 - 2. If a bid is submitted by a firm or partnership it shall be signed by a person having the legal authority to execute such a document on behalf of the bidder. The person signing the Bid Form shall then indicate his or her title or position in addition to the full name and address of the firm or partnership.

3. If a bid is submitted by a corporation it shall state the name and title of the official or officials of the corporation by whom the contract can be legally signed, and be accompanied by a copy of the corporate vote granting said authority, certified by the clerk of said corporation.
- D. The bid price shall represent full compensation for all equipment, materials, services and delivery associated with the work. The bid price or prices shall be written both in numbers and words.

1.04 ACCEPTANCE OR REJECTION OF BIDS

- A. The Town of Concord, (the “Town”) reserves the right to reject any or all bids and to accept any bid in whole or in part which it considers to serve the best interest of the Town.
- B. Any bid which is not according the prescribed form, not properly signed, or otherwise contrary to instruction may be rejected by the Town. More than one bid from the same bidder whether or not the same or different names appear on the signature page, shall not be considered. Reasonable proof for believing any bidder is interested in more than one bid shall cause the rejection of said bids made by such bidder directly or indirectly. Any or all bids shall be rejected if there is reason for believing that collusion exists among the bidders.

1.05. BIDDER RESPONSIBILITIES AND QUALIFICATION

- A. Bidders must examine each of the Contract Documents that form the Contract, and become thoroughly familiar with the Contract Documents. The Contract Documents shall in no way relieve any bidder from any obligation in respect to his or her bid.
- B. Should a bidder find discrepancies in and/or omissions from the Contract Documents, or should he/she be in doubt as to their meaning, he/she should at once notify the OWNER, who shall send a written instruction for clarification to all prospective bidders.
- C. The successful bidder shall be responsible to the preparation and filing of any reports required by the local by-laws, contracts, and laws of the Commonwealth and Federal Government.
- D. The bidder has not been cited by any city, town, the Commonwealth of Massachusetts or Federal Agency during the past three (3) years for violations related to occupational safety and/or environmental pollution regulations and/or laws. If a bidder has been cited for any violation, bidder must disclose in bid the nature of the violations which will be used to determine whether the bidder is responsible.
- E. The Town may take such investigations as he deems necessary to determine the ability of the bidder to perform the work.
- F. All bidders are required to submit reference information pertaining to all projects of similar scope and size from the last five (5) years. Reference information must include the following: project name, project date, project location, contact person, contact person title, and contact person telephone number. The Town will check references. If it is found that references are not favorable, the bidder may be eliminated from consideration, at the Town’s discretion. If the bidder has completed projects of a similar scope and size

prior to the last five (5) years, this reference information may also be submitted.

- G. To satisfy the qualification criteria, the Town of Concord, MA, in its judgment, may consider experience on projects that combine several, but not necessarily all the criteria listed, provided the contractor is able to demonstrate to the Town of Concord's satisfaction that its cumulative recent experience justifies qualification for the Warner's Pond Restoration Project.

Contractors must provide the following information with the completed Bid Form:

1. The Town requires that contractors have favorable references for its completed projects. Specific experience with dredging projects in environmentally sensitive areas is required. Failure by the Contractor to provide favorable references may result in rejection of the bid.
2. Contractors shall complete the Contractor Qualification Statement included in Section 00300, with the Bid Form. The project description shall include a general description of the project, and a description of the project specifics (i.e. methods of dredging and dredge material disposal, wetland establishment, erosion control measures, knowledge of native plant materials and planting, etc.). Inclusion of photographs is required.

- H.. The Town requires that Contractors meet the following criteria:

1. Experience in successful hydraulic dredging,
2. Experience in successful aquatic planting methods,
3. Experience in successful invasive species control.
4. Experience with recreational area and access improvements

- I. The bidders should meet all of the following requirements:

- (1) They shall not have defaulted on any contract within three years prior to the bid date.
- (2) They shall maintain a permanent place of business over 2 years.
- (3) They shall have adequate personnel and equipment to perform the work expeditiously.
- (4) They shall have suitable financial status to meet obligations incident to the work.
- (5) They shall be registered with the Secretary of State to do business in Massachusetts.
- (6) They shall not have failed to perform satisfactorily on contracts of similar nature.
- (7) They shall not have failed to complete previous contracts on time.

1.06 INTERPRETATION AND ADDENDA

- A. No oral interpretation will be made to any bidder as to the meaning of any of the Contract Documents or be effective to modify any of the provisions of the Contract Documents. Oral statements made at the pre-bid conference will not be binding on the Contract or legally effective. All questions shall be submitted in writing to the ENGINEER at least seven (7) days before the established date for bid opening. The

ENGINEER will arrange an addendum, which shall become part of the Contract, all questions received as provided above, and his decision regarding each. At least five (5) days prior to the receipt of bids, the ENGINEER will send a copy of these addenda to each of those who has obtained a set of the Contract Documents.

1.07 BIDDING ON SPECIFICATIONS

Each bidder shall bid on identical specifications and variations shall not be allowed without the written consent of the Town.

1.08. SUBLETTING OF AWARD

No subletting of the Award, nor assignment of moneys due or to become due, shall be made without written consent of the Town.

1.09 BREACH OF CONTRACT

Where the successful bidder fails to provide the material and services as specified, the Town reserves the right to terminate the contract and enter into other agreements to complete the contract, and the Town shall nevertheless have the right to recover damages for breach of contract by suit on the contract.

1.10 CONTRACT COMMENCEMENT, DURATION AND TIME OF COMPLETION

The date of commencement of work and duration of the project are set forth in the Agreement. Unless otherwise agreed between the Town and the contractor, the work shall begin within ten (10) days after effective date of the Notice to Proceed. Duration of Contract and liquidated damages are determined in the Bid Form (Section 00300).

1.11 TAXES

- A. Each bidder shall submit a certificate of taxes, which is attached to the bid.
- B. The Town is an exempt purchaser under the Sales Act, Chapter 14 of the Acts of 1966; Massachusetts Tax Exempt Number is E-046-001-121.
- C. The bidder shall study all tax laws for the jurisdiction in which the work is done, particularly so-called "Sales and Use Taxes" for which he may be liable as a consumer or user of goods. The bid shall be made in accordance with such laws and shall include such taxes in the bid amount. The bidder shall also obtain, where applicable, sales and use tax exemption.

1.12 HOLD HARMLESS CLAUSE

- A. The successful bidder shall indemnify, hold harmless and defend the Town, its agents, employees, officers and volunteers from and against any and all liabilities, claims, penalties, fines, forfeitures, suits, administrative proceeding and the costs and expenses incident thereto (including costs of defense, settlement and reasonable attorney's fees) which may be alleged against the Town, or which the Town may incur, become responsible for, or pay out as a result of death or bodily injury to any person, destruction

to property, contamination of or adverse effects on the environment, or any violation or alleged violation of governmental laws, regulations or orders caused by or resulting from the negligent acts or omission by the successful bidders or of any employee or agent of the successful bidder or from the failure or inadequacy of the equipment.

1.13 CERTIFICATE OF NON COLLUSION

- A. Each bidder shall submit a certificate of non-collusion which is attached with the bid.

1.14 BID SECURITY

- A. Each bid must be accompanied by a bid deposit in the form of a bid bond, or a certified check, issued by either a surety or a bank duly authorized to do business in the State of Massachusetts and made payable to the order of the Town of Concord. Attorneys who sign bid bonds (or payment bonds) must file with each bond a certified and effective dated copy of their power of attorney.
- B. The amount of the deposit shall be in an amount of not less than five percent (5%) of the bid.
- C. The deposit shall be enclosed in a sealed envelope containing the Proposal.
- D. Each bid deposit may be held by the Town as security for fulfillment of the bidder's promises, set forth in his bid, that he will not withdraw his bid while it is being considered and will execute the Contract Agreement and furnish the required bonds and insurance certificates if his bid is accepted. Should the bidder fail to fulfill such promises, his bid deposit shall become the property of or be payable to the Town of Concord as payment for damages.
- E. Unless it shall become the property of or be payable to the Town of Concord, said deposit shall be returned to the bidder as hereinafter provided. Deposits or bid bonds will be returned to all except the three lowest bidders within fifteen (15) days (Saturdays, Sundays and legal holidays excluded) after the formal opening of bids and to the three (3) lowest bidders within (5) days (Saturdays, Sundays and legal holidays excluded) after the Town of Concord and the accepted bidder have executed the Contract Agreement. In the event that the Contract Agreement has not been executed by both the accepted bidder and the Town of Concord within forty five (45) days, excluding Saturdays, Sundays and legal holidays, after the opening of the bids, bid security will be returned promptly upon demand of any bidder who has not been notified of the acceptance of his bid.
- F. None of the five (5) lowest bids shall be deemed rejected, notwithstanding acceptance of one of the bids, until the Contract Agreement has been executed by both the Town of Concord and the Accepted bidder.

1.15 BONDS

- A. A Labor and Materials Payment Bond in the forms which are inserted after the Contract Agreement and in the sum as herein specified and duly executed by the successful bidder as Principal and by a surety company qualified to do business under the laws of the State of Massachusetts and satisfactory to the Town of Concord, as Surety, will be required for the payment for the labor and materials.

Labor and Material Bond

50% of the amount of the Contract

- B. The Labor and Material Payment Bond must be furnished simultaneously with the delivery of the executed Contract by the successful bidder.

1.16 EXECUTION OF CONTRACT

- A. The bidder to whom the Contract is awarded will be required to execute the Contract Agreement and furnish the required Bond within five (5) days (Saturdays, Sundays and legal holidays excluded) after receipt of notification that the Contract Agreement is ready for signature.

1.17 INSURANCE CERTIFICATES

- A. The Contractor will not be permitted to start any construction work under this Contract until he has submitted certificates covering all insurance called for under SECTION 00800 - SUPPLEMENTAL GENERAL CONDITIONS and has obtained approval in writing of these certificates from the ENGINEER. The Town of Concord will be named additional insured on the certificate.

1.18 BID ITEM BREAKDOWN

- A. At least ten (10) days prior to the preparation of the first estimate for payment, the Contractor shall provide a complete breakdown of the cost of his work for each lump sum bid item. The breakdown shall be prepared in such a manner that it may be used as a basis for estimating the value of the work completed to the end of any month. The extent and basis of the breakdown shall be subject to the approval of the ENGINEER.

1.20 DELETED

1.21 WITHDRAWAL OF BIDS

- A. The attention of bidders is directed to the fact that, in submitting his bid, the bidder agrees that he will not withdraw it within forty five (45) days, excluding Saturdays, Sundays and legal holidays, after the actual date of the opening of bids.
- B. Upon proper request and identification, bids may be withdrawn as follows:
 - (1) At any time prior to the designated time for the opening of bids.
 - (2) Provided the bid has not been accepted by the Town of Concord, at any time subsequent to the expiration of the period during which the bidder has agreed not to withdraw his bid.
- C. Unless a bid is formally withdrawn, it shall be deemed open for acceptance until the Contract Agreement has been executed by all parties thereto or until the Town of Concord manifests that he does not intend to accept the bid. Notice of acceptance of a bid shall not constitute rejection of any other bid.

1.22 DELETED

1.23 INFORMAL BIDS

- A. The Town of Concord may reject as informal, bids which contain erasures not properly initialed, improperly executed, or incomplete bid documents. The Town of Concord reserves the right to waive any informality.

1.24 RIGHT TO REJECT BIDS

- A. The Town of Concord reserves the right to reject any or all bids, to accept any bid, or to waive any informality on bids received. The Town of Concord also reserves the right to omit any item or items which he deems advisable.
- B. A conditional or qualified bid will not be accepted. The Town of Concord reserves the right to reject unbalanced bids.

1.25 BASIS OF AWARD

- A. The Contract will be awarded to the lowest responsive and responsible bidder. The Town of Concord will require satisfactory proof that the low bidder is responsible and able to prosecute the work successfully in the time named. The Town's decision on these matters shall be final.
- B. The contract will only be awarded to a bidder who has demonstrated through past experience that he/she has the expertise and skill to reconstruct a historic dry laid stone wall without the use of mortar, cement, or reinforced steel. To verify this, the bidder must provide references of past projects that meet these criteria and the Town will check references.

1.26 MANUFACTURER'S EXPERIENCE

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

1.27 ALTERNATES

- A. Where an alternate item of work is indicated in the Bid, bidders shall submit a price for the alternate. The Town of Concord reserves the right to select the alternate if deemed to be in the best interest of the Town.

1.28 Town Permit Fees

- A. The Town waives Town permit fees for this project.

END OF SECTION

SECTION 00300

BID FORM

PART 1 GENERAL

1.01 SCHEDULE OF BID ITEMS

- A. The following Schedule of Bid Items shall be completed in ink or typewritten. All item prices must be entered in both words and figures and extended by the Bidder. In case there is a discrepancy between the item prices shown in words and figures, the amount shown in words shall govern. In case there is a discrepancy between the total bid price and the correct extension and the sum of the amounts for each bid item, the latter will govern.
- B. Where the Schedule of Items consists of more than one (1) item, the total bid price for the Contract, calculated as above and entered at the end of the schedule, is not a part of the Bid, but is to be used solely for the comparison of bids to determine the apparent low bidder.
- C. Failure to submit a formal Bid in accordance with the requirements of the Section 00100 INSTRUCTIONS FOR BIDDERS will be considered sufficient grounds for rejection of the entire Bid Proposal.
- D. Bidders must fill in a price for all items in the bid.
- E. ALL QUANTITIES IN THE BID FORM ARE ESTIMATED FOR COMPARISON OF BIDS.

1.02 DEFINITIONS OF TERMS AND ABBREVIATIONS USED IN THE BID

- A. Where any of the following abbreviations are used in the Bid, they shall have the meaning set forth opposite each.

Alt.	Alternate	Min.	Minimum
AC	Asbestos-Cement	M.H.	Manhour
CIP	Cast Iron Pipe	N/A	Not Applicable
CMP	Corrugated Metal Pipe	PE	Polyethylene
C.F.	Cubic Foot	psi	Pounds per Square inch
C.Y.	Cubic Yard	PVC	Polyvinylchloride
D.I.	Ductile Iron	R.C.	Reinforced Concrete
DIP	Ductile Iron Pipe	RCP	Reinforced Concrete Pipe
Dia.	Diameter	R.O.W.	Right of Way
EA	Each	SDR	Standard Dimensional Ratio
F.A.	Fees Allowance	S.F.	Square Foot
HDPE	High Density Polyethylene	S.Y.	Square Yard
lbs.	Pounds	T.N	Ton
L.F.	Linear Feet	V.C.	Vitrified Clay
L.S.	Lump Sum	V.F.	Vertical Feet
		w/	with

CONTRACT # 2243
“WARNER’S POND RESTORATION PROJECT”

The undersigned declares that the only persons or parties interested in this Bid as principals are as stated; that the Bid is made without any collusion with other persons, firms, or corporations; that all the Contract #2243 documents have been carefully examined; that the undersigned is fully informed in regard to all conditions pertaining to the Work and the place where it is to be done, and from them the undersigned makes this Bid. These prices shall cover all expenses incurred in performing the Work required under the Contract Documents, of which this Bid Form is a part.

Bids for this Contract are subject to the provisions of M.G.L. Chapter 30, Section 39M.

If a **Notice of Award** accompanied by at least three unsigned copies of the Agreement and all other applicable Contract Documents is delivered to the undersigned within forty-five days, excluding Saturdays, Sundays, and legal holidays after the actual date of the opening of the Bids, the undersigned will within five days, excluding Saturdays, Sundays, and legal holidays, after the date of receipt of such notification, execute and return all copies of the Agreement and all other applicable Contract Documents to OWNER. The premiums for all Bonds required shall be paid by CONTRACTOR and shall be included in the Contract Price. The undersigned Bidder further agrees that the Bid Security accompanying this Bid shall become the property of OWNER if the Bidder fails to execute the Agreement as stated above.

Accompanying this Bid in a separate attached envelope is a certified bid bond or check, for 5% of the bid, payable to the Town of Concord to secure said Town against the failure of the undersigned to execute the Contract and furnished satisfactory bonds under the Conditions and within the time specified in this Bid.

The undersigned hereby agrees that the Contract Time shall commence ten days following the Effective Date of the Notice to Proceed and to advance the Work to substantial completion within **two hundred twenty-nine (229)** Calendar Days following the Effective Date of Notice to Proceed, in accordance with the terms as stated in the Agreement.

The undersigned acknowledges receipt of addenda numbered:

Within five (5) days from the date of the “Notice of Award” (excluding Saturdays, Sundays and legal holidays), the Contractor has to execute the Contract and to furnish the Town a satisfactory Performance Bond and Labor and Material Payment Bond as set forth in Specification Section 00100 “INSTRUCTIONS FOR BIDDERS”.

Contract #2243 Bid Form
Town of Concord Warner's Pond Restoration Project

BASE BID					
ITEM NO.	QUANTITY	UNIT	ITEM DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
1		LS	Mobilization/Demobilization AT _____ Per Lump Sum		
2		LS	Temporary Erosion and Sedimentation Controls AT _____ Per Lump Sum		
3		LS	Commonwealth Avenue Access Improvements AT _____ Per Lump Sum		
4		LS	Site Restoration AT _____ Per Lump Sum		
5		LS	Wetland Shelf Planting AT _____ Per Lump Sum		
6		LS	Invasive Species Removal AT _____ Per Lump Sum		
7	5,000	CY	Dredging North Dredge Area AT _____ Per Cubic Yard		
8	30,800	CY	Dredging South Dredge Area AT _____ Per Cubic Yard		
9	2	TN	Debris Removal AT _____ Per Ton		
10	32,000	CY	Processing Dredge Material AT _____ Per Cubic Yard		
11	4,470	CY	Wetland Shelf Creation AT _____ Per Cubic Yard		
12	6	TN	Transportation and Disposal of Contaminated Material AT _____ Per Ton		
13	400	TN	Loam AT _____ Per Ton		

14	400	TN	Sand AT _____ Per Ton		
TOTAL BASE BID					

Amounts shall be shown in both words and figures, where indicated. In case of discrepancy, the amount shown in words will govern.

The undersigned agrees that extra work, if any, will be performed in accordance with Article 10 of the General Conditions and Supplementary Conditions and will be paid for in accordance with Article 11 of the General Conditions and Supplementary Conditions.

A Payment Bond in the amount of 50% of the total contract price shall be provided by the Contractor.

The above prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance and incidentals required to complete the Work.

The names and residences of all persons and parties interested in the foregoing Bid as principals are as follows:

(Give first and last names in full. In the case of a corporation and/or partnership - see Paragraph 1.03 C of Section 00100 Instructions to Bidders.)

Pursuant to M.G.L. Ch. 62C, sec. 49A, I certify under the penalties of perjury that the undersigned contractor, to my best knowledge and belief, has filed all state tax returns; has complied with all Massachusetts laws relating to taxes, reporting of employees and contractors, withholding and remitting child support, and paid all state taxes required under law.

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 on the work.

The undersigned hereby certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this section, the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

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 requisition promulgated thereunder.

If a Corporation:

Name of Contractor: _____

Signature of Bidder: _____

Name of Person Signing Bid: _____
(Name) (Title)

Business Address: _____

Telephone Number: _____

Incorporated under the Laws of the State of: _____

President: _____
(Name) (Title)

Officers:

Secretary: _____
(Name) (Title)

Treasurer: _____
(Name) (Title)

Dated: _____
(Affix Corporation Seal Here)

If a Partnership, Individual, or Non - Incorporated Organization:

Name of Company: _____

Signature of Bidder: _____
(Name) (Title)

Name and Address of
Member of Company: _____

Telephone Number: _____

FAIR BID CERTIFICATE

The undersigned swears under penalties of perjury that this Bid is in all respects bonafide, fair and made without collusion or fraud with any other person. As used in this section the word “person” shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

(Signature) (date)

(Name of Person Signing Bid)

(Company)

STATEMENT OF TAX COMPLIANCE

Pursuant to Massachusetts General Laws Chapter 62C, Section 49A, as inserted by the Acts of 1983, Section 36,

I, _____, authorized signatory
(name and title)
for _____, whose principal
(contractor)

place of business is at _____

_____, has complied with all laws of the
Commonwealth of Massachusetts relating to taxes.

(authorized signature)

(date)

COMMONWEALTH OF MASSACHUSETTS

Middlesex,

Then appeared before me the above-named _____

and having been duly sworn stated that the foregoing statements were true and
correct.

(Notary Public)

My commission expires:

(date)

FEDERAL IDENTIFICATION NUMBER:

OSHA REQUIREMENTS

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$ 10,000.00 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 payroll report for each employee and will comply will all laws and regulations applicable to awards of subcontracts subject to section 44F.

Signature: _____

Name: _____

Title: _____

Company: _____

Date: _____

WARNER'S POND RESTORATION PROJECT TOWN OF CONCORD,
MASSACHUSETTS

CONTRACTOR QUALIFICATION STATEMENT

COMPANY NAME: _____

COMPANY ADDRESS: _____

TELEPHONE NO.: _____

CONTACT PERSON: _____

AVERAGE NUMBER OF EMPLOYEES: _____

AVERAGE ANNUAL AMOUNT OF DREDGING WORK PERFORMED DURING
THE PAST TEN (10) YEARS: \$ _____

TOTAL VALUE OF WORK IN PROGRESS AND UNDER CONTRACT: \$ _____

VALUE OF LARGEST DREDGING PROJECT COMPLETED:
\$ _____

TYPE OF DREDGING EXPERIENCE: _____

EVIDENCE OF LOCAL PAST DREDGING EXPERIENCE IN ENVIRONMENTALLY
SENSITIVE AREAS OF EQUAL OR GREATER COMPLEXITY (PROVIDE PLANS,
PHOTOS, AND SPECIFIC PROJECT INFORMATION) _____

The information provided herein is true and sufficiently complete so as not to be misleading.

Authorized Signature

Date

END OF SECTION

TOWN OF CONCORD, MASSACHUSETTS

CONTRACT 2243 – WARNER’S POND RESTORATION PROJECT

SECTION 00500

AGREEMENT

THIS AGREEMENT made as of the _____ day of _____ in the year 2022 by and between the Town of Concord, Massachusetts acting through its Town Manager hereinafter called OWNER and _____ with legal address and principal place of business at _____ hereinafter called CONTRACTOR. OWNER and CONTRACTOR in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall perform the Work as specified or indicated in the Contract Documents.

ARTICLE 2. ENGINEER

The Project has been designed by or under supervision of the Town of Concord Division of Natural Resources. Unless otherwise decided, the Natural Resources Director, or duly authorized agent, shall act as ENGINEER in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONTRACT TIME

3.1 The Contract Time to substantial completion of dredging, dewatering, disposal, and associated seeding shall be one hundred eighty-eight (188) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or April 7, 2023, whichever is sooner. The Contract Time to final completion of dredging, dewatering, disposal, and associated seeding shall be two hundred nine (209) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or April 28, 2023, whichever is sooner. The Contract Time to substantial completion of invasive species removal shall be seventy-six (76) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or December 16, 2022, whichever is sooner. The Contract Time to final completion of invasive species removal shall be ninety (90) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or December 30, 2022, whichever is sooner. The Contract Time to substantial completion of wetland shelf planting shall be two hundred twenty-nine (229) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or May 18, 2023, whichever is sooner. The Contract Time to final completion of wetland shelf planting shall be two hundred forty-three (243) Calendar Days commencing ten (10) days following the Effective Date of Notice to Proceed, or June 1, 2023, whichever is sooner. The Contract Time to complete all work shall be two hundred forty-three (243) calendar days commencing ten (10) Calendar Days following the effective date of Notice to Proceed, or June 1, 2023, whichever is sooner.

3.2 CONTRACTOR agrees that the Work shall be prosecuted regularly, diligently and uninterruptedly and at such rate of progress as will ensure full completion thereof within the Contract Time stated above. It is expressly understood and agreed, by and between CONTRACTOR and OWNER that the Contract Time is reasonable for the completion of the Work, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

ARTICLE 4. CONTRACT PRICE

OWNER will pay CONTRACTOR for performance of the Work in accordance with the Contract Documents in current funds at the price agreed upon in the CONTRACTOR's Bid Form attached to this Agreement.

ARTICLE 5. APPLICATIONS FOR PAYMENT

5.1 CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions and Supplementary Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions and Supplementary Conditions.

5.2 Application for Payment shall be submitted in AIA Document G702 and G703 format, latest version. Breakdown of work shall be in accordance with Section 00300 BID FORM.

ARTICLE 6. PROGRESS AND FINAL PAYMENTS

6.1 OWNER will make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, monthly during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in Paragraph 14.01 of the General Conditions and Supplementary Conditions and will be a subject of 5% retainage.

6.2 OWNER will make progress and final payments as provided in Article 14 of the General Conditions and Supplementary Conditions and in accordance with the applicable Massachusetts General Law.

ARTICLE 7. SPECIAL DAMAGES

7.1 CONTRACTOR shall reimburse OWNER (1) for any fines or penalties imposed on OWNER as a direct result of the CONTRACTOR'S failure to attain Final Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by OWNER for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 3.1 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

7.2 After CONTRACTOR achieves Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, CONTRACTOR shall reimburse OWNER for the actual costs reasonably incurred by OWNER for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 3.1 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

7.3 The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

ARTICLE 8. ASSURANCE

8.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and Federal, State and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

8.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which

were relied upon by ENGINEER in the preparation of the Drawings and Specifications and which have been identified in Article 4 of the Supplementary Conditions.

8.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in the above paragraph as CONTRACTOR deems necessary for the performance of the Work at the Contract Price within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required for such purposes.

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

8.5 CONTRACTOR has given ENGINEER written notice of any conflict, error or discrepancy that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

8.6 CONTRACTOR agrees that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

ARTICLE 9. CONTRACT DOCUMENTS

9.1 The Contract Documents which comprise the Contract between OWNER and CONTRACTOR are attached hereto and made a part hereof and consist of the following:

9.1.1 Invitation To Bid (Section 00020).

9.1.2 Instructions To Bidders (Section 00100).

9.1.3 Bid Form (Section 00300).

9.1.4 This Agreement (Section 00500).

9.1.5 Payment Bond, EJCDC Document 1910-28-B, 1996 edition (Section 00620), and other required bonds, if applicable.

9.1.6 General Conditions, EJCDC Document C-700, 2002 edition (Section 00700).

9.1.7 Supplementary Conditions (Section 00800)

9.1.8 Federal and State Government Provisions (Section 00810)

9.1.9 Special Provisions (Section 00900)

9.1.10 Addenda numbers _____ to _____, inclusive.

9.1.11 Any modification, including Change Orders, duly delivered after execution of Agreement.

ARTICLE 10. MISCELLANEOUS

10.1 Terms used in this Agreement, which are defined in Article 1 of the General Conditions and Supplementary Conditions, shall have the meanings assigned in the General Conditions and Supplementary Conditions.

10.2 Neither OWNER nor CONTRACTOR shall, without the prior written consent of the other, assign or sublet in whole or in part any interest under any of the Contract Documents; and, specifically but without limitation, CONTRACTOR shall not assign any monies due or to become due without the prior written consent of OWNER. In case CONTRACTOR assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to CONTRACTOR shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for in this Contract.

10.3 OWNER and CONTRACTOR each binds itself, its successors, assigns and representatives in

respect to all covenants, agreements and obligations contained in the Contract Documents.

10.4 The Contract Documents constitute the entire agreement between OWNER and CONTRACTOR and may only be altered, amended or repealed by a written Modification signed by each party.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in sextuple. Four copies have been delivered to OWNER and one copy each to CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Agreement shall become effective on _____, 2022.

OWNER

CONTRACTOR

Town of Concord, Massachusetts

BY _____

BY _____

Town Manager

(CORPORATE SEAL)

(CORPORATE SEAL)

Attest _____

Attest _____

Address for giving notices

Address for giving notices

22 Monument Square, P.O. Box 535

Concord, MA 01742

As required by M.G.L. Chapter 44 Section 31C, this is to certify that the Town of Concord, Massachusetts, has an appropriation which is adequate to cover the cost of this contract.

Date _____

Signed _____

Title _____

Note: If CONTRACTOR is a corporation, an affidavit giving the principal the right to sign the Agreement must accompany the executed Agreement.

END OF SECTION

Payment Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place
of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:

SURETY

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:

SURETY

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the 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 Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any 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 Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, 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.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract 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. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. 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 Contract. 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 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.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)
AGENCY or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

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The Associated General Contractors of America



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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does

not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and

duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by

Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or

approval referred to in the Contract Documents,
or

c. has been damaged prior to Engineer's -
recommendation of final payment (unless
responsibility for the protection thereof has been
assumed by Owner at Substantial Completion in
accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection
with services, materials, or equipment, shall mean to
supply and deliver said services, materials, or
equipment to the Site (or some other specified
location) ready for use or installation and in usable or
operable condition.

2. The word "install," when used in connection
with services, materials, or equipment, shall mean to
put into use or place in final position said services,
materials, or equipment complete and ready for
intended use.

3. The words "perform" or "provide," when used in
connection with services, materials, or equipment,
shall mean to furnish and install said services,
materials, or equipment complete and ready for
intended use.

4. When "furnish," "install," "perform," or "pro-
vide" is not used in connection with services,
materials, or equipment in a context clearly requiring
an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents,
words or phrases which have a well-known technical or
construction industry or trade meaning are used in the
Contract Documents in accordance with such recognized
meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of
the Agreement to Owner, Contractor shall also deliver to
Owner such bonds as Contractor may be required to
furnish.

B. *Evidence of Insurance:* Before any Work at the Site is
started, Contractor and Owner shall each deliver to the
other, with copies to each additional insured identified in
the Supplementary Conditions, certificates of insurance
(and other evidence of insurance which either of them or
any additional insured may reasonably request) which

Contractor and Owner respectively are required to
purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or
hard copies of the Drawings and Project Manual.
Additional copies will be furnished upon request at the
cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the
thirtieth day after the Effective Date of the Agreement or,
if a Notice to Proceed is given, on the day indicated in the
Notice to Proceed. A Notice to Proceed may be given at
any time within 30 days after the Effective Date of the
Agreement. In no event will the Contract Times com-
mence to run later than the sixtieth day after the day of
Bid opening or the thirtieth day after the Effective Date of
the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date
when the Contract Times commence to run. No Work
shall be done at the Site prior to the date on which the
Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the
Effective Date of the Agreement (unless otherwise speci-
fied in the General Requirements), Contractor shall
submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the
times (numbers of days or dates) for starting and
completing the various stages of the Work, including
any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the
Work which includes quantities and prices of items
which when added together equal the Contract Price
and subdivides the Work into component parts in
sufficient detail to serve as the basis for progress
payments during performance of the Work. Such
prices will include an appropriate amount of
overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference
attended by Owner, Contractor, Engineer, and others as
appropriate will be held to establish a working
understanding among the parties as to the Work and to
discuss the schedules referred to in Paragraph 2.05.A,
procedures for handling Shop Drawings and other

submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor

may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. Limited Reliance by Contractor on Technical Data

Authorized: Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice:

(i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or
(ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence

of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclu-

sion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and

any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and,

in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make

settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques,

sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

- b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services;
- 4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute

item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

- 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or

royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on

entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:*

During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the

Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or

indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the

requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to

revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
2. recommendation by Engineer or payment by Owner of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures.

Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and

disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to

check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the

Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,
2. approve the Claim, or
3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

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

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All

cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone

directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
2. there is no corresponding adjustment with respect any other item of Work; and
3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier

Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections,

tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to

an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment,

including final payment, will impose responsibility on Engineer:

- a. to supervise, direct, or control the Work, or
- b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
- c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
- d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
- e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue

a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

- a. all documentation called for in the Contract Documents, including but not limited to the

evidence of insurance required by Paragraph 5.04.B.7;

- b. consent of the surety, if any, to final payment;
- c. a list of all Claims against Owner that Contractor believes are unsettled; and
- d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and, will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
3. Contractor's disregard of the authority of Engineer; or
4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),
2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and
3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment

within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00800

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Section 00700 Standard General Conditions of the Construction Contract (EJCDC No. C-700, 2002 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not specifically amended or supplemented hereby remain in full force and effect.

ARTICLE 1. DEFINITIONS

SC-1.01.12

Add the following language at the beginning of the definition entitled "Contract Documents" in the General Conditions:

The Invitation to Bid, Instructions to Bidders

SC-1.01.29

Add the following language to the definition entitled "Owner" in the General Conditions:

The "Owner" shall mean the Town of Concord, Massachusetts, acting through its Town Manager.

SC-1.01.45

Delete the definition of Substantial Completion in the General Conditions in its entirety and add the following in its place:

The Work required by the Contract has been completed except for work having a Contract Price of less than one percent of the then adjusted total contract price, or substantially all of the dredging and soil relocation Work has been completed and opened to Owner's use.

SC-1.53

Add the following definition to the General Conditions:

"State" shall mean the Commonwealth of Massachusetts.

ARTICLE 2. PRELIMINARY MATTERS

SC-2.03

Delete paragraph 2.03 of the General Conditions in its entirety and insert the following in its place:

2.03.A The Contract Time will commence to run on the day indicated in the Notice to Proceed.

SC-2.05

Add the following paragraphs immediately after paragraph 2.05.A.3 of the General Conditions which is to read as follows:

2.05.A.4 Before any work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates of insurance (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with the requirements of Article 5.

2.05.A.5 Contractor shall include and identify on the certificate of insurance, indemnification as required by Article 6.20.

ARTICLE 3. CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.01

Add the following paragraphs immediately after paragraph 3.01.A of the General Conditions which is to read as follows:

3.01.A.1 Each and every provision of law and clause required by law to be inserted in the Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

3.01.A.2 Sections of Division 1 - General Requirements govern the execution of the work of all sections of the specifications.

ARTICLE 4. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

SC-4.03.D

Add a new paragraph immediately after paragraph 4.03.C of the General Conditions which is to read as follows:

4.03.D Adjustments resulting from actual subsurface or latent physical conditions from those indicated will be in accordance with Massachusetts General Law, Chapter 30, Section 39N and the applicable provisions of the Contract Documents.

SC-4.05.B

Add a new paragraph at the end of paragraph 4.05.A of the General Conditions which is to read as follows:

4.05.B ENGINEER may check the lines, elevations, reference marks, batter boards, etc., set by CONTRACTOR, and CONTRACTOR shall correct any errors disclosed by such check. Such a check shall not be considered as approval of CONTRACTOR's work and shall not relieve CONTRACTOR of

the responsibility for accurate and satisfactory construction and completion of the entire Work. CONTRACTOR shall furnish personnel to assist ENGINEER in checking lines and grades.

ARTICLE 5. BONDS AND INSURANCE

SC-5.04

The limits of liability for the insurance required by paragraph 5.04A. of the General Conditions shall provide coverage for not less than the following amounts or greater where required by law:

5.04.A.1 and 5.04.A.2 Workers' Compensation

- (1) Worker's Compensation in accordance with M.G.L. c.149, Sect. 34A.
- (2) Employer's Liability \$1,000,000

5.04A.3., 5.04A.4., and 5.04A.5. Commercial General Liability including Premise/Operations; Explosion, Collapse and Underground Property Damage; Products/Completed Operations, Broad Form Contractual, Independent Contractors; Broad Form Property Damage; and Personal Injury liabilities:

- (1) Bodily Injury: \$1,000,000 Each Occurrence
\$3,000,000 Annual Aggregate
- (2) Property Damage: \$2,000,000 Each Occurrence
\$3,000,000 Annual Aggregate
- (3) Personal Injury, with employment exclusion deleted. \$1,000,000 Annual Aggregate

5.04A.6. Comprehensive Automobile Liability including all owned (private and others), hired and non-owned vehicles:

- (1) Bodily Injury \$1,000,000 Each Person
\$2,000,000 Each Accident
- (2) Property Damage \$2,000,000 Each Occurrence

SC-5.04B.7.a.

Add two new paragraphs immediately after paragraph 5.04.B.7.a. of the General Conditions which is to read as follows:

8. Contractor may purchase and maintain excess liability insurance in the umbrella form in order to satisfy the minimum amounts required for the insurance to be purchased and maintained in accordance with paragraph 5.04. Evidence of such excess liability insurance shall be delivered to Owner in accordance with paragraph 2.01B. in the form of a certificate indicating the policy numbers and minimum coverage amounts of all underlying insurance.

9. All policies required by this paragraph 5.04 shall contain provisions to the effect that the insurer(s) waive all right of subrogation against the Owner, Engineer and their officers, directors, partners, employees and other consultants and subcontractors of each and any of them.

SC-5.06

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

"A. CONTRACTOR shall purchase and maintain, until final payment, property insurance upon the Work at the site in an amount equal to the total bid price for the completed construction. This insurance shall include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER and ENGINEER's consultants in the Work, shall insure against the perils of fire and extended coverage, shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and shall include damages, losses and expenses rising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys and other professionals). This insurance shall be provided on the completed value form. If not covered under the "all risk" insurance or otherwise provided in these Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment."

Delete paragraph 5.06.B of the General Conditions in its entirety.

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

"C. All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least thirty days' prior written notice has been given to OWNER by certified mail and will contain waiver provisions in accordance with paragraph 5.07.B."

Delete paragraph 5.06.D of the General Conditions in its entirety.

Delete paragraph 5.06.E of the General Conditions in its entirety.

SC-5.07

Amend the last sentence of paragraph 5.07.A of the General Conditions by striking out the words "held by OWNER as trustee or." As so amended, paragraph 5.07.A remains in effect.

SC-5.08

Delete paragraph 5.08 of the General Conditions in its entirety.

SC-5.09

Delete paragraph 5.09.A of the General Conditions in its entirety and insert the following in its place:

"A. If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with this Article 5 on the basis of its not complying with the Contract Documents, OWNER will notify CONTRACTOR in writing thereof within thirty days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.05.C. CONTRACTOR will provide such additional information in respect of insurance provided by him as OWNER may reasonably request."

ARTICLE 6. CONTRACTOR'S RESPONSIBILITIES

SC-6.04

Add the following paragraph after paragraph 6.04A.2 of the General Conditions:

"B. The CONTRACTOR's resident superintendent shall attend **weekly** progress meetings at the site of the work with the ENGINEER and others, as appropriate to review schedule status and such other pertinent subjects as may be listed on the agenda by the ENGINEER."

SC-6.06.D

Add the following new paragraph as follows:

6.06.D.1 OWNER or ENGINEER may furnish to any such Subcontractor, Supplier, or other person or organization, to the extent practicable, information about amounts paid to CONTRACTOR in accordance with CONTRACTOR's Applications for Payment on account of the particular Subcontractor's, Suppliers, other person's, or other organization's Work.

SC-6.10

Add the following language at the end of paragraph 6.10.A of the General Conditions:

6.10.A.1 The materials and supplies to be used in the Work under this Contract are exempt from the Sales and Use Tax of the Commonwealth of Massachusetts. Contractor shall obtain the proper certificates, maintain the necessary records, and otherwise comply with all applicable requirements governing the exemption from sales tax.

SC-6.16

Delete the last sentence in paragraph 6.16A. of the General Conditions in its entirety and replace with the following:

A. If Engineer determines that the incident giving rise to the emergency action was not the responsibility of the Contractor and that a change in the Contract Document is required because of the action taken by the Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

SC-6.17

Add the following new paragraph immediately after paragraph 6.17.E of the General Conditions, which is to read as follows:

6.17.G The accuracy of all such information submitted by the Contractor is the responsibility of the Contractor. In reviewing Shop Drawings, Samples, and similar submittals, the Engineer shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

ARTICLE 7. OTHER WORK AT THE SITE

SC-7.03

Add the following new paragraph at the beginning of Article 7.03 of the General Conditions:

7.03.A Should CONTRACTOR cause damage to the work or property of any separate contractor at the site, or should any claim arising out of CONTRACTOR'S performance of the Work at the site be made by any separate contractor against CONTRACTOR, OWNER, ENGINEER, or any other person, CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys, and other professionals, and court and arbitration costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any separate contractor against OWNER and ENGINEER to the extent based on a claim arising out of the CONTRACTOR'S performance of the Work. Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of Work by any separate contractor at the site give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER and ENGINEER or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from OWNER and ENGINEER on such damage or claim. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and OWNER and CONTRACTOR are unable to agree to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a claim for an extension of times in accordance with Article 12.02. An extension of the Contract Times shall be CONTRACTOR'S exclusive remedy with respect to OWNER and ENGINEER for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not prevent recovery from OWNER or ENGINEER for activities that are their respective responsibilities.

ARTICLE 8. OWNER'S RESPONSIBILITIES

SC-8.06

Delete paragraph 8.06 of the General Conditions in its entirety.

ARTICLE 9. ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.01

Add a new paragraph 9.01.B after paragraph 9.01.A of the General Conditions, which is to read as follows:

"B. Nothing contained in the Contract Documents shall be construed to create a contractual relationship of any kind (1) between the ENGINEER and CONTRACTOR, (2) between the OWNER and a Subcontractor or Subcontractors, or (3) between any person or entities other than

the OWNER and CONTRACTOR. The ENGINEER shall, however, be entitled to performance and enforcement of obligations under the CONTRACT DOCUMENTS intended to facilitate performance of the ENGINEER'S duties."

SC-9.03

Add the following new paragraph immediately after paragraph 9.03A of the General Conditions which is to read as follows:

B. If the OWNER will act as ENGINEER in connection with the completion of the project, OWNER will provide periodic visits to observe the performance of the work. The Owner's representative providing Engineering services during construction is called in these Specifications in this case the ENGINEER.

SC-9.04

Add a new paragraph immediately after paragraph 9.04.A of the General Conditions which is to read as follows:

9.04.A.1 ENGINEER'S interpretations will be made in accordance with Massachusetts General Law, Chapter 30, Section 39P.

ARTICLE 10. CHANGES IN THE WORK; CLAIMS

SC-10.01

Add the following new paragraph immediately after paragraph 10.01.A of the General Conditions, which is to read as follows:

10.01.A.1 Upon request of the Owner or Engineer, the Contractor shall without cost to the Owner submit to the Engineer, in such form as the Engineer may require, an accurate written estimate of the cost of any such proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of materials, and the number of hours of work and hourly rate for each class of labor, as well as the description and amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of materials shall be shown if required by the Engineer. The Contractor shall promptly revise and resubmit such estimate if the Engineer determines that it is not in compliance with the requirements of this Article, or that it contains errors of facts or mathematical errors. If required by the Engineer, in order to establish the exact cost of new Work added or previously required Work omitted, the Contractor shall obtain and furnish to the Engineer bona fide proposals from recognized suppliers for furnishing any material included in such Work, and shall be furnished at 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.

SC-10.05B.

Delete "30 days" in the first sentence of Paragraph 10.05B. and replace with "10 days".

Delete "60 days" in the third sentence of Paragraph 10.05B. and replace with "15 days".

ARTICLE 11. COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-11.01

In the second sentence of paragraph 11.01.A.1 delete the word "superintendents".

SC-11.02

Delete paragraph 11.02 of the General Conditions in its entirety.

SC-11.03D.

Delete paragraph 11.03D. of the General Conditions in its entirety and replace with the following:

D. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment under the following conditions:

1. if the total cost of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 15 percent from the estimated quantity of such item indicated in the Agreement; and
2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof; or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a claim for an adjustment in the Unit Price for that quantity by which the actual quantity exceeds 115% of the estimated quantity in accordance with Article 10.05 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIME

SC-12.01C.2.b.

In the second line of paragraph 12.01C.2.b, before the semicolon add the following words "based on subcontractor's Cost of the Work";

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-13.05A.

Add the following new paragraph immediately after paragraph 13.05A. of the General Conditions to read as follows:

B. If Owner stops Work under Paragraph 13.05A. Contractor shall not be entitled to any extension of Contract Time or increase in Contract Price.

SC-13.09A

Delete "seven" in the first sentence of Paragraph 13.09A. and replace with "ten."

ARTICLE 14. PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02

Add new paragraphs immediately after paragraph 14.02.A.1 of the General Conditions to read as follows:

14.02.A.1.a Only the following items of material and equipment will be accepted for delivery at the site or at a local bonded warehouse and included in progress estimates in advance of actual requirement, subject to all conditions stated below.

14.02.A.1.b Materials and equipment listed above will not be included in progress estimates until the requirements stated herein have been fulfilled.

14.02.A.1.c The Contractor must present an invoice to the Engineer for each item of material or equipment he is requesting payment for. The invoice must be broken down to show the costs for the actual equipment, and reasonable costs for O&M Manuals, spare parts, start-up certification, training, testing, final acceptance testing, and any other services required by Contract.

14.02.A.1.d Sufficient monies have been allocated in the payment requisition line items to cover all of the costs listed in "a" above, plus the costs of physically installing the equipment.

14.02.A.1.e The equipment has been submitted and approved for use in this Project.

14.02.A.1.f The Contractor has, at the time of delivery, given the Engineer written notice of the delivery using the form provided by the Engineer.

14.02.A.1.g The equipment is acceptably stored and protected. Storage in a bonded warehouse will require proof of bonding, and insurance coverage specifically for the item being stored.

14.02.A.1.h The manufacturer's short and/or long term storage requirements have been received by the Engineer, prior to payment.

14.02.A.1.i The Contractor has established a program to implement the manufacturer's required storage procedures. Said program to consist of at the very least a written schedule of daily, weekly, monthly, routine maintenance requirements for each piece of equipment. A copy of this schedule to be presented to the Engineer prior to each requisition submittal, signed by the Contractor, stating that the required maintenance has been performed.

14.02.A.1.j Signed, notarized Title Transfers, format to be furnished by the Engineer, must be furnished for each item of equipment.

14.02.A.1.k When the above have been complied with to the satisfaction of the Engineer, payment will be authorized for the full invoice values of the item of equipment, less normal retainage and less all costs for O&M Manuals, spare parts, start-up certification, training, testing, final acceptance testing, and installation.

Delete paragraph 14.02.A.3 and insert the following in its place:

"3. Retainage with respect to progress payments will be five percent or, if stipulated, the maximum allowed by law."

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

SC-15.01A.

Delete paragraph 15.01A. of the General Conditions in its entirety and replace with the following:

A. Owner may order, at any time and without cause, suspension of the Work in accordance with Massachusetts General Law Chapter 30, Section 39O.

ARTICLE 16. DISPUTE RESOLUTION

SC-16

Delete paragraph 16.01 of the General Conditions in its entirety and replace with the following:

16.01.B CONTRACTOR shall carry on the Work and maintain the progress schedule during the dispute resolution proceedings unless otherwise agreed in writing by OWNER and CONTRACTOR.

ARTICLE 17. MISCELLANEOUS

SC-17.06

17.06 Headings:

Delete paragraph 17.06 A and replace with the following paragraph:

17.06.A The headings or titles of any article, paragraph, subparagraph, section, subsection, or part of the Contract Documents shall not be deemed to limit or restrict the article, paragraph, section, or part.

17.07 Legal Address of Contractor

Add the following paragraph immediately after section 17.06:

17.07.A CONTRACTOR'S business address and his office at or near the site of the Work are both hereby designated as places to which communications shall be delivered. The depositing of any letter, notice, or other communication in a postpaid wrapper directed to the CONTRACTOR'S business address in a post office box regularly maintained by the Post Office Department or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon CONTRACTOR, and the date of such service shall be the date of receipt. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by CONTRACTOR and delivered to ENGINEER. Service of any notice, letter, or other communication upon the CONTRACTOR personally shall likewise be deemed sufficient service.

END OF SECTION



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

ROSALIN ACOSTA
Secretary

MICHAEL FLANAGAN
Director

Awarding Authority: Town of Concord

Contract Number:

City/Town: CONCORD

Description of Work: Conduct restoration including limited dredging of Warner's Pond, dewatering, and transporting sediment, creating an emergent wetland, resurfacing a parking lot, reconstructing a boat launch.

Job Location: 2X Warner Street

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- **The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor.** For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The annual update requirement is not applicable to 27F "rental of equipment" contracts. **The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.**
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$35.95	\$13.41	\$16.01	\$0.00	\$65.37
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.02	\$13.41	\$16.01	\$0.00	\$65.44
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.14	\$13.41	\$16.01	\$0.00	\$65.56
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$37.06	\$9.10	\$16.64	\$0.00	\$62.80
	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$36.16	\$9.10	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2020	\$38.10	\$12.80	\$9.45	\$0.00	\$60.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	06/01/2022	\$37.06	\$9.10	\$16.64	\$0.00	\$62.80
	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$36.16	\$9.10	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2020	\$46.10	\$7.07	\$17.98	\$0.00	\$71.15

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
2	65	\$29.97	\$7.07	\$11.69	\$0.00	\$48.73
3	70	\$32.27	\$7.07	\$12.59	\$0.00	\$51.93
4	75	\$34.58	\$7.07	\$13.49	\$0.00	\$55.14
5	80	\$36.88	\$7.07	\$14.38	\$0.00	\$58.33
6	85	\$39.19	\$7.07	\$15.29	\$0.00	\$61.55
7	90	\$41.49	\$7.07	\$16.18	\$0.00	\$64.74
8	95	\$43.80	\$7.07	\$17.09	\$0.00	\$67.96

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (WALTHAM)</i>	02/01/2022	\$57.15	\$11.39	\$22.34	\$0.00	\$90.88
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Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Waltham

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.58	\$11.39	\$22.34	\$0.00	\$62.31
2	60	\$34.29	\$11.39	\$22.34	\$0.00	\$68.02
3	70	\$40.01	\$11.39	\$22.34	\$0.00	\$73.74
4	80	\$45.72	\$11.39	\$22.34	\$0.00	\$79.45
5	90	\$51.44	\$11.39	\$22.34	\$0.00	\$85.17

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$42.33	\$9.10	\$17.72	\$0.00	\$69.15
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For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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For apprentice rates see "Apprentice- LABORER"

CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2022	\$44.53	\$8.68	\$19.97	\$0.00	\$73.18
	09/01/2022	\$45.18	\$8.68	\$19.97	\$0.00	\$73.83
	03/01/2023	\$45.78	\$8.68	\$19.97	\$0.00	\$74.43

Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.27	\$8.68	\$1.73	\$0.00	\$32.68
2	60	\$26.72	\$8.68	\$1.73	\$0.00	\$37.13
3	70	\$31.17	\$8.68	\$14.78	\$0.00	\$54.63
4	75	\$33.40	\$8.68	\$14.78	\$0.00	\$56.86
5	80	\$35.62	\$8.68	\$16.51	\$0.00	\$60.81
6	80	\$35.62	\$8.68	\$16.51	\$0.00	\$60.81
7	90	\$40.08	\$8.68	\$18.24	\$0.00	\$67.00
8	90	\$40.08	\$8.68	\$18.24	\$0.00	\$67.00

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.59	\$8.68	\$1.73	\$0.00	\$33.00
2	60	\$27.11	\$8.68	\$1.73	\$0.00	\$37.52
3	70	\$31.63	\$8.68	\$14.78	\$0.00	\$55.09
4	75	\$33.89	\$8.68	\$14.78	\$0.00	\$57.35
5	80	\$36.14	\$8.68	\$16.51	\$0.00	\$61.33
6	80	\$36.14	\$8.68	\$16.51	\$0.00	\$61.33
7	90	\$40.66	\$8.68	\$18.24	\$0.00	\$67.58
8	90	\$40.66	\$8.68	\$18.24	\$0.00	\$67.58

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$30.45/ 3&4 \$36.57/ 5&6 \$56.36/ 7&8 \$62.54

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	04/01/2022	\$23.66	\$7.21	\$4.80	\$0.00	\$35.67
	04/01/2023	\$24.16	\$7.21	\$4.80	\$0.00	\$36.17

All Aspects of New Wood Frame Work

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - CARPENTER (Wood Frame) - Zone 3

Effective Date - 04/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.20	\$7.21	\$0.00	\$0.00	\$21.41
2	60	\$14.20	\$7.21	\$0.00	\$0.00	\$21.41
3	65	\$15.38	\$7.21	\$0.00	\$0.00	\$22.59
4	70	\$16.56	\$7.21	\$0.00	\$0.00	\$23.77
5	75	\$17.75	\$7.21	\$3.80	\$0.00	\$28.76
6	80	\$18.93	\$7.21	\$3.80	\$0.00	\$29.94
7	85	\$20.11	\$7.21	\$3.80	\$0.00	\$31.12
8	90	\$21.29	\$7.21	\$3.80	\$0.00	\$32.30

Effective Date - 04/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$14.50	\$7.21	\$0.00	\$0.00	\$21.71
2	60	\$14.50	\$7.21	\$0.00	\$0.00	\$21.71
3	65	\$15.70	\$7.21	\$0.00	\$0.00	\$22.91
4	70	\$16.91	\$7.21	\$0.00	\$0.00	\$24.12
5	75	\$18.12	\$7.21	\$3.80	\$0.00	\$29.13
6	80	\$19.33	\$7.21	\$3.80	\$0.00	\$30.34
7	85	\$20.54	\$7.21	\$3.80	\$0.00	\$31.55
8	90	\$21.74	\$7.21	\$3.80	\$0.00	\$32.75

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$17.86/ 3&4 \$20.22/ 5&6 \$27.57/ 7&8 \$29.94

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (WALTHAM)	01/01/2020	\$49.07	\$12.75	\$22.41	\$0.62	\$84.85
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Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Waltham)

Effective Date - 01/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$12.75	\$15.41	\$0.00	\$52.70
2	60	\$29.44	\$12.75	\$17.41	\$0.62	\$60.22
3	65	\$31.90	\$12.75	\$18.41	\$0.62	\$63.68
4	70	\$34.35	\$12.75	\$19.41	\$0.62	\$67.13
5	75	\$36.80	\$12.75	\$20.41	\$0.62	\$70.58
6	80	\$39.26	\$12.75	\$21.41	\$0.62	\$74.04
7	90	\$44.16	\$12.75	\$22.41	\$0.62	\$79.94

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$52.38	\$14.00	\$16.05	\$0.00	\$82.43
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$8.65	\$0.00	\$0.00	\$36.68
2	55	\$30.83	\$8.65	\$6.27	\$0.00	\$45.75
3	60	\$33.64	\$8.65	\$6.84	\$0.00	\$49.13
4	65	\$36.44	\$8.65	\$7.41	\$0.00	\$52.50
5	70	\$39.24	\$8.65	\$19.63	\$0.00	\$67.52
6	75	\$42.05	\$8.65	\$20.20	\$0.00	\$70.90
7	80	\$44.85	\$8.65	\$20.77	\$0.00	\$74.27
8	90	\$50.45	\$8.65	\$21.91	\$0.00	\$81.01

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DEMO: ADZEMAN <i>LABORERS - ZONE 2</i>	06/01/2022	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 2</i>	06/01/2022	\$43.08	\$9.10	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	06/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	12/01/2022	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	06/01/2023	\$45.33	\$9.10	\$17.57	\$0.00	\$72.00
	12/01/2023	\$46.58	\$9.10	\$17.57	\$0.00	\$73.25
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$43.08	\$9.10	\$17.57	\$0.00	\$69.75
	12/01/2022	\$44.08	\$9.10	\$17.57	\$0.00	\$70.75
	06/01/2023	\$45.08	\$9.10	\$17.57	\$0.00	\$71.75
	12/01/2023	\$46.33	\$9.10	\$17.57	\$0.00	\$73.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	06/01/2022	\$42.33	\$9.10	\$17.57	\$0.00	\$69.00
	12/01/2022	\$43.33	\$9.10	\$17.57	\$0.00	\$70.00
	06/01/2023	\$44.33	\$9.10	\$17.57	\$0.00	\$71.00
	12/01/2023	\$45.58	\$9.10	\$17.57	\$0.00	\$72.25
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ELECTRICIAN ELECTRICIANS LOCAL 103	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34

Apprentice - ELECTRICIAN - Local 103

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.93	\$13.00	\$0.69	\$0.00	\$36.62
2	40	\$22.93	\$13.00	\$0.69	\$0.00	\$36.62
3	45	\$25.79	\$13.00	\$15.62	\$0.00	\$54.41
4	45	\$25.79	\$13.00	\$15.62	\$0.00	\$54.41
5	50	\$28.66	\$13.00	\$16.10	\$0.00	\$57.76
6	55	\$31.53	\$13.00	\$16.58	\$0.00	\$61.11
7	60	\$34.39	\$13.00	\$17.04	\$0.00	\$64.43
8	65	\$37.26	\$13.00	\$17.52	\$0.00	\$67.78
9	70	\$40.12	\$13.00	\$17.98	\$0.00	\$71.10
10	75	\$42.99	\$13.00	\$18.46	\$0.00	\$74.45

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$23.50	\$13.00	\$0.71	\$0.00	\$37.21
2	40	\$23.50	\$13.00	\$0.71	\$0.00	\$37.21
3	45	\$26.44	\$13.00	\$15.64	\$0.00	\$55.08
4	45	\$26.44	\$13.00	\$15.64	\$0.00	\$55.08
5	50	\$29.38	\$13.00	\$16.12	\$0.00	\$58.50
6	55	\$32.32	\$13.00	\$16.60	\$0.00	\$61.92
7	60	\$35.26	\$13.00	\$17.07	\$0.00	\$65.33
8	65	\$38.19	\$13.00	\$17.55	\$0.00	\$68.74
9	70	\$41.13	\$13.00	\$18.01	\$0.00	\$72.14
10	75	\$44.07	\$13.00	\$18.49	\$0.00	\$75.56

Notes :
App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2022	\$47.18	\$14.00	\$16.05	\$0.00	\$77.23
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2022	\$48.72	\$14.00	\$16.05	\$0.00	\$78.77
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2022	\$23.33	\$14.00	\$16.05	\$0.00	\$53.38
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34

For apprentice rates see "Apprentice- ELECTRICIAN"

FIRE ALARM REPAIR / MAINTENANCE <i>LOCAL 103</i> / COMMISSIONING <i>ELECTRICIANS</i>	03/01/2022	\$44.71	\$13.00	\$18.74	\$0.00	\$76.45
	09/01/2022	\$46.42	\$13.00	\$18.87	\$0.00	\$78.29
	03/01/2023	\$48.34	\$13.00	\$19.01	\$0.00	\$80.35

For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"

FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$41.76	\$14.00	\$16.05	\$0.00	\$71.81
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$24.50	\$9.10	\$16.64	\$0.00	\$50.24
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	03/01/2022	\$49.93	\$8.68	\$20.27	\$0.00	\$78.88
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Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - FLOORCOVERER - Local 2168 Zone I

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.97	\$8.68	\$1.79	\$0.00	\$35.44
2	55	\$27.46	\$8.68	\$1.79	\$0.00	\$37.93
3	60	\$29.96	\$8.68	\$14.90	\$0.00	\$53.54
4	65	\$32.45	\$8.68	\$14.90	\$0.00	\$56.03
5	70	\$34.95	\$8.68	\$16.69	\$0.00	\$60.32
6	75	\$37.45	\$8.68	\$16.69	\$0.00	\$62.82
7	80	\$39.94	\$8.68	\$18.48	\$0.00	\$67.10
8	85	\$42.44	\$8.68	\$18.48	\$0.00	\$69.60

Notes: Steps are 750 hrs.
 % After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
 Step 1&2 \$32.94/ 3&4 \$39.66/ 5&6 \$60.32/ 7&8 \$67.10

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$8.65	\$0.00	\$0.00	\$31.43
2	55	\$25.06	\$8.65	\$6.27	\$0.00	\$39.98
3	60	\$27.34	\$8.65	\$6.84	\$0.00	\$42.83
4	65	\$29.61	\$8.65	\$7.41	\$0.00	\$45.67
5	70	\$31.89	\$8.65	\$19.63	\$0.00	\$60.17
6	75	\$34.17	\$8.65	\$20.20	\$0.00	\$63.02
7	80	\$36.45	\$8.65	\$20.77	\$0.00	\$65.87
8	90	\$41.00	\$8.65	\$21.91	\$0.00	\$71.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS OPERATING ENGINEERS LOCAL 4	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
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Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$28.26	\$14.00	\$0.00	\$0.00	\$42.26
2	60	\$30.83	\$14.00	\$16.05	\$0.00	\$60.88
3	65	\$33.40	\$14.00	\$16.05	\$0.00	\$63.45
4	70	\$35.97	\$14.00	\$16.05	\$0.00	\$66.02
5	75	\$38.54	\$14.00	\$16.05	\$0.00	\$68.59
6	80	\$41.10	\$14.00	\$16.05	\$0.00	\$71.15
7	85	\$43.67	\$14.00	\$16.05	\$0.00	\$73.72
8	90	\$46.24	\$14.00	\$16.05	\$0.00	\$76.29

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 17 - A	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 103	03/01/2022	\$57.32	\$13.00	\$20.82	\$0.00	\$91.14
	09/01/2022	\$58.76	\$13.00	\$20.86	\$0.00	\$92.62
	03/01/2023	\$60.43	\$13.00	\$20.91	\$0.00	\$94.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 17 - A	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) PIPEFITTERS LOCAL 537	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC PIPEFITTERS LOCAL 537	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS LABORERS - ZONE 2	06/01/2022	\$37.06	\$9.10	\$16.64	\$0.00	\$62.80
	12/01/2022	\$37.91	\$9.10	\$16.64	\$0.00	\$63.65
	06/01/2023	\$38.81	\$9.10	\$16.64	\$0.00	\$64.55
	12/01/2023	\$39.71	\$9.10	\$16.64	\$0.00	\$65.45
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$36.16	\$9.10	\$16.64	\$0.00	\$61.90
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) HEAT & FROST INSULATORS LOCAL 6 (BOSTON)	09/01/2021	\$51.40	\$13.80	\$17.14	\$0.00	\$82.34
	09/01/2022	\$53.85	\$13.80	\$17.14	\$0.00	\$84.79

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

Effective Date - 09/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.70	\$13.80	\$12.42	\$0.00	\$51.92
2	60	\$30.84	\$13.80	\$13.36	\$0.00	\$58.00
3	70	\$35.98	\$13.80	\$14.31	\$0.00	\$64.09
4	80	\$41.12	\$13.80	\$15.25	\$0.00	\$70.17

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.93	\$13.80	\$12.42	\$0.00	\$53.15
2	60	\$32.31	\$13.80	\$13.36	\$0.00	\$59.47
3	70	\$37.70	\$13.80	\$14.31	\$0.00	\$65.81
4	80	\$43.08	\$13.80	\$15.25	\$0.00	\$72.13

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (BOSTON AREA)</i>	03/16/2022	\$50.60	\$8.20	\$26.50	\$0.00	\$85.30
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Apprentice - IRONWORKER - Local 7 Boston

Effective Date - 03/16/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$30.36	\$8.20	\$26.50	\$0.00	\$65.06
2	70	\$35.42	\$8.20	\$26.50	\$0.00	\$70.12
3	75	\$37.95	\$8.20	\$26.50	\$0.00	\$72.65
4	80	\$40.48	\$8.20	\$26.50	\$0.00	\$75.18
5	85	\$43.01	\$8.20	\$26.50	\$0.00	\$77.71
6	90	\$45.54	\$8.20	\$26.50	\$0.00	\$80.24

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:**

JACKHAMMER & PAVING BREAKER OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

LABORER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.31	\$9.10	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - LABORER - Zone 2

Effective Date - 06/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.79	\$9.10	\$16.64	\$0.00	\$47.53
2	70	\$25.42	\$9.10	\$16.64	\$0.00	\$51.16
3	80	\$29.05	\$9.10	\$16.64	\$0.00	\$54.79
4	90	\$32.68	\$9.10	\$16.64	\$0.00	\$58.42

Effective Date - 12/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.30	\$9.10	\$16.64	\$0.00	\$48.04
2	70	\$26.01	\$9.10	\$16.64	\$0.00	\$51.75
3	80	\$29.73	\$9.10	\$16.64	\$0.00	\$55.47
4	90	\$33.44	\$9.10	\$16.64	\$0.00	\$59.18

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$35.41	\$9.10	\$16.64	\$0.00	\$61.15
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Apprentice - LABORER (Heavy & Highway) - Zone 2

Effective Date - 12/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$21.25	\$9.10	\$16.64	\$0.00	\$46.99
2	70	\$24.79	\$9.10	\$16.64	\$0.00	\$50.53
3	80	\$28.33	\$9.10	\$16.64	\$0.00	\$54.07
4	90	\$31.87	\$9.10	\$16.64	\$0.00	\$57.61

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER LABORERS - ZONE 2	06/01/2022	\$36.31	\$9.10	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER LABORERS - ZONE 2	06/01/2022	\$36.31	\$9.10	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.40	\$9.10	\$16.70	\$0.00	\$62.20
	12/01/2022	\$37.25	\$9.10	\$16.70	\$0.00	\$63.05
	06/01/2023	\$38.15	\$9.10	\$16.70	\$0.00	\$63.95
	12/01/2023	\$39.05	\$9.10	\$16.70	\$0.00	\$64.85
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.31	\$9.10	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.31	\$9.10	\$16.64	\$0.00	\$62.05
	12/01/2022	\$37.16	\$9.10	\$16.64	\$0.00	\$62.90
	06/01/2023	\$38.06	\$9.10	\$16.64	\$0.00	\$63.80
	12/01/2023	\$38.96	\$9.10	\$16.64	\$0.00	\$64.70
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2022	\$43.69	\$11.39	\$20.37	\$0.00	\$75.45

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.85	\$11.39	\$20.37	\$0.00	\$53.61
2	60	\$26.21	\$11.39	\$20.37	\$0.00	\$57.97
3	70	\$30.58	\$11.39	\$20.37	\$0.00	\$62.34
4	80	\$34.95	\$11.39	\$20.37	\$0.00	\$66.71
5	90	\$39.32	\$11.39	\$20.37	\$0.00	\$71.08

Notes:

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2022	\$57.17	\$11.39	\$22.31	\$0.00	\$90.87

Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.59	\$11.39	\$22.31	\$0.00	\$62.29
2	60	\$34.30	\$11.39	\$22.31	\$0.00	\$68.00
3	70	\$40.02	\$11.39	\$22.31	\$0.00	\$73.72
4	80	\$45.74	\$11.39	\$22.31	\$0.00	\$79.44
5	90	\$51.45	\$11.39	\$22.31	\$0.00	\$85.15

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 2) <i>MILLWRIGHTS LOCAL 1121 - Zone 2</i>	01/03/2022	\$40.67	\$8.58	\$21.57	\$0.00	\$70.82
	01/02/2023	\$41.92	\$8.58	\$21.57	\$0.00	\$72.07

Apprentice - MILLWRIGHT - Local 1121 Zone 2

Effective Date - 01/03/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.37	\$8.58	\$5.72	\$0.00	\$36.67
2	65	\$26.44	\$8.58	\$17.93	\$0.00	\$52.95
3	75	\$30.50	\$8.58	\$18.98	\$0.00	\$58.06
4	85	\$34.57	\$8.58	\$20.01	\$0.00	\$63.16

Effective Date - 01/02/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.06	\$8.58	\$5.72	\$0.00	\$37.36
2	65	\$27.25	\$8.58	\$17.93	\$0.00	\$53.76
3	75	\$31.44	\$8.58	\$18.98	\$0.00	\$59.00
4	85	\$35.63	\$8.58	\$20.01	\$0.00	\$64.22

Notes: Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:4

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MORTAR MIXER <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$23.48	\$14.00	\$16.05	\$0.00	\$53.53
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$28.44	\$14.00	\$16.05	\$0.00	\$58.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2022	\$54.86	\$8.65	\$23.05	\$0.00	\$86.56
	01/01/2023	\$56.06	\$8.65	\$23.05	\$0.00	\$87.76
	07/01/2023	\$57.26	\$8.65	\$23.05	\$0.00	\$88.96
	01/01/2024	\$58.46	\$8.65	\$23.05	\$0.00	\$90.16
	07/01/2024	\$59.66	\$8.65	\$23.05	\$0.00	\$91.36
	01/01/2025	\$60.86	\$8.65	\$23.05	\$0.00	\$92.56

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.43	\$8.65	\$0.00	\$0.00	\$36.08
2	55	\$30.17	\$8.65	\$6.27	\$0.00	\$45.09
3	60	\$32.92	\$8.65	\$6.84	\$0.00	\$48.41
4	65	\$35.66	\$8.65	\$7.41	\$0.00	\$51.72
5	70	\$38.40	\$8.65	\$19.63	\$0.00	\$66.68
6	75	\$41.15	\$8.65	\$20.20	\$0.00	\$70.00
7	80	\$43.89	\$8.65	\$20.77	\$0.00	\$73.31
8	90	\$49.37	\$8.65	\$21.91	\$0.00	\$79.93

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$8.65	\$0.00	\$0.00	\$36.68
2	55	\$30.83	\$8.65	\$6.27	\$0.00	\$45.75
3	60	\$33.64	\$8.65	\$6.84	\$0.00	\$49.13
4	65	\$36.44	\$8.65	\$7.41	\$0.00	\$52.50
5	70	\$39.24	\$8.65	\$19.63	\$0.00	\$67.52
6	75	\$42.05	\$8.65	\$20.20	\$0.00	\$70.90
7	80	\$44.85	\$8.65	\$20.77	\$0.00	\$74.27
8	90	\$50.45	\$8.65	\$21.91	\$0.00	\$81.01

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	07/01/2022	\$45.76	\$8.65	\$23.05	\$0.00	\$77.46
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$46.96	\$8.65	\$23.05	\$0.00	\$78.66
	07/01/2023	\$48.16	\$8.65	\$23.05	\$0.00	\$79.86
	01/01/2024	\$49.36	\$8.65	\$23.05	\$0.00	\$81.06
	07/01/2024	\$50.56	\$8.65	\$23.05	\$0.00	\$82.26
	01/01/2025	\$51.76	\$8.65	\$23.05	\$0.00	\$83.46

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.88	\$8.65	\$0.00	\$0.00	\$31.53
2	55	\$25.17	\$8.65	\$6.27	\$0.00	\$40.09
3	60	\$27.46	\$8.65	\$6.84	\$0.00	\$42.95
4	65	\$29.74	\$8.65	\$7.41	\$0.00	\$45.80
5	70	\$32.03	\$8.65	\$19.63	\$0.00	\$60.31
6	75	\$34.32	\$8.65	\$20.20	\$0.00	\$63.17
7	80	\$36.61	\$8.65	\$20.77	\$0.00	\$66.03
8	90	\$41.18	\$8.65	\$21.91	\$0.00	\$71.74

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.48	\$8.65	\$0.00	\$0.00	\$32.13
2	55	\$25.83	\$8.65	\$6.27	\$0.00	\$40.75
3	60	\$28.18	\$8.65	\$6.84	\$0.00	\$43.67
4	65	\$30.52	\$8.65	\$7.41	\$0.00	\$46.58
5	70	\$32.87	\$8.65	\$19.63	\$0.00	\$61.15
6	75	\$35.22	\$8.65	\$20.20	\$0.00	\$64.07
7	80	\$37.57	\$8.65	\$20.77	\$0.00	\$66.99
8	90	\$42.26	\$8.65	\$21.91	\$0.00	\$72.82

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	07/01/2022	\$43.82	\$8.65	\$23.05	\$0.00	\$75.52
PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$45.02	\$8.65	\$23.05	\$0.00	\$76.72
	07/01/2023	\$46.22	\$8.65	\$23.05	\$0.00	\$77.92
	01/01/2024	\$47.42	\$8.65	\$23.05	\$0.00	\$79.12
	07/01/2024	\$48.62	\$8.65	\$23.05	\$0.00	\$80.32
	01/01/2025	\$49.82	\$8.65	\$23.05	\$0.00	\$81.52

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.91	\$8.65	\$0.00	\$0.00	\$30.56
2	55	\$24.10	\$8.65	\$6.27	\$0.00	\$39.02
3	60	\$26.29	\$8.65	\$6.84	\$0.00	\$41.78
4	65	\$28.48	\$8.65	\$7.41	\$0.00	\$44.54
5	70	\$30.67	\$8.65	\$19.63	\$0.00	\$58.95
6	75	\$32.87	\$8.65	\$20.20	\$0.00	\$61.72
7	80	\$35.06	\$8.65	\$20.77	\$0.00	\$64.48
8	90	\$39.44	\$8.65	\$21.91	\$0.00	\$70.00

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$8.65	\$0.00	\$0.00	\$31.16
2	55	\$24.76	\$8.65	\$6.27	\$0.00	\$39.68
3	60	\$27.01	\$8.65	\$6.84	\$0.00	\$42.50
4	65	\$29.26	\$8.65	\$7.41	\$0.00	\$45.32
5	70	\$31.51	\$8.65	\$19.63	\$0.00	\$59.79
6	75	\$33.77	\$8.65	\$20.20	\$0.00	\$62.62
7	80	\$36.02	\$8.65	\$20.77	\$0.00	\$65.44
8	90	\$40.52	\$8.65	\$21.91	\$0.00	\$71.08

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	07/01/2022	\$44.36	\$8.65	\$23.05	\$0.00	\$76.06
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$45.56	\$8.65	\$23.05	\$0.00	\$77.26
	07/01/2023	\$46.76	\$8.65	\$23.05	\$0.00	\$78.46
	01/01/2024	\$47.96	\$8.65	\$23.05	\$0.00	\$79.66
	07/01/2024	\$49.16	\$8.65	\$23.05	\$0.00	\$80.86
	01/01/2025	\$50.36	\$8.65	\$23.05	\$0.00	\$82.06

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.18	\$8.65	\$0.00	\$0.00	\$30.83
2	55	\$24.40	\$8.65	\$6.27	\$0.00	\$39.32
3	60	\$26.62	\$8.65	\$6.84	\$0.00	\$42.11
4	65	\$28.83	\$8.65	\$7.41	\$0.00	\$44.89
5	70	\$31.05	\$8.65	\$19.63	\$0.00	\$59.33
6	75	\$33.27	\$8.65	\$20.20	\$0.00	\$62.12
7	80	\$35.49	\$8.65	\$20.77	\$0.00	\$64.91
8	90	\$39.92	\$8.65	\$21.91	\$0.00	\$70.48

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$8.65	\$0.00	\$0.00	\$31.43
2	55	\$25.06	\$8.65	\$6.27	\$0.00	\$39.98
3	60	\$27.34	\$8.65	\$6.84	\$0.00	\$42.83
4	65	\$29.61	\$8.65	\$7.41	\$0.00	\$45.67
5	70	\$31.89	\$8.65	\$19.63	\$0.00	\$60.17
6	75	\$34.17	\$8.65	\$20.20	\$0.00	\$63.02
7	80	\$36.45	\$8.65	\$20.77	\$0.00	\$65.87
8	90	\$41.00	\$8.65	\$21.91	\$0.00	\$71.56

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	07/01/2022	\$42.42	\$8.65	\$23.05	\$0.00	\$74.12
PAINTERS LOCAL 35 - ZONE 2	01/01/2023	\$43.62	\$8.65	\$23.05	\$0.00	\$75.32
	07/01/2023	\$44.82	\$8.65	\$23.05	\$0.00	\$76.52
	01/01/2024	\$46.02	\$8.65	\$23.05	\$0.00	\$77.72
	07/01/2024	\$47.22	\$8.65	\$23.05	\$0.00	\$78.92
	01/01/2025	\$48.42	\$8.65	\$23.05	\$0.00	\$80.12

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

Effective Date - 07/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.21	\$8.65	\$0.00	\$0.00	\$29.86
2	55	\$23.33	\$8.65	\$6.27	\$0.00	\$38.25
3	60	\$25.45	\$8.65	\$6.84	\$0.00	\$40.94
4	65	\$27.57	\$8.65	\$7.41	\$0.00	\$43.63
5	70	\$29.69	\$8.65	\$19.63	\$0.00	\$57.97
6	75	\$31.82	\$8.65	\$20.20	\$0.00	\$60.67
7	80	\$33.94	\$8.65	\$20.77	\$0.00	\$63.36
8	90	\$38.18	\$8.65	\$21.91	\$0.00	\$68.74

Effective Date - 01/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.81	\$8.65	\$0.00	\$0.00	\$30.46
2	55	\$23.99	\$8.65	\$6.27	\$0.00	\$38.91
3	60	\$26.17	\$8.65	\$6.84	\$0.00	\$41.66
4	65	\$28.35	\$8.65	\$7.41	\$0.00	\$44.41
5	70	\$30.53	\$8.65	\$19.63	\$0.00	\$58.81
6	75	\$32.72	\$8.65	\$20.20	\$0.00	\$61.57
7	80	\$34.90	\$8.65	\$20.77	\$0.00	\$64.32
8	90	\$39.26	\$8.65	\$21.91	\$0.00	\$69.82

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY) For apprentice rates see "Apprentice- LABORER (Heavy and Highway)	12/01/2021	\$35.41	\$9.10	\$16.64	\$0.00	\$61.15
PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/01/2021	\$35.78	\$13.41	\$16.01	\$0.00	\$65.20
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 (ZONE 1) For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
PILE DRIVER PILE DRIVER LOCAL 56 (ZONE 1)	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PILE DRIVER - Local 56 Zone 1

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.54	\$9.40	\$23.12	\$0.00	\$57.06
2	60	\$29.44	\$9.40	\$23.12	\$0.00	\$61.96
3	70	\$34.35	\$9.40	\$23.12	\$0.00	\$66.87
4	75	\$36.80	\$9.40	\$23.12	\$0.00	\$69.32
5	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
6	80	\$39.26	\$9.40	\$23.12	\$0.00	\$71.78
7	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68
8	90	\$44.16	\$9.40	\$23.12	\$0.00	\$76.68

Notes:
 % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
 Step 1&2 \$34.01/ 3&4 \$41.46/ 5&6 \$62.80/ 7&8 \$69.25

Apprentice to Journeyworker Ratio:1:5

PIPEFITTER & STEAMFITTER PIPEFITTERS LOCAL 537	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
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Apprentice - PIPEFITTER - Local 537

Effective Date - 03/01/2021

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$23.18	\$11.70	\$8.25	\$0.00	\$43.13
2	45	\$26.07	\$11.70	\$20.24	\$0.00	\$58.01
3	60	\$34.76	\$11.70	\$20.24	\$0.00	\$66.70
4	70	\$40.56	\$11.70	\$20.24	\$0.00	\$72.50
5	80	\$46.35	\$11.70	\$20.24	\$0.00	\$78.29

Notes:
 ** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.
 Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

PIPELAYER LABORERS - ZONE 2	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/01/2022	\$61.79	\$14.07	\$18.36	\$0.00	\$94.22
	09/04/2022	\$63.49	\$14.07	\$18.36	\$0.00	\$95.92
	02/26/2023	\$65.19	\$14.07	\$18.36	\$0.00	\$97.62
	09/03/2023	\$66.94	\$14.07	\$18.36	\$0.00	\$99.37
	03/03/2024	\$68.74	\$14.07	\$18.36	\$0.00	\$101.17
	09/01/2024	\$70.54	\$14.07	\$18.36	\$0.00	\$102.97
	03/02/2025	\$72.34	\$14.07	\$18.36	\$0.00	\$104.77

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$21.63	\$14.07	\$6.63	\$0.00	\$42.33
2	40	\$24.72	\$14.07	\$7.52	\$0.00	\$46.31
3	55	\$33.98	\$14.07	\$10.24	\$0.00	\$58.29
4	65	\$40.16	\$14.07	\$12.04	\$0.00	\$66.27
5	75	\$46.34	\$14.07	\$13.85	\$0.00	\$74.26

Effective Date - 09/04/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.22	\$14.07	\$6.63	\$0.00	\$42.92
2	40	\$25.40	\$14.07	\$7.52	\$0.00	\$46.99
3	55	\$34.92	\$14.07	\$10.24	\$0.00	\$59.23
4	65	\$41.27	\$14.07	\$12.04	\$0.00	\$67.38
5	75	\$47.62	\$14.07	\$13.85	\$0.00	\$75.54

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr
Step4 with lic\$69.00, Step5 with lic\$76.87

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2021	\$57.94	\$11.70	\$20.24	\$0.00	\$89.88
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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	06/01/2022	\$37.31	\$9.10	\$16.64	\$0.00	\$63.05
	12/01/2022	\$38.16	\$9.10	\$16.64	\$0.00	\$63.90
	06/01/2023	\$39.06	\$9.10	\$16.64	\$0.00	\$64.80
	12/01/2023	\$39.96	\$9.10	\$16.64	\$0.00	\$65.70

For apprentice rates see "Apprentice- LABORER"

POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$36.41	\$9.10	\$16.64	\$0.00	\$62.15
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$33.69	\$14.00	\$16.05	\$0.00	\$63.74
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - J.G. MacLellan (Lowell)</i>	05/01/2022	\$25.85	\$10.37	\$6.35	\$0.00	\$42.57
	01/01/2023	\$25.85	\$10.77	\$6.35	\$0.00	\$42.97
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2022	\$47.03	\$12.28	\$19.45	\$0.00	\$78.76

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.52	\$12.28	\$5.21	\$0.00	\$41.01
2	60	\$28.22	\$12.28	\$19.45	\$0.00	\$59.95
3	65	\$30.57	\$12.28	\$19.45	\$0.00	\$62.30
4	75	\$35.27	\$12.28	\$19.45	\$0.00	\$67.00
5	85	\$39.98	\$12.28	\$19.45	\$0.00	\$71.71

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
 (Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2022	\$47.28	\$12.28	\$19.45	\$0.00	\$79.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2022	\$53.70	\$13.80	\$25.60	\$2.79	\$95.89

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-A

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
2	42	\$22.55	\$13.80	\$6.01	\$0.00	\$42.36
3	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
4	47	\$25.24	\$13.80	\$11.26	\$1.51	\$51.81
5	52	\$27.92	\$13.80	\$12.23	\$1.62	\$55.57
6	52	\$27.92	\$13.80	\$12.48	\$1.63	\$55.83
7	60	\$32.22	\$13.80	\$13.87	\$1.80	\$61.69
8	65	\$34.91	\$13.80	\$14.84	\$1.91	\$65.46
9	75	\$40.28	\$13.80	\$16.77	\$2.13	\$72.98
10	85	\$45.65	\$13.80	\$18.20	\$2.33	\$79.98

Notes:
Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SPECIALIZED EARTH MOVING EQUIP < 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.53	\$13.41	\$16.01	\$0.00	\$65.95
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	03/01/2022	\$64.36	\$10.44	\$22.10	\$0.00	\$96.90
	10/01/2022	\$66.06	\$10.44	\$22.10	\$0.00	\$98.60
	03/01/2023	\$67.76	\$10.44	\$22.10	\$0.00	\$100.30
	10/01/2023	\$69.51	\$10.44	\$22.10	\$0.00	\$102.05
	03/01/2024	\$71.31	\$10.44	\$22.10	\$0.00	\$103.85
	10/01/2024	\$73.11	\$10.44	\$22.10	\$0.00	\$105.65
	03/01/2025	\$74.91	\$10.44	\$22.10	\$0.00	\$107.45

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.53	\$10.44	\$12.35	\$0.00	\$45.32
2	40	\$25.74	\$10.44	\$13.10	\$0.00	\$49.28
3	45	\$28.96	\$10.44	\$13.85	\$0.00	\$53.25
4	50	\$32.18	\$10.44	\$14.60	\$0.00	\$57.22
5	55	\$35.40	\$10.44	\$15.35	\$0.00	\$61.19
6	60	\$38.62	\$10.44	\$16.10	\$0.00	\$65.16
7	65	\$41.83	\$10.44	\$16.85	\$0.00	\$69.12
8	70	\$45.05	\$10.44	\$17.60	\$0.00	\$73.09
9	75	\$48.27	\$10.44	\$18.35	\$0.00	\$77.06
10	80	\$51.49	\$10.44	\$19.10	\$0.00	\$81.03

Effective Date - 10/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$23.12	\$10.44	\$12.35	\$0.00	\$45.91
2	40	\$26.42	\$10.44	\$13.10	\$0.00	\$49.96
3	45	\$29.73	\$10.44	\$13.85	\$0.00	\$54.02
4	50	\$33.03	\$10.44	\$14.60	\$0.00	\$58.07
5	55	\$36.33	\$10.44	\$15.35	\$0.00	\$62.12
6	60	\$39.64	\$10.44	\$16.10	\$0.00	\$66.18
7	65	\$42.94	\$10.44	\$16.85	\$0.00	\$70.23
8	70	\$46.24	\$10.44	\$17.60	\$0.00	\$74.28
9	75	\$49.55	\$10.44	\$18.35	\$0.00	\$78.34
10	80	\$52.85	\$10.44	\$19.10	\$0.00	\$82.39

Notes: Apprentice entered prior 9/30/10:
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 103</i>	03/01/2022	\$44.71	\$13.00	\$18.74	\$0.00	\$76.45
	09/01/2022	\$46.42	\$13.00	\$18.87	\$0.00	\$78.29
	03/01/2023	\$48.34	\$13.00	\$19.01	\$0.00	\$80.35

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 03/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$20.12	\$13.00	\$0.60	\$0.00	\$33.72
2	45	\$20.12	\$13.00	\$0.60	\$0.00	\$33.72
3	50	\$22.36	\$13.00	\$15.06	\$0.00	\$50.42
4	50	\$22.36	\$13.00	\$15.06	\$0.00	\$50.42
5	55	\$24.59	\$13.00	\$15.43	\$0.00	\$53.02
6	60	\$26.83	\$13.00	\$15.79	\$0.00	\$55.62
7	65	\$29.06	\$13.00	\$16.16	\$0.00	\$58.22
8	70	\$31.30	\$13.00	\$16.53	\$0.00	\$60.83
9	75	\$33.53	\$13.00	\$16.91	\$0.00	\$63.44
10	80	\$35.77	\$13.00	\$17.27	\$0.00	\$66.04

Effective Date - 09/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$20.89	\$13.00	\$0.63	\$0.00	\$34.52
2	45	\$20.89	\$13.00	\$0.63	\$0.00	\$34.52
3	50	\$23.21	\$13.00	\$15.13	\$0.00	\$51.34
4	50	\$23.21	\$13.00	\$15.13	\$0.00	\$51.34
5	55	\$25.53	\$13.00	\$15.51	\$0.00	\$54.04
6	60	\$27.85	\$13.00	\$15.88	\$0.00	\$56.73
7	65	\$30.17	\$13.00	\$16.26	\$0.00	\$59.43
8	70	\$32.49	\$13.00	\$16.62	\$0.00	\$62.11
9	75	\$34.82	\$13.00	\$17.00	\$0.00	\$64.82
10	80	\$37.14	\$13.00	\$17.37	\$0.00	\$67.51

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS BRICKLAYERS LOCAL 3 - MARBLE & TILE	02/01/2022	\$56.09	\$11.39	\$22.34	\$0.00	\$89.82
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Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2022

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.05	\$11.39	\$22.34	\$0.00	\$61.78
2	60	\$33.65	\$11.39	\$22.34	\$0.00	\$67.38
3	70	\$39.26	\$11.39	\$22.34	\$0.00	\$72.99
4	80	\$44.87	\$11.39	\$22.34	\$0.00	\$78.60
5	90	\$50.48	\$11.39	\$22.34	\$0.00	\$84.21

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$42.58	\$9.10	\$17.72	\$0.00	\$69.40
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For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.30	\$9.10	\$17.72	\$0.00	\$68.12
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For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2021	\$41.18	\$9.10	\$17.72	\$0.00	\$68.00
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For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$50.83	\$14.00	\$16.05	\$0.00	\$80.88
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.82	\$13.41	\$16.01	\$0.00	\$66.24
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TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2021	\$53.41	\$9.10	\$18.17	\$0.00	\$80.68
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For apprentice rates see "Apprentice- LABORER"

TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2021	\$55.41	\$9.10	\$18.17	\$0.00	\$82.68
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For apprentice rates see "Apprentice- LABORER"

TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2021	\$45.48	\$9.10	\$18.17	\$0.00	\$72.75
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For apprentice rates see "Apprentice- LABORER"

TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2021	\$47.48	\$9.10	\$18.17	\$0.00	\$74.75
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For apprentice rates see "Apprentice- LABORER"

VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	12/01/2021	\$36.24	\$13.41	\$16.01	\$0.00	\$65.66
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WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	06/01/2022	\$36.56	\$9.10	\$16.64	\$0.00	\$62.30
	12/01/2022	\$37.41	\$9.10	\$16.64	\$0.00	\$63.15
	06/01/2023	\$38.31	\$9.10	\$16.64	\$0.00	\$64.05
	12/01/2023	\$39.21	\$9.10	\$16.64	\$0.00	\$64.95

For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY & HIGHWAY)</i>	12/01/2021	\$35.66	\$9.10	\$16.64	\$0.00	\$61.40
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2021	\$51.38	\$14.00	\$16.05	\$0.00	\$81.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/01/2022	\$63.39	\$13.57	\$17.26	\$0.00	\$94.22
	09/04/2022	\$63.49	\$14.07	\$18.36	\$0.00	\$95.92
	02/26/2023	\$65.19	\$14.07	\$18.36	\$0.00	\$97.62
	09/03/2023	\$66.94	\$14.07	\$18.36	\$0.00	\$99.37
	03/03/2024	\$68.74	\$14.07	\$18.36	\$0.00	\$101.17
	09/01/2024	\$70.54	\$14.07	\$18.36	\$0.00	\$102.97
	03/02/2025	\$72.34	\$14.07	\$18.36	\$0.00	\$104.77
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Op Eng Marine (Dredging Work)						
BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$29.26	\$7.63	\$3.30	\$0.00	\$40.19
CERTIFIED WELDER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$31.09	\$7.63	\$3.60	\$0.00	\$42.32
CHIEF WELDER/ CHIEF MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DERRICK / SPIDER / SPILLBARGE OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DRAG BARGE OPERATOR / WELDER / MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$30.24	\$7.63	\$3.30	\$0.00	\$41.17
ENGINEER / ELECTRICIAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED TUG OPERATOR OVER 1000HP <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41
MAINTENANCE ENGINEER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.03	\$7.63	\$3.60	\$0.00	\$44.26
OILER - MARINE DIVISION <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
OPERATOR / LEVERMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41
RODMAN / SCOWMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
SHOREMAN / DECKHAND <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$22.25	\$9.25	\$1.82	\$0.00	\$33.32
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 08/30/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.67	\$9.25	\$3.39	\$0.00	\$42.31
2	65	\$32.14	\$9.25	\$3.46	\$0.00	\$44.85
3	70	\$34.62	\$9.25	\$3.54	\$0.00	\$47.41
4	75	\$37.09	\$9.25	\$5.11	\$0.00	\$51.45
5	80	\$39.56	\$9.25	\$5.19	\$0.00	\$54.00
6	85	\$42.03	\$9.25	\$5.26	\$0.00	\$56.54
7	90	\$44.51	\$9.25	\$7.34	\$0.00	\$61.10

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$30.73	\$4.70	\$3.17	\$0.00	\$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

SPECIAL PROVISIONS

SPECIAL PROVISIONS

WARNER'S POND RESTORATION PROJECT

TOWN OF CONCORD

GENERAL REQUIREMENTS AND COVENANTS (SUPPLEMENTARY MATERIAL TO 1988 STANDARD SPECIFICATIONS)

Issuance of Proposal Forms and Plans (Supplementing Subsection 2.01 B)

The CONTRACTOR shall provide references and project descriptions from at least four ecological restoration dredging projects that have been successfully completed within the past five years and which meet the following criteria:

1. Demonstrated ability to perform and successful past experience in ecological site restoration of equal or greater complexity. The CONTRACTOR must demonstrate familiarity with construction in environmentally sensitive areas.

CHANGES IN SCOPE

The Town of Concord reserves the right to increase or reduce the amount of this contract. Any changes in scope may involve adding work yet to be identified, or deleting all or some of the work. Changes in scope may be ordered at any time up to project acceptance at the contract unit bid prices.

DEFINITIONS

Except for specific reference to Department Standards and Operations, the usage of the term ENGINEER shall mean the Concord Natural Resources Director or her duly authorized Agent.

RESPONSIBILITY FOR DAMAGE CLAIMS

The CONTRACTOR shall indemnify, defend and save harmless the Municipality and all of its or their offices, agents and employees against all suits, claims or liability of every name and nature, for or on account of any injuries to persons or damage to property arising out of or in consequence of the acts of the CONTRACTOR in the performance of the work covered by the Contract or failure to comply with the terms and conditions of said Contract, whether by himself or his employees or SubCONTRACTORS, but only in respect of such injuries or damages sustained during the performance and prior to the completion and acceptance of the work covered by the contract.

The CONTRACTOR will be held responsible for any and all claims for damage to underground structures such as, but not restricted to, water or gas mains, pipes, conduits, manholes or catch basins, due to his operation or to the operations of any of his SubCONTRACTORS.

COOPERATION BY CONTRACTOR (Supplementing Subsection 5.05)

Attention is directed to the provisions relating to rights of public corporations and municipal departments to enter the site of the improvement and alter, replace, and/or install facilities at such times when the CONTRACTOR will be prosecuting other required work contiguous thereto.

INSPECTION OF WORK (Supplementing Subsection 5.09)

The CONTRACTOR is advised that the ENGINEER will be provided with a schedule of operations and will at various times during the construction of the project be onsite to inspect procedures and give directions. For the purpose of observing work that affects their respective properties, inspectors for public agencies and utility companies shall be permitted access to the work, but all official orders and directives to the CONTRACTOR will be issued by the ENGINEER or her duly authorized agent.

NOTICE TO OWNERS OF UTILITIES AND PUBLIC SERVICE DEPARTMENTS:

Written notice shall be given by the CONTRACTOR to all public service corporations or officials owning or having charge of Public or Private Utilities and Departments of his intentions to commence operations affecting such utilities and Departments at least one (1) week in advance of the start of such operations and the CONTRACTOR shall at the same time file a copy of said notice with the ENGINEER.

The names of the principal Town Departments and Utilities which may be affected will be provided to the CONTRACTOR at the pre-construction meeting.

**The CONTRACTOR shall notify “Massachusetts DIG SAFE” and procure a DIG SAFE number 72 hours prior to disturbing existing ground in any way.
DIG SAFE Call Center - 1-888-344-7233.**

Before the CONTRACTOR begins any work on operations which might result in damage to utility pipes or structures the CONTRACTOR shall verify the locations of existing overhead and subsurface utilities in the vicinity of the work with the listed Departments and Utility Companies and conduct his operations so as to avoid any damage to them.

PROTECTION OF EXISTING UTILITIES AND STRUCTURES (Supplementing Subsection 7.13)

Excavation and backfill operations shall be carried out in a manner that will prevent cave-in of excavations or the undermining, damage or disturbing of existing utilities and structures or of new work.

Any excavations improperly backfilled, or where settlement occurs, shall be reopened to the depth required, then refilled with new materials and compacted, and the surface restored to the required grade and condition at no additional expense to the Owner.

Any damage due to excavation, backfilling or settlement of the backfill, or injury to persons or damage to property occurring as a result of such damage shall be the responsibility of the

CONTRACTOR. All costs to repair such damage, in a manner satisfactory to the Owner, shall be borne by the CONTRACTOR at no additional expense to the Owner.

Where existing subsurface utilities or other facilities adjacent to or crossing through the excavation require temporary support or protection, such temporary support or protection shall be satisfactorily provided by the CONTRACTOR at no additional expense to the Owner. All necessary measures shall be taken by the CONTRACTOR to prevent lateral movement or settlement of existing facilities or of work in progress.

PROTECTION OF UTILITIES AND PROPERTIES (Supplementing Subsection 7.18)

In case of damage to utilities, the CONTRACTOR shall promptly notify the Owner and shall, if requested, furnish manpower under the Owner's direction in getting access to the utility. Pipes or other structures damaged by the operation of the CONTRACTOR may be repaired by the Owner, the municipality, or the utility company. The cost of such repairs shall be borne by the CONTRACTOR without compensation therefore.

The work to be done under this contract may necessitate changes in the properties of utility companies or the municipality hereinbefore listed. Immediately after executing the contract, the CONTRACTOR shall confer with the owners of all utilities in order that relocations of mains or services may be made at times consistent with operations of the Contract.

PROVISIONS FOR TRAVEL AND PROSECUTION OF THE WORK

Prior to commencement of work, the CONTRACTOR shall be responsible for obtaining all necessary construction permits. Permits may include, but are not necessarily limited to a Right-of-Way / Trench Permit from the Concord Public Works Engineering Division and a Building Permit from the Concord Building Division. The Town has obtained approval from the Natural Resources Commission for the site improvements which is valid through April 21, 2020, and which will be renewed by the Town if necessary.

Access shall be maintained for all abutters so that they may use the driveways, and approaches adjacent to their properties. Pedestrian access and access for emergency vehicles shall be provided at all times.

CONTRACTOR will coordinate with the ENGINEER, Concord Public Works, and the Concord Police Department regarding all disruptions of traffic.

All construction equipment, material and debris shall be removed from the traveled way at the end of each working day and shall be stored in such manner as not to interfere with the flow of driveway traffic or pedestrians.

The CONTRACTOR shall coordinate his work with the work to be done by other CONTRACTORS on the site, public utilities or other agencies, and he shall so schedule his operations as to cause the least interruption to the normal flow of all traffic types. Reasonable facilities shall be provided by the CONTRACTOR for the safe and convenient passage of pedestrians and vehicles through and within the project area.

Particular care shall be taken to establish and maintain methods and procedures which will not create unnecessary or unusual hazards to public safety. The placement of necessary devices will be for daily work periods and shall be removed after the completion of work operations. Signs having messages that are irrelevant to normal traffic conditions shall be removed or properly covered at the end of each work period. Signs are to be kept clean at all times and legends shall be distinctive and unmarred.

METHOD OR SEQUENCE OF CONSTRUCTION

The CONTRACTOR shall submit his proposed method and sequence of construction to the ENGINEER, prior to performing the work within five (5) days of issuance of Notice to Proceed.

WORK SCHEDULE

Work on this project is restricted to a normal eight (8) hour day between the hours of 7:00 AM and 5:00 PM five (5) day week Monday through Friday, with the CONTRACTOR and all subcontractors working on the same shift. No work shall be done on this contract on Saturdays, Sundays, or holidays without the prior written approval by the OWNER.

OSHA REQUIREMENTS

The work to be performed under this Contract by the General CONTRACTOR and any and all subcontractors is to be performed in compliance with the Occupational Safety and Health Act of 1970, including any and all amendments thereto.

PRECAUTIONS UNDER ELECTRIC LINES

The bidders attention is directed to the AASHTO Guide on Occupational Safety on Highway Construction Projects, Subpart N, 1926.550, relating to construction equipment clearances at overhead electric lines, which states in part "... the minimum clearance between the lines and any part of the crane or load must be at least 10 feet from lines rated 50 KV or below, and greater distances for high voltage ...".

For the protection of personnel and equipment, the CONTRACTOR should be aware of this regulation especially during use of cranes and paving operations using large semi-trailer vehicles.

OVERLOADED TRUCKS

MATERIALS DELIVERED TO THE PROJECT OR LEAVING THE SITE IN MOTOR VEHICLES OR SEMI-TRAILER UNITS THAT EXCEED THE LEGAL MAXIMUM GROSS WEIGHT ALLOWED FOR THE PARTICULAR CLASS AS SPECIFIED IN SECTION 19A OF CHAPTER 90 OF THE GENERAL LAWS OF MASSACHUSETTS WILL NOT BE ACCEPTED.

THE PROVISIONS OF SUB-SECTION 7.03 OF THE STANDARD SPECIFICATIONS SHALL STILL APPLY

PUBLIC SAFETY AND CONVENIENCE (Supplementing Subsection 7.09)

The CONTRACTOR shall take every measure necessary for the protection of personnel and

property.

The CONTRACTOR shall at all times, until written acceptance of the physical work by the Owner, be responsible for the protection of the work and shall take all precautions for preventing injuries to persons or damage to property on or about the project.

DISPOSAL OF SURPLUS EXCAVATED MATERIALS

All surplus excavated material not required or suitable for reuse on the project, or otherwise not wanted by the OWNER, shall become the property of the CONTRACTOR and removed and disposed of outside and away from the limits of the project at no additional cost to the OWNER in accordance with all local rules and the approval of local governmental authorities having jurisdiction over the disposal of such materials. Any excess material that the OWNER decides to keep shall be transported by the CONTRACTOR to a location determined by the OWNER without additional compensation.

Payment for this work shall be included in the unit price under the applicable item from which the material was obtained.

PROTECTION OF EXISTING TREES

Trees and shrubs that are not designated on the plans, or by the ENGINEER, to be cut, removed, destroyed or trimmed shall be saved from harm and injury. The CONTRACTOR shall provide measures to prevent any harm and injury caused during construction operations. No separate payment will be made for this work.

The CONTRACTOR is also hereby made aware of the Town's Construction and Tree Protection standard Operating Procedures, a copy of which is included at the end of this section.

DISTURBANCE OF EXISTING BOUNDS

Where existing bounds are disturbed by the CONTRACTOR's activities, they shall be reset by a Registered Land Surveyor at the CONTRACTOR's expense.

A certification by the Registered Land Surveyor performing the work shall be made and submitted to the ENGINEER for all bounds reset.

POTABLE WATER SOURCE

The Town of Concord does not permit the CONTRACTOR to draw water for construction purposes from the municipal system or surface waters. Water required for construction operations can be obtained at the CPW facility located at 133 Keyes Road, Concord, MA (Tel. 978.318.3210) during normal business hours.

GENERAL REQUIREMENTS

SECTION 01 10 00 – SUMMARY

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes, but is not limited to, the following:

1. Contract description
2. Engineer's authority
3. Contractor's use of site
4. Work sequence
5. Work schedule
6. Order of precedence
7. Permits
8. Specification conventions
9. Commonwealth Avenue access improvements, dredging sediment, dewatering, transport and disposal of solids, and restoration of the site
10. Construction inspection.

B. Related Sections:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, general specifications, and technical specifications.

1.2 DEFINITIONS

A. Definitions of contractual or associated parties, referenced herein on the Contract Drawings and in the Specifications, are listed below:

1. Application for Payment—The form acceptable to Owner, which is to be used by Contractor during the course of the Work in requesting progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
2. Change Order—A document recommended by Owner, which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work.

3. Contact—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
4. Contract Documents—Those items so designated in the Agreement. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
5. Contractor—A person, company, or organization who has contracted with the Owner and is directly responsible for performance of the Work referenced in the Specifications, Contract Drawings, or as included herein.
6. Drawings—That part of the Contract Documents prepared by Owner, which graphically shows the scope, extent, and character of Work to be performed by the Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
7. Engineer—Owner’s representative.
8. Owner—Town of Concord.
9. Property Owner— Town of Concord (for Warner’s Pond and the Commonwealth Avenue access location) and Commonwealth of Massachusetts (for the temporary sediment dewatering area and the sediment disposal area).
10. Project—The total construction of which the Work to be performed under the Contract Document may be the whole, or a part.
11. Restoration Construction Area (RCA): Area affected by the physical construction activities where soil disturbances shall occur.
12. Shop Drawings—All drawings, diagrams, illustrations, schedules, and other data or information, which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
13. Site—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner, which are designated for the use of Contractor. Generally, the Site includes land within the RCA.
14. Specifications—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
15. Subcontractor—A person, company, or organization who has contracted with the Contractor for the purpose of supplying services, materials, assemblies, or other items as required to perform the Work referenced in the Specifications, Contract Drawings, or as included herein.
16. Substantial Completion—The time at which the Work (or a specified portion thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a

specified portion thereof) can be utilized for purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

17. Work—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

1.3 CONTRACT DESCRIPTION

- A. The "Work" of this contract is titled Warner’s Pond Restoration and is described in the Contract Documents including the Contract Drawings and Specifications and shall be referred to for detailed requirements of the Work involved.
 1. Project Location: 2X Warner Street, Map 8D, Parcel 2017, Concord, Massachusetts
 2. Project Sponsor: Town of Concord
 3. Property Owner: Town of Concord.
- B. The "Work" generally includes, but is not limited to, the following: Commonwealth Avenue access improvements, dredging sediment, dewatering, transport and disposal of solids, and restoration of the site
- C. The Work shall include in the base bid all necessary labor, work, and equipment for the Commonwealth Avenue access improvements, dredging sediment, dewatering, transport and disposal of solids, and restoration of the site as indicated in the Contract Documents.
- D. The contractor will be required to complete the Work by 1 June 2023.

1.4 ENGINEER’S AUTHORITY

- A. The Engineer does not have contractual authority between the Owner and Contractor.
- B. The Engineer will review submittals and make recommendations to Owner for approval, rejection, or approval as noted.
- C. The Engineer will observe Contractor’s field activities and report activity to Owner.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to areas shown on the Contract Drawings. Additional area may be available with prior approval of Property Owner and Engineer.
- B. Maximum limits of disturbance (RCA) are shown on the Contract Drawings. Contractor shall minimize areas of disturbance within the RCA to the maximum extent possible. Disturbance outside of the RCA is not permitted.

1.6 WORK SEQUENCE

- A. Construct Work in phases to minimize construction schedule. Contractor may propose an alternate work sequence subject to Engineer and regulatory approval.

1.7 WORK SCHEDULE

- A. The Contractor shall perform all work on the site Monday to Friday between the hours of 7:00 a.m. and 5:00 p.m. The Contractor may perform work at times other than listed above with permission of the Engineer. The Contractor shall notify the Engineer a minimum of 48 hours in advance prior to performing any work outside the times listed.

1.8 ORDER OF PRECEDENCE

- A. In the event of a conflict in the execution of work, the following order of precedence shall apply:
 - 1. Contract Drawing Plan Views
 - 2. Contract Drawing Details
 - 3. Specifications.

1.9 PERMITS

- A. Owner will provide the following documents/permits (attached as Exhibit A):
 - 1. Massachusetts Wetlands Protection Act/Town of Concord Natural Resources Commission Order of Conditions
 - 2. Massachusetts General Permit 23: Aquatic Habitat Restoration, Enhancement, and Establishment Activities:
 - i. Includes Pre-Construction Notification.
 - 3. Massachusetts Environmental Policy Act Environmental Notification Form
 - 4. Massachusetts Department of Environmental Protection Section 401 Water Quality Certification
 - 5. Massachusetts Public Waterfront Act Chapter 91 license and permit
 - 6. Authorization under the National Pollutant Discharge Elimination System Construction General Permit and Stormwater Pollution Prevention Plan
- B. Contractor shall obtain any additional permits necessary for construction of Work.
- C. Contractor shall comply with and execute requirements in all permits.

- D. It is the Contractor's responsibility to obtain all required inspections by the state, county, or city.

1.10 SPECIFICATIONS CONVENTIONS

- A. These Specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 COMMONWEALTH AVENUE ACCESS IMPROVEMENTS, DREDGING SEDIMENT, DEWATERING, TRANSPORT AND DISPOSAL OF SOLIDS, AND RESTORATION OF THE SITE

- A. Contractor shall provide all labor, supervision, equipment, tools, testing devices, materials and material handling, security and accountability, and each and every item of expense necessary for the Commonwealth Avenue access improvements, dredging sediment, dewatering, transport and disposal of solids, and restoration of the site (regardless of weather conditions). The Contractor shall provide all required submittals. No extension of the schedule will be allowed.

3.2 CONSTRUCTION INSPECTION

- A. Contractor's Work shall be monitored periodically by the Engineer:
 - 1. The Engineer does not anticipate that a full-time inspector will be assigned to this Work. The Engineer will inspect the Work at various times throughout the course of construction. In addition to the random Engineer inspections, the Contractor shall observe construction "hold points" to permit the Engineer to inspect the Work of certain key elements of construction. The scope of each hold point inspection shall be discussed with the Contractor prior to the request for inspection. Hold point inspections will permit the Engineer to inspect the Work of certain key elements of construction, as follows:
 - a. Construction of access road(s) and temporary storage areas
 - b. Construction stakeout
 - c. Installation of erosion and sediment control structures
 - d. Installation of Dewatering Area and geotextile tubes
 - e. Soil sampling after potentially contaminated sediment has been dewatered
 - f. Final inspection (punch list development)
 - g. Completion verification inspection.

- B. Contractor shall keep the Engineer informed concerning the work status and projected work schedule through regular communications. The Engineer shall be notified by the Contractor in writing 2 to 3 calendar days prior to reaching each hold point previously designated by the Contractor. The Contractor shall reconfirm the inspection date 24 hours (not including Saturday, Sunday, and legal holidays) before the scheduled hold point.
- C. Rescheduling of a hold point, and cancellation shall also be given in writing by the Contractor. The Contractor shall not cover any work related to the designated hold point until one of the following occurs:
 - 1. Contractor is authorized in writing to proceed after inspection by the Engineer.
 - 2. The hold point inspection is rescheduled by the Engineer to a later construction event.
 - 3. The hold point inspection is waived in writing by the Engineer.
- B. Contractor shall submit a written request for Final Inspection 7 calendar days in advance of the planned completion date. After review of the Notice of Completion, the Engineer may reject the Notice for cause or schedule the Final Inspection. The Engineer will perform its Final Inspection on all phases of the Work and develop a comprehensive punch list, which will be provided to the Contractor.
- C. The Completion Verification Inspection will be scheduled when the punch list items discovered during the Final Inspection have been corrected. The Engineer may add new items to the punch list at this inspection.
- D. Contractor is advised that the Engineer will not accept the Work until the Engineer determines substantial completion has been achieved. Therefore, to minimize its risk of assessment of Liquidated Damages, the Contractor should schedule its Work to be substantially complete in time to allow Final Inspection, punch list work, and Completion Verification Inspection to occur in advance of the Contract Completion Date.
- E. Nothing in this Section shall be construed to limit the Engineer's or Owner's right to inspect the Work at any time.

END OF SECTION 01 10 00

SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SCOPE

- A. This Section describes the measurement and payment for the Work to be completed under each item in the Bid Form. The descriptions may not reference all of the associated Work. Work specified but not designated as a separate Bid item is considered incidental to all Bid items. The Contractor shall review all work associated with each Work item and shall have no claim for being unfamiliar with the requirements of these specifications.

1.2 DEFINITIONS

- A. Payment Items: the Owner's distribution of the Contract Sum through listed work items, as outlined in this Section, reviewed, and accepted by the Engineer.
 - 1. Each item is specified to include a defined scope of services. The payment items have been established for the Owner's convenience only, and not all materials, labor, equipment, or services of a payment item are guaranteed to be listed or specified herein.
 - 2. Include costs associated with items of work required to complete the defined scope of services within the appropriately specified payment item.
 - 3. Payment items include all necessary products, materials, equipment, plus costs for delivery, handling, storage, installation, all applicable fees and taxes (where applicable), administrative over-site, tools, labor, incidentals, research and testing, overhead, and profit.
 - 4. All work and associated costs described in the Contract Documents shall be included in the payment items described herein.
 - 5. The Contractor shall include, in the Total Lump Sum Base Bid, the cost associated with securing a performance bond and a labor and material payment bond in the amount of 100 percent of the Total Lump Sum Base Bid Price.
 - 6. The price so-stated on the bid form for the payment items below, constitutes full and complete compensation for all products, materials, equipment, tools labor, overhead and profit, and incidentals required to finish the Work and accepted by the Engineer.

1.3 DESCRIPTION OF BASE BID LUMP SUM PRICE PAY ITEMS

- A. The payment items listed below include references to Specification Sections of work to be completed under the payment item; however, not all Sections of related work are guaranteed to be listed.

B. Bid Price Item No. 1 – Mobilization/Demobilization & Site Preparation:

1. Work associated with this item will be paid for at the stated price including, but not limited to:
 - a. Mobilization and Demobilization of personnel, equipment and project facilities.
 - b. Establish all temporary utilities and services including electric, phone, internet, sanitary facilities, and potable water.
 - c. Furnish and install staging areas.
 - d. Project Plans, including but not limited to, Health and Safety Plan (HASP), Work Plan, etc.
 - e. Obtain all required work and environmental permits not obtained by the Town.
 - f. Schedules, submittals, shop drawings, and record drawings.
 - g. Bonds and insurance
 - h. Clearing and grubbing of vegetation within the project work area.
 - i. Perform initial survey.
 - j. Site Control, Layout and As-Built Surveys.
 - k. Furnish and install temporary fencing and barricades.
 - l. Provide and post project signs.
 - m. Construct and deconstruct necessary access roads.
 - n. Furnish labor, equipment, and materials to provide necessary traffic and pedestrian controls.
 - o. Other work not specifically included in other items including construction stakeout, compliance with applicable regulatory requirements; preconstruction and construction period planning; scheduling, submittals, reporting, administration and documentation; quality control; environmental protection and spill control.
2. Mobilization shall be considered complete when the Contractor has commenced the work onsite. Demobilization shall be considered to be complete when the Contractor has achieved final completion of the Work and removed all equipment and materials from the site.
3. Payment: Lump Sum.
4. Measurement and payment for Bid Item no. 1 MOBILIZATION/DEMobilIZATION & SITE PREPARATION shall be paid the lump sum price for the above items completed, installed, and properly functioning as documented and approved by the Engineer. The Contractor may invoice for up to 60% of this item upon successful installation of the work, 20% at substantial completion of work, and 20% upon demobilization. Payment shall be Lump Sum Bid for each individual item described above, including mobilization, demobilization, and miscellaneous as submitted in the Contractor's bid breakdown.

C. Bid Price Item No. 2 – Temporary Erosion and Sedimentation Controls:

1. Work associated with this item will be paid for at the stated price including, but not limited to, installing, maintaining, and removing all temporary erosion and sedimentation control measures, and practices for completion of all Work associated with the project. Includes construction access, staging areas, and installing/maintaining controls or

establishing temporary vegetation in areas to remain dormant for extended periods as indicated on the Contract Drawings.

- a. Includes, but is not limited to, construction of the dewatering area, installing, maintaining and removing turbidity controls within Warner's Pond near the dewatering area discharge.

2. Payment: Lump Sum.

3. Measurement and payment for Bid Item no. 2 TEMPORARY EROSION AND SEDIMENTATION CONTROLS shall be paid the lump sum price for the above items completed, installed, and properly functioning as documented and approved by the Engineer. The Contractor may invoice for up to 60% of this item upon successful installation of the work, 20% at substantial completion of work, and 20% upon demobilization. Proper maintenance of controls is expected throughout the Project. Billing for this Work will be permitted upon the completion, inspection and acceptance (by the Engineer) for this Work. Progress billing will not be allowed.

D. Bid Price Item No. 3 – Commonwealth Avenue Access Improvements

1. Work associated with this item will be paid for at the stated price including, but not limited to, removing and disposing existing asphalt pavement from the access road, constructing a passing pull-off on the access road, installing gravel in the parking lot and access road, installing signage and structures associated with the handicap accessible parking spot, replacing and reinforcing the canoe/boat launch. and installing the grassed channel along the parking lot as indicated on Contract Drawings. Includes offsite disposal of asphalt pavement from the access road, excavated material from canoe/boat launch, and excavated soil from grassed channel excavation.

2. Payment: Lump Sum.

3. Measurement for Payment for bid item no. 3 COMMONWEALTH AVENUE ACCESS IMPROVEMENTS shall be the bid lump sum price for site restoration as documented and approved by the Engineer.

E. Bid Price Item No. 4 – Site Restoration

1. Work associated with this item will be paid for under the allowance stated including, but not limited to, all labor, materials, equipment and incidentals necessary to completely and properly restore the pond, dewatering area, and Commonwealth Avenue access, including the repair and/or replacement of the access corridors, staging, stockpiling, and processing areas, plantings, fences, curbs, paved areas, that were damaged during restoration of Warner's Pond.

2. Payment – Lump Sum.

3. Measurement for Payment for bid item no. 4 SITE RESTORATION shall be the bid lump sum price for restoration of Warner's Pond and Commonwealth Avenue Access as documented by a Massachusetts licensed surveyor and approved by the Engineer.

F. Bid Price Item No. 5 – Wetland Shelf Planting

1. Work associated with this item will be paid for under the allowance stated including, but not limited to, all labor, materials, equipment and incidentals necessary to completely and properly plant and restore the wetland shelf, during restoration of Warner's Pond.
2. Payment – Lump Sum.
3. Measurement for Payment for bid item no. 5 WETLAND SHELF RESTORATION shall be the bid lump sum price for restoration of Warner's Pond and Commonwealth Avenue Access as documented by a Massachusetts licensed surveyor and approved by the Engineer.

G. Bid Price Item No. 6 – Invasive Species Removal

1. Payment – Lump Sum.
2. Provide all labor, materials, equipment and incidentals necessary to remove all invasives from the Commonwealth Ave Access area by manual, mechanical, and chemical methods.
3. Contractor shall not be reimbursed for invasive species removal outside of the approved species and areas.
4. Measurement for Payment for bid item no. 6 INVASIVE SPECIES REMOVAL shall be the bid lump sum price for invasive species removal at the Commonwealth Avenue Access as indicated in the Invasive Species Management Plan (Exhibit C) and approved by the Engineer.

1.4 DESCRIPTION OF UNIT PRICE BID PRICE PAY ITEMS

A. Bid Price Item No. 7 – Dredging North Dredge Area

1. Bid Item no. 7 shall be bid unit cost price per cubic yard (CY) of DREDGING NORTH DREDGE AREA per the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to completely dredge sediment from North Dredge Area by hydraulic methods to the target dredge elevations presented on the Construction Drawings.
3. The Contractor shall not be reimbursed for dredging of materials resulting from unapproved dredging. Materials from unapproved dredging outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor's expense.

4. Measurement for Payment for bid item no. 7 shall be paid the bid unit price for each in-situ cubic yard of Warner's Pond North Dredge Area sediment and debris dredging that has been completed to within 1 foot of the proposed dredge elevations provided in the Construction Drawings. Volume will be determined by comparing the pre-dredge and post-dredge bathymetric and topographic surfaces as measured, calculated, and certified by a Massachusetts licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item no. 7.

B. Bid Price Item No. 8 – Dredging South Dredge Area

1. Bid Item no. 8 shall be bid unit cost price per cubic yard (CY) of DREDGING SOUTH DREDGE AREA per the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to completely dredge sediment and potentially contaminated sediment from South Dredge Area by hydraulic methods to the target dredge elevations presented on the Construction Drawings.
3. The Contractor shall not be reimbursed for dredging of materials resulting from unapproved dredging. Materials from unapproved dredging outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor's expense.
4. Measurement for Payment for bid item no. 8 shall be paid the bid unit price for each in-situ cubic yard of Warner's Pond South Dredge Area sediment and debris dredging that has been completed to within 1 foot of the proposed dredge elevations provided in the Construction Drawings. Volume will be determined by comparing the pre-dredge and post-dredge bathymetric and topographic surfaces as measured, calculated, and certified by a Massachusetts licensed surveyor and approved by the Engineer. Costs associated with surveying are to be fully compensated under bid item no. 8.

C. Bid Price Item No. 9 – Debris Removal and Disposal

1. Bid Item no. 9 shall be bid unit cost price per ton of DEBRIS REMOVAL per the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to completely remove and dispose of debris from the North and South Dredge Areas in order reach the target dredge elevations presented on the Construction Drawings, to remove debris, excess material and pavement from the Commonwealth Access Improvement Area and to transport debris to the appropriate disposal area.
3. The Contractor shall not be reimbursed for removal of debris resulting from unapproved debris removal. Materials from unapproved debris removal outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor's expense.

4. Measurement for Payment for bid item no. 9 shall be paid the bid unit price for each ton of Warner's Pond North and South Dredge Area debris removal and disposal that has been completed to within 1 foot of the proposed dredge elevations provided in the Construction Drawings. Volume will be determined certified weight slips from the disposal facility.

D. Bid Price Item No. 10 – Processing Dredge Sediment

1. Bid Item No. 10 shall be bid unit cost price per in-situ cubic yard (CY) of sediment and sediment dredged from the North and South Dredge Area that is handled, processed, dewatered, transported and placed in the disposal area to conform to all Federal, State, and Local transportation and disposal requirements and the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to prepare dredged North and South Dredging Area sediment for transportation and disposal in accordance with Specification **SECTION 02 73 00 SOLIDS PROCESSING**.
3. The Contractor **shall not** be reimbursed for processing of materials resulting from unapproved dredging. Materials from unapproved dredging outside the vertical and lateral limits presented on the Construction Drawings shall be properly handled, characterized, and disposed offsite at the Contractor's expense.
4. Measurement for Payment for bid item No. 10 shall be paid the bid unit price for EACH cubic yard (CY) of sediment dredged from North and South Dredge Areas that is processed using methods proposed by the Contractor and approved by the Engineer. Volume will be determined by comparing the pre-dredge and post-dredge as measured, calculated, and certified by a Massachusetts State licensed surveyor and approved by the Engineer. Costs associated with surveying and dredging are to be fully compensated under bid items No. 7 and 8.

E. Bid Price Item No. 11 – Wetland Shelf Creation

1. Bid Item No. 11 shall be bid unit cost price per in-situ cubic yard (CY) of sediment from North Dredging Area placed in the wetland shelf that is placed and stabilized to conform to all Federal, State, and Local requirements and the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to place dredged North Dredging Area sediment within the wetland shelf in accordance with Specification **SECTION 02 73 00 SOLIDS PROCESSING**.
3. The Contractor **shall not** be reimbursed for placement of materials outside of the elevations specified in the Contract Drawings. Materials from unapproved placement outside the vertical and lateral limits presented on the Construction Drawings shall be removed at the Contractor's expense.

4. Measurement for Payment for bid item No. 11 shall be paid the bid unit price for EACH cubic yard (CY) of sediment from North Dredge Areas that is placed in the wetland shelf area proposed by the Contractor and approved by the Engineer. Volume will be determined by comparing the pre-placement and post-placement as measured, calculated, and certified by a Massachusetts State licensed surveyor and approved by the Engineer. Costs associated with surveying and dredging are to be fully compensated under bid items No. 7 and 8.

F. Bid Price Item No. 12 – Transportation & Disposal of Contaminated Materials

1. Bid Item No. 12 shall be bid unit cost price per ton of Contaminated Material (sediment materials contaminated with arsenic) properly disposed offsite as non-hazardous waste per the Contract Documents.
2. Provide all labor, materials, equipment and incidentals necessary to transport and dispose of contaminated materials in a permitted facility in accordance with all applicable laws, rules and regulations for proper execution of the Contract. The bid price shall also include the sampling, characterization, transportation and disposal of contaminated material generated during the excavation activities and classified as non-hazardous waste.
3. The Contractor **shall not** be reimbursed for the supply or disposal of sediment beyond 10% of the wet weight of sediment as calculated by the Engineer unless approved in writing by the Engineer.
4. Measurement for payment for Bid Item No. 12 shall be paid the bid unit price for each ton of Contaminated Material, as measured by certified weight tickets, which is properly sampled, transported and disposed as documented and approved by the Engineer.

G. Bid Price Item No. 13 – Loam for Wetland Restoration Area

1. Bid Item No. 13 shall be bid unit cost price per ton of loam mixed with placed dredge material, placed to the grades and lines as field directed by the engineer.
2. Provide all labor, materials, equipment and incidentals necessary to import loam material to the wetland creation site.
3. Measurement for payment for Bid Item No. 13 shall be paid the bid unit price for each ton of Loam installed as directed by the engineer, as measured by certified weight tickets.

H. Bid Price Item No. 14 – Sand for Wetland Restoration Area

1. Bid Item No. 14 shall be bid unit cost price per ton of sand mixed with placed dredge material, placed to the grades and lines as field directed by the engineer.

2. Provide all labor, materials, equipment and incidentals necessary to import sand to the wetland creation site.
3. Measurement for payment for Bid Item No. 14 shall be paid the bid unit price for each ton of sand installed as directed by the engineer, as measured by certified weight tickets.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 20 00

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. Scope:

1. This section specifies the requirements related to submittals. This section is to be used with the requirements contained in all other sections. The Contractor shall provide all labor, materials, equipment, and incidentals to complete the Work specified in this section.

B. Related Sections

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Owner's responsive action. Unless noted otherwise, submittals shall be classified as Action Submittals.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Owner's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTALS

- A. Schedule of Submittals.

1.4 SUBMITTAL PROCEDURES

- A. With the first submittal or 30 days after Notice of Award (whichever is sooner), submit a Contractor's submittal register by Specification section number; all submittals required and approximate date the submittal will be forwarded. Contractor's submittal register shall be similar to U.S. Army Corps of Engineers (USACE) ER 415-1-10, Engineering Form 4288, or equivalent as approved by Owner.

http://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_415-1-10.pdf

- B. Transmit each submittal with Owner accepted form.
- C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- D. Identify: Project, Contractor, Subcontractor and supplier, pertinent Contract Drawing and detail number, and Specification section number appropriate to submittal.

- E. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is according to requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite Project.
- G. For each submittal for review, allow 7 days excluding delivery time to and from Contractor.
- H. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed work.
- I. Allow space on submittals for Contractor, Owner, and Engineer review stamps.
- J. When revised for resubmission, identify changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- L. Submittals not requested will not be recognized nor processed.
- M. Incomplete Submittals: Owner will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Owner.

1.5 PRODUCT DATA

- A. Submit to Owner for review for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. After review, produce copies and distribute according to Section 013300 – Submittal Procedures and for record documents described in Section 017000 – Execution and Closeout Submittals.

1.6 USE OF ELECTRONIC CAD FILES OF PROJECT CONTRACT DRAWINGS

- A. Electronic CAD Files of Project Contract Drawings: May only be used to expedite production of Shop Drawings, Record Drawings, and to determine coordinates for dredging. Use for other projects or purposes is not allowed.
- B. Electronic CAD Files of Project Contract Drawings: Distributed only under the following conditions:
 - 1. Use of files is solely at receiver's risk. Engineer does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in

Contract Documents, notify Engineer of discrepancy and use information in hard copy Contract Drawings and Specifications.

2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions, and for incorporating addenda and modifications.
3. User is responsible for removing information not normally provided on Shop Drawings and removing references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
4. Receiver shall not hold Engineer responsible for data or file cleanup required to make files usable; nor for error or malfunction in translation, interpretation, or use of this electronic information.
5. Receiver shall understand that even though Engineer has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.
6. Receiver shall not hold Engineer responsible for such viruses or their consequences; and shall hold Engineer harmless against costs, losses, or damage caused by presence of computer virus in files or media.

1.7 SHOP DRAWINGS

- A. Action Submittal: Submit to Owner for assessing conformance with information given and design concept expressed in Contract Documents.
- B. When required by individual Specification sections, provide Shop Drawings signed and sealed by a Professional Engineer licensed in the State of Rhode Island responsible for designing components shown on Shop Drawings.
 1. Include signed and sealed calculations to support design.
 2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- C. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 – Execution and Closeout Submittals.

1.8 CERTIFICATES

- A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Owner, in quantities specified for Product Data.

- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.9 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Owner.
- B. Contractor shall be responsible for:
 - 1. Determination and verification of materials including manufacturer's catalog numbers.
 - 2. Determination and verification of field measurements and field construction criteria.
 - 3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
 - 4. Determination of accuracy and completeness of dimensions and quantities.
 - 5. Confirmation and coordination of dimensions and field conditions at site.
 - 6. Construction means, techniques, sequences, and procedures.
 - 7. Safety precautions.
 - 8. Coordination and performance of work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin work for which submittals are required until approved submittals have been received from Owner.

1.10 OWNER REVIEW

- A. Do not make "mass submittals" to Owner. "Mass submittals" are defined as six or more submittals or items in one day, or fifteen (15) or more submittals or items in one week. If "mass submittals" are received, Owner's review time stated above will be extended as necessary to perform proper review. Owner will review "mass submittals" based on priority.
- B. Engineer will review submittals and provide recommendations and comments to Owner comparing submittals to Contract Documents.
- C. Informational submittals and other similar data are for Owner's information, do not require Owner's responsive action, and will not be reviewed or returned with comment.
- D. Submittals made by Contractor that are not required by Contract Documents may be returned without action.

- E. Submittal approval does not authorize changes to Contract requirements unless accompanied by Contract Modification from Owner.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION 01 33 00

SECTION 01 45 25 – TESTING

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes Contractor requirements for sampling, analyzing, validating, and reporting in accordance with the Plan and permits and United States Environmental Protection Agency (USEPA), Massachusetts Department of Environmental Protection (MassDEP), and Town of Concord (the TOWN) standards and requirements for environmental sampling and analysis.

1.2 PERFORMANCE REQUIREMENTS

- A. The Contractor shall provide all labor, materials, equipment, subcontracting and incidentals required to collect, preserve, handle, transport, analyze, and report sample results related to the following:
 - 1. Solids Processing System Monitoring (Section 02 73 00 SOLIDS PROCESSING)
 - 2. Sediment Characterization and Disposal (Sections 02 61 00 TRANSPORTATION & DISPOSAL, 35 20 23 DREDGING, and 02 73 00 SOLIDS PROCESSING)
 - 3. Other samples as requested by the Engineer.
- B. The Contractor shall employ the services of a qualified independent testing laboratory, or laboratories and approved by the Engineer to perform the testing.
- C. Employment of laboratory shall, in no way, relieve Contractor of obligations to perform work.

1.3 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel.
- B. Coordinate and cooperate with MassDEP for the collection of duplicate samples for independent analysis, if needed.
- C. Collect samples for Arsenic from material dredged from the Potentially Contaminated Sediment Dredging Area.
- D. Verify that laboratory submits copies of analytical test reports to Engineer.
- E. Furnish incidental labor and facilities:
 - 1. Provide access to Work to be tested.
 - 2. Obtain and handle samples at Project site.
 - 3. Facilitate inspections and tests.
 - 4. Properly store test samples (e.g. in coolers on ice).
 - 5. Transport samples promptly to laboratory under chain of custody protocols to ensure that required turnaround time for results is met.
 - 6. Determine proper usage/disposal options for removed sediments based upon test results, and subject to Engineer's approval.

- F. Contractor shall make arrangements with the laboratory for proper disposal of the samples after testing.

1.4 SUBMITTALS

- A. Submittals in this Specification shall be in accordance with Section 01 33 01 SUBMITTALS.
- B. Proposed analytical laboratories, along with qualifications or certifications.
- C. Field Sampling Documentation, including copies of completed field sheets, chain-of-custodies, and field log book entries.
- D. Analytical Data Reports, including:
 - 1. Form I data and laboratory QA/QC results (i.e., blanks, MS/MSD, surrogate recovery, laboratory duplicates) for expedited turnaround reports.
 - 2. ASP Category B deliverables only for specified samples.
 - 3. All data generated under this Contract shall be submitted as an EQUIS™ Electronic Data Deliverable (EDD) or otherwise directed by the Town.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

3.1 QUALITY CONTROL

- A. Contractor shall notify Engineer at least 3 days prior to sediment and soil sampling and shall provide one day notice prior to all other sampling activities. Engineer will approve all sample locations prior to sampling and shall be present during sampling.

3.2 SAMPLE COLLECTION AND ANALYSIS

- A. Solids Processing Monitoring
 - 1. Paint filter tests shall be completed on all dewatered soils and sediment prior to offsite transportation and in accordance with Section 02 73 00 -SOLIDS PROCESSING.
 - 2. Paint filter tests shall be performed at 3 sample locations per 100 cubic yards and shall be jointly selected with the Engineer. The frequency of sampling may be revised by the Engineer.
 - 3. Arsenic Sampling shall be performed from material dredged from the Potentially Contaminated Sediment Dredging Area in accordance with MassDEP 401 Water Quality Certification requirements.
- B. Sediment Characterization Sample Collection
 - 1. Potentially Contaminated Sediment, as defined in Section 35 20 23-DREDGING, generated during execution of Work shall be stored/stockpiled

within designated separate dewatering areas and as agreed upon with the Engineer.

2. Potentially Contaminated Sediment shall be tested for arsenic.
 - a. If the concentration of arsenic in the dredge material is below 20 parts per million, the material will be transported to the Dredge Material Disposal Site in accordance with Section 02 73 00 -SOLIDS PROCESSING.
 - b. If the concentration is above 20 parts per million but below 100 parts per million, the material will be disposed of at an approved landfill offsite in accordance with Section 02 61 00 - TRANSPORTATION AND DISPOSAL.
 - c. In the unlikely event that material has concentrations above 100 parts per million, further sampling and testing of the material will be managed on a case-by-case basis during construction.
3. Contractor shall provide a copy of analytical results to Engineer prior to transporting sediments.

C. Other

1. Other sampling and testing required by Engineer during the Work, such as characterization of new and used construction materials, will be managed on a case-by-case basis during construction.

END OF SECTION 01 45 25

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Scope:

1. Section includes requirements for temporary facilities and controls. This section is to be used with the requirements contained in all other sections. The Contractor shall provide all labor, materials, equipment, and incidentals to complete the work specified in this section.
2. Temporary facilities shown on Drawings are for illustration purposes only. Contractor shall determine the temporary facilities required to execute the Work in addition to those required by the contract documents and coordinate the location of the facilities with the Engineer and the Town.

B. Related Sections:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 TEMPORARY ELECTRICITY

- A. Provide and pay for power service required from utility source as needed for construction operation.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations to continue at work schedule as approved by Owner.

Maintain lighting and provide routine repairs.

1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide facilities from the time of project mobilization, until demobilization. Locate sanitary facilities at a location approved by the Engineer.

1.5 TRAFFIC CONTROL

- A. Provide traffic control at critical areas of haul routes to regulate traffic and to minimize interference with public traffic.

1.6 VEHICULAR ACCESS

- A. Provide unimpeded access for emergency vehicles. Maintain 20 foot wide driveways with turning space between and around combustible materials.
- B. Construct stabilized construction entrances as shown on the Contract Drawings.
- C. Surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- D. Maintain construction entrances in accordance with Section 01 57 00 EROSION AND SEDIMENTATION CONTROLS in a condition that will prevent tracking or flowing of sediment onto adjacent public roads. This may require periodic topdressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roads must be removed immediately.
- E. Periodic inspection and required maintenance shall be provided in accordance with Section 01 57 00 EROSION AND SEDIMENTATION CONTROLS.
- F. Provide means of removing mud from vehicle wheels before entering streets.
- G. The contractor must keep public roads in the construction area clean and promptly remove all tracked dirt.

1.7 PARKING

- A. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, ice, and the like.
 - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original condition.
- B. Removal, Repair:
 - 1. Remove temporary materials and construction before Substantial Completion.
 - 2. Repair existing facilities damaged by use, to original condition.

1.8 PROGRESS CLEANING AND WASTE REMOVAL.

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

- B. Collect and remove waste materials, debris, and rubbish from site periodically and dispose offsite.
- C. All materials spilled, dropped, washed, or tracked from vehicles onto roadways shall be removed immediately.

1.9 PROJECT IDENTIFICATION

- A. Furnish, install, and maintain temporary Project Identification Sign affixed to a post. The sign shall be at least two square feet and not more than three square feet, which boldly identifies “MassDEP File Number 137-1585”. The sign must be maintained at a conspicuous location until such time that the project is complete.
- B. No signs, except those specified, shall be displayed unless approved by Engineer and Owner.
- C. Maintenance:
 - 1. Maintain sign so it is clean, legible, and upright.
 - 2. Keep grass and weeds cut away from sign.
 - 3. Repair and repaint damaged or deteriorated sign.
- D. Removal: Remove signs, framing, supports, and foundations at completion of project and restore area.

1.10 SECURITY

- A. Security will not be provided by Owner. The Contractor shall, at all times, take reasonable precautions in conducting all operations under this contract in a manner to avoid the risk of loss, theft or damage to the equipment and supplies. Owner will not be responsible for the loss, theft, or damage of the Contractor’s equipment.

1.11 WATER CONTROL

- A. Protect site from puddles or running water.

1.12 DUST CONTROL

- A. Execute work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.13 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.14 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced or disturbed by construction operations.

1.15 TURBIDITY CONTROL

- A. Monitor turbidity in accordance with the Order of Conditions issued by the Concord Natural Resources Commission.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials before Final Construction Inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore areas disturbed during construction to original condition.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION 01 50 00

SECTION 01 51 00 - MOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes work necessary for the movement of personnel and equipment to and from the Project site.

1.2 SUBMITTALS

- A. Submit site-specific Health and Safety Plan for informational purposes.

1.3 QUALITY ASSURANCE

- A. Not used.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 SAFETY

- A. The Contractor shall prepare a site-specific Health and Safety Plan (HASP) in accordance with applicable Occupational Safety and Health Administration regulations.
- B. The Contractor shall comply with all requirements of the most recent version of the Occupational Safety and Health Act (OSHA).
- C. When any support system is used that requires design by an engineer, copies of the design stamped by a Professional Engineer registered in the State of Massachusetts shall be submitted to the Engineer.
- D. The Contractor has full responsibility to comply with all provisions of the State of Massachusetts Public General Statutes concerning Occupational Safety and Health. Any fines levied against the Contractor for violations shall be the Contractor's responsibility.

3.2 PROTECTION

- A. The Contractor shall assume full responsibility for the protection of all public or private buildings, structures and utilities in the streets, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from

damage of every description and any such damage thereto shall be repaired or otherwise made good by the Contractor, at his expense, in a manner acceptable to the Engineer.

- B. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. The Contractor shall, at the Contractor's own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. The length or size of excavation will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.

END OF SECTION 01 51 00

SECTION 01 57 00 - EROSION AND SEDIMENTATION CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes requirements related to the Contractor’s responsibility to furnish all labor, equipment, and materials associated with erosion and sediment control required to complete the work as shown on the Contract Drawings and specified herein. All erosion control work is to be done in conformance with all federal, state and local permits and regulations.
- B. Section includes:
 - 1. Perimeter Erosion and Sedimentation Control
 - a. Haybales
 - b. Silt fences
 - c. Coir logs
 - d. Filter Fabric
 - e. Sediment Filter Bags
 - 2. Temporary construction entrance
- C. Related sections/references:
 - 1. Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas.
 - 2. Town of Concord Design and Construction Standards for Erosion and Sedimentation Control.
 - 3. Order of Conditions issued by the Concord Natural Resources Commission.

1.2 SUBMITTALS

- A. Product data:
 - 1. Submit product data for all erosion control products to verify compliance with Massachusetts Department of Environmental Protection and Town of Concord material requirements.
- B. Erosion and Sediment Control Inspection logs.
- C. Name and resume of the Environmental Monitor (EM). At minimum, the EM shall be a “qualified personnel” with a minimum of 3 years professional environmental experience in construction monitoring and shall meet the qualification outlined in Section 4.4.1 of the EPA Construction General Permit and the requirements of the Order of Conditions issued by the Concord Natural Resources Commission.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, the Town of Concord Design and Construction Standards for Erosion and Sedimentation Control, and the Order of Conditions issued by the Concord Natural Resources Commission.

- B. Perform all work, including site preparation, land disturbance, and construction and redevelopment, in accordance with the Stormwater Notice of Intent for National Pollution Discharge Elimination System coverage and the construction Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8, which details erosion methods and surface water management procedures.

PART 2 – PRODUCTS

2.1 EROSION CONTROL PRODUCTS

- A. Erosion control products to be used include but are not limited to haybales/silt fence, temporary construction entrances, and coir logs.
- B. Furnish materials in accordance with Town of Concord Design and Construction Standards for Erosion and Sedimentation Control.
- C. Sediment Filter Bag: Dewatering fluid may be filtered via sediment filter bags. Such bags shall be made from permeable non-woven geotextile fabric into which water is pumped. Sediment is filtered on the inside of the bag and water diffuses out. Sediment filter bags must be sized appropriately for flow rates entering the bags. The apparent opening size of the geotextile shall be suitable for the sediment grain size distribution. Bags must be placed on gravel bedding within the dewatering sump area. Full sediment filter bags must be removed from site and disposed of in a lawful manner.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Perimeter Erosion and Sedimentation Control
 1. Provide perimeter erosion and sedimentation control where shown on the Contract Drawings and ES&C Plan as a temporary structural practice to trap and retain suspended sediments and allow time for them to settle out.
 2. Contractor is responsible for setting up sediment filter bags in the sump area and setting up hay bale corrals around the outflow pipe outside the dewatering area to reduce turbidity in the water flowing out of the dewatered sediment.
 3. Contractor may install sediment filter bags within the dewatering sump area to filter out fines from the dewatering liquid prior to outflow from the dewatering area.
 4. Install in accordance with Town of Concord Design and Construction Standards for Erosion and Sedimentation Control.
- B. Construction Entrance
 1. Provide construction entrance where shown on the Contract Drawings and ES&C Plan as a temporary structural practice to minimize mud and sediment tracking on public roads.
 2. Notify Town in the event that additional or alternative construction access areas are required.

3. Install construction entrances in accordance with Town of Concord Design and Construction Standards for Erosion and Sedimentation Control.

Erosion controls shall remain in place during the entire construction period until the site is fully stabilized or as otherwise specified.

3.2 FIELD QUALITY CONTROL

- A. Inspect erosion control devices at least every two weeks and after any rainfall event of 0.5 inches or more. Make necessary repairs to ensure erosion and sediment controls are in good working order. Remove and dispose entrapped silt in an upland location outside of any resource areas or buffer zones subject to the jurisdiction of the Massachusetts Wetlands Protection Act.
- B. Retain a qualified independent Environmental Monitor to ensure proper operations of all sediment and erosion control measures throughout the duration of the project in accordance with the Order of Conditions issued by the Concord Natural Resources Commission. The EM shall have the authority to stop construction to ensure that erosion controls are in place and maintained at all times, and/or if the EM determines that work is not being conducted in accordance with the approved plans and submissions.

MAINTENANCE

- A. Maintain erosion control devices in accordance with Town of Concord Design and Construction Standards for Erosion and Sedimentation Control and in accordance with manufacturer's specifications and good engineering practices.
- B. Inspect the coir logs and haybales/silt fence in accordance with the paragraph titled FIELD QUALITY CONTROL (Section 3.2). Any required repairs shall be made promptly. Pay close attention to the repair of damaged coir logs and haybales/silt fence resulting from end runs and undercutting. Should the material on a coir log or haybale/silt fence decompose or become ineffective when the barrier is still necessary, replace or repair the coir log or haybale/silt fence promptly. Remove sediment deposits when deposits reach one-quarter to one-half of the height of the barrier.
- C. Do not damage structure or device during cleaning operations.
- D. Replace control system promptly if fabric decomposes or system becomes ineffective prior to the expected usable life.
- E. Maintain or replace system until no longer necessary for the intended purpose.
- F. Contractor shall be responsible to fix and/or replace all damaged erosion control systems damaged by severe weather to the satisfaction of the Engineer.
- G. Do not permit sediment to erode into construction or site areas or into wetlands or waterways.

3.3 REMOVAL

- A. Remove and dispose of coir logs after respective upgradient areas stabilize with stable growth or as directed by the Engineer. Erosion controls shall not be removed until approved by the Engineer.
- B. Prior to removal of haybales/silt fence and coir logs adjacent to wetlands or land under water, remove all eroded soil, sediments, or mud which have collected behind or around haybales/ silt fence and coir logs. Dispose materials in an upland location outside of any resource areas or buffer zones subject to the jurisdiction of the Massachusetts Wetlands Protection Act and at a point where runoff will not carry materials into wetlands or waterways.

END OF SECTION 01 57 00

SECTION 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Scope:

1. This section specifies the requirements for execution and closeout requirements, including but not limited to, topographic survey, construction photographs, restoration, closeout requirements, inspection procedures, record documents, and final cleaning. This section is to be used with the requirements contained in all other sections, including the related sections listed below. The Contractor shall provide all labor, materials, equipment, and incidentals to complete the Work specified in this section. Bathymetric survey requirements are described in Section 02 21 19 BATHYMETRIC SURVEYS.

B. Related Sections:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 DEFINITIONS

- A. Restoration Construction Area: Area affected by the physical construction activities where soil disturbances shall occur.

1.3 SUBMITTALS

- A. Construction photographs
- B. Substantial completion certificate and inspection request
- C. Substantial completion punch list
- D. Final completion certificate and inspection request
- E. Record documents.

1.4 FIELD ENGINEERING/TOPOGRAPHIC SURVEY

- A. Contractor shall verify with the Engineer locations of site, benchmarks, survey control, and reference points prior to starting Work. Surveyor shall set benchmarks if no suitable benchmarks exist on site. Locate and protect these points. Promptly notify Engineer of discrepancies discovered. Contractor shall also verify layouts periodically during Work.
- B. Control datum for survey is indicated on Contract Drawings.
- C. Verify setbacks and easements; confirm Contract Drawing dimensions and elevations.
- D. Provide field engineering services. Establish elevations, lines, and levels using recognized engineering survey practices.

- E. Contractor shall develop and make all detail surveys and measurements needed for construction.
- F. Contractor shall provide all materials as required to properly perform the surveys, including, but not limited to, instruments, tapes, rods, measures, mounts and tripods, stakes and hubs, nails, ribbons, other reference markers, and all else required. All material shall be of sound professional quality.
- G. All lasers, transits, and other instruments shall be calibrated and maintained in accurate calibration throughout the execution of the Work. Calibration certificates shall be submitted to the Engineer prior to use of any instrument.
- H. Contractor shall establish additional control, including baselines, as is required for performance of the Work. These shall be tied into the site reference points.
- I. Maintain complete and accurate log of control and survey work as work progresses.
- J. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- K. Promptly report to Engineer loss or destruction of reference point or relocation required because of changes in grades or other reasons.
- L. It shall be the duty of the Contractor to keep the Engineer informed of the times and places at which work will be conducted in order that the Engineer may have an ample opportunity to furnish and/or check the lines and elevations with a minimum of inconvenience to the Engineer or delay to the Contractor.
- M. All surveys shall be plus or minus 0.1 feet, and for horizontal control angles shall be to the nearest 20 seconds plus or minus 10 seconds and measured distances shall be to plus or minus 0.1 feet.
- N. Final As-Built Survey: Prior to Substantial Completion, prepare final as-built survey illustrating locations of Work that have resulted from construction indicating their relationship to permanent benchmarks and property lines.
 - 1. Show significant features (real property) for project.
 - 2. Include certification on survey, signed by surveyor, that principal metes, bounds, lines, levels, and elevations of project are accurately shown.

1.5 CONSTRUCTION PHOTOGRAPHS

- A. Provide photographs of site and construction throughout progress of work produced by an experienced photographer acceptable to Engineer.
- B. Each month submit photographs with Application for Payment.
- C. Take photographs as evidence of existing project conditions prior to initiating onsite work. Notable items include the existing light towers and their foundations as well as overhead wires.

- D. Progress Photographs. Digital color photographs shall be used to document progress of the Work. A minimum of four views of the site showing the location, entrance/exit road, and any other notable site conditions shall be taken before Work begins. After Work has been started, construction activities shall be photographically recorded weekly indicating relative progress of Work.
- E. Digital Images: Deliver complete set of digital image electronic files to Engineer with Project record documents. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as sensor, uncropped.

1.6 RESTORATION

- A. Prior to final acceptance of the project, the site shall be restored to its original condition prior to construction, unless otherwise indicated on the Contract Drawings and in the Specifications. This shall include, but not be limited to, staging areas, Dewatering Areas, construction access roads, and all areas within the limits of work/ Restoration Construction Area.
- B. Final restoration shall include seeding as included in Section 32 92 19 – Site Restoration. The Contractor shall be responsible for a minimum of 85% vegetative coverage after one growing season.
- C. Disassemble and remove all temporary construction facilities constructed by the Contractor and leave the site in an orderly and restored condition.
- D. Repair or replace damaged items as directed by the Engineer, at no additional cost to Owner.
- E. Gravel surfaces shall be restored to condition as shown in plans, or as directed by Engineer.
- F. All vegetated areas disturbed during construction shall be re-seeded in accordance with Section 32 92 19 – Site Restoration, unless otherwise specified or directed by the Engineer.
- G. Temporary berms, roads, and other temporary facilities shall be removed prior to final acceptance of the Work, unless otherwise specified or directed by the Engineer.
- H. Asphalt roads shall be returned to preconstruction conditions.
- I. Any fencing or posts removed during construction shall be replaced to its original condition.

1.7 CLOSEOUT PROCEDURES

- A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
 - 1. Submit project record documents, digital images of construction photographs, and other similar final record data in compliance with this section.

2. Conduct inspection to establish basis for request that Work is substantially complete. Create comprehensive list (initial punch list) indicating items to be completed or corrected, value of incomplete or nonconforming work, reason for being incomplete, and date of anticipated completion for each item. Include copy of list with request for Certificate of Substantial Completion.
 3. Discontinue or change over and remove temporary facilities and services from project site along with construction tools and similar elements.
 4. Perform final cleaning according to this section.
- B. Substantial Completion Inspection:
1. When Contractor considers Work to be substantially complete, submit to Engineer:
 - a. Written certificate that Work, or designated portion, is substantially complete.
 - b. List of items to be completed or corrected (initial punch list).
 2. Within 7 days after receipt of request for Substantial Completion, Engineer will make inspection to determine whether Work or designated portion is substantially complete.
 3. Should Engineer determine that Work is not substantially complete:
 - a. Engineer will promptly notify Contractor in writing, stating reasons for their opinion.
 - b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Engineer.
 - c. Engineer will re-inspect Work.
 - d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.
 4. When Engineer finds that Work is substantially complete, Engineer will:
 - a. Prepare Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified and amended by Owner and Engineer (final punch list).
 - b. Submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in Certificate.
 5. After Work is substantially complete, Contractor shall:
 - a. Allow Owner occupancy of project under provisions stated in Certificate of Substantial Completion.

- b. Complete Work listed for completion or correction within time period stipulated.
- C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.
- 1. The Vegetation Establishment Period shall be complete and approved by the Owner as discussed in Section 32 92 19 – Site Restoration prior to the Contractor submitting request for final inspection.
 - 2. When Contractor considers Work to be complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been examined for compliance with Contract Documents.
 - c. Work has been completed according to Contract Documents.
 - d. Work is completed and ready for final inspection.
 - 3. Submittals: Submit following:
 - a. Final punch list indicating all items have been completed or corrected.
 - b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
 - d. Accounting statement for final changes to Contract Sum.
 - e. Contractor's affidavit of payment of debts and claims.
 - f. Contractor affidavit of release of liens.
 - g. Consent of surety to final payment.
 - 4. Perform final cleaning for Contractor-soiled areas according to this section.
- D. Final Completion Inspection:
- 1. Within 5 days after receipt of request for final inspection, Engineer will make inspection to determine whether Work or designated portion is complete.
 - 2. Should Engineer consider Work to be incomplete or defective:

- a. Engineer will promptly notify Contractor in writing, listing incomplete or defective Work.
- b. Contractor shall remedy stated deficiencies and send second written request to Owner that Work is complete.
- c. Engineer will re-inspect Work.
- d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.

1.8 PROJECT RECORD DOCUMENTS

- A. Maintain onsite one set of the following record documents; record actual revisions to the Work:
 1. Contract Drawings
 2. Specifications
 3. Addenda
 4. Change Orders and other modifications to the Contract
 5. Reviewed Contract Drawings, product data, and samples
 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Engineer.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record, at each product section, description of actual products installed, including the following:
 1. Manufacturer's name and product model and number
 2. Product substitutions or alternates used
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Contract Drawings: Legibly mark each item to record actual construction as follows:
 1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.

2. Identify actual excavation and final grades and limits.
 3. Include locations of concealed elements of the Work.
 4. Identify and locate existing buried or concealed items encountered during project.
 5. Measured horizontal and vertical locations of any underground utilities and appurtenances encountered, referenced to permanent surface improvements.
 6. Field changes of dimension and detail.
 7. Details not on original Contract Drawings.
 8. Scale Contract Drawings showing limits of excavation. Onsite staging, Phragmites Dewatering Areas, and locations of frac tanks shall also be shown on the Contract Drawings.
- G. Final as-built surveys shall include a licensed professional surveyor's stamp.
- H. Submit marked-up paper copy documents to Engineer before Substantial Completion.
- I. Submit PDF electronic files of final documents to Engineer prior to final application of payment.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing conditions are capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification sections.
- D. Verify that utility services are available with correct characteristics and in correct locations.

3.2 EXECUTION

- A. Verify that field measurements are as indicated on approved Contract Drawings or as instructed by manufacturer.

3.3 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual Specification sections.
- B. Control activity in immediate work area to prevent damage.

3.4 FINAL CLEANING

- A. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - 1. Clean areas disturbed by construction activities of rubbish, surplus soil, waste material, litter, and other foreign substances.
 - 2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - 3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - 4. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - 5. Remove debris from limited access spaces, including trenches, equipment vaults, manholes, and similar spaces.
 - 6. Leave Project clean and ready for occupancy.
- B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury stumps, debris or excess materials brought to the site on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.
- C. If the Contractor fails to clean up, the Owner may do so and the cost thereof will be charged to the Contractor.

END OF SECTION 01 70 00

SECTION 01 80 00 ENTRY AND SECURITY PROCEDURES

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- 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, which 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.
- D. The requirements of this Section shall apply only to Work located at the Massachusetts Department of Correction Northeastern Correctional Center located on Barretts Mill Road in Concord, Massachusetts. Work at this location includes hauling and disposal of dredged and dewatered pond sediments.

1.02 REQUIREMENTS INCLUDED

- A. Institutional Security and Regulations
- B. Construction Detail Security Staff
- C. Request For Entrance
- D. Entrance Procedures
- E. Photo Identification
- F. Vehicles
- G. Construction Materials And Waste
- H. Lunches
- I. Contact with Inmates
- J. Tool Classification
- K. Tool Storage
- L. Shadowing
- M. Lost or Found Tools
- N. Control of Flammable And Hazardous Materials

1.03 INSTITUTIONAL SECURITY AND REGULATIONS

- A. The work of this project occurs within the buildings and on the grounds of a penal institution.
- B. The Superintendent of each Institution is the official responsible for the security of the Institution and has the authority to determine and/or approve all contract operations, schedules and procedures that may, in his/her opinion, affect the security of the Institution. The Superintendent may designate another staff member to exercise this authority.

- C. No person convicted of a felony shall be employed on this project without the express permission of the Commissioner of Correction or the Institution Superintendent.
- D. No employee of the Contractors will be allowed admittance to the institution if it is known that he has imbibed in alcoholic beverages while outside the correctional institution property during the workday.
- E. The entire content of this Specification, Section 01800 ENTRY AND SECURITY PROCEDURES, including the laws relating to security in a penal institution, shall be read to all employees and; it shall be the responsibility of the Contractor to see that they are made aware of all these regulations, and requirements.
- F. Attention is called to the following sections of Chapter 268 of the General Laws, as amended.

Section 26: Furnishing Liquor to a Prisoner: Whoever gives, sells or delivers alcoholic beverages, as defined in Section One of Chapter One Hundred and Thirty-Eight to a person confined in any correctional institution or other place of confinement, or to a person in the custody of a sheriff, constable, police officer, Superintendent of a correctional institution, or other master or keeper of a place of confinement, or has in his possession, within the precincts of any prison or other place of confinement, any such beverages, with the intent to convey or deliver them to any person confined therein, except under the direction of the physician appointed to attend such prisoner, shall be punished by a fine of not more than fifty dollars or by imprisonment for not more than two months.

Section 28: Whoever gives or delivers to a prisoner in any correctional institution, or in any jail or house of correction, any drug or article whatever, or has in his possession within the precincts of any prison herein named with intent to give or deliver to any prisoner any such drug or article without the permission of the Superintendent, master or keeper, shall be punished by imprisonment in the state prison for not more than five years or in a jail or house of correction for not more than two years, or by a fine of not more than one thousand dollars.

Section 31: Illicit Conveyance of Articles to and from Penal Institutions. Whoever delivers or procures to be delivered, or has in his possession with intent to deliver to a convict confined to any penal institution, or whoever deposits or conceals in or about the institution or dependencies thereof, or upon any land appurtenant thereto or in any boat or vehicle going into the premises belonging to the Institution, any article, with intent that a convict shall obtain or receive it, and whoever receives from a convict any article with intent to convey it out of the Institution, contrary to the rules and regulations thereof, without the knowledge and permission of the Corrections' Commissioner, or of the Superintendent in charge thereof shall be punished by a fine of not more than five hundred dollars or by imprisonment in the state prison for not more than three years or in a jail for not more than two and one-half years.

1.04 CONSTRUCTION DETAIL SECURITY STAFF

- A. It is the responsibility of the security staff assigned to the construction detail to monitor the construction site and all construction workers; assist in processing construction workers; ensure that vehicles, tools, etc., are kept locked/secured at all times; and, maintain keys to all vehicles.
- B. The Contractor shall meet, on a weekly basis, or more often if required, with the security staff to outline proposed project activities for the following week which may affect institutional security, and operational logistics

1.05 REQUEST FOR ENTRANCE

- A. Prior to any Contractors working at a Department of Correction Institution, the contracting company must submit a "*Contractors Clearance for Entry*" request form to the DOC project manager.
- B. The project manager, or his designee, will be responsible to coordinate security checks on all Contractors requesting to enter the work area.
- C. Per MGL chapter 127, Section 37, the Superintendent may refuse admission to a person who has prior permission, if in the Superintendent's opinion, such admission would be injurious to the best interest of the Institution.
- D. The project manager or his designee will prepare an "approved to enter" list of all outside contractors. Copies of the approved list will be sent to the contracting company.
- E. A Contractor must notify the project manager and the Institution prior to entry if he/she has any relations incarcerated at the Institution.

1.06 ENTRANCE PROCEDURES

- A. All workers shall enter and exit the Institution at designated times, and only at the authorized access points. All workers must sign the gate register each day upon entering the Institution.
- B. All workers are responsible to obey security regulations and instructions of security staff at all times, including but not limited to the following:
 - 1. Give their correct full name and current address.
 - 2. State if they have been convicted of a felony. If so, they cannot enter the work area without permission from the Superintendent.
 - 3. State their legitimate reason for requesting entrance to the work site.
 - 4. Because of inmate dress codes, dungarees are not allowed in the work areas. Workers must comply with the Institutional dress code.
 - 5. The Contractor's employees, vehicles and belongings are subject to being searched at any time while on state property.

6. Do not carry, have in their possession or in their vehicles, anything classified as contraband by the Institution. This includes **FIREARMS, WEAPONS OF ANY KIND, POCKETKNIVES (if not used for job), AMMUNITION OR EXPLOSIVES, ILLEGAL DRUGS, PRESCRIPTION DRUGS, ALCOHOLIC BEVERAGES, FLARES OR FIRE EXTINGUISHERS.**

C. The security staff will be responsible to ensure that all workers show proper photographic identification (driver's license, passport or welfare card). Only the Superintendent or his/her designee may make exceptions to this requirement.

1.07 PHOTO IDENTIFICATION

A. Every employee under this contract shall, if requested, permit his photograph and fingerprints to be taken by the Institution authorities, so that persons entering or leaving correctional institutions can be properly identified.

B. There will be a board located at the authorized entry point that will be utilized to store two photos of all workers scheduled to work in the work area. One photo will be utilized as an ID; the other will be mounted to the board.

C. The security staff will be responsible for issuing the photo ID to each construction worker after they have been identified and have completed the process. Workers are required to wear the ID while en route to and from the construction site. While at the site, they must have it on their person and produce it for security staff upon request.

1.08 VEHICLES

A. All Motor vehicles and equipment, including company and private employee's vehicles, shall be parked at designated places only, as assigned by the security staff, and shall be kept locked at all times. The security staff will retain the keys, while vehicles are parked inside the institution.

B. **Motor Vehicles and Equipment are subject to being searched at any time while on state property.**

C. All vehicles, including motorized construction equipment (such as excavators, loaders, pavers, and cranes to name a few) must be moved outside the institution at the end of each day. This requirement may be waived only by an express permission of the Superintendent if the equipment is too slow to transport in and out on a daily basis, such as a large crane, and only if the equipment can be positively disabled to the satisfaction of the Superintendent (i.e. by removing a simple, but critical component each day to be brought outside).

1.09 CONSTRUCTION MATERIALS AND WASTE

A. Building materials that are considered to represent a security risk to the Institution, and that are movable, shall be stored outside the Institution at the designated staging areas.

- B. The Contractor shall transport into the Institution only those quantities that will be installed during each workday. Any excess quantities not installed shall be brought back outside to the staging areas at completion of each day.
- C. All scrap, waste material and debris considered to represent a security risk to the Institution, shall be brought outside to the staging areas at the completion of each day.
- D. Special containers and dumpsters intended to store construction materials, scrap, and debris must be lockable and secured at completion of each day.
- E. Trucks intended to haul bulk material, including but not limited to gravel and pre-mixed concrete, cannot be searched effectively when loaded. Therefore, such loads present a special security risk and shall be restricted to leaving the Institution only during a major count, which occurs three times each day. This presents a very limited time for these movements, which the Contractor must coordinate closely with the security staff.

1.10 LUNCHES

- A. Workers will be allowed to bring a lunch for only the time that they will be in the work area. Smoking materials will not be allowed inside the Institution. All lunches will be searched during processing. Beverages that are prepackaged must be in sealed containers with the seal unbroken. **Workers must remain at the construction site during lunch breaks.**

1.11 CONTACT WITH INMATES

- A. Officers assigned to the construction crew detail will insure that workers have only a minimum amount of contact with inmates. The workers should not engage in conversation with the inmate population. Inmate names and the reason for their incarceration will not be divulged to the outside contractors.

1.12 TOOL CLASSIFICATION

- A. All tools and controlled items shall be classified under three general categories:
 - 1. Class "B"-non-hazardous tools: This category includes those tools which are not likely to be used in escapes or escape attempts; not used to manufacture or serve as weapons capable of doing serious bodily harm; or are not hazardous to institutional security or personal safety.
 - 2. Class "A"-hazardous tools: This category includes those tools most likely to be used in an escape or escape attempt; used to manufacture or serve as weapons capable of doing serious bodily harm; or are hazardous to institutional security or personal safety.
 - 3. Class "AA"-extremely dangerous tools: This category includes those tools that would be classified as Class "A" tools, but due to their nature in the correctional setting are not appropriate for storage within a secured facility. The use of these

items within a secured facility must be strictly controlled, supervised, and limited. At a minimum these items include bolt cutters, ladders over six feet in height, scaffolding, Hilti gun (or similar) kits with charges, metal cutting saw blades, hacksaw blades, files, band saw blades, meat cutting blades, welding mixing chambers, any diamond tipped tool, hydraulic jacks, porta-jacks, core drills. The institution shall determine any additional items that fit this category. Extremely dangerous tools must be removed from the institution at the end of each workday or stored inside a combination locked safe inside a Class "A" tool room, stored in the Armory or turned into the control center. Procedures for storing and issuing these items are discussed later in this specification.

- B. Some tools such as pliers, side cutters, and snips have a wire cutting capability on the inside of the tool thereby necessitating an "A" classification. If the wire cutting capability is ground off, the tool could be classified as "B".
- C. Review the appendix for a sample listing of "A" and "AA" tools. The lists, though fairly comprehensive, are not all inclusive. Items not classified as "A" or "AA" tools should be treated as "B" tools e.g., shovels, rakes, ladders less than 6', and extension cords less than 25'. When in doubt seek direction about an item's classification from the director of security or superintendent's designee.
- D. The classification of tools is an on-going process based on the dissemination of information from other facilities and the innovation of new tools. Certain tools not currently listed on the "A" or "AA" list might quite possibly be classified on that list in the future. Therefore discretion should be utilized when classifying tools so as they are classified in accordance with the definitions and provisions delineated in this policy.

1.13 TOOL STORAGE

- A. Workers are responsible to produce an inventory list of all tools they are taking to the work site and shall follow all the requirements of this Specification. The security staff member will be responsible to inspect and inventory all equipment, tools, caustic materials and keys. The security staff member and the worker who is responsible for the tools will sign the inventory list. While at the work site, all tools not in use must be secured.
- B. Upon leaving the work site, the security staff will inspect and re-inventory all tools to ensure they are all accounted for. If any tools, equipment, keys or caustic material are missing, the procedures outlined in Paragraph 1.15 (Lost or Found Tools) shall be implemented.
- C. Class "AA", Class "A", and Class "B" tools shall be inventoried, marked, secured and shadowed separately at all times when not in use.
- D. All Class "A" tools shall be stored in areas secured by at least two separate solid locked doors and inmates shall never have access to these areas. A centralized tool storage area for this classification of tools is required which shall be staffed by a designee of the superintendent to which the keys shall be restricted to that person only and secured in glass front box in the main control center. This tool storage area must be designed in such a fashion so unauthorized entrance is physically reduced. Such storage area must be

of solid design from floor to ceiling without windows or if windows are present, bars equivalent in strength to the control center must be installed. This area can be fashioned so that one larger room is partitioned into two separate rooms of which the outer room with one locked door can be utilized as a Class "B" storage area and the inner room with a separate locked door would be utilized as a Class "A" storage area. The doors, hinges, locks, and any other hardware utilized for this storage of Class "A" tools must be maximum security, and heavy duty, prison-type construction.

- E. All Class "B" tools shall be stored in an area secured by at least one locked door and separated from inmate traffic. If the Class "B" storage area is in conjunction with a Class "A" storage area, then the design must be of the solid type construction with security hardware and locks as described above in Paragraph 1.13.B above. If only Class "B" tools are to be stored in the area the design can be such as is normally associated with an administrative office within a secure facility. The keys to this area must be restricted to one person but may be located on the main keyboard.
- F. Class "AA" tools may only be stored inside a secure facility in a combination locked safe within a Class "A" central tool storage area that meets all the requirements set forth above in Paragraph 1.13.B. All other Class "AA" tools shall be removed from the facility and stored either in the Armory, Main Control Center, or other outside structure with equivalent design features, no inmate access and limited staff access. Whenever Class "AA" tools enter a secured facility the entrance officer must log the item into the facility to include the time, date, item, staff member supervising the tool, and area to be visited. The entrance officer should then notify the shift commander. These tools must never be left unattended within the facility.
- G. Sufficient quantities of hacksaw and metal cutting blades, band saw blades, and meat cutting blades shall be stored outside the facility preferably in the control center or other similar safe storage area. They shall be stored, shadowed, and inventoried in accordance with this specification. Detail supervisors shall check these items out with a metal chit and sign a tool log in the control center or designated area. The item checked out shall be returned immediately when the work is completed and the officer in charge of the designated area shall sign the log indicating its return.
- H. Aerosol containers are not permitted inside any secured facility without the approval of the director of security or superintendent's designee. When approved, aerosol containers of any kind shall be considered a Class "A" tool and stored in accordance with this specification. Only those containers necessary to complete a necessary function are permitted. Excessive storage of aerosol containers is prohibited. If necessary replacement quantities may be stored outside the facility confines in accordance with this specification. All aerosol containers shall be stored in a non-flammable storage cabinet.
- I. Freon and other pressurized containers are Class "A" tools and must have the approval of the director of security or superintendent's designee. When approved these items shall be controlled as any other Class "A" tool in accordance with this specification.
- J. All ladders over six feet in height shall be stored at the rear sally port, chained to an immovable object. The key to the padlock securing the ladders shall be restricted to the rear gate officer. The shift commander, control center, and staff supervising the area in which the ladder is used shall be notified prior to the ladder entering the institution. The

officer in charge of the rear sally port shall log the date and time the ladder is issued, the signature of staff supervising the ladder, and his/her signature indicating the return of the ladder. All ladders entering the institution shall be under constant staff supervision. The ladder shall be returned to the storage site immediately after work is completed, unless inside storage is specifically approved by the director of security or superintendent's designee in which case they must be chained to an immovable object when not under direct supervision. Ladders shall not remain inside the facility overnight.

- K. Scaffolding shall be treated and stored in the same manner as ladders. Each section shall be dismantled prior to storage. If approved for a special project to remain inside the facility overnight the scaffolding shall be chained to an immovable object in plain view by security padlocks. The keys to the padlocks shall not remain in the area overnight.
- L. Tools assigned to areas outside a specific institution shall not be brought inside the institution. Tools stored inside the institution shall not be removed from the institution without prior approval from the director of security or the superintendent's designee.
- M. Power tools shall be stored in the designated areas at the end of each workday. This includes, but is not limited to, grinders, lathes, metal shears, drill presses, radial arm saws, table saws, and band saws. If not stored as required, such tools must be located in strategic areas where they are highly visible to staff. The tools shall be used only under direct staff supervision and locked inoperative when not in use. They must be permanently secured to the bench or anchored to the floor. The anchor bolts shall have the bolt threads stripped or nuts welded to prevent the tool's removal. These tools shall have an automatic electrical lockout device, which shall be locked in the off position when not in use. All cutting blades shall be removed and stored as separate tools. Grinders shall have a solid metal cover to prevent access that shall be locked when not in use.
- N. All extension cords shall be inventoried and shall have a metal tag attached indicating the tool number (by location) and length of cord. Each extension cord, no matter what size, shall be maintained in an approved storage location when not in use.
- O. At the start of each work shift and prior to the conclusion of the shift, workers and security staff assigned to areas where tools are stored (whether Class "AA", "A", or "B") are responsible for checking all shadow boards, to ensure all tools assigned are accounted for. Discrepancies shall be immediately reported to the shift commander.
- P. If a construction trailer is utilized for the storage of tools, the trailer will be secured at all times when not in use. There will be compartments inside the trailer to secure equipment and tools. An inventory list will be attached to each compartment indicating the tools and equipment enclosed. All compartments will be secured at all times. The Institution will designate the location(s) for tool storage.
- Q. If a tool locker is brought into the building it shall be located within an area acceptable to the institution and the locker shall be locked at all times when not in use. An inventory list will be attached to the locker indicating the tools and equipment enclosed.

- R. A master inventory list must be submitted to the Director of Security or his designee. An inventory will be taken at the start and end of each workday. If there is a discrepancy in the tool inventory, a report must be submitted.
- S. Ram sets and similar devices can be very dangerous in a correctional setting. Such devices will not be allowed on site except by express permission of the Superintendent. All ammo will be counted in the control room. Ammo must be kept in a secured/locked container. The officer assigned to the construction crew will keep the keys to this lock in his possession at all times. All spent casings will be kept secured. At the end of the shift, all ammo, spent casings and live ammo must be inventoried.

1.14 SHADOWING

- A. All tools stored in any area shall be shadowed separately. Only one tool shall be kept on each shadow and the shadow must be identical in size and shape. Kits, socket sets, wrench sets, torch sets, etc., shall not be shadowed intact; but, rather, each individual item in the kit or set shall be inventoried and shadowed separately. However, utility pouches or toolboxes may remain intact and be shadowed in that manner. A reduced copy of the inventory for that kit shall be laminated and attached to the pouch.
- B. All Class "AA" tools shall be shadowed in bright curb yellow on a white background.
- C. All Class "A" tools shall be shadowed in red on a white background.
- D. All Class "B" tools shall be shadowed in black on a white background.
- E. All shadows shall be complete and not merely outlined.
- F. When approved by the director of security or superintendent's designee, tools not adaptable to a shadow board may be stored in a locked drawer with a separate inventory.
- G. Large tools not feasibly shadowed on a board may be shadowed on the floor or against the wall.
- H. Accessories to power tools, either hand portable or floor type, to include saw blades, grinding wheels, etc., shall be removed when not in use and shadowed separately.
- I. In the event that a tool is removed from the inventory, the corresponding shadow shall be removed from the shadow board and the inventory shall be adjusted immediately. The tool control officer or superintendent's designee has the sole authority to add or remove a shadow from any shadow board.

1.15 LOST OR FOUND TOOLS

- A. Security staff shall conduct routine checks to ensure accountability for all tools.
- B. Contractors shall immediately notify a staff member of a lost or found tool. That staff member shall immediately secure the area and notify the shift commander. When a Class "A" tool is involved, the director of security or superintendent's designee shall be notified

immediately. The worker, who is responsible for the missing tool, shall remain at the facility until all attempts to recover the tool have been completed.

- C. In conjunction with the shift commander, all effected areas, including workers and inmates having access to those areas, shall be thoroughly searched.
- D. A ***Lost Or Missing Tool Report*** (see appendix) shall be completed and forwarded to the superintendent and director of security or superintendent's designee the same day.
- E. The accountability for all broken tool accessories is critical, such as pieces of blades, drill bits, grinding wheels, and other similar devices. Therefore, broken pieces must be recovered and returned to ensure the entire length of the accessory is accounted for. If the entire length of the accessory is not accounted for, the staff member must submit a ***Lost Or Missing Tool Report*** (see appendix) to the director of security or superintendent's designee explaining the discrepancy and steps taken to recover the missing pieces. The director of security or superintendent's designee shall determine if additional steps must be taken concerning the missing pieces.
- F. When a tool breaks, the Contractor shall notify the security officer immediately. If it is not feasible to repair the tool, the tool shall be removed from the Institution for proper disposal. The corresponding shadow shall be removed from the shadow board and the effected inventory shall be adjusted immediately.

1.16 CONTROL OF FLAMMABLE AND HAZARDOUS MATERIALS

- A. All flammable, hazardous, poisonous and toxic materials shall be considered Class "A" items. This includes such items as gasoline, alcohol, ditto fluids, acid, glue, insecticides, etc.
- B. Inventories shall be maintained for these items. The security officer shall record the date, time, amount, and name of the employee receiving the item.
- C. These items shall be stored in a non-flammable storage cabinet or other suitable storage cabinet, in accordance with Class "A" storage requirements as outlined in this specification.
- D. All flammable and toxic materials, other than gasoline, shall be stored in its original container. The manufacturer's label shall not be removed.
- E. Gasoline and other flammables shall be strictly controlled to prevent use in the manufacturing of bombs or committing arson.
 - 1. All gasoline-powered equipment shall be removed and stored outside the institution, and locked when not in use.
 - 2. Gasoline shall not be stored or carried in any type container except an approved safety can. The can shall be painted red, with the word "gasoline" painted clearly on the side in yellow, with a one-half inch yellow band around the container, as per OSHA regulations and local fire codes.

3. A security staff member shall supervise all movement of gasoline into the institution, for use in small engines. All gasoline powered small engine operations shall be directly supervised by a security staff member. All gasoline powered small engines operating inside the institution must be equipped with locking gas caps and metal shields over the fuel lines.
-
- F. All excess oxygen, propane, acetylene, and other gas tanks (full or empty) shall be stored in a secure area, outside the institution perimeter, inaccessible to inmates. They shall be chained together and locked to an immovable object. The director of security or superintendent's designee must approve all tanks to be stored inside the institution. The decision should be based upon the tank's necessity for the functioning of the institution and not just convenience. All tanks stored inside the institution must be locked to an immovable object. Empty tanks may not be stored inside the institution. All tanks when moved from their designated storage site must be used under constant security staff supervision and returned to storage immediately after use. At no time shall they remain out of storage overnight. Mixing chambers shall not be stored under any circumstances inside the institution and shall be removed from the institution immediately after use. Combination Acetylene/Oxygen tanks with non-detachable mixing chambers shall not be stored inside the institution. Torch tips, hoses, regulators, etc., shall be handled in accordance with Class "A" tool specifications but shall not be stored in the same or adjacent area where any tanks are stored.

APPENDIX

- LOST OR MISSING TOOL REPORT
- CONTRACTOR TOOL INVENTORY
- SAMPLE LIST OF CLASS “A” TOOLS
- SAMPLE LIST OF CLASS “AA” TOOLS

LOST OR MISSING TOOL REPORT

Project: _____ Date: _____

Escorting Officer _____ Shop/Area: _____

Tool Information:

Company/ Owner of the Tool: _____

Tool Description: _____

Tool Size: _____

Last Date and Time the Tool was accounted for: _____

Person Accountable for the Tool: _____

Please explain circumstances of lost/missing tool:

What efforts have been made to locate the tool?

Action taken against individual to who tool was assigned.

REPORT OF RECOVERY OF LOST OF MISSING TOOL:

To be completed in the event the missing tool is recovered. This report is to be signed by escorting officer. This form shall be retained by the Director of Security in Master Tool Inventory File for the appropriate shop. All other copies shall be destroyed.

Circumstances of Recovery:

Escorting Officer: _____ Date: _____

cc: Tool Control Officer, Shift Commander, Superintendent

CONTRACTOR TOOL INVENTORY

Date

Institution: _____ Company/Firm Name: _____

Project Number: _____ Worker's Name (Print): _____

Project Title: _____ Signature: _____

Title: _____

	Tool Inventory – Entering		Tool Inventory – Departing
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	
11		11	
12		12	
13		13	
14		14	
15		15	
16		16	
Officer's Signature:		Officer's Signature:	

This form shall be completed by the front or rear entrance officer. Completed forms shall be forwarded to the Director of Security's office daily. Any discrepancies in the entering or departing inventories shall be reported immediately to the Shift Commander, and the worker shall be detained pending investigation of the missing tool. Subsequently, the worker shall be required to complete a *Lost Or Missing Tool Report*. Class "A" or "AA" tools are not permitted into the Institution without specific authorization of the Director of Security.

SAMPLE LIST OF CLASS "A" TOOLS

	NAME OF TOOL	SIZE
1	Aviation Snips	
2	All Purpose Tools (Leatherman, etc.)	
3	Acetylene Hose	
4	Acetylene Tank Key	
5	Acetylene Regulations	
6	Acetylene Torch	
7	Acetylene Torch Tips	
8	Adaptor Screw	
9	Air Hammer Bits	
10	Adaptor for Knockout	
11	Air Scaffolds and Accessories	
12	Arbor and Adaptors	
13	Axe, Single Bit and Double Bit	
14	Awl	
15	Band Saw Portable	
16	Bender, Pipe (Conduit)	
17	Barber Scissors (pointed tips)	
18	Bit Masonry/Concrete	
19	Bit, Carbide	
20	Bit, Metal	
21	Bit, Stardrill	
22	Bit, Extender	
23	Bar, Pinch	
24	Bar, Wrecking	
25	Bar, Crow	
26	Blades, Carbide cutting	
27	Blades, Band Saw	
28	Blades, Sabre Saw, Metal Cutting	
29	Chains, various sizes, lengths and widths With or without crab hooks	
30	Chain Hoists	
31	Chisel, Cold and Cope	
32	Chisel, Hilti Flat	
33	Chisel, Hilti Pointed	
34	Crimper, Cutting	
35	Rope	Over 25'
36	Cutter, Wolf Pacer	
37	Cutter, Maimin	
38	Cutter, Paper	
39	Connector Cord	
40	Chisel	

SAMPLE LIST OF CLASS “A” TOOLS (continued)

41	C-Clamps	6” and over
42	Channel Lock Pliers, and Vise Grips	12” and over
43	Clamp, Bar	36” and over
44	Compass, Steel	
45	Concrete Vibrator	
46	Cotton Pin Press	
47	Cable Cutter	
48	Cutter, Pipe	
49	Cutter, Pizza	
50	Compass	
51	Drill Motor	
52	Drill Motor, Masonry	
53	Drill Motor, Screwdriver	
54	Drill Motor Wrench	
55	Drill, Milwaukee	
56	Drop Cord	25’ and over
57	Dado Head	
58	Drive Point	
59	Drive Point Rubber	
60	Drive Cup	
61	Drive Extension	
62	Duct Cutter	
63	Electrician’s Knife Driver	
64	Electric Hammer Drill	
65	EMT Bender	
66	Extension Cords	25’ and over
67	Electric Etcher	
68	Fork, Serving	
69	Files, Bastard, Half Round, Tri Taper, Mid Cut, Etc.	
70	Freon Tanks	
71	Greenlee Hydraulic Pipe Bender	
72	Greenlee Hydraulic Cable Puller	
73	Grinder, Angle	
74	Gloves, High Voltage	
75	Gloves, Welding	
76	Gear Puller	
77	Grass Clippers, Pointed	
78	Grinders	
79	Grinding Wheels	
80	Greenlee Vacuum	
81	Grinding Disc	
82	Hilti Check Adaptor	

SAMPLE LIST OF CLASS "A" TOOLS (continued)

83	Hilti Hammer Drill Bits	
84	Hatchet, Single and Double Bit	
85	Heat Gun	
86	Holke Saw Bits	
87	Hoists, Come Along	
88	Hoses, Air Water, Garden	25' and over
89	Hammer, Sledge	4 lbs and over
90	Ice Pick	
91	Impact Wrench	
92	Jig Saws	
93	Knife, Box	
94	Knife, Draw	
95	Knife, Hawk Bill	
96	Knife, Linoleum	
97	Knife, Boning	
98	Knife, French	
99	Knife, Butcher	
100	Knife, Bread	
101	Knife, paring	
102	Knockout Punch Ratchet	
103	Letter Opener (Pointed Tip)	
104	Mattock Pick	
105	Meat Slicing Blade	
106	Nitrogen Regulators	
107	Oxygen Regulators	
108	Peill Motor	
109	Paint Mixer	
110	Propane Tanks	
111	Propane Torch Tips	
112	Potato Peeler	
113	Pliers, Round Nose Cutting	
114	Pliers, Diagonal Cutting	
115	Pliers, Needle Nose Cutting	
116	Pipe Clamps	
117	Pliers, Fence	
118	Punch Lock Riveter	
119	Pry Bar	
120	Pump, Hand with Ram	
121	Pick	
122	Pitch Fork, Flat Tined	
123	Pliers, Side Cutters	
124	Remote Tachometer	

SAMPLE LIST OF CLASS "A" TOOLS (continued)

125	Router, Electric	
126	Ram Threads	
127	Rope	25' and over
128	Rope Snake	25' and over
129	Rose Bud Tip	
130	Sanders, Electric Vibrator and Belt	
131	Scissors, Pointed Tips	
132	Sharpening Steel	
133	Sharpening Stone	
134	Sheet Metal Shears	
135	Snip, Tin	
136	Snip, Aviation	
137	Skill Saw, Worm Drive	
138	Skill Saw, Worm Drive Tool	
139	Skill Saw, Circular	
140	Skill Saw, Circular Saw Tool	
141	Sabre Saw	
142	Speaker Cord	25' and over
143	Security Screwdriver	
144	Sickle	
145	Survey Kit	
146	Spacker	
147	Temperature Analyzer (Food Service)	
148	Tap, combination	
149	Torque Wrench	
150	Tile Scraper	
151	Transformer	
152	Tachometer	
153	Tile Cutter, Floor	
154	Wire Cutters and Strippers	
155	Wrench, Pipe and Chain	14" and over
156	Wrench, Pipe	
157	Wrench, Acetylene T	
158	Wrench, Adjustable	14" and over
159	Wrench, High Mast Nut	
160	Wedge, Steel	
161	Welding Striker	
162	Wind Dividers	
163	Wheel, Grinding	
164	Wire, Grinder Brush	

SAMPLE LIST OF CLASS "AA" TOOLS		
	NAME OF TOOL	SIZE
1	Bolt Cutters	
2	Ladders	
3	Scaffolding	Over 6' in height
4	Hilti Gun (or similar) kits with charges	
5	Metal Cutting Saw Blades	
6	Hacksaw Blades	
7	Files of all types	
8	Mixing Chambers	
9	Any Diamond Tipped Tool	
10	Hydraulic Floor Cranes	
11	Hydraulic Jacks	
12	Porta Jacks	
13	Core Drills	
14	Mig Welder Gun and Leads	
15	Tig Welder Torch	

END OF SECTION 01 80 00

SECTION 02 21 19 – BATHYMETRIC SURVEYS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section describes the surveys required to be performed by the Contractor prior to, during, and following construction in Warner’s Pond. For this Section, survey shall include only bathymetric survey of the sediment surface. Includes minimum survey standards, units of measure, and the procedure for survey data submittal. Topographic survey requirements are described in Section 01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS.
- B. The Contractor shall perform all survey work described in the Technical Specifications and shown on the Engineering Drawings. Surveys for measurement of dredging quantities shall be completed by the Contractor. This Work includes the following:
 - 1. Pre-dredge survey of Warner’s Pond
 - 2. Interim surveys of Warner’s Pond as required, for progress payment requests and contractor dredging controls only.
 - 3. Post-dredge survey of Warner’s Pond
- C. The Contractor shall retain the services of a Surveyor to perform surveying in accordance with U.S. Army Corps of Engineers (USACE) Engineering and Design – NAVSTAR Global Positional System Surveying guidance (EM 1110-1-1003).
- D. The Contractor’s Surveyors shall make all measurements of length, depth, and area of the Work performed consistent with these Technical Specifications and as shown on the Engineering Drawings. The results of these survey measurements and all relevant backup calculations shall be provided for review and approval.
- E. The Contractor shall prepare survey data files and survey Record Drawings to be used for confirming quantities and documenting construction. The final Survey Record Drawings shall be prepared and certified by the Contractor’s surveyors.

1.2 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- B. Pre-Construction submittals:
 - 1. The qualifications of the surveyors (1.3 of this section). The Engineer reserves the right to disallow the person(s) selected by the Contractor for surveying. If, in the Engineer’s opinion, the person is not qualified to do the Work, the Contractor shall select another surveyor and submit qualifications until a qualified person is approved. Use of alternative surveyors shall be at no additional cost to the Town.
 - 2. Manufacturer’s specifications of the real-time kinematic (RTK) differential global positioning system (DGPS) or equivalent equipment.
 - 3. Proposed survey methods for each area, including, but not limited to, open water areas, adjacent to existing structures, and shorelines.
 - 4. The delineation of any division of the total dredge area proposed for partial surveying.

- C. Start of Construction submittals
 - 1. The bathymetric data presented on the Engineering Drawings are based on Site surveys conducted during the dates indicated on the Engineering Drawings. The Contractor shall perform surveys of the Site as a basis for comparison with final surveys.
 - a. The Contractor's surveyor(s) shall perform the pre-dredge bathymetric surveys in accordance with the requirements of this Section.
 - b. The Contractor shall submit detailed survey information in accordance with the requirements of this Section.
 - c. The Contractor shall submit the pre-dredge bathymetric Survey Record Drawings. The Survey Record Drawings shall be certified by the Contractor's surveyor(s). Material removal activities shall not be initiated until the survey work is accepted by the Engineer.
 - d. The Contractor shall submit a letter certifying that the Work is located as required by the Contract. If the Contractor's Survey determines that the Work is not located as required by the Contract, the Contractor shall notify the Engineer immediately and provide documentation prepared by surveyor(s) describing and illustrating the inconsistencies with the Contract.

- D. During Construction submittals
 - 1. The Contractor's Surveyor shall conduct surveys and submit Survey Record Drawings for the following:
 - a. Interim surveys as required, for progress payment requests only.
 - b. Post-dredge verification survey.
 - 2. At any time during the Work, the Contractor shall provide, on request of the Engineer, documentation of accuracy of survey work, survey logs, and survey field notes.

- E. At the Completion of Construction submittals:
 - 1. The Contractor shall submit final bathymetric plans as part of the Survey Record Drawings.
 - 2. The Contractor shall submit, at the completion of Construction, all survey logs, field notes, and all survey XYZ data files developed over the course of Construction.

1.3 QUALIFICATIONS OF SURVEYORS

- A. Surveyor
 - 1. The Surveyor selected by the Contractor shall be a Registered Surveyor certified by the American Congress on Surveying and Mapping with qualifications acceptable to the Engineer, and the Surveyor shall perform the surveys. The Surveyor shall have actively engaged in survey operations during the past 3 years.

1.4 PROJECT DATUMS

- A. All surveys shall be prepared using the project datums listed in these Technical Specifications and as shown on the Engineering Drawings:
 - 1. Horizontal Datum: North American Datum of 1983 (NAD 83) Massachusetts State Plane, Mainland Zone in U.S. Survey Feet.

2. Vertical Datum: North American Vertical Datum of 1988 (NAVD 88) in U.S. Survey Feet.

1.5 SURVEY REFERENCE POINTS

- A. Control points (horizontal and vertical control) for the project shall be provided by the surveyor prior to Construction.
- B. The Contractor shall set and protect monuments and control points prior to starting the Work and preserve all permanent reference points during Construction.
 1. The Contractor shall not make changes or relocations without prior written notice to the Engineer and after obtaining approval.
 2. The Contractor shall report to the Engineer when any reference point is lost, destroyed, or requires relocation because of necessary changes in grades or locations.

PART 2 – PRODUCTS – Not Used

PART 3 – EXECUTION

3.1 SURVEY LIMITS

- A. The Contractor's surveyor(s) shall use survey methods to execute the survey work within the limits of Warner's Pond. The Contractor's surveyor(s) shall provide the required surveys for a given area using a consistent survey technique over the course of construction.
- B. The survey limits for a given area shall extend to edge-of-water.
- C. Bathymetric surveys shall be completed in accordance with this section where the current water depth in Warner's Pond allows. Shallow water areas in Warner's Pond, where the approved survey equipment cannot access and perform accurate surveys, shall be surveyed as a topographic survey in accordance with Section 01 70 00 EXECUTION AND CLOSEOUT SUBMITTALS.

3.2 BATHYMETRIC SURVEYS

- A. Pre-Dredge Surveys
 1. The Contractor's Surveyor shall perform a pre-dredge survey prior to construction in Warner's Pond.
 2. The pre-dredge survey must be accepted by the Engineer before any in-water Work commences.
- B. Interim Surveys
 1. The Contractor will be permitted to perform interim surveying of the post-dredge surface as the Work progresses. These partial post-dredge surveys shall only be permitted when all dredging upstream and all dredging within 300 feet lateral or downstream of the survey limits has been performed.
- C. Post-Dredge Surveys

1. The Contractor's Surveyor shall perform a post-dredge survey, of all areas not yet surveyed in the interim surveys, upon completion of construction in Warner's Pond.
- D. Pre-, interim, and post-dredge surveys shall be conducted using the methods outlined in this Section. The same survey method shall be used for all surveys for a given area.
- E. Survey procedures including, but not limited to, positioning modes, calibration, data reduction, adjustment, processing, and plotting shall conform to recognized industry best practices and capable of meeting the repeatability and accuracy limits herein. Horizontal location observations shall compensate for errors, geodetic corrections, and atmospheric variations. Failure to perform and process such surveys in accordance with recognized standards will result in a rejection and non-payment for Work performed.
- F. The Contractor's surveyor(s) shall verify Work utilizing manufacturer calibration and field verification procedures per industry standards.
- G. Bathymetric surveys shall meet the following criteria, at a minimum:
1. Positioning shall be by real-time kinematic (RTK) differential global positioning system (DGPS) or equivalent technology capable of providing the same level of positioning accuracy.
 2. Single-beam bathymetric surveying techniques shall be used.
 3. Single-beam bathymetric surveys shall comply with the standards defined in USACE *Engineering and Design – NAVSTAR GPS Surveying* guidance, unless otherwise stated herein.
 4. Transect spacing for bathymetric data collected using single-beam survey equipment shall not exceed 5 feet.
 5. Survey point spacing along each transect for bathymetric data collected using single-beam survey equipment shall not exceed 5 feet.
 6. All bathymetric surveys shall meet the following repeatable accuracy:
 - a. For elevation, to the nearest 0.5 foot.
 - b. For horizontal distance, to plus or minus 0.5 feet.

3.3 DREDGE VERIFICATION

- A. The Contractor is required to achieve the dredge elevations as shown on the Engineering Drawings and as specified in Section 35 20 23 DREDGING. Verification of the dredge elevations shall be as specified herein. If required dredging has not been achieved as determined by the Engineer, the Contractor shall re-dredge and re-survey the area. The re-surveying shall be conducted at no additional cost to the Town.
- B. The Contractor shall provide survey comparison, including XYZ data and AutoCAD Civil3D surface, for the Engineer review and approval verifying that the post-dredge elevations achieves the minimum required percentage of the dredge area specified in Section 35 20 23 DREDGING. This verification will be determined by comparing the post-dredge survey elevations to the dredge design surface elevations.
- C. The Contractor shall verify that no high spots are greater than that specified in Section 35 20 23 DREDGING by comparing the post-dredge survey elevations to the dredge design surface elevations. The Contractor shall provide this survey comparison,

including XYZ data and AutoCAD Civil3D surface, to the Engineer for review and approval.

3.4 SURVEY RECORD DRAWINGS AND REPORTING

- A. The Contractor shall maintain a complete, accurate log of all control and survey work as it progresses. Survey logs and field notes shall be provided to the Engineer upon request.
- B. The contractor's licensed surveyor shall compute quantities for final quantity tracking and payment. Quantities shall be computed to the nearest tenth of a cubic yard of volume. The Contractor shall submit the actual dredging quantities achieved signed and certified by a licensed surveyor.
- C. The Contractor shall provide the Engineer the following items for Survey Record Drawings and reporting:
 - 1. All Survey Record Drawings.
 - 2. File of survey XYZ data.
 - 3. AutoCAD Civil 3D (2017 or later) format or compatible Digital Terrain Model (DTM) of the survey. The DTM must contain adequate 3-D points and 3-D break lines required to accurately model the digital surface to within the above-stated accuracy. The DTM must also provide a 2-D polyline defining the limits and footprint of the area(s) surveyed.

END OF SECTION 02 21 19

SECTION 02 61 00 - TRANSPORTATION AND DISPOSAL

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes but is not limited to offsite transportation, and disposal of all waste materials generated during the Work.
 - 1. Proper transportation and disposal of contaminated sediment and all site waste.

1.2 DEFINITIONS

- A. Construction Debris: waste materials from construction activities, debris encountered during dredging activities within the pond.
- B. Contaminated waste: Contaminated sediment or other material containing more than 20 ppm ($\mu\text{g/g}$) Arsenic dredged from the Potentially Contaminated Sediment Dredging Area. Contractor is not relieved of testing as required for disposal to meet RCRA and landfill requirements.
- C. Dredging: Removal of material encountered below subgrade elevations and to lines and dimensions indicated.
- D. Sediment: Sediment excavated during work.
- E. Waste – shall mean contaminated sediment and any waste within the work area to be disposed.

1.3 SUBMITTALS

- A. Disposal facility qualifications
- B. Transporter certifications
- C. Certificates of disposal and disposal weigh tickets
- D. Waste manifests.

1.4 QUALITY ASSURANCE

- A. Provide the Engineer with disposal facility qualifications and transporter certifications prior to the transportation and disposal of any contaminated waste.
- B. Provide the Engineer with certificates of disposal and disposal weigh tickets with Application for Payment and within 30 days from shipment date.
- C. Provide the Engineer with waste manifests with Application for Payment and within 30 days from shipment date.

1.5 HANDLING REQUIREMENTS

- A. The Contractor shall be responsible for proper onsite management of sediment and wastes generated in compliance with all federal, state and local regulations and the Contract Documents. Management shall include handling, segregating, processing (as required), and storing all sediment and wastes generated during the Contractor's Work.

1.6 OTHER WASTES

- A. Construction debris from the Site shall be taken to landfill for proper disposal.

PART 2 – PRODUCTS

2.1 STORAGE AND TRANSPORTATION EQUIPMENT

- A. All materials and equipment used to store and transport contaminated materials shall be water-tight.

2.2 SOLIDIFICATION AMENDMENTS (NON-HAZARDOUS MATERIALS)

- A. No Amendments shall be used.

PART 3 – EXECUTION

3.1 TRANSPORTATION OF CONTAMINATED WASTE AND CONSTRUCTION DEBRIS TO LANDFILL

- A. Inspect transportation equipment for leaks and forward copies of inspection reports to the Engineer.
- B. Contractor shall collect laboratory samples of excavated media from material stockpiles in accordance with Massachusetts Department of Environmental Protection 401 Water Quality Certification requirements including analysis and frequency.
- C. Contractor shall be responsible for the transportation of all waste specified in the Contract Drawings or generated as a result of the Work.
- D. Contractor shall be responsible for loading waste containers, trucks, etc. with removed waste generated.
- E. Furnish labor, materials, and equipment necessary to store, transport, and dispose of waste in accordance with federal, state, and local requirements. Prepare and maintain waste shipment records and manifests required by the Resource Conservation Recovery Act, U.S. Federal Department of Transportation, Massachusetts Department of Transportation, and Massachusetts Department of Environmental Protection..
- F. Transportation:

1. Transport contaminated waste in water-tight (e.g., lined and covered) vehicles in accordance with all federal, state, and local requirements.
 - a. Inspect and document vehicles/containers for proper operation and covering. Repair or replace damaged containers.
 - b. All trucks should be covered prior to departure.
 - c. Inspect vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.

G. Shipping Documentation:

1. 40 Code of Federal Regulations 761. Before transporting the waste, Owner will sign and date the manifests. Ensure that the manifest accompanies the waste at all times. Submit transporter certification of notification to U.S. Environmental Protection Agency (EPA) of their waste activities and EPA identification numbers. Within 35 days from shipment date, the transporter shall provide a copy of the manifest signed and dated by the disposer.

H. Certificate of Disposal:

1. Manifests and certified weight slips for all transported waste loads must be obtained and provided as documentation for payment.
2. Submit certificate of disposal to the Engineer within 30 calendar days of the date that the disposal of the contaminated sediment and debris waste identified on the manifest was completed. Include:
 - a. The identity of the disposal facility, by name, address, and EPA identification number.
 - b. The identity of the waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.
 - c. A statement certifying the fact of disposal of the identified waste, including the date(s) of disposal, and identifying the disposal process used.
 - d. A certification as defined in 40 Code of Federal Regulations 761, Section 3.

- I. Dispose of all waste at the facilities approved by the Engineer.

END OF SECTION 02 61 00

SECTION 02 73 00 - SOLIDS PROCESSING

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes Contractor requirements for segregating and dewatering excavated soil and dredged sediment, to maximize solids content for disposal to an appropriate disposal facility.
- B. Contractor shall install a solids processing system as depicted on the Drawings, or Engineer-approved equal, and as set forth in this specification.
- C. Contractor shall be responsible for the construction, operation, maintenance, and performance specifications as noted in Drawings and Technical Specifications.

1.2 PERFORMANCE REQUIREMENTS

- A. Contractor shall be responsible for the selection, design, furnishing, construction, installation, commissioning, testing, operation, maintenance, and performance of the solids processing system and all equipment, materials, containment and staging areas, access ways, and other supporting features necessary to complete the Work specified herein.
- B. Contractor may select to complete the dewatering Work by methods including, but not limited to, the following:
 - 1. Geotextile tubes
- C. Other means of dewatering solids may be proposed in the Contractor's Dredge Work Plan, but not executed until work plan approval. If other means of dredging in the Contractor's Dredge Work Plan are approved by the Engineer, the requirements of this specification will apply.
- D. Contractor is responsible for providing solids processing activities that dewater the solids to a state of passing EPA's paint filter method. The dewatering process shall eliminate all free liquids from solids prior to loading for disposal and shall provide any additional solids processing using a combination of additional dewatering. Failure to meet Engineer approved dewatering criteria shall result in a modification to the Contractor's means and methods to achieve acceptable conditions at no additional cost to the Town.
- E. Contractor may select to complete the dewatering liquid outflow filtration by methods including, but not limited to, the following:
 - 1. Sediment filter bags
 - 2. Haybale corrals
- F. Other means of dewatering liquid filtration may be proposed in the Contractor's Dredge Work Plan; but not executed until work plan approval. If other means of filtration are approved by the Engineer, the requirements of this specification will apply.
- G. Geotechnical information about the existing soils and sediment is provided with these Contract Documents.

- H. Processed solids shall be characterized and disposed of at the Dredge Material Disposal Site as shown in the Contract Drawings. Any contaminated processed solids (as defined by Section 01 45 25 TESTING) shall be disposed of at an approved offsite landfill in accordance with Section 02 61 00 TRANSPORTATION AND DISPOSAL.
- I. Debris shall bypass solids processing and be stockpiled and disposed in accordance with Section 35 20 23 DREDGING.

1.3 DEFINITIONS

- A. Solids
 - 1. Excavated material and dredged material including sediment (not including debris) removed in accordance with Section 35 20 23 DREDGING.
- B. Solids and Water Processing Area
 - 1. Shall include the Dewatering area and staging/stockpiling area as shown on the Contract Drawings. All stockpiling, solids dewatering, and water treatment shall be completed in the solids and water processing area.

1.4 SUBMITTALS

- A. Contractor shall prepare a Solids Processing Plan including details on all unit processes (i.e., primary processing components) of processing equipment, including interconnecting piping and transfer equipment, to be employed in the process train. The Contractor shall specify the dewatering method to be used and specify the processing equipment required for that method. As a minimum, The Solids Processing Plan shall include (items listed shall apply to geotextile tubes, or approved equal, unless otherwise noted):
 - 1. A written description of the major elements of Work involved and the operation and maintenance procedures at the solids processing area.
 - 2. A detailed description of the means and methods, including all equipment and personnel, for solids processing, dewatering, and preparation for disposal.
 - 3. Details regarding the types, sizes, and quantities of equipment Contractor proposes to use for solids processing and preparation for disposal. Include detailed specifications on the proposed equipment. Include processing capacities, performance ratings, and guarantees.
 - 4. A flow chart depicting the processing steps and illustrating the various process streams, including all inputs and outputs and an overall material balance.
 - 5. Proposed solids processing area utilization, with emphasis on maintaining compact use of space for all Work.
 - 6. Equipment arrangement, scaled diagrams and elevations as applicable, which illustrate component location, connections, and utilities.
 - 7. Power system location and capacity. Mechanical and electrical design drawings stamped by a Professional Engineer, licensed in Massachusetts.
 - 8. Manufacturer's operation and maintenance recommendations.
 - 9. Temporary enclosure structure footprint and relative position of equipment, if required.
 - 10. Provide qualifications for a technician with a minimum of 5 years of experience operating the chosen process for sediment remediation or similar projects.

- B. The Contractor shall submit an Operation and Maintenance Plan for the system and submit the following operation and maintenance information to verify continuing efficient operation and limit break-downs and other work stoppages:
 - 1. Daily operation and maintenance records and reports.
 - 2. Monthly operation and maintenance records and reports.
 - 3. Spare parts lists for major pieces of equipment.
 - 4. Preventative maintenance schedule for major pieces of equipment.
- C. Winterization Plan for protection from freezing to allow for continuous operation

1.5 QUALITY ASSURANCE

- A. Contractor shall maintain at or near the Site, equipment and personnel for performing moisture content analysis of dredge slurries, stockpiles, geotextile tubes at different points in the system. Contractor shall perform moisture content analysis on a daily basis as required to assess performance of the solids processing system and as directed by the Engineer.
- B. Contractor shall monitor and maintain efficiency of the liquids used in the solids processing system.
- C. Contractor shall complete paint filter tests on all dewatered soils and sediment prior to offsite transportation and disposal. Paint filter tests shall be performed at 3 sample locations per 100 cubic yards. The sample locations shall be jointly selected with the Engineer. The frequency of sampling may be revised by the Engineer.

PART 2 – PRODUCTS

2.1 GENERAL MATERIALS

- A. Contractor shall be responsible for the selection of all types, sizes, and quantities of equipment and vessels to perform the Work. Equipment shall meet the minimum specified requirements and meet the production requirements of the Work.
- B. Materials and equipment chosen for this work shall be adequate in capacity for required usage, shall not create unsafe conditions, and shall meet requirements of applicable codes and standards and approval of the Engineer.
- C. Materials shall be new and unused unless otherwise approved by the Engineer. Approval for such items may be withheld due to excess wear, inappropriate size, or other factors which may compromise efficient use of the item.
- D. Transfer equipment shall be of a design to resist clogging, prevent equipment damage in the event of clogging, and allow orderly and prompt removal of obstructions.

2.2 DEWATERING AREA

- A. The Dewatering Area shall be constructed at the solids and water processing area to process dredged material in accordance with details provided in Contract Drawings or approved equal. Within the Dewatering Area, a segregated area shall be constructed to isolate process potentially contaminated material from the remaining dredged material. Contractor shall

construct the segregated area in accordance with details provided in the Drawings or approved equal.

- B. The Dewatering Area as shown in the Drawings shall include:
 - a. Liner covering ground surface of dewatering area will be 30 mil impermeable low density polyethylene fabric.
 - 1) Liner will be keyed into jersey barriers as shown in Contract Drawings.
 - b. Jersey barriers surrounding the stockpile, a minimum of 32 inches in height.
 - c. Perimeter erosion control barrier surrounding the jersey barriers which are composed of haybale/silt fence in accordance with Section 015700 EROSION AND SEDIMENTATION CONTROLS.
 - d. A segregated dewatering area shall be constructed within the larger Dewatering area to process potentially contaminated materials and shall include:
 - 1) Jersey barriers surrounding the stockpile to separate the potentially contaminated dredged material, as defined in Section 35 20 23 DREDGING from the remaining dredged material.

2.3 GEOTEXTILE TUBE DEWATERING

- A. Geotextile tubes shall be constructed with a Tencate Geotube® GT500 fabric, or approved equivalent. The geotextile tube shall be fabricated from a high tenacity permeable fabric to allow water passage through the filter tube. The Geotube material shall be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids
- B. Contractor shall furnish all labor, materials, equipment, polymer, polymer feed system, and incidentals, specified, and required in connection with deployment, testing, and filling of the geotextile tube, in accordance with the lines, grades, design, and dimensions shown on the Drawings as Technical Specifications.
- C. Geotextile tube shall be constructed atop the Dewatering Area to provide sufficient voided area for filtrate drainage at no additional expense to Town.
- D. Contractor shall furnish the geotextile tube by positioning it on a prepared surface that is level across the width of the geotextile tube with a maximum slope of 0.5% in the overall length direction of the geotextile tube. The geotextile tube shall be filled with material to a height not to exceed the manufacturer's specifications.
- E. Contractor shall provide sediment processing products and dosage rates, including approaches to track, verify, or adjust polymer feed rate and other amendments for optimal dosage.
- F. Contractor shall provide a site plan, geotextile tube container layout, mass balance system showing density, percent solids, and flow measurements, filling method, and methods for collecting all filtered water shall be described in the Contractor's Solids Processing Plan.
- G. Contractor shall provide means and methods for reducing nuisance odor, dust and noise.

PART 3 – EXECUTION

3.1 GENERAL

- A. These execution specifications shall apply to all solids processing methods specified herein.
- B. The Contractor shall provide all supervision, labor, tools, materials, utilities, equipment, services, and appurtenances necessary for, or incidental to, solids processing and related Work shown on the Drawings and described herein.
- C. Contractor shall make all arrangements and pay all service, connection, and other fees associated with obtaining utilities for the work.
- D. Contractor shall conduct dewatering and as required to meet disposal requirements. Contractor shall coordinate with the approved disposal facility regarding requirements for disposal, i.e. paint filter test and/or any other requirements.
- E. Contractor shall construct dewatering sump and perimeter trench in accordance with Section 31 00 00 EARTHWORK.
- F. Contractor shall at all times maintain sufficient personnel, materials, and equipment to maintain effective operation of the solids processing systems.
- G. Contractor shall perform all preventative maintenance, repairs, and replacement of system components as required.
- H. At all times, the Contractor shall maintain the process systems and working area in a clean and orderly condition, free of debris, unused materials, and hazards of any kind.
- I. Safety guards and placards shall not at any time be removed from equipment unless equipment is locked and tagged out of operation.
- J. Fugitive dust, odors, chemical emissions, and noise shall be controlled during construction.
 - 1. Contractor shall locate equipment to minimize noise and odor impacts due to prevailing wind direction.
 - 2. Contractor is responsible for planning, implementing, and maintaining effective control measures as may be required. Control measures shall include installation of a tensioned fabric structure over the processing area if this method is selected by the Contractor. If Contractor fails to control their methods of operation or the noise levels of his equipment, then Contractor shall, at their expense, construct other noise minimizing structures and/or take other measures to prevent noise disturbances. This may include re-locating equipment.

3.2 SYSTEM TESTING AND START-UP

- A. Prior to start of full-scale processing, Contractor shall demonstrate for the Engineer's approval the operation of all system components.
- B. Contractor shall correct any problems as directed by the Engineer.
- C. Processing shall not commence until all components are approved.

3.3 SYSTEM OPERATION AND MAINTENANCE

- A. At all times, Contractor shall comply with the approved Operations and Maintenance Plan for the Work.
- B. Contractor is responsible for the containment and cleanup of all spills and contamination resulting from their operations.
- C. The Contractor shall maintain management, operation, and maintenance records; and prepare management, operation, and maintenance reports. All records and copies of reports shall be turned over to the Engineer within 5 days after contract completion.
- D. Conduct daily observation of solids processing system and monitoring system. Make required repairs and perform scheduled maintenance.
- E. Contractor shall submit Daily Logs each morning, which cover the prior 24-hours' work and Monthly Logs on the first Monday of each month for the preceding month's work. Daily and Monthly Logs shall note any significant performance or compliance problems during the preceding period, the measures undertaken to correct those problems, and a running summary or such prior problems until their resolution.
- F. Operate solid processing system continuously until work within dewatered areas is complete in accordance with Contract Documents.

3.4 CONTRACTOR ADJUSTMENTS

- A. Operational adjustments:
 - 1. Daily operational adjustments shall be noted on the Daily Log sheets.
 - 2. Operational adjustments shall be reported to the Engineer as required by the Engineer.
- B. Process adjustments:
 - 1. Significant adjustments include removal or addition of unit process components or significant elements governing unit process performance, and any adjustment that reduces the sustained operation of equipment below the rate proposed in the initial Solids Processing Plan.
 - 2. If the Contractor decides that an adjustment is required to improve performance or reduce costs of processing, the Contractor may present a proposal describing the changes requested for review by the Engineer. This proposal shall be accompanied by data, calculations, and manufacturer guarantees as needed to support the application.
 - 3. The Engineer may request additional information prior to approval.
 - 4. Adjustments shall not be made without the prior approval of the Engineer.

3.5 WINTERIZATION

- A. If Contractor elects to work in winter months, the solids processing system and all supporting areas shall be winterized to protect from freezing to allow for continuous operation. Submit a Winterization Plan for Engineer approval prior to winterization. Winterization shall include protecting the solids processing pipelines, pumps, valves, tanks, generators, geotextile tubes,

and all other necessary equipment from freezing and ice accumulation with enclosures, insulation, conductive heating, or other approved equivalent.

3.6 EQUIPMENT REMOVAL AND SITE RESTORATION

- A. Remove solids processing system after operations are discontinued and Work within the processing area is completed. Do not remove solids processing systems until Engineer has approved.
- B. At the conclusion of work, Contractor shall decontaminate and remove all equipment and restore the site to original conditions.
- C. Prior to removing equipment from the site, the Contractor shall decontaminate all equipment used to handle contaminated waste and dispose of project waste.
- D. All disturbed areas shall be restored according to the Drawings and Section 01 74 24 SITE RESTORATION.
- E. Repair damage caused by solids processing system or resulting from failure of systems to protect property.

END OF SECTION 02 73 00

TECHNICAL SPECIFICATIONS

SECTION 06 85 00 – TIMBER

PART 1 – GENERAL

1.01 SUMMARY

- A. The work of this Section consists of installing cedar logs in the boat launch and related items as indicated on the Drawings and/or as specified herein.

1.02 REFERENCES

- A. Unless otherwise specified or indicated, materials and workmanship shall conform with the latest edition of the following standards, codes, specifications, requirements and regulations:
 - 1. Standard Specifications: The Commonwealth of Massachusetts, Highway Department, Standard Specifications for Highways and Bridges, latest edition.

1.03 SUBMITTALS

- A. At least thirty (30) days prior to intended use, the Contractor shall provide the following samples and submittals for approval. Do not order materials until Owner's Representative's approval of samples, certifications and/or test results has been obtained. Delivered materials shall closely match the approved samples. Samples and approvals which are not obtained prior to the ordering of materials or the completion of work, shall result in possible disapproval of obtained materials or completed work.
- B. Shop Drawings: Submit the following:
 - 1. Submit detailed Shop Drawings for each item required to be fabricated or installed under this Section. Include plans, sections and details as required to show all materials, layout, dimensions, jointing and connections for all items required. Shop drawings required are as follows:
 - a. Log steps for boat launch
- C. Manufacturer's Literature: Submit three (3) copies of each of manufacturer's material descriptions and/or installation instructions for the following:
 - 1. Brush-on preservative for field-cuts of wood items

1.04 QUALITY STANDARDS

- A. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have a smooth finish and sharp, well-defined lines. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be spread evenly to curves.
- B. Timber Sources: The Owner's Representative reserves the right to review and reject the source of the timber. The Contractor shall submit for the Owner's Representative's review and

approval a list indicating the source for the timber.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store work under this Section in a manner to prevent wracking or stress of components, and to prevent mechanical damage or damage by the elements.
- B. Items which become rusted or damaged because of non-compliance with these conditions shall be rejected and replaced without additional cost to the Owner.
- C. Deliver work to the site in sufficient time to avoid delay in job progress and at such times as to permit proper coordination of the various parts.
- D. Deliver bolts and other small items required for erection of work under this Section bundled with their respective items.

PART 2 – PRODUCTS

2.01 LOG STEPS FOR BOAT LAUNCH

- A. Wood for the log steps shall be cedar logs. The sizes shall be as noted on the Drawings.
- B. Contractor to notch and pre-drill logs per Drawings.
- C. Steel rods required by the Drawings shall be fashioned from steel and galvanized in accordance with requirements of ASTM A123 and/or A153.
- D. Aggregate material shall be sand borrow as described in Section 31 00 00 – Earthwork.

PART 3 – EXECUTION

3.01 LOG STEPS FOR BOAT LAUNCH

- A. Install log steps in accordance with the Drawings and approved submittals and Shop Drawings.

END OF SECTION 06 85 00

SECTION 31 00 00 - EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Perimeter trench drain and dewatering sump excavation and construction
2. Grassed channel excavation and construction
3. Pavement removal
4. Gravel access road installation
5. Soil scarification
6. Excavation and placement of boat launch.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO):

1. AASHTO T-99 – Standard Method of Test for Moisture – Density Relations of Soils Using a 2.5-kilogram (5.5-pound) Rammer and a 305-millimeter (12-inch [in.]) drop.

B. ASTM International (ASTM):

1. ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D4253 – Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
3. ASTM D4254 – Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
4. ASTM D2216 – Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.

1.3 SUBMITTALS

- A. Material testing laboratory results.
- B. Materials source – submit name of imported materials suppliers.
- C. Manufacturer's certificate – certify Products meet or exceed specified requirements.
- D. A typical grain-size analysis for all aggregate materials.
- E. The moisture density curve for the select granular fill material.

- F. MassDOT approved source.
- G. A description of the equipment and methods proposed to be used for compaction.
- H. Copies of all compaction test reports. The test reports shall include the test methods used, results, a narrative of tests conducted, locations, elevations material tested, equipment used, the name of the technician conducting the tests and a signed certification from the laboratory.
- I. Name of qualified independent compaction testing laboratory.

1.4 QUALITY ASSURANCE

- A. Where “Standard Specification” is used, it shall mean “Commonwealth of Massachusetts, Massachusetts Department of Transportation, Standard Specifications for Highway and Bridges” English Edition, and latest issued supplements.
- B. Source
 - 1. Where available, materials specified herein shall come from sources and stockpiles possessing current MassDOT certification for item supplied.
 - 2. Materials from non-MassDOT approved sources may be acceptable to Engineer provided material testing and acceptance criteria of MassDOT Standard Specifications are met.
- C. Testing
 - 5. Contractor shall obtain representative samples of materials specified herein and perform MassDOT Standard Specifications compliance testing at no additional cost prior to delivering material to the site:

Aggregate Schedule		
Material	Estimated Quantity	Compaction Testing Required?
Gravel Backfill	850 CY	Yes
Dense Graded Crushed Stone for Subbase	93 CY	Yes
Supplementary Sand Borrow	400 CY	No
Supplementary Loam	400 CY	No
¾” Crushed Stone	7 CY	No

PART 2 - PRODUCTS

2.1 GRAVEL BACKFILL:

- A. Gravel backfill shall meet MassDOT Standard Specification requirements under M1.03.0 Gravel Borrow and meet MassDOT Standard Specification Type d size requirements and gradation requirements in Table M1.03.0-1.
- B. Gravel backfill shall be used in installing temporary access roads and construction entrances as shown on the plans and as directed by the Engineer. The quantity identified in the schedule is based on surface area of the access road and construction entrances and boat launch and proposed depths.
- C. Material may also be used for access road if Contractor selects to construct an access road.

2.2 DENSE GRADED CRUSHED STONE FOR SUBBASE

- A. Dense Graded Crushed Stone for Subbase shall meet MassDOT Standard Specification requirements under M.01.0 Crushed Stone and meet MassDOT Standard Specification M2-1.7 size requirements and gradation requirements in Table M2.01.7-1.
- B. Dense Graded Crushed Stone for Subbase shall be used in improving the Commonwealth Avenue access road as shown on the plans and as directed by the Engineer. The quantity identified in the schedule is based on surface area of the access road and proposed depths.

2.3 ¾" STONE

- A. ¾" Stone shall meet MassDOT Standard Specification requirements under MassDOT Standard Specification M2-1.4 size requirements and gradation requirements in Table M2.01.0-1.
- B. ¾" Stone shall be used in improving the Commonwealth Avenue access road for use as backfill material to improve the boat launch area once cedar logs (Section 06 85 00 TIMBER) are placed.

2.4 SUPPLEMENTARY SAND BORROW

- A. Supplementary Sand Borrow shall meet MassDOT Standard Specification requirements under M1.04.1: Sand Borrow for Subdrains.
- B. Supplementary Sand Borrow shall be used in the case that the wetland shelf material has percentage organic content that is deemed too high at the discretion of the Engineer. Supplementary Sand Borrow will be mixed into the upper six inches of material used to create the shelf.

2.5 SUPPLEMENTARY LOAM

- A. Supplementary Loam shall meet MassDOT Standard Specification requirements under M1.05.0: Loam.
- B. Supplementary Loam shall be used in the case that the wetland shelf material has percentage organic content that is deemed too low at the discretion of the Engineer. Supplementary Loam will be mixed into the upper six inches of material used to create the shelf.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.
- D. Remove asphalt paving on Commonwealth Avenue access location access road prior to placement of dense graded crushed stone.

3.2 EXCAVATION

- A. Excavate to the lines and grades shown on the Contract Drawings.
- B. When excavating under the drip line of trees, use compressed air (i.e. Air Knife, Air Spade, etc.) to protect roots.
- C. Notify Owner of unexpected subsurface conditions.
- D. Slope banks with machine to angle of repose or less until shored.
- E. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- F. Trim excavation. Remove loose matter.
- G. Repair or replace items indicated to remain if they are damaged by excavation.
- H. Excavate grassed channel to the dimensions and locations shown in the Contract Drawings.

- I. Excavate sump and perimeter drain in dewatering area to be sufficiently sized to drain dewatering liquid. Sump should be excavated at lowest point in the grading. The drain shall be located where it will capture all water coming from the dewatering dredge material without backing up and overtopping dewatering area perimeter controls, and drain should be graded towards the sump.

3.3 USE OF EXCAVATED MATERIALS

- A. Excavated material not utilized in the design shall become the property of the contractor and removed from the site.

3.4 DISPOSAL OF UNSUITABLE MATERIALS

- A. Existing debris, asphalt, waste, and other unsuitable materials, as determined by these Specifications or by the Owner, shall be removed from the site and shall be disposed of at a site with an approved erosion and sediment control permit.

3.5 ROCK EXCAVATION

- A. Boulders and Rock: Boulders and rock from the excavation may not be broken and used for any of the proposed in structures unless authorized by the Owner or provided for in the Contract Documents.

3.6 FROZEN MATERIAL

- A. Frozen material shall not be used as backfill. It shall be stockpiled outside of the construction limits and reserved for future use at a time when its condition is acceptable to the Owner. Re-handling of the excavated material shall be at the expense of the Contractor. Any material which is wasted shall be replaced by the Contractor with approved material at no expense to the Owner.

3.7 EXCAVATION BEYOND SPECIFIED LIMITS

- A. The widening of cut or excavation sections beyond the limits of the cross-sections, as specified in the Contract Documents, is prohibited in all instances except by written order from the Owner.

3.8 UNSUITABLE MATERIAL AND UNDERCUTS

- A. Unstable or other unsuitable material encountered at or below the lowest normal excavation limit, as specified in the Contract Documents, shall be undercut and removed to the extent directed by the Owner. In rock areas, the limit of measurement for excavation will be at the bottom of the normal plan section. All voids created by the removal of unsuitable material and undercuts, except when rock is encountered at subgrade, shall be backfilled to the lines and grades specified in the Contract Documents. Backfill material for undercuts shall conform to materials specified and shall be incidental to the excavation.

3.9 PLACEMENT OF SALVAGED MATERIALS

- A. Salvaged suitable materials meeting the Specifications described in the Contract Documents shall be placed as specified in stockpiles that meet erosion and sediment control requirements.

3.10 STABILIZATION

- A. The Contractor shall be responsible for temporary and permanent stabilization of all excavation areas, immediately after the completion of grading, as specified in the Contract Documents. The Contractor shall perform all care and remediation work required to maintain stable stream banks, including erosion and sediment control.

3.11 INSTALLATION

- A. The bottom layer of material shall be placed so that the placed materials are in full contact with the underlying material.
- B. The ground surface on which the any aggregate is to be placed shall be free of brush, trees, stumps, and other objectionable material and shall be dressed to a smooth surface. All soft or spongy material shall be removed to the depth specified or as directed by the Engineer and replaced with bedding material and compacted in an approved manner.
- C. The stone shall be so placed and distributed that there will be no pockets of uniform size material.
- D. The desired distribution of the various sizes of stone throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during the final placing; or by other methods of placement, which will produce the specified result.
- E. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to secure the specified results.
- F. Gravel shall be spread and compacted in accordance with the compaction requirements of MassDOT Standard Specification 401.60 Gravel Sub-base.

3.12 STOCKPILING

- A. The Contractor shall propose material stockpile locations in their work plan.
- B. Stockpile in sufficient quantities to meet Project Schedule and requirements.
- C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.

- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.13 COMPACTION

- E. Place fill in lifts of not more than 4 inches, scarify and recompact material at 90 percent.

3.14 STORAGE OF SOIL MATERIALS

- A. Stockpile soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- B. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.15 FIELD QUALITY CONTROL

- A. Compaction
 1. Engage testing agency to inspect and test each fill layer. Proceed with subsequent earthwork operations only after test results for previously completed work comply with requirements.
 2. Testing agency will test compaction of soils in place according to ASTM D 1556, and ASTM D 6938, as applicable and when directed by the Engineer. Tests will be performed for every 1,000 square feet of gravel access road.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 00 00

SECTION 31 72 00 – INVASIVE SPECIES REMOVAL

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes, but is not limited to, the following:
 - 1. Manual removal of invasive species.
 - 2. Mechanical removal of invasive species.
 - 3. Herbicide application.
- B. Related Sections:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions
 - 2. Section 31 23 16 – Earthwork
 - 3. Section 32 93 00 – Site Restoration
 - 4. Invasive Species Management Plan
- C. The Work included in this Section shall be completed in accordance with the Invasive Species Management Plan for the Commonwealth Avenue Access Location (Exhibit C).

1.2 SUBMITTALS

- A. Narrative describing method of protection to prevent overspray and minimize pesticide drift.
- B. Product data: Glyphosate and/or Triclopyr Materials Safety Data Sheets. Specify herbicide to be used during bid process.
- C. Applicator name, license number, and company information: To be provided during bid process.
- D. All necessary Permits for application of Herbicide: To be obtained by Contractor prior to start of Work.

1.3 QUALITY ASSURANCE

- A. Preconstruction Meeting: Conduct meeting with Engineer and on-site supervisor and review the following:
 - 1. Limits of manual removal.

2. Limits of mechanical removal,
3. Limits of herbicide application.
4. Herbicide selection – Glyphosate and/or Triclopyr.

1.4 PROJECT CONDITIONS

1. The applicator will have sufficient experience controlling target invasive species and will be trained in plant identification.
2. Herbicide application shall occur within the timeframe specified in the Invasive Species Management Plan for the Commonwealth Avenue Access Location.

1.5 EQUIPMENT OPERATIONS

- A. Do not commence herbicide application operations until temporary erosion and sedimentation control measures are in place.
- B. Restore items and finished surfaces that have been damaged by Contractor's operations to a condition at least equal to condition before work began.
- C. Repair all rutting, or damage to the site as a result of the repetitive passage of equipment on existing substrate.

PART 2 – PRODUCTS

- A. Herbicide: Glyphosate and/or Triclopyr products may be used:
 1. Glyphosate:
 - a. EPA Registration Number: 97706-1.
 2. Triclopyr:
 - a. EPA Registration Number: 81927-11.

PART 3 – EXECUTION

3.1 SITE PREPARATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place.
- B. Identify utilities and perform site clearing.

C. Stake-out limits of herbicide application for review and approval by Engineer.

3.2 MANUAL REMOVAL

A. Pull out by hand seedlings of plants identified as invasives.

B. Monitor areas in and around invasives removed for new growths and remove immediately.

C. Conduct manual removal in accordance with the methods outlined in the Commonwealth Avenue Access Location Invasives Species Management Plan.

3.3 MECHANICAL REMOVAL

A. Cutting and soil disturbance may result in production of new shoots. Any mechanical removal should be combined with herbicide application to manage invasives that are 2 in. diameter or larger.

B. Conduct mechanical removal in accordance with the methods outlined in the Commonwealth Avenue Access Location Invasives Species Management Plan.

3.4 HERBICIDE APPLICATION

A. Apply one or the other herbicide at the following rates:

1. Aquapro: 4–6 quarts per acre
2. Clearcast: 96–128 ounces per acre.

B. Glyphosate and/or Triclopyr herbicide will be diluted with water from off-site and applied using the cut stump treatment method or the basal bark treatment method as specified in the Invasive Species Management Plan for the Commonwealth Avenue Access Location.

- a. Cut Stump Treatment – Cut stems a few inches above the ground and apply herbicide immediately. Cut stump treatment shall be conducted between August and October.
- b. Basal Bark Treatment – Apply triclopyr in a band around the stem from the base of the stem to a height of 12-15 inches above ground. Winter treatments shall be conducted in the absence of snow cover.

C. Conduct herbicide application in accordance with the methods outlined in the Commonwealth Avenue Access Location Invasives Species Management Plan.

D. Conduct herbicide application in accordance with product label(s) and Safety Data Sheet(s).

E. Foliar treatment of certain species will be conducted upon approval by the Engineer in accordance with the methods outlined in the Commonwealth Avenue Access Location Invasives Species Management Plan.

3.5 DISPOSAL OF UNSUITABLE MATERIALS

- A. All pulled or cut stems shall be removed from the site and shall be disposed offsite in accordance with Section 02 61 00 – TRANSPORTATION AND DISPOSAL OF MATERIALS. Care must be taken to prevent spread of fruits and seed to new areas.

3.6 PROTECTION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Protect existing site improvements to remain from damage during construction.

3.7 CONDITIONS

- A. The Contractor should anticipate adverse excavation conditions. Saturated soils, contact with groundwater, woody debris and organic muck are anticipated. No additional payment shall be made for adverse conditions of excavation, or delay or work associated with those conditions.

END OF SECTION 31 72 00

SECTION 32 90 00 - SITE RESTORATION

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Description
 - 2. Submittals
 - 3. Restoration of Dewatering Area
 - 4. Planting of Wetland Shelf
 - 5. Shoreline protection
 - 6. Restoration of Commonwealth Avenue Access
 - 7. Restoration of Dredge Material Disposal Site.
 - 8. Parking Appurtenances

1.2 DESCRIPTION

- A. Upon completion of the work, Contractor shall be responsible for restoring all disturbed areas (work areas, access areas, staging areas, and other areas as applicable) to original condition unless otherwise specified herein. This section specifies the requirements for establishing vegetative covering over final soil surfaces, including fill materials, seeding, planting, mulching, and vegetation establishment period. The Contractor shall provide all labor, materials, equipment, and incidentals to complete the work specified in this section.

1.3 SUBMITTALS

- A. Contractor shall submit documentation of the pre-construction condition of the site to the satisfaction of Engineer. Upon request of Engineer, Contractor shall submit additional documentation.
- B. Contractor shall submit and obtain Engineer's approval for all materials prior to start of restoration.
- C. Product Data: Contractor shall submit list for fill materials, seed mix data, plant sources, mulch, soil amendments, and other accessories.
- D. Qualifications of nursery.
- E. Materials Source: Submit name of commercial imported fill materials suppliers.
- F. Substantial completion certificate and inspection request.

1.4 QUALIFICATIONS

- A. Nursery: Company specializing in growing and cultivating plants with minimum 3 years documented experience.
- B. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum 3 years documented experience.

- C. Installer: Company specializing in installing and planting plants with minimum 3 years documented experience.
- D. Maintenance Services: Performed by installed for duration of warranty period.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed
 - 1. Deliver seed mixtures in sealed containers. Seed in damaged packaging is not acceptable.
 - 2. Protect seed from drying out and from contamination during delivery, on-site storage, and handling.
 - 3. Store in cool, dry locations away from contaminants.
- B. Plants
 - 1. The Contractor shall be solely responsible for judging the full extent of work requirements involved, including but not limited to the potential need for storing and maintaining plants temporarily and/or re-handling plants prior to final installation.
 - 2. All plants are the full responsibility of the Contractor between the time of delivery by the nursery and final acceptance.
 - 3. Protect and maintain plant life until planted.
 - 4. Deliver plants immediately prior to placement. Keep plants moist.
 - 5. Plant material damaged as a result of delivery, storage, or handling will be rejected.
 - 6. Bare root plants shall be heeled-in and maintained in moist soil or other suitable material until planted.
 - 7. Plants being transported to and from the planting area shall have their roots protected from drying by means of covering with canvas, burlap, or straw and shall be kept moist.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Planting of the wetland shelf shall occur between April 1 and June 1.
- B. Do not install plants or seed when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.
- C. Do not install plants or seed immediately following rain, when ground is too dry, or when winds are over 12 mph.

1.7 WARRANTY

- A. Furnish 1-year warranty for plants installed at the wetland shelf. This warranty shall be provided by the Contractor at no additional cost to the Owner and shall include required maintenance of planting areas and replacement of lost plant(s) to maintain a minimum survivability of 85% of installed plants.
- B. Warranty period shall begin once all plantings have been completely installed.

1.8 MAINTENANCE SERVICE

- A. Maintenance includes:
 - 1. Periodic inspection of the herbivory protection and replacement of any damaged and/or destroyed sections to maintain the integrity of the system.

PART 2 – PRODUCTS

2.1 PLANTS

- A. The Contractor shall furnish all plants shown on the Contract Drawings, as specified, and in quantities listed on the Contract Drawings. No substitutions will be permitted without written approval of the Engineer. All plants shall be nursery grown stock.
- B. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name.
- C. Plant species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.
- D. All plants shall be vigorous and balanced root and top growth, free from disease, injurious insects, mechanical wounds, broken branches, decay, or other defects.
- E. The Contractor shall complete a careful visual inspection of plant containers and/or trays to assess the presence of invasive plant species including but not limited to purple loosestrife (*Lythrum salicaria*). Any plant containers and/or trays found to contain invasive plant species shall be rejected at no additional expense to the Owner.
- F. Plant suppliers:
 - 1. New England Wetland Plants, Inc.
 - 2. Or Approved equal
- G. Wetland Planting
 - 1. Plugs to be planted in a 24” triangular grid pattern
 - 2. Include plant species, type, size, spacing, and quantities as listed in the Contract Drawings.

2.2 SEED MIXES

- A. Seed suppliers:
 - 1. New England Wetland Plants, Inc.
 - 2. Or Approved equal
- B. Upland Planting - New England Erosion Control/Restoration Mix
 - 1. Products:
 - a. New England Wetland Plants, Inc – New England Erosion Control/Restoration Mix (Application rate: 1 lb/1,250 SF or 35 lbs/acre)
 - b. Approved equal.

2. Include grass and wildflower species and percentages by weight as listed in the Contract Drawings.

C. Temporary Seed Mix

1. Products:
 - a. 40% Annual Ryegrass and 60% Perennial Ryegrass (Application rate: 18 lbs/acre)
 - b. Approved equal.

2.3 ACCESSORIES

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry, 4,000 lbs/acre. Chopped cornstalks are not acceptable.
- B. Water: Clean, fresh, and free of substances or matter capable of inhibiting vigorous growth.
- C. Pesticides: In accordance with Federal, State and Local laws and regulations.

2.4 HERBIVORY PROTECTION

- A. Furnish and install a waterfowl herbivory barrier protecting the planted areas of the wetland shelf as described in this section. The barrier will discourage foraging by geese and other waterfowl that may be likely to disturb, damage, or destroy wetland plants during the establishment period.
- B. The waterfowl herbivory barrier shall be fabricated as follows:
 1. Untreated, non-tropical, notched hardwood stakes (2 inches by 2 inches by 8 feet long).
 2. Ultraviolet-resistant polypropylene extruded safety fencing having a mesh opening size of 1.5 inches (orange color) Tensar BX205 or approved equal.
 3. Mylar flash tape, 2 inches width that reflects sunlight and generates noise in wind. Survey tape is not an acceptable substitute.
 4. Monofilament shall be braided nylon and 0.125 inch diameter or conform to 80 pound test minimum.
 5. 2-inch roofing nails shall be hot dipped galvanized.
 6. 1.5-inch staples shall be hot dipped galvanized.
- C. Verify wetland area planting dimensions by field measurement before proceeding with waterfowl barrier installation work.
- D. The waterfowl barrier shall be installed at the end of each day's planting and enclose the newly planted areas to prevent waterfowl grazing during construction.
- E. The support stakes shall be located throughout the planted area. The stakes shall be driven plumb 1 one foot from the edge of any plant material and to a minimum of 2 feet deep. Remove any broken or splintered stakes and replace at no extra cost.
- F. The extruded plastic safety fencing shall be embedded to a minimum of 2 inches below the finished grade. The fencing shall be attached to the stakes by staples as defined above. Fencing shall surround the planting area.

- G. The braided nylon twine shall be attached to the stakes by roofing nails as defined above. Monofilament lines are run parallel to one another at 6-inch intervals. On the top, the twine shall be attached to roofing nails hammered into the top of the stakes. Each line across the top shall be woven in and out to provide increased stability. The twine shall be pulled taught to reduce sagging.
- H. Mylar flash tape shall be attached to the top nylon twine at a minimum of 2-foot intervals. Tape shall be wrapped around the twine several times to avoid slippage. A minimum of 1-foot length of tape should be present below attachment.
- I. Maintain the waterfowl barrier throughout the maintenance period. Waterfowl barrier shall be routinely inspected once every two weeks and damaged areas repaired as necessary.
- J. Maintenance shall include removal of debris. Remove all unwanted and unsightly materials that have become attached to the fence as well as debris from within the enclosed area to prevent smothering of plants.
- K. Remove the waterfowl barrier fence at the end of the maintenance period. Any plants damaged during removal of the waterfowl barrier will be replaced at no additional expense.

2.5 PARKING APPURTENANCES

- A. Handicapped Parking Sign
 - 1. Handicapped parking sign: conforming to mass.gov/doc/disability-parking-regulations/download.
- B. Parking Block
 - 1. Parking Block: three foot long, concrete parking block, not weighing less than 185 lbs.

PART 3 – EXECUTION

3.1 The Contractor is ultimately responsible for the means and methods of installation of the materials and structures outlined in this section. All guidance provided is the best recommendation of the Engineer. The Contractor shall institute means, and methods as required, to meet the goals and performance criteria specifications outlined herein.

3.2 EXAMINATION

- A. Comply with all local, State, and Federal regulations.
- B. Verify structural ability of unsupported slopes and excavation side-walls to support loads imposed by fill. Contractor is responsible for stability of all temporary slopes, shoring, and unsupported excavation side walls.
- C. Verify fill materials have been approved by Owner prior to transporting fill material.

3.3 TOLERANCES

- A. Unless specified elsewhere in this section, surface elevations and the slopes of all fill surfaces shall conform to the contours specified on the Contract Drawings or as directed by the Engineer. Tolerances of the finished structure are as follows:

Surface Elevation: ± 0.2 ft

Slope: ± 0.1 %

- B. Placed material not conforming to the specified tolerance limits shall be removed and replaced as directed by the Engineer at no additional cost to the Owner.

3.4 SURVEY

- A. Contractor shall provide a post-excavation and final surface survey in accordance with Section 01 70 00 Execution and Sedimentation Controls to quantify each fill material for payment and verification that final grade meets the requirements of the Contract Documents and permit requirements. Post-excavation and final surface surveys shall be submitted to Owner and Engineer for approval.

3.5 FINISHING

- A. Finish the surface of excavations, embankments, and subgrades to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations depicted in the Contract Drawings unless otherwise indicated.
- B. Any roots, rocks larger than 3 inches in size, or other undesirable material shall be removed from the surface immediately and the surface shall be prepared for stabilization.
- C. Remove all surplus backfill materials from site.

3.6 PREPARATION

- A. Verify prepared soil base is ready to receive the work of this section. Engineer shall approve soil base prior to planting or seeding.
- B. Prepare seeding surface to a smooth and equipment- track-free surface.
- C. Seeding and planting operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed times shall be submitted to and approved by the Engineer.

3.7 SEEDING

- A. Locations of seeding zones may require adjustments in the field to adapt to on-the-ground conditions, water levels, and other conditions to ensure survivability and long-term health. Owner, Engineer, and Contractor shall evaluate all planting zones prior to performing work to confirm locations. No seeding operations shall proceed without approval from the Owner and Engineer.

- B. Date of application: Thaw to May 1; September 1 to freeze/snow.
- C. Temporary seed mix shall be applied if final grading is completed outside the date of application.
- D. Prior to seeding, any previously prepared seedbed areas compacted or damaged by interim rain, traffic, or other cause, shall be reworked to restore the ground condition previously specified. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.
- E. Seed shall be uniformly drilled to an average depth of 1/2 inch and at the rates specified using equipment having drills not more than 6-1/2 inches apart. Row markers shall be used with the drill seeder.
- F. Do not seed areas in excess of that which can be mulched on same day.
- G. Immediately following seeding, apply mulch.

3.8 MULCH

- A. The mulch shall be fixed in place with mechanical anchoring by a V-type-wheel land packer, a scalloped-disk land packer designed to force mulch into the soil surface, or other suitable equipment.
- B. Straw or hay mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of a steep slope and continued uniformly until the area is covered. The mulch shall not be bunched. All seeded areas shall be mulched on the same day as the seeding.

3.9 PLANTING

- A. The Contractor shall locate plant material sources and ensure that plants are shipped in timely fashion for installation.
- B. The Contractor shall provide at least three (3) business days' notice to the Engineer regarding the anticipated date of delivery of plant material to the project site. The Contractor shall request that the Engineer be present at the project site upon delivery of plant material, and the Engineer shall inspect all plant material upon delivery to the project site to confirm that plant material is in accordance with the requirements of this Section. Planting activities shall not commence until the Contractor has received written approval of planting material from the Engineer following the on-site inspection. Cost of replacement, as required, shall be borne by the Contractor.
- C. Locations of planting zones and individual plants may require adjustments in the field to adapt to on-the-ground conditions, water levels, and other conditions to ensure survivability and long-term health. Owner, Engineer, and Contractor shall evaluate all planting zones prior to performing work to confirm locations. No planting operations shall proceed without approval from the Owner and Engineer.

- D. All plant roots must be damp and thoroughly protected from sun and wind throughout planting operations until final planting.
- E. Seasons for Planting:
 - 1. April 1 to June 1
- F. Place plants as indicated in the Contract Drawings.
- G. Plants shall be installed in the following manner.
 - 1. Plant in a triangle planting pattern at the spacing indicated.
 - 2. Remove non-biodegradable root containers.
 - 3. Use an auger or other appropriate tool to excavate planting holes. Evenly distribute plant species throughout the designated planting area. Place plants in irregularly-shaped clusters of 50-100 individuals of a single species to create a patchwork mosaic through the planting area.
 - 4. Plant plugs level with soil grade. Place soil around plugs and firmed into place. Do not fill around plugs with mulch.
 - 5. Place bare root plants so roots lie in natural position. Backfill soil until no roots are exposed above the grade line. Maintain plant life in vertical position.
 - 6. Care shall be taken during backfilling, soil compressing, and watering to avoid injuring the roots.

3.10 PROTECTION

- A. Immediately after seeding, the area shall be protected against traffic or other disturbance.

3.11 VEGETATION ESTABLISHMENT PERIOD FOR SEEDED AREAS

- A. Seeded areas shall be watered during the first growing season (1 May – 15 October) at a minimum as follows:
 - 1. Water twice a day (to apply a minimum of ¼ inch per watering event) for 7 days to promote seed germination, then
 - 2. Water once a day (to apply a minimum of ¼ inch per watering event) for the next 7 days, then
 - 3. Water three times a week to apply a minimum of 1 inch per week for the next 28 days.
 - 4. Skip the next watering event if a rain event occurs that is greater than the amount to be applied during that water event.
- B. No watering shall be provided for the wetland shelf area.
- C. Areas compacted from equipment during watering events shall be repaired and soil density shall be reduced to approximate surrounding soil density.
- D. Control growth of weeds. Apply herbicides to turf grass seeded areas. Remedy damage resulting from improper use of herbicides. Manually or mechanically remove weeds from native and no mow low grow areas or complete weed removal by other methods in these areas as approved by Owner. High-deck mowing may be necessary in areas with excessive weeds.

- E. Control pests that may hinder vegetation establishment.
- F. Immediately reseed and water areas showing bare spots.
- G. Repair washouts or gullies.
- H. Vegetation Establishment Period execution shall continue until all of the following conditions are met:
 - 1. Minimum watering events have been completed.
 - 2. Vegetative cover is established over 80 percent of seeded areas.
 - 3. Not more than 10 percent of areas with bare spots larger than 1 square foot.
 - 4. Less than 5 percent invasive species are present within areas vegetated by Contractor.
 - 5. Greater than 75 percent of plants showing sprouting and/or leaf production.
 - 6. Written approval by Engineer.

3.12 RESTORATION OF DEWATERING AREA

- A. Areas graded for staging or placement of soils shall be restored at the completion of work to conditions that existed prior to the start of work as approved by Engineer. Access routes to dewatering area and staging/stockpiling areas shall be restored per the design drawings, which may include grading and seeding. Areas where vegetation was temporarily disturbed due to project activities will be seeded in accordance with Part 3.8 in this Section and as approved by Engineer.
- B. Agricultural fields within the limits of disturbance will be restored to original condition. Fields will be graded to original grades and stripped topsoil will be replaced. Any topsoil disturbed/compacted within the project area will be scarified to loose condition.
- C. Planting of the agricultural fields begins 1 May. Any disturbed areas within the fields that remain idle for more than 14 days prior to 1 May will be stabilized with temporary seed mix, mulch, or other approved methods.

3.13 RESTORATION OF WETLAND SHELF

- A. The wetland shelf shall be restored per the design drawings. Areas shall be brought to proper grade as required by Engineer. Restoration plantings shall be installed per Part 3.9 in this Section.

3.14 RESTORATION OF COMMONWEALTH AVENUE ACCESS IMPROVEMENTS

- A. During the course of the work, Contractor shall improve the Commonwealth Avenue Access used as the dredge barge access to Warner's Pond. New gravel will be placed over road and parking lot as described in Section 31 05 16 EARTHWORK and as approved by Engineer.
- B. Cedar logs will be placed to stabilize the boat launch area in accordance with Section 06 85 00 TIMBER. New sand will be placed over the boat launch area as described in Section 31 00 00 EARTHWORK and as approved by Engineer.

- C. Grassed Channel shall be brought to proper grade as described in Section 31 00 00 EARTHWORK and seeded with upland planting seed mix to prevent erosional conditions. as specified in Part 3.7 of this Section and as required by Engineer.
- D. Concrete curbs and sidewalks that are affected by the construction shall be replaced during site restoration to pre-construction dimensions in accordance with Town of Concord building code.

3.15 RESTORATION OF DREDGE MATERIAL DISPOSAL SITE

- A. Contractor shall repair any damage made to surrounding grassed/lawn areas associated with the work. Disposal Site shall be brought to proper grade and seeded with upland planting seed mix to prevent erosional conditions. as specified in Part 3.7 of this Section and as required by Engineer.

END OF SECTION 32 90 00

SECTION 35 00 00 - WATERWAY AND
MARINE CONSTRUCTION

PART 1 – GENERAL

1.1 DESCRIPTION

CONTRACTOR shall maintain vessels and provide safety equipment per United States Coast Guard (USCG) regulations and to the satisfaction of the ENGINEER.

1.2 REFERENCED SECTIONS

- A. Section 01 76 00 – PROTECTING INSTALLED CONSTRUCTION
- B. Section 35 20 23 – DREDGING

1.3 REFERENCES

- A. USCG Code of Federal Regulations (CFR), Title 33, Chapter 1, Parts 64 and 66 – PATON
- B. American National Standards Institute (ANSI) 535.1 standard for Safety Colors

1.4 SUBMITTALS

- A. CONTRACTOR shall submit qualifications of person(s) responsible for performing inspections of dredges and related equipment before they are entered into service to make sure they are in safe operating condition.

PART 2 – MATERIALS

NOT USED.

PART 3 – EXECUTION

3.1 VESSEL REQUIREMENTS

- A. CONTRACTOR shall inspect, certify, license, and number all vessels and equipment according to applicable regulations of USCG and other jurisdictional entities before placing them in service.
- B. CONTRACTOR shall plainly mark on all vessels the maximum occupancy and carrying capacity allowed onboard for safe passage (i.e., USCG maximum capacities). CONTRACTOR shall not exceed this maximum occupancy or carrying capacity.
- C. CONTRACTOR shall make sure each vessel has enough room, freeboard, and stability to safely carry the maximum cargo and passengers under various weather and water conditions.
- D. CONTRACTOR shall equip gasoline engines, except for outboard types, with a

USCG-approved backfire flame arrestor. The arrestor must be attached to the air intake with a flame-tight connection, or per manufacturer specifications. It must be kept clean and in serviceable condition.

- E. CONTRACTOR shall comply with USCG regulations for fire extinguishers.
- F. Vessels with permanently installed gasoline engines must have powered ventilation systems to remove gasoline vapors from the vessel.
- G. CONTRACTOR shall store fuel in approved containers suitable for marine use. Fuel lines must be equipped with a valve to cut off fuel flow. In addition, if the vessel will not be in use for 8 hours or longer, the valve must be closed.
- H. CONTRACTOR shall equip vessels with approved personal flotation devices (PFDs) and approved throwable devices in accordance with applicable rules and regulations. A PFD shall be worn at all times when personnel are onboard a vessel or work platform or working within 10 feet of water where a drowning hazard exists.
- I. CONTRACTOR shall equip all vessels and work platforms with adequate safety equipment to meet USCG requirements and any hazards that may be encountered during normal operations.
- J. Personnel shall not directly enter the water from waterfront structures, vessels, or any floating equipment unless he/she is a certified diver whose duties require such entrance and are approved by the ENGINEER.
- K. All vessels and barges shall be properly identified for both daytime and nighttime operations in accordance with USCG Navigation Rules.
- L. CONTRACTOR shall operate all marine equipment so as to maintain a draft suitable to avoid running aground.

3.2 MARINE EQUIPMENT OPERATIONS

- A. A qualified person must inspect dredges, cranes, support barges, or other support equipment before they are entered into service to ensure they are in safe operating condition. The qualified person must have a recognized degree, certificate, or license or professional standing, as well as extensive knowledge, training, and experience in solving problems related to the Work. Inspections must be documented and submitted to the ENGINEER.
- B. A qualified person must directly supervise any mobilization, demobilization, or relocation of dredges, support barges, or other support equipment.

3.3 LIGHTING AND SIGNAGE

- A. Vessels, barges, containment booms, and other equipment must be able to display navigation and marker lights required by USCG. Lights shall be displayed between sunset and sunrise and any other time visibility is reduced.

- B. Lights shall conform to the requirements specified in USCG requirements for visibility and color.
- C. Signage and/or flags shall be installed to clearly identify Work areas, water vessels, barges, containment booms, silt curtains, and other equipment to provide proper warning to mariners.

3.4 ANCHORING AND MOORING

- A. Remove visible sediment and vegetation from all anchors before leaving the location of anchoring.
- B. No anchoring is permitted in areas where wetland shelf materials have been placed.
- C. All anchoring systems for Work-related vessels must be kept in proper working order. All anchoring chains and winches shall be inspected prior to deployment each day to ensure proper working order. Repairs and preventive maintenance to equipment shall be made in a timely manner to minimize downtime and loss of production. Repairs shall also be made to ensure the safety of the operation, as well as continue the efficiency of all operating equipment. Inspections of equipment shall be allowed at any time.
- D. Anchor vessels and equipment in a safe and secure manner during storm conditions and extreme wave conditions.

END OF SECTION 35 00 00

SECTION 35 20 23 – DREDGING

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the Contractor requirements for dredging sediment and debris, through hydraulic dredging from Warner’s Pond. The Contractor’s Dredge Work Plan shall describe the selected means and methods for sediment and debris removal.

1.2 PERFORMANCE REQUIREMENTS

- A. Contractor shall be responsible for the selection, design, furnishing, testing, operation, and maintenance of dredging equipment required for the Work specified herein.
- B. The Contractor shall use hydraulic dredging.
- C. Contractor shall provide a Dredge Work Plan, which details a sequence of dredge activities that provide for optimal removal, handling, and disposal operations.
- D. Contractor’s selected approach and sequence for sediment dredging shall be developed to meet federal, state, and local requirements, address project space constraints and presence of nearby residential areas, provide protection of public health and the environment, and proactively control effects impacting the public such as nuisance odors, dust, and noise levels.
- E. Dredged material removed from Warner’s Pond shall be transported via hydraulic pipeline. Dredged material transportation via hydraulic pipeline is specified in **Section 35 20 26 HYDRAULIC PIPELINE**.
- F. Contractor is responsible for separate removal, management, and disposal of debris that will interfere with dredging operations and is responsible for separation of debris from dredged material that will interfere with dewatering for disposal in accordance with **Section 02 73 00 SOLIDS PROCESSING**.

1.3 DEFINITIONS

- A. Debris:
 - 1. A general term referring to items removed during dredging operations such as logs, large rocks, tires, trash (shopping carts, sports balls, white goods, concrete) which are too large to be removed with the sediment. Debris may be removed from the sediment prior to dredging or screened out of sediment prior to hydraulic transport. The Contractor shall dispose of all debris offsite in accordance with regulations.
- B. Dredged material:
 - 1. Dredged material includes all sediment and debris removed from within the edge of water by hydraulic dredging methods. This includes sediment dredged within project boundaries, sediment overdredge, debris, and any additional material resulting from dredging work.

- C. Overdredge Allowance:
 - 1. The amount of dredging material that will be paid for under this Contract in excess of the dredge design elevation.

- D. Potentially Contaminated Dredged Material:
 - 1. Potentially Contaminated Dredged material includes all sediment and debris removed by hydraulic dredging methods from within the lateral extent of contaminated sediments in the vicinity of sediment cores SC4-A, SC4-B, and SC4-C, as established by the Engineer. This includes sediment overdredge, solids collected from dredging equipment decontamination, debris, and any additional materials resulting from dredging work.

1.4 SUBMITTALS

- A. Submit the following in accordance with Standard Specification **Section 01 33 00 SUBMITTALS**.

- B. Dredge Work Plan: The Contractor shall prepare and submit a Dredge Work Plan. The Dredge Work Plan must be approved prior to initiation of dredging activities and shall include, but not be limited to, the following (items listed shall apply to work in Warner's Pond, unless otherwise noted):
 - 1. Contractor's (and any subcontractor's) business name, address, telephone number, dredging site representatives, and emergency contact phone numbers. If subcontractors are employed, describe role(s) of each subcontractor. Subcontractors must be approved by the Engineer prior to performing project related work onsite.
 - 2. Contractor's experience working with same or similar equipment as presented in the Contractor's Dredge Work Plan. The Contractor shall have a minimum of 5 years of experience using presented equipment for contaminated sediment remediation projects.
 - 3. Means and methods to achieve the dredging design (including slope dredging and dredging near structures) providing sufficient detail to demonstrate procedures have incorporated environmental protection, debris removal operations, containment of turbidity plumes and sheens, protection of existing structures, spill prevention and containment, and all other requirements of the Drawings and Technical Specifications. Work plan shall describe in detail, Contractor's approach to manage shallow water depth, irregular shoreline, protection of existing structures, and debris. Process flow for removal through disposal, describing each activity is required.
 - 4. Contractor shall provide details of proposed turbidity controls. It is anticipated that the hydraulic dredging of Warner's Pond would be performed in manageable sub-sections where areas are isolated from the rest of the pond with turbidity curtains. The contractor is expected to contain dredging within the protected subsection.
 - 5. Description of logistics of the operation and schedule such as downtimes assumptions, sequence of the Work, schedule for dredging related submittals during construction, and assumed work days and hours of operation.
 - 6. Identification of local ordinances that may limit work hours, noise, and truck traffic.
 - 7. Delineation and demarcation of the work areas within the limits of disturbance to be used by the Contractor.

8. Description of anticipated dredging equipment to be utilized, including manufacturer, number, type, and size of dredge(s); excavator, pumps, barges, tow/tug boats, support vessels, containers, and other support equipment. If hydraulic transport or dredging is to be used, provide the anticipated percent solids of the slurry and dewatered dredged material solids from Contractor's dewatering methods. Anticipated dredge production rates and work sequence must be included.
9. Description, dimensions, capacity, and drawings or photographs of the hydraulic dredging system to be used for dredging.
10. Means and methods for maintenance of equipment used for activities associated with dredging for the duration of the Work, and proposed solutions if equipment used to complete the Work malfunctions or has operational problems that could result in project delays.
11. Demonstration of the ability to achieve, monitor, and report the accuracies specified herein.
12. Unloaded and loaded draft requirement for all barges and vessels supporting dredging activities in Warner's Pond.
13. Proposed approach for deployment and inspection of equipment, including mobilization of dredges, barges, scows, and other ancillary equipment to Warner's Pond, and verification of soundness, water tightness, and whether it is fit for duty. U.S. Coast Guard inspection reports shall be submitted for all proposed barges, scows, or vessels.
14. Proposed approach for deployment of personnel and personnel requirements for each vessel and/or operation.
15. Transportation Plan identifying haul roads, access routes, and plans for safe transport on public roads.
16. The Dredge Work Plan shall include the following additional information which is not specified in the Section, but is included other sections of the Technical Specifications:
 - a. Proposed procedure for dredging to the dredge limits and within dredge tolerances in Warner's Pond in accordance with **Section 02 21 19 BATHYMETRIC SURVEYS**.
 - b. Proposed methods for dredging adjacent to shorelines and structures that may be disturbed by dredging activities and avoiding or protecting utilities identified during utility-locating procedures. This should include completing a pre-construction conditions survey for all structures in and adjacent to the project area, with assessment and documentation of each structure and periodical monitoring during dredging activities.
 - c. Pipeline Construction Work Plan including drawings of pipeline routes for hydraulic material transport of dredged material from Warner's Pond to the solids and water processing area and materials to be used for installation in accordance with **Section 35 20 26 HYDRAULIC PIPELINE**.
 - d. Solids Processing Plan detailing proposed processing area utilization, with emphasis on maintaining compact use of space for all solids processing, debris management, and wastewater treatment operations as specified in **Section 02 73 00 SOLIDS PROCESSING**. This should include a description of the solids processing operation and maintenance to manage space constraints.
 - e. Proposed methods for addressing odors generated during dredging activities.

- C. Daily Construction Quality Control (CQC) Report
1. The Daily CQC Report shall include, but not be limited to, the following information related to dredging activities (items listed shall apply to work in Warner's Pond, unless otherwise noted):
 - a. Weather conditions.
 - b. Description of general work activities.
 - c. Location of dredging operations, hours of dredge time, total area dredged, actual daily production rate, and name of dredge operator(s).
 - d. Equipment performance, maintenance, hours of downtime, and cause(s) of downtime.
 - e. Description and details of the daily QC checks of all dredging equipment and positioning system sensors.
 - f. Daily output from dredging software to show the progress of dredging activities in Warner's Pond including cumulative area, volume, and weight dredged to date. Daily output shall be used to track daily activities and production but are not an acceptable substitute for post-dredge survey verification. Daily output shall include the following:
 - 1) Daily export of dredge interim survey XYZ files from the Hypack System (or equivalent) and processed drawings in AutoCAD Civil 3D (2017) format or compatible Digital Terrain Model (DTM) of the survey to show the dredge progress for the day.
 - 2) Calculations of the day's dredging volume calculated to the nearest cubic yard.
 - 3) Documentation that the system is operating within allowable tolerances.
 - g. The Hydraulic Pipeline Daily Operations Report in accordance with **Section 35 20 26 HYDRAULIC PIPELINE**.
 - h. Delays encountered and relevant details of the delay, such as the cause, resolution, and measures implemented to avoid similar delays in the future and to make up lost time if necessary. The Engineer reserves the right to require a recovery schedule from the Contractor.
 - i. Representative photos of construction activities for the day.
- D. Dredge Material Tracking Form
1. Provide a fully executed Dredge Material Tracking Form or Material Shipping Record within 30 days of final shipment to the reuse location or facility.
 2. The Dredge Material Tracking Form or Material Shipping Record is used to track the transport of dredged material to a licensed upland facility to ensure that dredged materials are properly and safely handled during transportation on public roadways and provides the ability for MassDEP to verify that potentially contaminated sediments have arrived at the appropriate and approved end location and to protect the water quality of surrounding wetlands and waters during transportation.
- E. Surveys
1. Provide bathymetric and topographic surveys to document dredge progress in Warner's Pond in accordance with **Section 02 21 19 BATHYMETRIC SURVEYS**.
 2. Surveys shall be submitted with applications for payment for dredging and excavation bid items

- F. Winterization Plan for protection from freezing to allow for continuous operation.

1.5 PERMITS

- A. The Contractor shall comply with all state, federal, and local permits obtained by or applied for by the Government. The Contractor shall also comply with all permits obtained directly by the Contractor as required during construction and as necessary to complete the work.
- B. The Contractor shall comply with work restrictions as outlined in the permits. If discrepancies exist between these Technical Specifications and applicable permits, the conditions of the permit shall apply.

1.6 JOB SITE AND SUBSURFACE CONDITIONS

- A. Available data from previously conducted site sampling events, including representative sediment core logs and associated information, are included in the specification exhibit.
- B. The Contractor shall field verify the locations of utilities within the work areas including, but not limited to, those shown on the Drawings. The Contractor shall coordinate a utility locate service and coordinate utility identification and location with the Government to check all dredge areas in accordance with the Technical Specifications.

PART 2 – PRODUCTS

2.1 HYDRAULIC DREDGING EQUIPMENT

- A. In-water dredging work at Warner’s Pond shall be completed by the Contractor with hydraulic dredging equipment of suitable size and power to complete the work detailed in the Drawings and Technical Specifications, and as approved in the Contractor’s Dredge Work Plan.
- B. A hydraulic submersible dredge pump equipped with cutterhead and attached to position control equipment, or a conventional hydraulic dredge with cutterhead, shall be used for hydraulic dredging.

2.2 DREDGE POSITIONING EQUIPMENT

- A. Hydraulic dredging equipment for Warner’s Pond shall be equipped with RTK DGPS and the necessary sensors, to enable accurate positioning of the dredge bucket or cutterhead and for the Contractor to continuously monitor the location of the dredge bucket or cutterhead. The dredge bucket or cutterhead shall have a vertical positioning accuracy of plus or minus 0.1 foot and a horizontal accuracy of plus or minus 0.2 feet.
- B. The dredge positioning software shall be capable of:
 - 1. Inputting a dredge prism template (an x, y, z file on a gridded interval of 1 foot by 1 foot).
 - 2. Producing plots showing the location of each dredge bucket or cutterhead cut in the dredge area as part of the Daily CQC Reports.
 - 3. Providing a view of the barge and clamshell bucket or cutterhead, in real time.

4. Providing the current depth, final project depth, target depth, and current bucket or cutterhead depth, in real time.
 5. Recording sensor information so that playback/review of past dredge activities is possible.
 6. XYZ file export.
- C. The Contractor will have qualified positioning equipment technical support personnel at the Site whenever dredging activities take place.
- D. The Contractor shall show that the error budget of the dredge positioning system allows it to work within the stated overdredge tolerances specified in **Section 35 20 23 DREDGING**. The error budget shall include all errors associated with measuring the positioning of the bucket or cutterhead.
- E. The Contractor must verify that the system is operating within allowable tolerances (i.e., quality control check of positioning sensors to verify that individually and together they operate within a range that satisfies the tolerance requirement) at least once per day against site benchmarks and included in the Daily CQC Report. If, during any verification activities, the Contractor determines that the RTK-DGPS system is out of the stated positioning tolerance, dredging will be halted until the system is brought back into tolerance and is verified.
- F. If, at any time during the Work, the Contractor determines that the RTK-DGPS system is malfunctioning or has failed, dredging will be halted until the system has been restored to proper operating condition.

2.3 SPILL RESPONSE MATERIALS

- A. Provide appropriate spill response materials including, but not limited to; containers, adsorbents, adsorbent booms and pads, shovels, and personal protective equipment. The Contractor will be responsible for deploying an oil containment boom upon Engineer request to supplement adsorbent booms depending on circumstances of a spill. Spill response materials shall be available at all times when contaminated materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of materials and contaminants being handled.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Verify work hours are acceptable to the Massachusetts Correctional Institution at Concord and the Town of Concord and comply with Town bylaws.
- B. Call Dig Safe 811 at least 48 hours but no more than 10 working days before performing work.
1. Request underground utilities to be located and marked within and surrounding construction areas.
 2. Contractor is responsible to locate and mark all utilities.
- C. Protect utilities from damage that are indicated to remain. Contractor is responsible for all repairs to damaged utilities and all associated reparations at no cost to the Town.

Contractor is responsible for removal and disposal of abandoned utilities encountered during dredging, and protection of encountered utilities that are not to be abandoned.

- D. The Contractor is responsible for utility locates and markings on bridges and surrounding Warner's Pond. The Contractor shall use a third-party locate service and not rely on one-call services for these structures.
- E. Utilities encountered that were not previously shown or otherwise located shall not be disturbed without approval from the Engineer.
- F. Protect plant life, and other features remaining as portion of final landscaping along Warner's Pond and around staging areas.
- G. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic except as proposed by Contractor and approved by Engineer.
- H. Identify required lines, levels, contours, and datum.
- I. The Contractor will provide the Engineer with details regarding the location and times the Engineer will be able to access the dredging equipment prior to mobilization. In general, the Contractor will facilitate access for Engineer representatives to the Work vessels upon request.

3.2 REMOVAL LIMITS

- A. Sediments shall be removed to the depth and extent as determined by Contract Documents.
- B. Embedded debris shall be removed to the elevations specified in the Contract Drawings. If the debris requires specialized equipment for removal, notify the Engineer before proceeding.
- C. Overdredge allowance within the dredge area is 12 inches below (i.e., deeper than) the required dredge design elevations shown on the Drawings for Warner's Pond. The Contractor shall minimize overdredge. Overdredge performed by the Contractor outside of the overdredge tolerances shall be at the Contractor's expense.

3.3 GENERAL

- A. The Contractor shall provide all supervision, labor, tools, materials, equipment, services, and appurtenances necessary for, or incidental to, dredging and related Work shown on the Drawings and described herein.
- B. The Contractor shall excavate the dredge area to the lines, grades, slopes, and elevations as described in these Technical Specifications and shown on the Drawings. Significant changes, as determined by Engineer, to operating procedures or equipment presented in the Contractor's Dredge Work Plan, such as proposed dredge production rates or changes to the duration of work, must be approved in advance by the Engineer.
- C. Notify Engineer of unexpected subsurface conditions.

- D. Dredge in an upstream to downstream fashion.
- E. The Contractor shall be responsible for constructing stable internal and external side slopes and meet all internal and external side slope grades per the Drawings and Technical Specifications.
- F. The Contractor shall repair damage resulting from dredging operations or other Contractor construction activities in support of the Work to the original condition prior to damage, and repair to a condition approved by the Engineer. The pre-dredge activities structure surveys shall be used as a baseline. The Town shall bear no costs associated with damage to shoreline areas or structures.

3.4 DEBRIS AND CONSTRUCTION WASTE

- A. Debris will be encountered during dredging activities. The Contractor shall remove all debris that interferes with dredging and solids processing operations. Debris screened out of sediment shall bypass the solids processing system and shall not be washed. Debris shall be stockpiled in the same manner as the dewatered contaminated sediment. Debris shall be loaded onto trucks and transported and disposed offsite in accordance with **Section 00015 OFFSITE TRANSPORTATION AND DISPOSAL**.
- B. Access road surfacing, Dewatering waste, and other construction waste shall be disposed at the approved solid waste disposal facility.
- C. Temporary materials used during construction may be reused onsite by the Contractor if they are decontaminated and Engineer approves of the reuse in writing.

3.5 RESUSPENSION CONTROLS

- A. The contractor shall provide, maintain, and deploy re-suspension control systems to minimize sediment transport downstream in accordance with **Section 35 80 00 TURBIDITY BARRIERS**.
- B. Place resuspension controls and turbidity monitoring as shown on the Contractor's approved Work Plan.
- C. Contractor's dredging shall minimize disturbance of sediment to reduce, to the extent practical, sediment resuspension or mud-waving that would create movement of contaminated sediment outside the dredge area or exceed water quality requirements specified in the permits. Contractor shall implement operational controls and best management practices (BMPs) to minimize sediment resuspension and maintain compliance with the water quality requirements.
- D. Contractor shall clean and decontaminate any and all equipment that has become exposed to contaminated materials or oily fluids prior to using this equipment to conduct any other construction activities. Cleaning shall be conducted in a designated location approved by the Engineer and all decontamination water shall be collected and treated offsite.

3.6 HYDRAULIC DREDGING

- A. Maintain the plant, scows, coamings, barges, pipelines, and associated equipment to meet the requirements of the work.
- B. The Contractor is permitted to dredge ahead of the plant to access shallow areas but is not permitted to ground the plant or support barges against the pond bed.
- C. The Contractor shall maintain floating platforms, material scows, and associated equipment to meet the requirements of the Work and all applicable marine regulations, including the prompt repair of equipment failures.
- D. Furnish, set, and maintain ranges, buoys, and markers needed to define work areas. Establish and maintain gages in location observable from each part of the work so that the depth may be determined. Suspend dredging when the gages or ranges cannot be seen or followed. The Contractor shall determine the survey lines, points, and elevations for the setting of ranges, gages, and buoys.
- E. Provide agitation to loosen and dislodge materials for removal at the intake. Water jetting to dislodge materials for removal is not permitted, unless pre-approved by Engineer in writing.
- F. Remove and separately manage debris as needed for maintaining a pumpable slurry compatible with the selected hydraulic dredging method. Debris that can readily be incorporated into the hydraulic dredge intake and not clog the cutterhead does not need to be removed. Debris that would clog the cutterhead or is too large to be removed should be removed separately using a bucket, or if large enough, a grapple.
- G. If percent solids in the dredge slurry is less than anticipated, corrective actions shall be discussed with the Engineer.
- H. Potentially contaminated material dredged from the established lateral extent of contaminated sediment shall be piped directly to the segregated area within the dewatering area for testing and processing, as shown in the Contract Drawings.
- I. Material used in the Wetland Shelf shall be sourced solely from the North Dredge Area.

3.7 DREDGE VERIFICATION SURVEY

- A. Dredge verification completed in Warner's Pond shall be completed using bathymetric survey and topographic survey methods, where appropriate for the current water depth, as described in **Section 02 21 19 BATHYMETRIC SURVEYS**.
- B. If post-dredge surveying indicates that dredging operations failed to achieve the required dredge design elevation, the Contractor will re-dredge the area to the required dredge design elevation. Any re-dredging and/or re-surveying required to obtain the required dredge design elevation will be at no additional cost to the Town.

3.8 HIGH SUBGRADE

- A. When a shoreline or other area is encountered with high subgrade or undredgable bank (stiff clay, dense sand/gravel, or rock) that prevents the Contractor from achieving the design elevations required by the Drawings, the Contractor shall notify the Engineer to determine if dredging should continue to the design elevations or be stopped at this location.
- B. The Contractor shall perform poling and coring surveys, and bathymetric survey, as necessary to determine the extent of this high subgrade area. After the high subgrade area is delineated, a summary figure shall be created for review and approval by the Engineer.

3.9 SEDIMENT HANDLING

- A. All sediment handling and processing shall be completed in the designated areas shown on the Drawings unless expressly permitted by the Engineer.
- B. Contaminated material shall be segregated from remaining dredged material and transported offsite to an approved disposal facility.
- C. All material transfer activities must utilize berms and liners, spill plates, or other lined systems to prevent drips and spills outside of contained management areas.
- D. At no time shall the dredged material be handled by methods other than those in accordance with the Drawings and Technical Specifications and as described in the approved Dredge Work Plan.

3.10 SPILLS

- A. In the event of a spill or release of a hazardous substance (as designated in 40 CFR 302), pollutant, contaminant, or oil (as governed by the Oil Pollution Act, 33 U.S.C. 2701 et seq.), notify the Engineer immediately. If the spill exceeds the reporting threshold, follow the pre-established procedures as described in the Dredge Work Plan for immediate reporting and containment. Immediate containment actions shall be taken to minimize the effect of any spill or leak. Cleanup shall be in accordance with but not limited to applicable federal, state, and local regulations. As directed by the Engineer, additional sampling and testing shall be performed to verify spills have been cleaned up. Spill cleanup and testing shall be done at no additional cost to the Town. The Contractor shall be prepared to undertake measures to control and contain spills to minimize affected areas, and expediently undertake actions to address spills and provide necessary site restoration, in coordination with the Engineer.
- B. Contractor shall comply with the Engineer immediately if the discharge that is not exempted. The Spill Hotline telephone number is 1-800-304-1133.
- C. Should the Contractor, during the execution of the Work, lose, dump, throw overboard, sink, or misplace any material, dredge, scow, machinery, equipment, or appliance, the Contractor shall promptly recover and remove same to the satisfaction of the Town at no additional cost to the Town.

3.11 WINTERIZATION

- A. If Contractor selects to work in winter months, dredging operations, hydraulic pipelines, all associated equipment, and all supporting areas shall be winterized to protect from freezing to allow for continuous operation. Submit a Winterization Plan for Engineer approval prior to winterization. Winterization shall include but is not limited to protecting the dredging operation dredge(s); excavator, pumps, barges, tow/tug boats, support vessels, containers, hydraulic pipelines, feed pumps, valves, tanks generators, meters, gauges, and all other supporting equipment from freezing and ice accumulation with enclosures, insulation, conductive heating, or other approved equivalent. Include a description for how ice will be managed within the excavation area and hydraulic pipeline anchorages.

3.12 CONDITIONS

- A. The Contractor should anticipate adverse dredging conditions. Saturated soils with low shear strength, woody vegetation and roots, dredge areas contaminated with metals, soils with, and potential for sheen generation, contact with groundwater and surface water, woody debris, manmade debris, organic muck, and ice are anticipated. No additional payment shall be made for adverse conditions of dredging or delay or work associated with those conditions. Ice shall not be transported to the staging area but shall be managed within the dredge area.

END OF SECTION 35 20 23

SECTION 35 20 26 – HYDRAULIC PIPELINE

PART 1 – GENERAL

1.1 SUMMARY

- A. This section describes Contractor requirements to provide and install a hydraulic pipeline that may be installed as part of the dredging operations.
- B. The Contractor's selected approach and sequence for hydraulic transport of dredged material shall be developed to meet federal, state, and local requirements, address project space constraints and presence of nearby residential areas, provide protection of public health and the environment, and proactively control affects impacting the public such as nuisance odors, dust, and noise levels.
- C. The Contractor is responsible for separate removal, management, and disposal of debris that will interfere with hydraulic transport of materials in accordance with Section 35 20 23 – DREDGING.

1.2 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 01 SUBMITTALS.
- B. Pipeline Construction and Operations Work Plan: The Pipeline Construction and Operations Work Plan must be approved prior to mobilization of hydraulic transport equipment and shall include, but not be limited to, the following:
 - 1. Sequence and schedule of hydraulic pipeline installation.
 - 2. Proposed plan drawings of any pipeline routes for hydraulic pipeline.
 - 3. Detailed descriptions and drawings of the Contractor's means and methods of installing and constructing the hydraulic pipeline (e.g., connections, floats, materials of construction, welding, pumps).
 - 4. Manufacturer's technical specifications of pipeline and pump materials.
 - 5. Methods to be used for connecting the hydraulic pipeline sections, including a description of the equipment to be used and test methods to verify the strength of the connections.
 - 6. Details of testing and inspection of the hydraulic pipeline.
 - 7. Length of the manufactured hydraulic pipeline sections.
 - 8. Length of the hydraulic pipeline sections after connection, before in-water installation.
 - 9. Connection of the hydraulic pipeline to the solids processing system.
 - 10. An overview of equipment that may be used for installation works (e.g., vessels, cranes).
 - 11. Details related to the operation of hydraulic pipeline including expected operating pressures and velocities, water supply and management, dredged material screening and preparation for conveyance, pump operation, expected abrasion and wear of lines from transport sand, and anticipated routine maintenance.
 - 12. Contingency planning to address losses of dredged material or damage to the pipeline.

- C. Hydraulic Pipeline Daily Operations Report: The following information shall be submitted to the Engineer in a Hydraulic Pipeline Daily Operations Report:
1. Weather conditions.
 2. Results of daily inspections, including observations made during visual inspection of flanges, tanks, valves, piping, pumps, motors, and moving parts.
 3. Record of any adjustments made to the hydraulic pipeline alignment or pontoons.
 4. Record of any pump refueling activities, including quantities of fuel used.
 5. Hydraulic pipeline pressure, density, and velocity visualizations used to adjust hydraulic pipeline operations or offloading as needed.
 6. Record of any hydraulic pipeline flushing activities, including time and duration of hydraulic pipeline flushing and quantity of water used to flush the line.
 7. Any unusual or unexpected conditions encountered during hydraulic pipeline operations.
- D. Winterization Plan for protection from freezing to allow for continuous operation

PART 2 – PRODUCTS

2.1 FEED PUMP

- A. A centrifugal slurry pump, or equivalent pump suitable for conveyance of dense slurry, shall be used to transport dredged material from the Warner's Pond dredging areas, through the hydraulic pipeline, to the solids and water processing area.
- B. Provide dredge pump or supplemental feed pumps as needed to achieve required head to efficiently convey dredged materials to site locations shown on the Drawings. Provide additional head capacity in selected pumps to overcome heavy slurry conditions from in situ material high percent solids content, in addition to other standard factors for pipeline conveyance of heavy fluids.

2.2 HYDRAULIC PIPELINE

- A. The contractor shall provide and install a hydraulic pipeline suitably rated for the working pressure of the feed pump and is resistant to erosion by flowing slurry.
- B. If selected by the Contractor, high density polyethylene (HDPE) pipeline shall meet the following requirements:
1. Rated for the working pressures of the selected pump.
 2. Resistant to wear by flowing slurry.
 3. Installed in butt-welded sections and flanged together. The length of these sections should be as long as reasonably possible, to minimize the number of flanges necessary.
 4. Diameter suitable for transporting expected sediment and debris and compatible with the chosen pump.
- C. Prior to use of the hydraulic pipeline to transport dredged material, a hydrostatic test shall be performed to confirm the integrity of the pipe joints. Hydrostatic testing shall be performed at the working pressure of the pump and in accordance with the pipe manufacturer's requirements.

2.3 APPURTENANCES

- A. The Contractor will provide any necessary appurtenances, required for the protection, support, and operation of the hydraulic pipeline.
- B. The Contractor will provide necessary valves, meters, and gauges required for proper operation of the hydraulic pipeline.
- C. Debris is expected to be encountered during dredging. The Contractor is responsible for managing debris conditions, either by removing debris ahead of dredging operations, or incorporating permissible debris as part of dredged material, followed by removal of larger debris that remains after dredging. If necessary, the Contractor shall provide for debris removal using a grizzly screen and other suitable separation at the dredging site, prior to conveyance of dredged material through the pipeline. All visible adhered sediment shall be removed from debris as a part of the contractor's selected debris separation system.

2.4 GEOTEXTILE FILTER FABRIC

- A. The Contractor will provide geotextile filter fabric to remove fines that may be suspended in the collected sump water prior to discharge.

PART 3 – EXECUTION

3.1 ROUTING

- A. The Contractor shall install the hydraulic pipeline along routes shown in the Contractor's approved Pipeline Construction Work Plan, and within the limits of disturbance shown on the Drawings.
- B. The hydraulic pipeline alignment shall be positioned to avoid erosion or resuspension of sediment in Warner's Pond and anchored along slopes or supported with floats. The Contractor will be responsible for restoring disturbances created by the pipeline with no additional cost the Town.
- C. The pipeline alignment shall be a linear feature with minimum bends. 90-degree joints or tight bends along the alignment are not allowed unless approved by Engineer.
- D. Avoid unsupported segments of pipeline. Provide pipeline supports as required to uniformly distribute weight and avoid stress concentrations.
- E. Provide floats for pipeline to allow inspection at any time. Submerging pipeline will be avoided except for special cases and requires written approval from the Engineer.

3.2 START-UP AND COMMISSIONING

- A. After installation of the hydraulic pipeline, each flange connection, pontoon, anchors, floats, pipeline section, temporary dock, and other main components shall be thoroughly inspected by the Engineer to ensure that all is delivered and installed according to the Specifications.

- B. After installation of the hydraulic pipeline, the Contractor will perform start-up, testing, and troubleshooting activities prior to initiating full-scale operations.
- C. Start-up and testing shall be performed in accordance with the manufacturer's recommendations and as indicated in the prepared Pipeline Construction Work Plan.
- D. General start-up and testing will consist of:
 - 1. Hydrostatic testing of the hydraulic pipeline to check for possible leaks.
 - 2. Running the hydraulic pipeline with Warner's Pond water to further check for possible leaks in the hydraulic pipeline sections, valves, vacuum breaker, and connection points and to check pump functionality.
 - 3. Running the hydraulic pipeline with an initial low slurry concentration, to perform a step-by-step check of the functionality of different monitoring systems.

3.3 OPERATION

- A. Proper scour protection for the pipeline anchors must be identified by the Contractor and approved by the Engineer.
- B. Water for operation of the hydraulic pipeline may be drawn directly from Warner's Pond. All water used for the hydraulic pipeline shall be recirculated for reuse or treated before discharge. Treated water shall be discharged to Warner's Pond.
- C. Flush pipelines as needed and at the end of each day's operation to prevent accumulation of sediment and debris within pipeline.
- D. Maintain the hydraulic pipeline and associated equipment to meet the requirements of the work. Perform two inspections per day of pipeline for leaks and log results in the Hydraulic Pipeline Daily Operations Report.
- E. If leaks or breaks along pipelines are identified, Contractors shall cease operations and repair or replace damaged sections as needed. Spills from leaks, damaged pipeline, or any losses of dredged material to the surrounding environment shall be removed and affected area restored at Contractor's expense. The Contractor is responsible for additional removal and disposal of materials resulting from pipeline leaks and breaks, at no cost to the Town.

3.4 WINTERIZATION

- A. If Contractor selects to work in winter months, hydraulic pipelines, all associated equipment, and all supporting areas shall be winterized to protect from freezing to allow for continuous operation in accordance with Section 35 20 23 – DREDGING.

END OF SECTION 35 20 26

SECTION 35 60 00 - FLOOD CONTINGENCY PLANNING

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. Work under this specification includes planning for flood events, and recovery after flood events.

1.2 FLOOD CONTINGENCY PLANNING

- A. Rainfall and/or rapid snow melt will cause the water level in the pond to rise. Consequences of elevated pond water level potentially affecting construction activities range from additional groundwater seepage into open excavations to complete flooding of the majority of the site and temporary work stoppage (during extreme flood events). The Contractor shall prepare a Flood Contingency Plan (FCP) for use in planning for and responding to potential flood situations to maintain site and project personnel safety, and to prevent flood-related loss of equipment and materials.

1.3 REFERENCES

- A. Not Used

1.4 SUBMITTALS

- A. Flood Contingency Plan (included as part of Dredge Work Plan per Section 35 20 23 DREDGING); at a minimum the FCP shall include:
 1. Pond stage monitoring: The FCP shall include detail related to the Contractor's plan for pond stage monitoring including the monitoring of weather forecasts and data sources/monitoring frequency during dry and wet conditions.
 2. Pond stage action levels: As part of the FCP, the Contractor shall evaluate changes in pond stages caused by precipitation events and evaluate potential construction impacts. A range of site activity action levels shall be identified in the FCP to mitigate the potential for environmental releases and minimize the potential for construction losses, rework and project delays. Site activity action levels such as normal, flood watch, flood warning or Action Level 1, Action Level 2, and Action Level 3 may be considered.
 3. Methods for management of water following inundation of the work area by a flood.
 4. Soil disturbance in the watercourse must be temporarily ceased in the event of a forecasted 10 year or greater storm event. The Contractor shall be expected to control flow around the site.
 5. Plan documentation: Contractor Daily Field Reports shall include all creek stage and weather monitoring data as well as Contractor actions taken to address potential flooding conditions.
 6. Flood warning sources: Official flood warnings are issued by the NOAA National Weather Service (NWS). The FCP shall include contact information related to the NWS Forecast Office that serves the project area.
 7. Local flood agencies: The FCP shall include contact information for the local emergency management agencies such as Massachusetts Emergency Management Agency and the Concord Fire Department.

8. Asset location: The FCP shall include consideration of project temporary facilities such as office trailers, sediment and cap material staging areas, equipment, etc. as it pertains to creek stage rise during flood events.
9. Flood insurance: The Contractor is not required to obtain flood insurance for this project but may wish to evaluate the need for flood insurance as a construction risk management tool.
10. Cleanup/spill equipment: The FCP shall include detail related to Contractor's onsite hazardous material spill response equipment such as oil absorbent booms.
11. Plan training: The Contractor will be responsible for FCP training of site staff including subcontractors. Pond stage data and contingency planning shall be discussed at Daily Safety Meetings to inform all onsite staff of roles and responsibilities.
12. Utility considerations: Temporary utilities may need to be protected, moved or de-energized during flood conditions. The FCP shall include detail related to utility planning.
13. Equipment securing: The FCP shall include detail related to storing active and inactive equipment during flood events including a plan showing a flood event equipment storage area above the 100-year flood zone.
14. Additional water management provisions: In the event of a flood, modification of water management may be necessary to address the flood waters and prevent damage to restored areas.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

- A. Water quality – any discharges to the pond permitted by this Section shall comply with all federal, state, and local regulations and permits obtained for this work. The Contractor shall ensure that discharges to the pond do not negatively impact downstream water quality.

END OF SECTION 35 60 00

SECTION 35 80 00 – TURBIDITY BARRIERS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section describes the Contractor requirements for turbidity barriers around active dredging and dewatering operations and meeting permit requirements during the implementation of the work.
- B. The Contractor shall be responsible for the selection of the turbidity barrier and design, meeting the minimum requirements within this section.

1.2 SUBMITTALS

- A. Submit the following in accordance with Section 00 33 00 SUBMITTAL PRECEDURES.
- B. The Contractor shall include a Turbidity Barrier Plan including the following information:
 - 1. Proposed manufacturer’s material and equipment specification sheets detailing the materials to be used for the turbidity barrier used.
 - 2. Proposed plan for layout, installation, deployment, inspection, and maintenance of the turbidity barrier.
 - 3. Proposed plan for performing and documenting inspections of the turbidity barrier a minimum of once per day to ensure the system is free from defects and remains effective during the work performed.
 - 4. Proposed methods and equipment for turbidity barrier reefing, where applicable.
 - 5. Proposed methods for turbidity barrier anchoring, where applicable.
 - 6. Proposed methods for turbidity barrier weight attachment, where applicable.
 - 7. Proposed methods for lifting anchors, if necessary, and moving turbidity barriers. Methods also must include replacing such structures after moving.
 - 8. Proposed contingency measures to be taken by the Contractor to meet water quality requirements in the event that the turbidity barrier is not adequate.
 - 9. Proposed maintenance plan (including repair and replacement of barrier sections, if needed) to ensure adequate performance of the turbidity barrier and contingency systems to meet the performance criteria.
 - 10. Proposed storm management plan to ensure systems and barriers are adequately secured and will not damage the surrounding areas or interfere with normal waterway operations during storm events.
 - 11. Proposed plan for removal and final decontamination or characterization/disposal of turbidity barrier prior to demobilization from the site.
- C. Contractor shall submit a turbidity and total suspended solids monitoring plan for review and approval at least two weeks prior to the commencement of dredging operations. Ensure monitoring plan includes performance criteria.
- D. Product data:
 - 1. Submit product data for all turbidity control products to verify compliance with MassDEP material requirements.
- E. Name and resume of the Environmental Monitor (EM). At minimum, the EM shall be a “qualified personnel” with a minimum of 3 years professional environmental experience in

construction monitoring and shall meet the qualification outlined in Section 4.4.1 of the EPA Construction General Permit.

1.3 SITE CONDITIONS

- A. Water current direction within the Pond is generally from the west (Nashoba Brook) to the south in the direction of flow from the inlet to the outlet around Scout Island. Currents and wave action will vary based on wind direction, tides, and speed within the work area. Contractor shall make provisions for checking current flow direction daily to determine up current and down current directions.
- B. Pond elevation averages approximately 116.5 feet. Due to the fixed outfall of Warner's Pond, pond levels are not anticipated to vary significantly.

1.4 PERFORMANCE CRITERIA

- A. The Contractor shall design a turbidity barrier that can maintain turbidity around active dredge operations equal per the Order of Conditions.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Turbidity barrier:
 - 1. Shall be a Type 2 turbidity barrier, constructed of high strength fabric and heavy-duty tension members.
 - 2. Barrier shall be constructed with flexible, geotextile filter barrier with flotation collar and anchoring system; an example is shown on the Drawings.
 - 3. Turbidity barrier shall fully capture all water moving from active dredge operations to the rest of the pond. The Contractor shall design the layout and anchoring of turbidity barrier.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. The Contractor shall furnish and/or provide all supervision, labor, tools, materials, equipment, services, and appurtenances necessary for the installation, deployment, inspection, movement, and maintenance of the turbidity barrier presented in this Section and shown on the Drawings for the duration of the work to the satisfaction of the Engineer.
- B. The Contractor shall not begin work that could result in generation of turbidity or sheens until turbidity barriers are in place per this Section and the Drawings.
- C. The Contractor shall exercise care in installing turbidity barrier around active dredge operations to avoid increasing turbidity. If total suspended solids (TSS) visibly increase, the Contractor shall cease installation and evaluate alternative methods of installing system. Do not proceed with installation until a method can be devised to minimize the creation of excessive turbidity or approval by the Engineer.

- D. Anchor weight spacing shall be selected by the Contractor and approved prior to installation. The Contractor shall move and replace these weights based on communications with neighboring property owners and/or as requested by the Engineer. Any damage to the turbidity barrier or surrounding property due to improper sizing, installation, or moving of the weight anchors shall be the sole responsibility of the Contractor and shall be repaired to the satisfaction of the Engineer at no additional cost to the Town.
- E. Install all turbidity barriers in a manner which minimizes disturbance of the sediments. When terminating at shoreline, provide closure with the shore using sand bags or other approved means.

3.2 OPERATION AND MAINTENANCE

- A. Retain a qualified independent Environmental Monitor to ensure proper operations of all turbidity control measures throughout the duration of the project in accordance with the Concord Wetlands Bylaw Special Conditions 47. The Environmental Monitor shall inspect turbidity controls weekly. If any damage is observed, the Contractor shall replace or repair controls in place immediately.
- B. Maintain all turbidity barriers in working order. Turbidity barriers shall be inspected daily and repaired if necessary, to the satisfaction of Engineer.
- C. The Contractor shall visually inspect the turbidity barrier and associated components from a boat or vessel during installation and during in-water work at a minimum of once per day as specified herein. The inspection shall be noted on Contractor's Daily Inspection Report.
- D. Additional inspections shall be conducted at the Contractor's discretion and/or at the request of the Engineer, following storm periods, noticeable turbidity increases outside the system, unexpected barrier position/behavior, contact of the barrier by equipment or debris, or other abnormal events.
- E. The Contractor shall conduct diver inspections of the turbidity barrier, at no additional cost to the Town if downstream turbidity levels exceed permitted levels and no obvious system malfunctions were identified from the surface.
- F. Any torn, damaged, or otherwise ineffectively functioning sections of the systems identified during routine inspections shall be promptly repaired or replaced by the Contractor as necessary to maintain the performance criteria and all applicable permits and approvals, at no additional cost to the Town.
- G. The turbidity curtain shall be inspected and in working order prior to backfilling.
- H. The Contractor shall conduct all work in accordance with the water quality requirements outlined in the permits. The Contractor shall stop work and modify work methods, procedures, or operation of the turbidity barrier if the water quality criteria are not being met. Any modifications required to meet water quality criteria shall be performed by the Contractor at no additional cost to the Town.

3.3 REMOVAL AND DISPOSAL

- A. Prior to removing the turbidity barrier, the Contractor shall ensure that the turbidity within the barrier area reaches an acceptable level such that downstream water quality criteria are not exceeded during the removal process.
- B. Contractor shall exercise extreme care in removing turbidity barriers to avoid increasing turbidity. If TSS visibly increases, the Contractor shall cease removal activities and evaluate alternative methods of barrier removal for approval by the Engineer.
- C. Turbidity barriers shall not be removed until the water behind the barrier has equal or greater clarity than the waterbody.
- D. The Contractor shall be responsible for properly disposing of the turbidity barrier material at an approved landfill.

END OF SECTION 35 80 00

EXHIBIT A

PERMITS

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

WPA Form 5 - Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:137-1585
eDEP Transaction #:1354724
City/Town:CONCORD

A. General Information

1. Conservation Commission CONCORD

2. Issuance a. OOC b. Amended OOC

3. Applicant Details

a. First Name DELIA b. Last Name KAYE

c. Organization TOWN OF CONCORD NATURAL RESOURCES DIVISION

d. Mailing Address 141 KEYES ROAD

e. City/Town CONCORD f. State MA g. Zip Code 01742

4. Property Owner

a. First Name

b. Last Name

c. Organization TOWN OF CONCORD

d. Mailing Address 141 KEYES ROAD

e. City/Town CONCORD f. State MA g. Zip Code 01742

5. Project Location

a. Street Address 2X WARNER ST

b. City/Town CONCORD c. Zip Code 01742

d. Assessors 8D e. Parcel/Lot# 2017

Map/Plat#

f. Latitude 42.46131N g. Longitude 71.40093W

6. Property recorded at the Registry of Deed for:

a. County	b. Certificate	c. Book	d. Page
SOUTHERN MIDDLESEX		9847	0372

7. Dates

a. Date NOI Filed : 11/17/2021 b. Date Public Hearing Closed: 3/16/2022 c. Date Of Issuance: 3/18/2022

8. Final Approved Plans and Other Documents

a. Plan Title:	b. Plan Prepared by:	c. Plan Signed/Stamped by:	d. Revised Final Date:	e. Scale:
WARNER'S POND RESTORATION PROJECT PLAN SET (SHEETS 1-12) PBC	EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.,	AMY E. HUNT, P.D.	February 16, 2022	AS SHOWN

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act
Following the review of the the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act.

Check all that apply:

a. <input checked="" type="checkbox"/> Public Water Supply	b. <input checked="" type="checkbox"/> Land Containing Shellfish	c. <input checked="" type="checkbox"/> Prevention of Pollution
d. <input checked="" type="checkbox"/> Private Water Supply	e. <input checked="" type="checkbox"/> Fisheries	f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat
g. <input checked="" type="checkbox"/> Ground Water Supply	h. <input checked="" type="checkbox"/> Storm Damage Prevention	i. <input checked="" type="checkbox"/> Flood Control

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2. Commission hereby finds the project, as proposed, is:

Approved subject to:

- a. The following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

- b. The proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. The information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310CMR10.02(1)(a).

a. linear feet

Inland Resource Area Impacts:(For Approvals Only):

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>30</u> a. linear feet	<u>30</u> b. linear feet	<u>0</u> c. linear feet	<u>0</u> d. linear feet
5. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	<u>750</u> a. square feet	<u>750</u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input checked="" type="checkbox"/> Land under Waterbodies and Waterways	<u>318340</u> a. square feet <u>35750</u> e. c/y dredged	<u>318340</u> b. square feet <u>35750</u> f. c/y dredged	<u>0</u> c. square feet	<u>0</u> d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>4900</u> a. square feet	<u>4900</u> b. square feet	<u>0</u> c. square feet	<u>0</u> d. square feet
Cubic Feet Flood Storage	<u>0</u> e. cubic feet	<u>0</u> f. cubic feet	<u>0</u> g. cubic feet	<u>0</u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u>	<u> </u>
Cubic Feet Flood Storage	<u> </u>	<u> </u>	<u> </u>	<u> </u>

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	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9.Γ Riverfront Area	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	g. square feet	h. square feet	i. square feet	j. square feet

Coastal Resource Area Impacts:

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10.Γ Designated Port Areas	Indicate size under Land Under the Ocean, below			
11.Γ Land Under the Ocean	<u> </u>	<u> </u>		
	a. square feet	b. square feet		
	<u> </u>	<u> </u>		
	c. c/y dredged	d. c/y dredged		
12.Γ Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13.Γ Coastal Beaches	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a. square feet	b. square feet	c. c/y nourishment	d. c/y nourishment
14.Γ Coastal Dunes	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a. square feet	b. square feet	c. c/y nourishment	d. c/y nourishment
15.Γ Coastal Banks	<u> </u>	<u> </u>		
	a. linear feet	b. linear feet		
16.Γ Rocky Intertidal Shores	<u> </u>	<u> </u>		
	a. square feet	b. square feet		
17.Γ Salt Marshes	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a. square feet	b. square feet	c. square feet	d. square feet
18.Γ Land Under Salt Ponds	<u> </u>	<u> </u>		
	a. square feet	b. square feet		
	<u> </u>	<u> </u>		
	c. c/y dredged	d. c/y dredged		
19.Γ Land Containing Shellfish	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a. square feet	b. square feet	c. square feet	d. square feet
20.Γ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u> </u>	<u> </u>		
	c. c/y dredged	d. c/y dredged		
21.Γ Land Subject to Coastal Storm Flowage	<u> </u>	<u> </u>		
	a. square feet	b. square feet		

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22.

Restoration/Enhancement (For Approvals Only)

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c & d or B.17.c & d above, please entered the additional amount here.

44000

a. square feet of BVW

b. square feet of Salt Marsh

23.

Streams Crossing(s)

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. the work is a maintenance dredging project as provided for in the Act; or
 - b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not exceed the issuance date of the original Final Order of Conditions.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.
8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing

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the words,

" Massachusetts Department of Environmental Protection"

[or 'MassDEP']

File Number : "137-1585"

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before Mass DEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.
17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. The work associated with this Order(the "Project") is (1) is not (2) subject to the Massachusetts Stormwater Standards. If the work is subject to Stormwater Standards, then the project is subject to the following conditions;
 - a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
 - b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

WPA Form 5 - Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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City/Town: CONCORD

- BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized; *iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10; *iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition; *v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: *i.* the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and *ii.* the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
 - d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Multi-Sector General Permit.
 - e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
 - f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.
 - g) The responsible party shall:
 - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
 - h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
 - i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
 - j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

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- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions:

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No

2. The Conservation Commission hereby (check one that applies):

a. DENIES the proposed work which cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

1. Municipal Ordinance or Bylaw _____

2. Citation _____

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order or Conditions is issued. Which are necessary to comply with a municipal ordinance or bylaw:

b. APPROVES the proposed work, subject to the following additional conditions.

1. Municipal Ordinance or Bylaw CONCORD
WETLANDS BYLAW

2. Citation ARTICLE 43 OF 2009
TOWN MEETING, AS
AMENDED

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows:
SEE ATTACHED WARNER'S POND SPECIAL CONDITIONS.

Massachusetts Department of Environmental Protection

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E. Signatures

This Order is valid for three years from the date of issuance, unless otherwise specified pursuant to General Condition #4. If this is an Amended Order of Conditions, the Amended Order expires on the same date as the original Order of Conditions.

3/18/2022
1. Date of Original Order

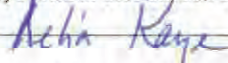
Please indicate the number of members who will sign this form. This Order must be signed by a majority of the Conservation Commission.

4
2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

Delia Kaye, Natural Resources Director



Edward Nardi

duly authorized (Book 74404, Page 14)

Gregory Higgins

Nicholas Pappas

by hand delivery on

by certified mail, return receipt requested, on

Date

Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act

⁶ **Massachusetts Department of Environmental
Protection**
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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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eDEP Transaction #:1354724
City/Town:CONCORD

Signature of Applicant

Rev. 4/1/2010

Project Description: To hydraulically dredge approximately 35,750 cubic yards of accumulated sediment from Warner's Pond, dewater sediments, dispose of sediments in an upland location, construct a 1-acre wetland shelf, and improve the Warner's Pond boat access off Commonwealth Avenue. Activities are proposed in Bank, Bordering Vegetated Wetland, Land Under Waterbodies, Bordering Land Subject to Flooding, and the 100-foot Buffer Zone to Bank and Bordering Vegetated Wetland.

Findings:

- A) This Order is issued under the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40 and the Concord Wetlands Bylaw, Article 43 approved at 2009 Town Meeting, as amended.
- B) The Commission finds that proposed work in the 25-foot No Disturb Zone is restorative in nature and meets the waiver provisions set forth in the Concord Wetlands Bylaw.
- C) In correspondence dated January 28, 2022, the Massachusetts Division of Fish and Wildlife (DFW) has determined that no time-of-year restrictions are necessary. If the timing of the in-water phase is delayed past the end of winter, DFW recommends completing the work within the May 1 – August 30 time period to avoid impacts to spawning fish.

Therefore, under the Order of Conditions issued under DEP File Number 137-1585, the Commission hereby finds that in addition to standard Conditions #1-20 above, the following special conditions are necessary in accordance with the Performance Standards set forth in the regulations to protect the interests checked above.

The Commission orders that all work shall be performed in accordance with said conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications or other proposals submitted with the Notice of Intent, the conditions shall control.

Special Conditions:

- 21. This Order shall be included by reference in all contracts, plans, and specifications dealing with any activity that is regulated by this Order, and that are created or modified after the issuance date of this Order. In the event of a conflict between this Order and any plans, contract documents, or specifications, the conditions in this Order shall control.
- 22. This Order of Conditions shall apply to any successor in interest or successor in control of this property. The Natural Resources Commission (acting as the Conservation Commission) shall be notified in writing, at the time of such transfer, or any transfer in title for all or part of the property that occurs prior to the issuance of the Certificate of Compliance. Prior to any transfer of title, the Order of Conditions shall be filed at the Registry of Deeds. A lack of such required written notification to the Natural Resources Commission may delay the issuance of the Certificate of Compliance.
- 23. Prior to the commencement of any site work, the Contractor shall retain a qualified independent environmental monitor (EM) to ensure proper operations of all sediment and

erosion control measures throughout the duration of the project. The name and resume of the EM shall be provided to the Division of Natural Resource (DNR) and Concord Public Works (CPW) Engineering for review and approval at least two weeks in advance of any site work. At a minimum, the EM shall be a “qualified personnel” with a minimum of 3 years professional environmental experience in construction monitoring and shall meet the qualifications outlined in sec. 4.4.1 of the EPA Construction General Permit. The name and phone number of the EM shall be provided to the DNR and CPW-Engineering in the event that this person has to be contacted, due to an emergency at the site, during any 24-hour period, including weekends. The EM shall immediately report any deviations from the Order, or potential violations, to the Natural Resources Director at 978.318.3285.

24. Prior to the commencement of any site work, the Applicant shall retain a qualified independent Wetland Scientist (WS) to ensure proper creation and monitoring of the wetland shelf, and proper invasives species control and native replanting efforts at the boat launch. At a minimum, the WS shall have a minimum of 3 years professional experience in wetland replacement design, construction, and monitoring, and invasive species control.
25. The Contractor shall commence mitigation measures, including but not limited to invasives species removal, during the first growing season following issuance of this Order. Once invasives have been removed and the boat launch areas replanted, they shall be monitored by a qualified Wetland Scientist for a period of two consecutive growing seasons. The Wetland Scientist shall prepare a written status report accompanied by photographs of the restoration areas to be submitted annually to the Natural Resources Division at the end of each growing season, and no later than December 1st, each year. These reports shall clearly and comprehensively describe restoration conditions, including, but not limited to, means and methods of invasive species removal and replanting, an inventory of planted species, the stability, health, growth, and vigor of the planted species, wildlife habitat, and any enhancement activities or remedial actions necessary to be undertaken for restoration success to ensure the restored function is achieved. Dead plants shall be immediately replaced with the same or may be substituted with another suitable native species.
26. Prior to the commencement of any site work, with the exception of installing erosion and sedimentation controls, a pre-construction conference shall be held on site that includes the General Contractor, Project Engineer, Environmental Monitor, Wetland Scientist, and Natural Resources staff.
27. The Contractor shall copy the Natural Resources Director on the Army Corps of Engineers (Corps) Work Start Notification Form which is due at least two weeks before the anticipated starting date and the Corps Compliance Certification Form within one month following the completion of the authorized work.
28. The EM shall have the authority to stop construction to ensure that erosion controls are in place and maintained at all times, and/or if the EM determines that work is not being conducted in accordance with the plans and submissions approved by the Commission or this Order of Conditions.

29. Upon commencement of work and for as long thereafter as ground remains unstable, the EM shall submit written inspection/progress reports at the frequency detailed in the SWPPP (i.e. weekly, after storms). Progress reports shall indicate what work has been completed, and what work is anticipated to be done over the next reporting period. The reports shall address the current condition of erosion and sedimentation controls; describe any erosion and sedimentation control repair and/or replacement; and describe any erosion or sedimentation problems and mitigation measures implemented.
30. Prior to the commencement of any site work, the Applicant shall provide a copy of the EPA's Notice of Intent General Permit and executed Stormwater Pollution Prevention Plan (SWPPP), and the Erosion Control Plan (ECP), to DNR and CPW - Engineering for review and approval. Both a hard copy and electronic (pdf) copy shall be provided.
31. The site evaluation/inspection reports generated by the EM shall be provided to the DNR and CPW-Engineering, at the frequency detailed in the SWPPP (i.e. weekly and after any rain event greater than 0.25 inches in 24 hours). The Contractor and EM shall work with CPW-Engineering and Natural Resources Director to establish an approved monitoring protocol and to ensure that all proper staff is being provided with the above information to ensure the Town is in compliance with its MS4 permit issued by the EPA.
32. Prior to commencement of construction, adequate erosion and sedimentation control measures shall be installed to protect all wetland resource areas. Erosion and sedimentation control measures may consist of, but are not limited to, silt fence, staked straw bales, silt/turbidity curtains, and compost filter tubes. The sequencing of activities shall minimize land disturbance at one time. Disturbed areas shall be stabilized no more than 14 days after construction of any given area. Any slash vegetation cut to install the erosion controls shall be removed and not placed within wetland resource areas. These conditions are necessary to ensure that stormwater controls prevent degradation to wetlands and waters.
33. The Contractor shall submit a turbidity and total suspended solids monitoring plan to the Natural Resources Director for review and approval at least two weeks prior to the commencement of the dredging operation. This condition is necessary to minimize turbidity and sediment caused by construction activities, to ensure that water quality is not degraded, and that biology of the waters are not negatively impacted by potential discharges.
34. The Contractor shall perform a pre- and post- dredging multi- beam hydrographic survey, or other approved surveying method, to confirm the permitted amount of dredge material is removed.
35. A copy of the Order of Conditions, as well as the approved plan, shall be readily available onsite in a water tight box affixed to a sign bearing the DEP file number (not nailed to a tree) while activities regulated by this Order are being performed and until the issuance of the Certificate of Compliance. Copies of this document shall be provided to all contractors and subcontractors who shall also be held responsible for compliance with this Order.

36. Any proposed changes, alterations or amendment requests, as well as any required submittals, shall be sent by email to the Natural Resources Director and her designee.
37. No more than **318,340 square feet of impacts to land under water, 30 linear feet of bank, and 750 square feet of bordering vegetated wetland** shall occur.
38. No more than **35,750 cubic yards of dredging** shall occur unless otherwise approved by the Natural Resources Commission. This condition is necessary to ensure that practicable steps have been taken which will avoid and minimize impacts to wetlands and waters.
39. Following completion of dredging but prior to transportation of dredged material from the dewatering area to the disposal area, the Contractor shall complete chemical analysis of dredged sediments in accordance with the requirements of the Massachusetts 401 Water Quality Certification regulations at 314 CMR 9.00. Chemical analysis of sediment shall be performed by a Massachusetts-certified analytical laboratory. Sediment sample results shall be provided to the Natural Resources Director within 5 days of receipt, and prior to sediment disposal.
40. Approximately 4,470 cubic yards of dredged material will be piped from the northern and/or southern dredge areas directly to the northern shoreline of Scout Island to create an approximately 1- acre emergent wetland shelf area as shown on the project plans. Should segregation of dredge materials be required by the project's 401 Water Quality Certification, the Contractor shall only use dredge materials from the north dredge area to construct the wetland shelf.
41. A silt fence and/or silt curtain shall be installed around the proposed wetland shelf area prior to piping dredged material to this area to minimize increases in turbidity in adjacent waters during this operation and to contain material within the proposed wetland shelf footprint
42. The proposed wetland shelf construction shall be completed in accordance with approved design plans and specifications for the project.
43. Any proposed substitutions to the list of plants for the wetland shelf area and the invasive species replanting area included in the Notice of Intent must be approved in advance by the Natural Resources Director. Planting shall occur in the spring between April 1 and June 1, except as approved in writing by the Natural Resources Director.
44. Proposed work shall minimize disruption to the vegetated wetlands. Planting and seeding shall be done in accordance with Sheet C-104 of Warner's Pond Restoration Project Permitting Plan Set found within the application.
45. The Contractor shall deploy turbidity curtains to prevent turbid waters, due to dredging, from extending past the limits of work in Warner's Pond. This condition is necessary to minimize turbidity and sediment caused by dredging activities and to ensure that water

quality is not degraded and that biology of the waters are not negatively impacted by potential discharges.

46. The Contractor shall monitor the turbidity controls at all times. If visual turbidity escapes the controls in place, the Contractor shall stop work until the Contractor has addressed the issue. This condition is necessary to minimize turbidity and sediment caused by construction activities.
47. The Environmental Monitor shall inspect turbidity controls weekly. If any damage is observed, the Contractor shall replace or repair controls in place immediately.
48. Stockpiled materials shall be properly contained and shall not be located within at least 50 feet of wetlands or waters to ensure water runoff and/or stockpiled materials will not escape the approved stockpile locations. This condition is necessary to protect water quality because it ensures that the Contractor is using planning and construction practices that will maintain the integrity of the site hydrology and maintain the aquatic resource functions and values.
49. The Contractor shall transport dredged material using a Dredged Material Tracking Form (DMTF). A fully executed copy of the DMTF shall be provided to the Natural Resources Director within 30 days of final shipment to the reuse location or facility. This condition is necessary to maintain a record of the dredged material for reference and to ensure accountability in its transportation. This assists in the protection of health, safety, public welfare, and the environment from any potential hazards during the transportation.
50. The Contractor shall have spill containment kits on site in the event of a release of fuels and/or oils. In the event of a release, the local Fire Department and Natural Resources Division shall be immediately notified at 978.318.3400 and 978.318.3285.
51. The Contractor shall implement best management practices during transportation of dredge materials to the receiving facility. At a minimum, when transported upon public roadways, all dredged materials shall have no free liquid as determined by a paint filter test or as otherwise required by the Massachusetts 401 Water Quality Certification regulations at 314 CMR 9.00. This condition is necessary to protect surrounding area water quality during transportation.
52. All proper erosion and sedimentation control measures shall be taken during and after construction to ensure that no sedimentation will occur to downgradient wetland resource areas. The Contractor shall be responsible for the establishment of permanent erosion control on all slopes within jurisdictional areas using, but not limited to, erosion control blankets and permanent vegetative cover.
53. Erosion controls shall not be removed until approved by the Natural Resources Division.
54. All fill and/or mulch incorporated into the site must be clean, debris free and devoid of invasive plants or their parts or seeds.

55. All construction materials, earth stockpiles, landscaping materials, slurry pits, waste products, refuse, debris, stumps, slash, or excavate may only be stockpiled or collected in areas as shown and labeled on the approved plan(s), or if no such areas are shown, must be placed or stored outside all areas subject to jurisdiction under the MA Wetlands Protection Act and the Concord Wetlands Bylaw under cover and surrounded by a double-staked row of straw bales to prevent runoff. If sedimentation reaches a resource area, the Contractor shall immediately notify the Natural Resources Division at 978.318.3285.
56. Any damage to any wetland resource areas protected under the MA Wetlands Protection Act (M.G.L. c.131 s.40) and/or the Town of Concord Wetlands Bylaw caused by this project shall be the responsibility of the Contractor to repair, restore and/or replace. Sedimentation or erosion into jurisdictional areas, as well as damage to or destruction of vegetation shall be considered damage to wetland resource areas.
57. No trash dumpsters are allowed within areas subject to protection under the MA Wetlands Protection Act or the Concord Wetlands Bylaw.
58. Machinery shall not be stored in the buffer zone. Machinery and delivery trucks shall be managed in a manner that does not result in damage to vegetation, create unnecessary soil compaction, or result in disturbance of sensitive areas.
59. Neither oil nor sodium chloride shall be used during or after construction for the control of dust or snow and ice within areas of jurisdiction.
60. The Applicant shall acquire and maintain, in full force and effect, all other permits and approvals required for the proposed construction.
61. Storage, use and disposal of any "Hazardous Material" during and following construction shall comply with the Town of Concord Groundwater Protection Bylaw as approved under Article 42 of the 1981 Town Meeting.
62. Site clearing and any construction debris shall be promptly removed from the site in accordance with all applicable laws and regulations.
63. The Contractor shall furnish to the Natural Resources Director such written and oral reports as the Director may, from time to time, request demonstrating compliance with this Order of Conditions. Without request, the Applicant shall immediately notify the Director if any violation of this Order of Condition occurs.
64. All work shall be completed in substantial accordance with a construction schedule furnished to the Natural Resources Director prior to the commencement of work. No changes shall be made in the construction schedule without the approval of the Director.
65. During all phases of construction, all disturbed or exposed soil surfaces shall be brought to final finished grade and stabilized within thirty (30) days. Bare ground that cannot be

permanently stabilized within thirty (30) days shall be loamed and seeded or stabilized with mulch or any other protective covering and/or method approved by the Natural Resources Director.

66. Trees scarred by equipment shall be attended to properly and promptly. In landscaping the finish grade, trunks of trees shall not be covered with more than two inches of soil.
71. The Natural Resources Director reserves the right to decide as to the success or failure of the wetland shelf area and the invasive species removal and native replanting area, and reserves the right to require additional plantings or other remedial actions as may be required, in the opinion of the Natural Resources Director, to ensure the success of these areas. This condition is necessary to ensure that there is an adequate indication that the restoration effort is successful.
72. At least 75% of the surface area of the wetland shelf and invasive species control area must be re-established with indigenous wetland plant species within two growing seasons. Additional planting as needed to achieve this standard shall be completed at the Applicant at their expense.
73. Snow shall not be disposed of or stored within 50 feet of wetlands. This condition shall be in perpetuity and shall not expire with the issuance of a Certificate of Compliance.
74. All maintenance conditions specified in this Order shall be ongoing and shall not expire at the end of the project construction or with the issuance with the Certificate of Compliance. It shall be the responsibility of the property owner to see that the maintenance conditions are complied with as required.
75. The work authorized hereunder shall be completed within three years from the date of this Order (please refer to General Conditions #4 & #5 for exceptions). This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. Your Order expires on **March 18, 2025.**
76. Upon completion of the project, the Applicant shall request a Certificate of Compliance from the Commission. The request shall be accompanied by submission of as-built plans within jurisdictional areas and a written statement by a Professional Engineer or Registered Land Surveyor registered in the Commonwealth of Massachusetts, or other qualified professional acceptable to the Commission, certifying compliance with the approved plans referenced above in this Order of Conditions and setting forth deviations, if any exist.



Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Bethany A. Card
Secretary

Martin Suuberg
Commissioner

Ms. Delia Kaye
Town of Concord Division of Natural Resources
141 Keyes Road
Concord, MA. 01742

May 26, 2022

RE: 401 WATER QUALITY CERTIFICATION

Application for: BRP WW 10, Water Quality Certification, Major Fill Project and
BRP WW07, Major Dredge Project, Warner's Pond Restoration Project, Water Quality
Certification

AT: Warner's Pond, Concord, MA 01742
SuAsCo River Basin, Concord River Watershed

DEP Transmittal Number: 21-WW10-0015, 21-WW08-0007
EOEEA Number: 15977
DEP Wetlands File Number: 137-1585
USACE Number: NAE-2019-00744

Dear Ms. Kaye:

The Northeast Regional Office of the Massachusetts Department of Environmental Protection, (MassDEP), has reviewed your application for Water Quality Certification (WQC), as referenced above. In accordance with the provisions of MGL c.21, §§ 26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.) and 314 CMR 9.00, MassDEP has determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate water quality standards (314 CMR 4.00) and other applicable requirements of state law.

Warner's Pond is an impoundment in the Nashoba Brook, downstream of Nagog Brook within the Assabet River Watershed and SuAsCo River Basin. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) assigns Nagog Pond from Source to outlet in Acton and those tributaries thereto as Class A Public Water Supply. Class A waters are designated as "excellent habitat for fish, other aquatic life and wildlife, including for their reproduction,

migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. Anti-degradation provisions of these Standards require that "in all cases existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

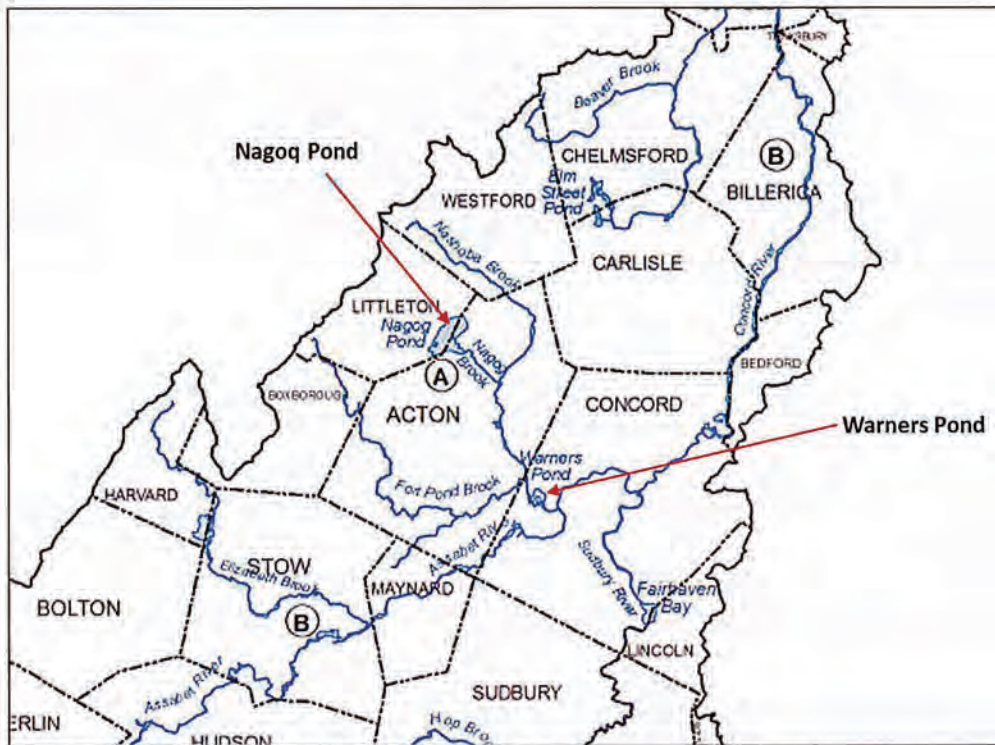


Figure 1. MA Surface Water Quality Standards, 314 CMR 4.06, Figure 18 SuAsCo River Basin.

Project Site

Warner's Pond is a 54-acre impoundment of Nashoba Brook located near the intersection of Union Turnpike and Commonwealth Avenue in Concord, Massachusetts. The pond was created in the 1850s by damming Nashoba Brook downstream from Nagog Brook and the confluence with Fort Pond Brook. Water flows into the impoundment through a broad delta of emergent wetlands on the western shore and discharges from the pond at a spillway located at the pond's southeast corner, approximately 1,250 feet upstream of the Assabet River. The Pond contains a large island, Scout Island, that is owned by the Boy Scouts of America and is located within a Massachusetts Historical Commission (MHC) Inventoried Area, Concord Junction (MACRIS # CON.E).¹

¹ 401 Water Quality Certification Application - Warner's Pond Restoration Project, Concord, MA



Figure 2. Confluence of Nashoba Brook and Fort Point Brook at Scout Island.

Project Description

The Town of Concord's project includes the hydraulic dredging of sediment from Warner's Pond and improvements to the parking area, access road, and stormwater management system. Dredging will remove 35,750 cubic yards of accumulated sediment from two areas of the pond totaling 6.3 acres. The purpose of the project is to restore aquatic habitat and improve water quality and recreational opportunities in the pond. Approximately 4,470 cubic yards of dredged sediment will be used to construct an emergent wetland shelf within the pond basin on the north shore of Scout Island, in Warner's Pond. The remaining volume of dredged sediments will be temporarily stockpiled and dewatered adjacent to Warner's Pond and then transported to the final reuse location elsewhere within the Town of Concord.

The pond is currently in an advanced state of eutrophication and has experienced significant in-filling with nutrient-rich sediments that have reduced water depths and led to increased growths of nuisance aquatic invasive plant species including variable watermilfoil (*Myriophyllum heterophyllum*), fanwort (*Cabomba caroliniana*), and water chestnut (*Trapa natans*). The sediment accumulation, excess nutrient inputs, and dense growths of aquatic invasive plants have resulted in decreased water quality in Warner's Pond and a reduction in the pond's ability to provide habitat for native fish and wildlife.

Evaluation of Discharge of Dredge Materials or Fill Material [314 CMR 9.06]

The Town's Watershed Management Plan of 2012 recommended dredging as the primary focus for water management because the vast majority of the pond's watershed is outside of Concord's borders, which limits the ability of the Town to achieve meaningful reductions in nutrient and sediment loading to Warner's Pond. The Town prepared a Dredging Feasibility

Study for Warner's Pond in 2018 (Appendix A) including a description of the proposed dredging project, conceptual-level design plans and sediment sampling. The Feasibility Study identified two targeted locations within the pond: (1) an area between Scout Island, Pond Street, and the Town-owned Commonwealth Avenue public access location, and (2) a small area in the northeastern corner of the pond adjacent to the Town-owned Gerow Recreation Area, which is currently in development. These areas are referred to as the south and north dredge areas, respectively. This targeted dredging of these two was determined to be a more feasible option than dredging the entire pond given the high costs and greater potential for environmental impacts associated with full-pond dredging.

Approximately 4,470 cy of dredged material removed from the dredge area will be discharged directly to the northern shoreline of Scout Island to create an approximately one-acre emergent wetland shelf area. A silt fence and/or silt curtain will be installed around the proposed wetland shelf area prior to piping dredged material to this area to contain material within the proposed wetland shelf footprint and to minimize increases in turbidity in adjacent waters. Sediment will be placed to allow for up to one foot of water above the surface of the wetland shelf. Native emergent wetland plant species will be planted in the wetland shelf area to stabilize the sediment and provide habitat for wetland wildlife species. The planting plan calls for plants spaced 2 ft on-center using a triangular grid, providing the opportunity for approximately 12,700 plant starts. Measures to protect new plantings from goose herbivory are anticipated to be needed.

The creation of this additional emergent wetland area will enhance the ecological value of the Warner's Pond system by increasing habitat for wetland wildlife including wading birds, reptiles, and amphibians. Creation of the proposed wetland shelf will improve the capacity of Warner's Pond to sustain and protect wildlife habitat by converting a portion of the pond basin from an area dominated by invasive plants which provide low habitat diversity to an area dominated by native plants which provide important wildlife habitat. The habitat improvement provided by the wetland shelf creation therefore meets the definition of "Ecological Restoration Project" as defined in the Wetlands Protection Act Regulations at 310 CMR 10.04. The project is not eligible for a Restoration Order of Conditions because it is not a project type listed in 310 CMR 10.13(2) through (7). Therefore, the project has been filed as an Ecological Restoration Limited Project pursuant to 310 CMR 10.53(4)(e)(5). An Order of Conditions approving the project was issued by the Concord Natural Resources Commission on March 18, 2022. The Town is proposing to monitor the wetland shelf twice annually for a five-year period beginning the first growing season following the completion of planting. Monitoring will include an evaluation of the presence and extent of any invasive species in the wetland shelf and the annual monitoring reports will provide recommendations for managing invasive species, if needed. Finally, an invasive species management plan has been prepared for the project which focuses on the Commonwealth Avenue improvements portion of the work. If needed, this plan could be amended to include management options for the wetland shelf area.

The Criteria for Evaluating Proposed Discharge to Wetlands at 314 CMR 9.00 of the Regulations requires the submittal of information necessary for MassDEP to determine that the project complies with the Wetlands Protection Act, minimizes individual and cumulative impacts, and complies with the Massachusetts Surface Water Quality Standards. This information has been provided and specific mitigating measures required by MassDEP are itemized below. Therefore, based upon information currently in the record, MassDEP grants a Water Quality Certification subject to the following conditions to maintain water quality, to minimize impact on the waters and wetlands, and to ensure compliance with the appropriate state law.

Evaluation of Dredging and Dredged Material Management [314 CMR 9.07]

Alternatives Analysis

No-Action: Under the no-action alternative, the proposed dredging and wetland shelf construction in Warner's Pond would not occur. The no-action alternative maintains the existing volume of sediment in the pond, which is currently degrading aquatic habitats and water quality. Open water habitats and water quality within the pond would not be improved.

Dredging the Entire Pond: Dredging the entirety of Warner's Pond was considered as a potential restoration alternative, however, the cost is prohibitive and the Town's goals of habitat and recreational improvements can be achieved by dredging of smaller areas at lower cost. Dredging smaller areas will reduce the scale of potential impacts of the dredge and fill project, including impacts to benthic habitats and macroinvertebrates.

Mechanical Dredging: Mechanical dredging using conventional construction equipment to remove sediment presents several logistical challenges and was dismissed as an alternative because it requires either (1) drawing down Warner's Pond to provide access to construction equipment or (2) providing construction equipment access to multiple locations around the shoreline of Warner's Pond to complete dredging without draw down of the pond. This option would result in greater impacts to wetlands and to fish and wildlife habitat.

Targeted Hydraulic Dredging: Hydraulic dredging of smaller areas of Warner's Pond is the preferred alternative. The north and south dredge areas are suitable for dredging as they are not located within the main channel through the pond but are rather outside the path of the incoming sediments. Therefore, a dredging project targeting removal of sediment from these areas would be expected to have a longer life compared to other areas within the pond where sediment refill would occur more rapidly.

MassDEP has reviewed the alternatives analysis provided with the application and concurs with the chosen alternative to dredge only the North and South areas because it reduces extensive impacts associated with mechanical dredging, helps to improve water quality by removing contaminated sediments, and meets the goals of the Town of Concord to develop the pond for

recreational uses. MassDEP also concurs that the applicant has exhausted alternatives for providing additional BVW replication or restoration at the site.

Due Diligence

A due diligence review was conducted of available federal and state records pertaining to the environmental conditions in and around the Warner's Pond. No Superfund sites or RCRA Corrective Action sites are listed in the EPA and DEP databases near the project area. One hundred seventy-four (174) state listed reportable releases of chemical or oil spills and discharges were identified in Concord. One release of 35 gallons of hydraulic oil to subsurface (RTN 3-0017278) was reported at 135 Commonwealth Avenue located downgradient and southeast of Warner's Pond. Two reportable releases of kerosene to the Assabet River (RTN 3-0001818 and RTN 3-0015490) are associated with underground storage tanks at the Massachusetts Correctional Institution (MCI) facility which is 2,000 feet northeast of the project area and upgradient of Warner's Pond. All release sites in the project area have achieved an "adequate regulatory status" or received a Response Action Outcome (RAO) for the release. MCI facility has active permits for air emissions, NPDES, and RCRA waste generations. Since 2018, the NPDES-permitted discharges to the Assabet River have exceeded E. coli from gross effluent on one occasion (1st Quarter 2018). No chronic pollutant loading and/or other sources of pollutants were identified.

Sediment Analysis

Twenty-nine sediment samples were collected to characterize the sediments in Warner's Pond. The sediment sampling plan details 24 sampling locations in area South and southeast of Scout Island and 5 locations in the North dredge area. All the samples were delivered to a state certified Laboratory for grain size distribution and subsequent chemical analysis on July 11, 2017. The 2017 sediment samples and chemical analysis were accepted for use as current indicators of sediment conditions in the pond even though they exceeded the 3 year time limit typically applied to sediment sampling since the due diligence research indicated that the project site has no past history of chemical spills, oil spills or discharges, industry al or municipal discharges within 1,000 feet of the project site, and no chronic pollutant loading from other sources in the immediate watershed for the site.

Grain size analysis of pond sediments show 20% of the total sediments by weight pass the #200 sieve. Subsequently, chemical analysis was conducted for all samples by Phoenix Environmental Laboratories, Inc. Chemical results for composited samples SC4-A, SC4-B, and SC4-C indicate contaminant levels that exceed Reportable Concentrations for MCP-S1/GW1 of 20 mg/kg for Arsenic. Contaminant levels in all other sediment samples tested below RCS-1 standards.

Table 1. Total Metals for composited SC4-A, B, C.

	RCS-1	SC3-AC	SC3-B	SC4-ABC
Metals, Total				
Arsenic	20	17.30	14.20	26.7
Cadmium	70	2.10	1.00	11.8
Chromium	100	51.40	49.50	81.1
Copper	1000	22.70	24.80	57.1
Lead	200	47.50	53.80	104
Mercury	20	0.18	0.28	0.39
Nickel	600	18.10	13.20	29.7
Zinc	1000	91.90	114.00	228

Dredging Operation

Hydraulic dredging will be used to remove sediments from the pond bottom to an upland dewatering area adjacent to the pond. Hydraulic dredging is a vessel-based dredge method that uses a cutter-head arm to stir and loosen bottom sediment as it is moved across an area. The material is hydraulically removed from the bottom in a slurry and pumped through a flexible discharge pipe to the temporary dewatering location. The choice of hydraulic dredging over mechanical dredging techniques will reduce construction related impacts to the water quality and wetland areas by avoiding the need to lower the pond elevation, to install cofferdams, to create water bypass channels, and to construct access roads for conventional construction equipment to dredge in the dry.

Dredging will remove 35,750 cubic yards of accumulated sediment from two locations referred to as the South and North dredge areas that total 6.3 acres in size.² Of the total volume, 4,470 cubic yards of sediments will be removed from the 1.1-acre North dredge area to create a swim beach adjacent to the Town-owned Gerow Recreation Area. Over 30,000 cubic yards of sediment will be removed from the 5.2 acre South dredge area located east and south of Scout Island.³ These areas will be dredged to bottom elevations of 107.5 feet below the High Water Mark (HWM) (116.5 feet NAVD-88) at both the South Area (cross sections A-A' and B-B') and North Area (cross sections C-C').^{4,5} Side Slopes shall be no steeper than 3H:1V as shown on the project plans. Sediment will be removed from targeted dredge areas until the finished grade contours shown in the project plans are achieved.⁶

² Warner's Pond Restoration Project, 401 Water Quality Certification Application, Dredging Feasibility Assessment, Figure I.

³ Ibid. Figure 2.

⁴ Town of Concord Warner's Pond Restoration Project Permitting Plan Set, signed and stamped by Amy E. Hunt P.E., Civil 51405, dated 11/15/2021, Sheet C-102, Proposed Dredging Plan – South Area

⁵ Town of Concord Warner's Pond Restoration Project Permitting Plan Set, signed and stamped by Amy E. Hunt P.E., Civil 51405, dated 11/15/2021, Sheet C-103, Proposed Dredging Plan – North Area

⁶ Town of Concord Warner's Pond Restoration Project Permitting Plan Set, signed and stamped by Amy E. Hunt P.E., Civil 51405, dated 11/15/2021, Sheet C-301, Cross Sections

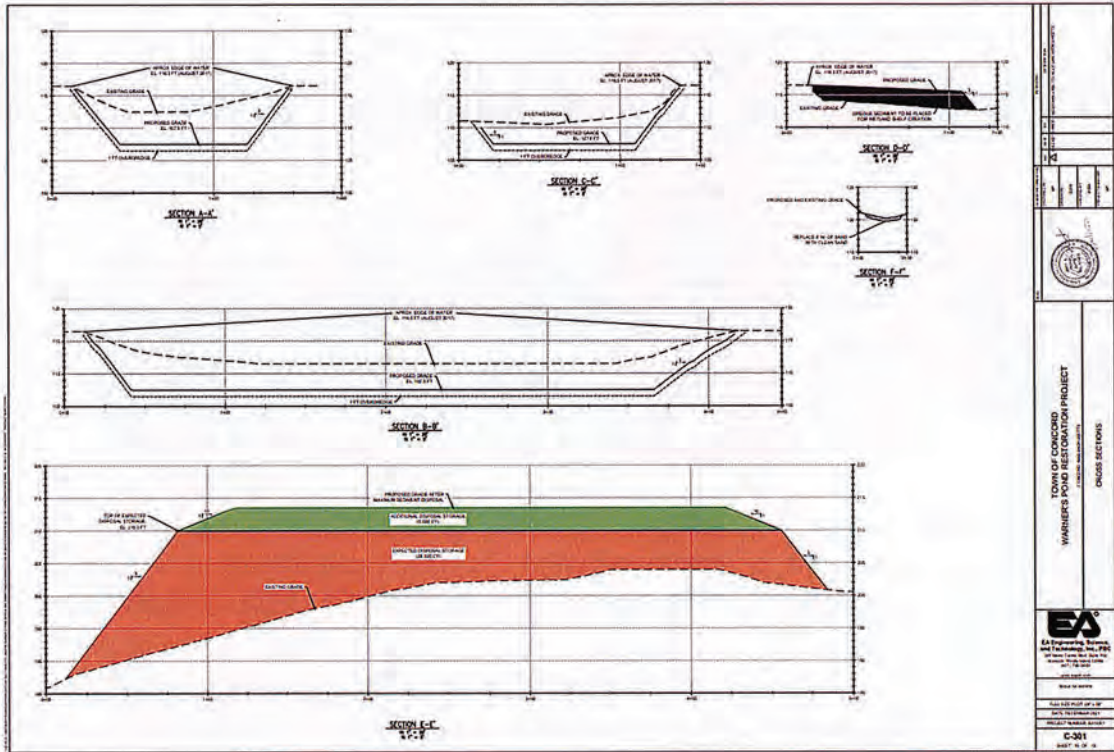


Figure 3. Cross sections for North and South dredge areas.

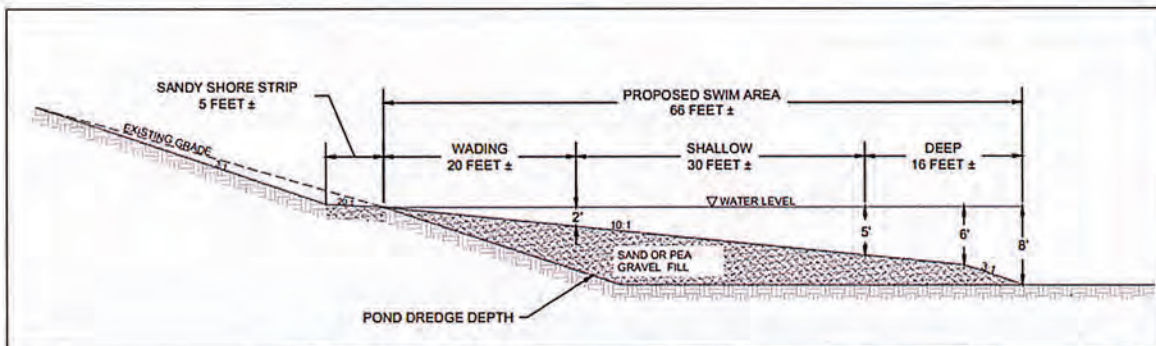


Figure 4. North area proposed profile for swim beach.

Dredge Material Dewatering

Dredged sediments will be pumped through a flexible discharge pipe from the hydraulic dredge barge to a 4.6-acre temporary stockpile and dewatering area on the northwestern shoreline of the pond. Appropriate erosion control measures will be placed around stockpiles to contain sediments during dewatering and a 2-inch layer of crushed stone will cover the area to the perimeter controls to facilitate dewatering. Excess water from dredge material will collect in a sump area in the field and a pipe will gravity drain the collected water from the dewatering area to the outflow structure and to the pond. The inlet and outlet ends of the discharge pipe will be fitted with geotextile filter fabric to remove fines that may be suspended in the collected sump

water prior to discharge. The dewatering area perimeter control and outflow structure shall be constructed as shown on the project design plan set.^{7,8}

Dredge Material Disposal

Sufficiently dewatered sediments that test below reportable concentrations for MCP-S1/GW1 standards will be transported from the temporary dewatering area to the approximately 2.6-acre final reuse area at the Northeastern Correctional Center (NCC) along the proposed haul route, as shown in the project plans. Conventional earth-moving equipment will be used both to load sediment from the temporary dewatering area into dump trucks and to place and grade the sediment pile at the final reuse location to achieve design side slopes as shown on the project plans. Following the completion of material transport and placement of uncontaminated sediments/soil, the final sediment reuse area will immediately be seeded to stabilize soils using the New England Erosion Control/Restoration Mix for Dry Sites available from New England Wetland Plants, Inc. (Appendix D) or an approved equivalent native seed mixture.

The Town proposes to discharge 4,470 cubic yards of dredged sediment within the pond basin on the north shore of Scout Island to construct an emergent wetland shelf. Existing conditions in the pond show that Nashoba Brook, downgradient of the confluence with Fort Point Brook, flows into the pond from a westerly direction and along the north shore of Scout Island toward the eastern shore of Warner's Pond. Sediment depth measurements as illustrated on the sediment depth contour map indicate that stream flows across the top of the Scout Island keep the shoreline relatively free of accumulated sediment. Sediments and fines drop out of suspension and accumulate as the stream velocities diminish in the broader pond area and where streamflow is redirected as Nashoba Brook approaches the eastern shore of the pond. These conditions suggest that large storm events that create high velocity stream flows in Nashoba Brook could result in resuspension and redistribution of fines in the vicinity of the wetland shelf.

Dredging Performance Standards at 314 CMR 9.07(3), require that dredging be planned and conducted to avoid or minimize cumulative impacts on the aquatic ecosystems and to provide protection to human health. This goal can be facilitated by minimizing the potential for resuspension of fine particulate matter in the water column, particularly those fines with contaminant levels exceeding MCP S1/GW1 standards. To protect public health, aquatic life, and other existing and designated uses of the waters of the Commonwealth including recreation and public swimming, sediments with contaminant levels that test above MCP S1/GW1 standards shall not be used to construct the wetland shelf on the north shore of Scout Island or be reestablished at a different location in Warner's Pond. Only sediments testing below MCP S1 standards shall be used for wetland shelf construction purposes to avoid or minimize impacts to water quality and human health.

⁷ Town of Concord Warner's Pond Restoration Project Permitting Plan Set, signed and stamped by Amy E. Hunt P.E., Civil 51405, dated 11/15/2021, Sheet C-106, Dewatering Plan.

⁸ Town of Concord Warner's Pond Restoration Project Permitting Plan Set, signed and stamped by Amy E. Hunt P.E., Civil 51405, dated 11/15/2021, Sheet C-501, Details.

Offsite upland disposal at a licensed landfill is required for all sediments that exceed reportable concentrations for MCP S1/GW1 cleanup standards. This condition is necessitated because the extent to which natural sources contribute to the presence of arsenic in the lower reaches of the Nashoba Brook impoundment near the dam has not been determined, a more accurate estimate of the total volume of contaminated sediments in the pond needs to be calculated, and because a characterization of soils at the proposed disposal site at the Massachusetts Correctional Center in Concord is not available. As a result, all contaminated sediments shall be removed and disposed of at a licensed facility after proper dewatering and with appropriate overland transportation precautions taken.⁹

In-water placement of uncontaminated sediments (testing below RCS-1 levels) for ecological restoration as well as completion of the emergent wetland shelf and swim beach project is consistent with MassDEP's Antidegradation Policy. Placement of uncontaminated sediments at the proposed upland reuse location at the MCI Concord is also consistent with MassDEP's Antidegradation Policy. An explanation of how contaminated sediments will be segregated from the 4,470 cubic yards of dredge materials needed to create the wetland shelf shall be submitted prior to the start of work on the project.

Time of Year Restrictions

The Massachusetts Division of Fisheries and Wildlife (DFW) recommends that no Time of Year restrictions pertaining to the in-water construction phase of the proposed work are required. If the timing of the in-water phase is delayed past the end of winter, we recommend completing the work within the May 1 to August 30 time period to avoid impacts to spawning fish.

Rare Species and Wildlife Habitat

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) Atlas, 15th Edition, effective July 27, 2021, indicates that no portion of the Warner's Pond dredge project is located within mapped areas designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife and will not require review pursuant to the Massachusetts Endangered Species Act.

Section 61 Findings

Pursuant to M.G.L. Chapter 30, Sections 61 to 62 inclusive, the [Massachusetts Environmental Policy Act ("MEPA")], this project was reviewed as EOE #15997 and a Certificate of the Secretary of Energy and Environmental Affairs was issued on April 5, 2019, on the Environmental Notification Form (ENF). The MEPA Certificate states that "The project will be subject to requirements governing the discharge of dredged or fill material, dredging, and disposal of dredged material." The Secretary finds that "No further MEPA review is required. The project may proceed to State permitting."

⁹ EEA #15997 MEPA Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form Warner's Pond Restoration Project, Concord, MA.

Therefore, based on information currently in the record, MassDEP grants a 401 Water Quality Certification for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. MassDEP further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, MassDEP has determined that upon satisfying the conditions and mitigation requirements of this approval, the project provides a level of water quality necessary to protect existing uses and accordingly finds that the project to be implemented satisfies the Surface Water Quality Standards at 314 CMR 4.00.

Conditions

1. Pursuant to 314 CMR 9.09(22), prior to the start of work, or for any portion of the work thereafter, MassDEP shall be notified of any change(s) in the project Plan of Record that may affect the quality of waters or wetlands. MassDEP will determine whether the change(s) will require a revision to this 401 Water Quality Certification to ensure that any project modification(s) adhere to 314 CMR 9.00 and antidegradation provisions of the *Massachusetts Surface Water Quality Standards* at 314 CMR 4.04. This condition is necessary to ensure that the project is completed according to the approved Plan of Record for this permit and to ensure that any changes to the approved plans are reviewed and approved prior to implementation to protect water quality.
2. Pursuant to 314 CMR 9.05(1), areas required to facilitate construction access shall be limited to those shown on the referenced plans. In the event that other access areas are required by the applicant or by the contractors, MassDEP shall be notified. This condition is necessary to ensure that the project is completed according to the approved Plan of Record for this permit that was designed to protect water quality;
3. Pursuant to 314 CMR 9.01(3), the applicant and its contractor shall take all steps necessary to assure that the proposed activities will be conducted in a manner that will avoid violations of the anti-degradation provisions of the *Massachusetts Surface Water Quality Standards*, that protect all waters, including wetlands. This condition is necessary to assure that any discharge from the project complies with the *Massachusetts Surface Water Quality Standards*, as provided in 314 CMR 4.00, to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
4. Pursuant to 314 CMR 9.09(1), Dredging and filling/excavation in accordance with this Combined 401 WQC may begin following the 21-day appeal period and once all other permits have been received. This condition assures that all appropriate permits have been

obtained and that grievances and additional concerns regarding impacts to water quality, protection of public health, or restoration and maintenance of the chemical, physical, and biological integrity of the water resources are identified and addressed before work begins.

5. Pursuant to 314 CMR 9.01(3)(a), 314 CMR 9.07(1), and 314 CMR 9.09(1), no later than 21 days prior to commencement of dredging activity, the name and contact information for the project site manager designated by the applicant and its contractor who will be responsible for installation, monitoring, inspection, and correction of erosion control measures shall be provided to MassDEP.
6. Pursuant to 314 CMR 9.05(1), all work shall be performed in accordance with the following documents and plans submitted with the application. This condition is necessary to ensure that the project is completed according to the approved Plan of Record for this permit and to protect water quality:
 - Application for the Combined 401 Dredge/Fill WQC, Transmittal #s 21-WW07-0007, 21-WW10-0015, dated November 17, 2021.
 - "Town of Concord, Warner's Pond Restoration Project, Permitting Plan Set, Concord, Massachusetts" prepared by EA Engineering Science and Technology, dated February 16, 2022, consisting of 12 sheets.
 - Sheet G-001 Title Sheet
 - Sheet G-002: General Notes and Legend
 - Sheet C-101: Existing Conditions Plan
 - Sheet C-102: Proposed Dredging Plan-South Area
 - Sheet C-103: Proposed Dredging Plan-North Area
 - Sheet C-104: Proposed Wetland Shelf
 - Sheet C-105: Dredge Material Management Plan
 - Sheet C-106: Dewatering Plan
 - Sheet C-107: Dredge Material Disposal Site
 - Sheet C-108: Commonwealth Ave Access Improvements
 - Sheet C-301: Cross Sections
 - Sheet C-501: Details

On File with: MassDEP, the Concord Natural Resources Commission and the USACE and Stamped and Signed by: Amy E. Hunt, PE, dated November 15, 2021.

 - "Commonwealth Avenue Access Location Invasive Species Management Plan, Warner's Pond Restoration Project," by EA Engineering, Science and Technology, Inc.
7. Pursuant to 314 CMR 9.01(3)(a), 314 CMR 9.07(1), and 314 CMR 9.09(1), the applicant shall retain a wetland scientist who will serve as the project's Environmental Monitor (EM). This person shall be competent in wetland ecology, soil science and have a minimum of five (5) years of experience in wetland restoration, as well as expertise with erosion control and general construction practices. Prior to the pre-construction meeting, the applicant shall

provide MassDEP with the name(s), address(es) and telephone number(s) of the EM and their alternate including their qualifications and contact information. The EM or their backup shall be available on a 24-hour basis. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.

8. Pursuant to 314 CMR 9.06(6)(a)(8), the applicant shall utilize construction Best Management Practices in accordance with the MassDEP's Stormwater Policy. This condition is necessary to minimize the potential for construction related activities to adversely impact land under water, land under ocean, intertidal zone, and special aquatic sites. Stormwater runoff from construction activities can deliver concentrated pollutants and eroded sediments to downstream waters unless proper erosion and sediment controls are used. The effects may result in waters failing to meet designated uses and/or water quality criteria. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters. To prevent erosion and sedimentation from disturbed areas from entering the wetlands and waterways the following erosion and sedimentation control measures shall be taken:
 - a) An erosion control plan shall be deployed as shown on the referenced plans and described in the application for 401 Certification. Any further erosion control plan or site-specific Stormwater Pollution Prevention Plan (SWPPP) developed for this project shall be supplied to the MassDEP and Conservation Commission prior to construction activities. Noncompliance with the SWPPP shall constitute non-compliance with the requirements of this Certification.
 - b) Travel paths for heavy equipment, vehicle wash down pads, and stabilized entrances to construction site shall be established and erosion control measures installed where in proximity to wetlands or LUW.
 - c) Stockpile areas shall be established, and erosion control measures installed around their perimeter when in proximity to wetlands or LUW.
 - d) Siltation devices shall be installed before the commencement of any site work. These devices shall be inspected regularly, and entrapped silt shall be removed and disposed of in an upland location greater than 100 feet from wetland resource areas. Siltation devices shall be maintained or replaced when clogged with sediment or deteriorated.
 - e) Soils shall be fully stabilized prior to the removal of any erosion control devices. Before removing siltation control devices adjacent to wetlands or LUW, all eroded soil, sediments or mud which have collected behind or around such structures shall be removed. Such material shall be disposed of at a point where runoff will not carry it back into wetlands or waterways.

9. Pursuant to 314 CMR 9.06(2), pre-construction photographs of BVW and LUW where impacts are anticipated shall be submitted to MassDEP prior to the start of work. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters
10. Pursuant to 314 CMR 9.06(2), all temporary construction fills shall be completely removed after the construction phase of this project is complete. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
11. Chemical results for composited samples SC4-A, SC4-B, and SC4-C indicate contaminant levels that exceed Reportable Concentrations for MCP-S1/GW1 of 20 mg/kg for Arsenic. Pursuant to 314 CMR 9.07 (5), offsite upland disposal at a licensed landfill is required for all sediments that exceed reportable concentrations for MCP S1/GW1 cleanup standards. That volume of sediment that exceeds the reportable concentrations of arsenic must be segregated and deposited at a registered landfill protecting habitat and public health. No sediment exceeding reportable concentrations for MCP S1/GW1 cleanup standards shall be used on the wetland shelf on the north side of Scout Island. This condition is necessary to protect the public health and restoring and maintaining the chemical, physical, and biological integrity of the water resources of the Commonwealth.
12. Pursuant to 314 CMR 9.07(3), 314 9.07(9) and prior to the start of work, the applicant shall establish the lateral extent and estimated volume of contaminated sediments in the vicinity of sediment cores SC4-A, SC4-B, and SC4-C. Refinement of the contaminated sediment volume will be accomplished by employing the services of a Licensed Site Professional. This condition is required to ensure that dredging is planned and conducted to minimize short-term, long-term, and cumulative impacts on the aquatic ecosystem and to provide protection to human health.
13. The applicant shall provide a plan showing the extent of dredge area required to effectively segregate contaminated sediments for disposal at a licensed upland landfill from those sediments available for reuse on site or for upland disposal at the MCI in Concord. Pursuant to 314 CMR 4.04(1), this condition is necessary to maintain and protect the existing uses and level of water quality necessary to protect the existing uses of Warner's Pond including recreation. Pursuant to 314 CMR 9.07(3), this condition is required to ensure that dredging is planned and conducted in a manner that minimizes short-term, long-term, and cumulative impacts on the aquatic ecosystem and protects human health. This condition also serves to minimize the potential for resuspension of fine particulates and contaminants that impact aquatic life and the existing and designated uses of waters of the Commonwealth.

14. Pursuant to 314 CMR 9.07(9)(b,) offsite upland disposal at a licensed landfill is required for all sediments that exceed MCP Reportable Concentrations for S1/GW1 soil standards. This condition is required to ensure that the concentrations of oil and hazardous material in the dredged material proposed for reuse activities and as fill in an upland receiving location are less than the S-1 soil standards.
15. Pursuant to 314 CMR 9.06(2), the contractor shall be provided with a copy of this Certification and all documents referenced herein, and copies shall be available at the work site headquarters. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
16. Pursuant to 314 CMR 9.06(2), no sediments, plumes, floatables, debris or pollutants shall be introduced into the water or wetlands. All refueling and maintenance of oil and hydraulic fluid levels shall be done outside of water or wetlands. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
17. Pursuant to 314 CMR 9.05(4), MassDEP and the Concord Conservation Commission personnel shall be allowed on site to inspect construction activities for compliance with the terms and conditions of this certification. This condition ensures notification from the applicant for MassDEP or Conservation Commission personnel to access the project site to monitor project progress and to verify that the project is implemented in compliance with requirements of 401 WQC to protect water quality.
18. Pursuant to 314 CMR 9.06 (2)(a), post-construction monitoring will be completed at the proposed wetland shelf area to confirm that the planting program is successful and to monitor for the presence of invasive plant species. Monitoring will be completed twice annually for a five-year period beginning the first full growing season following the completion of planting. An annual report will be prepared for each year during which monitoring occurs summarizing the results of the monitoring and any recommended management actions to improve the ecological function of the wetland shelf. The wetland shelf will be photo-documented during each monitoring event and photographs will be included in each annual report. This condition is necessary to ensure that the chemical, physical and biological integrity of wetlands and waters of the Commonwealth are protected.
13. Pursuant to 314 CMR 9.05(4), MassDEP, attention Phil DiPietro, Wetlands Program Northeast Regional Office (philip.dipietro@mass.gov) and the Concord Conservation Commission shall be notified 48 hours in advance of construction activity for this project so that MassDEP staff may inspect the work for compliance with the terms and conditions of this 401 WQC. This condition assures that MassDEP is notified in reasonable time to plan a site visit, if needed, to observe the work and conduct site inspection for compliance with 401 WQC to ensure that water quality is protected.
19. Pursuant to 314 CMR 9.05(4), the applicant and its contractor shall allow agents of MassDEP to enter the project sites to verify compliance with the conditions of this Certification and to ensure water quality is maintained during project preparation and construction. This

condition assures permission from the applicant for MassDEP personnel to access the project site to monitor project progress and to verify that the project is implemented in compliance with requirements of 401 WQC to protect water quality.

20. Pursuant to 314 CMR 9.09(1), the term of this Certification remains in effect for the same duration as the federal permit that requires it or five years from the date of issuance of this Certification whichever comes first. This condition is necessary to ensure that the project is completed in a timely manner that is consistent with timing of related permits and if extension of the permit is needed, that the status of the project can be inspected to ensure that water quality is protected, and the project complies with this permit.
21. Pursuant to 314 CMR 9.09(3), the applicant may submit a written request to extend the 401 Water Quality Certification. Requests to extend are subject to the Department's review and approval or denial.
22. Pursuant to 314 CMR 9.07(5), a Dredged Material Tracking Form (DMTF) or Material Shipping Record (MSR) shall be used track the transport of dredged material to a licensed upland facility. A fully executed copy of the DMTF or MSR shall be provided to MassDEP within 30 days of final shipment to the reuse location or facility. This condition is necessary to ensure that dredge materials are properly and safely handled during transportation on public roadways and provides the ability for MassDEP to verify that potentially contaminated sediments have arrived at the appropriate and approved end location. It also protects the water quality of surrounding wetlands and waters during transportation.
23. Pursuant to 314 CMR 9.07(5), Best Management Practices shall be implemented during transportation of the dredged material to the licensed receiving facility. At a minimum, when transported upon public roadways, all dredged material shall have no free liquid as determined by the Paint Filter Test or other suitably analogous methodology acceptable to the MassDEP and a tarpaulin or other means shall be used to cover the dredged material during transport. This condition ensures that water quality in waters and wetlands along the travel route are not degraded by spills or discharges during transport and avoids inadvertent contribution to degradation of other waters of the Commonwealth. These practices help to avoid fugitive dust and siltation into wetland resources and waters.
24. Pursuant to 314 CMR 9.07(1), Within 30 days of the completion of the initial dredging, a bathymetric survey and construction photos of the site depicting post-dredge conditions shall be submitted to MassDEP. At a minimum, the survey shall include an overlay of the dredge footprint (i.e., top of slope) with sufficient coordinates in the Massachusetts State Plane (e.g., longitude and latitude) to clearly delineate the dredge footprint. The survey shall be sent within five working days after its completion to MassDEP. This condition is necessary to ensure that the dredging was completed as proposed on the approved Plan of Record

and that the final depths and grades designed and approved to protect water quality have been accurately achieved.

25. Pursuant to 314 CMR 9.07(1) and 314 CMR 4.04(1), when not in use, all equipment and machinery storage, servicing, or cleaning, including but not limited to fueling, changing, adding, or applying lubricants or hydraulic fluids, or washing/rinsing of trucks or equipment, shall be performed above mean high water or High-Water Mark for inland sites and outside any wetland resource areas. This condition is necessary to protect water quality by ensuring that pollutants associated with the use and maintenance of equipment used for the project are not released to the water.
26. Pursuant to 314 CMR 4.04(1), 314 CMR 9.01(3), 314 CMR 9.07, during the project period, there shall be no discharge or spillage of fuel, oil, or other pollutants into wetlands and waterways at the site. The applicant shall take all reasonable precautions to prevent the release of pollutants by ignorance, accident, or vandalism. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
27. Pursuant to 314 CMR 9.09(1), in case of a storm event, the site shall be secured beforehand in such a way as to protect Warner's Pond and downstream waters, including covering of stockpiles of soil; installation of erosion control mats over-areas of exposed soil; and removal of any debris, equipment, materials, etc. that could potentially enter the Ponds. This condition is necessary to minimize stormwater runoff and erosion from impacting wetland resources.
28. Pursuant to 314 CMR 9.09(1), no later than one week prior to the start of in-water work, the applicant shall submit a notification procedure outlining the reporting process to MassDEP for incidents relating to dredging activities that impact surrounding resource areas and habitats. Incidents that trigger reporting include, but are not limited to, observed dead or distressed fish or other aquatic organisms, observed oily sheen on the surface of the water, a sediment spill, or a turbidity plume beyond the deployed BMPs. If at any time during implementation of the project such an incident occurs, the applicant shall immediately notify MassDEP and all site related activities impacting the water quality shall cease until the source of the problem is identified and adequate mitigating measures are deployed to the satisfaction of MassDEP. This condition assures that MassDEP is able to respond quickly to dredge related incidents that may impact water quality and allows MassDEP to oversee the implementation of measures designed to protect water quality.

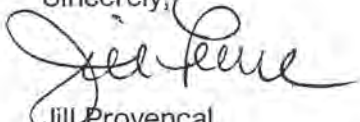
No activity may begin prior to the expiration of the appeal period or until a final decision is issued by the Department if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, MGL c.21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations. This includes, but is not limited to, conditions of the Order of Conditions.

If you have further questions regarding this decision, please contact Phil DiPietro at philip.dipietro@mass.gov.

Sincerely,



Jill Provencal
Section Chief
Wetlands Program - NERO
Bureau of Water Resources

cc: Alexander H. Patterson, Project Manager, EA Engineering, Science, and Technology, Inc.
301 Metro Center Blvd., Suite 102, Warwick, RI 02866 apatterson@eaest.com

Ruthann Brien, Department of the Army, New England District, Corps of Engineers, 696
Virginia Road, Concord, MA. 0172-2751 Ruthann.A.Brien@usace.army.mil

Edward Reiner, US EPA, 5 Post Office Square, Suite 100, Boston, MA 02109
reiner.ed@epa.gov

Amy Hoenig and Melany Cheeseman, Natural Heritage & Endangered Species Program,
Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581
Amy.hoenig@mass.gov Melany.Cheeseman@mass.gov

Notice of Appeal rights

A) Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; (c) any ten (10) persons of the Commonwealth pursuant to M.G.L. c. 30A where a group member has submitted written comments during the public comment period; or (c) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. chapter 30A section 10, a Notice of Claim must be made in writing provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, 3rd Floor
Boston, MA 02108

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection, Northeast Regional Office
One Winter Street; 5th Floor
Boston, MA 02108

B) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01 (6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- (a) the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- (b) the complete name of the applicant and address of the project;

- (c) the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax, and telephone number of the attorney;
- (d) if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- (e) a clear and concise statement that an adjudicatory hearing is being requested;
- (f) a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to the Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification, and
- (g) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

C) Filing Fee and Address

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the applicant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06 (2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

DRAFT WATERWAYS LICENSE/PERMIT
AND SPECIAL CONDITIONS

Town of Concord

of -- Concord -- in the County of -- Middlesex -- and Commonwealth aforesaid, has applied to the Department of Environmental Protection for license/permit to -- perform improvement dredging and reuse and placement of dredged sediments, as further detailed below -----

and has submitted plans of the same; and whereas due notice of said application, ~~and of the time and place fixed for a hearing thereon,~~ has been given, as required by law, to the -- Municipal Official -- of the -- Town of Concord; -----

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said --

Town of Concord -- subject to the provisions of the ninety first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to -- perform 35,750± cubic yards of improvement dredging of aquatic sediments to a depth of 7.5 feet below mean ordinary high water (EL. 115 ft) to proposed grade (EL. 107.5 ft plus 1-foot of over-dredge) with side slopes not steeper than 3:1 (V:H) over an approximate area of 281,700 square feet; and reuse and placement of 4,470± cubic yards of said dredged sediments over an approximate area of 50,400 square feet along the northern shore of Scout Island to create an emergent wetland shelf -----

in waters of -- Warner's Pond -- at 2X Warner Street -- in the -- Town of Concord -- and in accordance with the locations shown and details indicated on the accompanying Draft License Plans No. 21-WW01-0007-APP (5 Sheets) prepared by EA Engineering, Science, and Technology, Inc., PBC., dated May 4, 2022, and signed and sealed by Amy E. Hunt, P.E. Civil No. 51405 on May 17, 2022.

No previously issued specific Licenses and/or Legislative Authorizations for the structure have been identified for the project site.

The structures and fill authorized hereby shall be limited to the following uses: bank stabilization and public access to waterfront open space for recreational purposes.

The structures and fill authorized pursuant to this License are valid for an unlimited term, pursuant to 310 CMR 9.15(1)(c).

The Dredging Permit incorporated within this License is valid for a term of five (5) years from the date of issuance.

This License/Permit is subject to the following Special Conditions and Standard Conditions. These Special Conditions will be included, in substantially the same form, along with the Standard Conditions, in the Chapter 91 Waterways License/Permit to be issued pursuant hereto.

SPECIAL WATERWAYS LICENSE CONDITIONS

1. The Licensee shall maintain all structures/fill authorized herein in accordance with the terms and conditions specified herein or this License may expire, pursuant to 310 CMR 9.25(1).
2. Any structural alteration, change in use, or any other modification to that explicitly authorized herein and contained on said License Plans shall require prior review of the Department to determine whether additional licensing is required pursuant to M.G.L. Chapter 91 and the Waterways Regulations at 310 CMR 9.00.
3. All structures and fill authorized herein shall be constructed to meet the Engineering and Construction Standards pursuant to 310 CMR 9.37.
4. The Licensee shall allow agents of the Department to enter the project site to verify compliance with the terms and conditions of this License.
5. All work authorized herein shall be completed within five (5) years of the date of license issuance. The construction period may be extended by the Department for one (1) or more one (1) year periods without public notice, provided that the Applicant submits to the Department thirty (30) days prior to the end of the construction period, a written request to extend the period and provides adequate justification for said extension.
6. Within sixty (60) days of completion of the licensed project, the Licensee shall request in writing that the Department issue a Certificate of Compliance in accordance with 310 CMR 9.19. The request shall be accompanied by a certification by a registered professional engineer licensed to do business in the Commonwealth that the project was completed in accordance with the plans, specifications, and conditions of this License.

SPECIAL WATERWAYS DREDGE CONDITIONS

1. The Permittee shall inform the Department in writing at least three (3) days before commencing any authorized dredging activities.
2. Dredging may be performed by hydraulic or mechanical means and conducted in a manner that will cause no unnecessary obstruction with vessel navigation in Warner's Pond.
3. After completion of the dredging authorized herein, no maintenance dredging beyond the time authorized herein is permitted under this Permit.

Please see Page 4 and 5 for additional conditions to this License/Permit

Duplicate of said Plan, License Plan No. (to be assigned) on file in the office of said Department, and original of said plan accompanies this License, and is to be referred to as a part hereof.

STANDARD WATERWAYS LICENSE CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.
2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee prior to the commencement of any activity or use authorized pursuant to this License.
3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this Waterways License void.
4. This Waterways License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This License may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this Waterways License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.
5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying license plans.
6. Nothing in this Waterways License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof. The Licensee stated that the Town of Concord was the property owner at the time the application was submitted.
7. This Waterways License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, §40.
8. This Waterways License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the DEP.
9. This License authorizes structure(s) and/or fill on:

_____ Private Tidelands - In accordance with the public easement that exists by law on Private Tidelands, the Licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

_____ Commonwealth Tidelands - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

_____ Great Pond of the Commonwealth - The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.

X Navigable River or Stream - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, in the waterway.

No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this License.

10. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

STANDARD WATERWAYS DREDGING CONDITIONS

1. Acceptance of this Waterways Permit shall constitute an agreement by the Permittee to conform to all terms and conditions stated herein.
2. Any modification from that explicitly authorized herein and contained on the Waterways Permit Plans shall require prior review of the Department to determine whether additional authorization is required pursuant to M.G.L. Chapter 91, the Public Waterfront Act, and the Waterways Regulations at 310 CMR 9.00.
3. The Permittee shall inform the Department in writing at least three (3) days before commencing any authorized dredging or dredge material disposal.
4. This Waterways Permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Permittee prior to the commencement of any activity hereby authorized.
5. This Waterways Permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This Permit may be revoked after the Department has given written notice of the alleged noncompliance to the Permittee, or his agent, and those persons who have filed a written request, with the Department, for such notice and have afforded the Permittee a reasonable opportunity to correct said noncompliance. Failure to correct noncompliance after the issuance of a written notice by the Department shall render this Permit void.
6. This Waterways Permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, §40 and a valid Water Quality Certification issued pursuant 314 CMR 9.00.
7. This Waterways Permit is issued upon the express condition that dredging, transportation, and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the Department. Any subsequent maintenance dredging and transportation and disposal of dredge material during the term of this Waterways Permit shall be in strict conformance with all applicable requirements and authorizations of the Department.
8. Unless otherwise authorized in accordance with a Special Condition of this Waterways Permit, no maintenance dredging beyond the time authorized herein is permitted.
9. The dredging under this Permit shall be conducted as to cause no unnecessary obstruction of the free passage of vessels.
10. In conducting the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Permittee shall, at his expense, remove the shoal areas. The Permittee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the Permittee shall pay all costs associated with such work.
11. Nothing in this Permit shall be construed as to impair the legal rights of any persons or authorize dredging on land not owned by the Permittee without consent of the owner(s) of such property.
12. The Permittee shall assume and pay all claims and demands arising in any manner from the work authorized herein and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs and expenses incurred by reason thereof.
13. Whosoever violates any provisions of this Permit shall be subject to a fine of twenty-five thousand dollars and zero cents (\$25,000.00) per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed twenty-five thousand dollars and zero cents (\$25,000.00) for each day such violation occurs or continues.
14. In the event of any conflict between the Special Conditions and the Standard Conditions, the Special Conditions shall prevail.

~~The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said -- Town of Concord -- by paying into the treasury of the Commonwealth -- (N/A) -- for each cubic yard so displaced, being the amount hereby assessed by said Department (N/A).~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within sixty (60) days from the date hereof, in the Registry of Deeds for the -- Southern District -- County of -- Middlesex.

~~**In witness where**as, said Department of Environmental Protection have hereunto set their hands this _____ day of _____ in the year _____.~~

Commissioner _____

*Department of
Environmental Protection*

~~Program Chief _____~~

THE COMMONWEALTH OF MASSACHUSETTS

This License is approved in consideration of the payment into the treasury of the Commonwealth by the said -- Town of Concord -- the further sum of -- N/A -- the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

~~BOSTON,~~

~~Approved by the Governor.~~

Governor

EXHIBIT B
GEOTECHNICAL DATA



MATERIALS TESTING, INC.

55 LAURA STREET • NEW HAVEN, CONNECTICUT 06512 • (203) 468-5216
42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860) 423-1972

DATE: 06-23-17

REPORT: M-1244

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37422

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
3/8" (9.5mm)	100
1/4" (6.3mm)	90
#10 (2.0mm)	76
#20 (850µm)	64
#40 (425µm)	50
#100 (150µm)	39
#200 (75µm)	20.8

A material specification was not provided at this time.

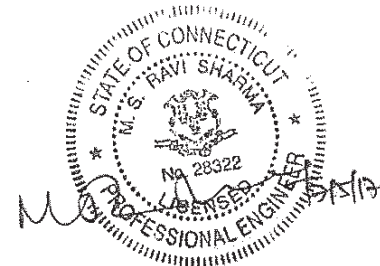
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
1cc: Client
Attachment: (1) Chain of Custody

wlb

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MATERIALS TESTING, INC.

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DATE: 06-23-17

REPORT: M-1245

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37423

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	85
#20 (850µm)	72
#40 (425µm)	61
#100 (150µm)	45
#200 (75µm)	28.8

A material specification was not provided at this time.

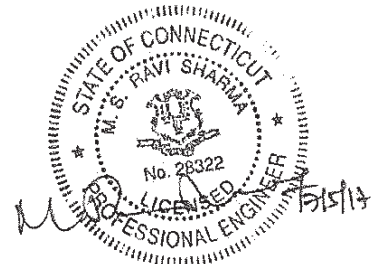
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
1cc: Client
Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1246

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37424

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	83
#20 (850µm)	70
#40 (425µm)	46
#100 (150µm)	26
#200 (75µm)	13.2

A material specification was not provided at this time.

Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
1cc: Client
Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1247

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37425

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	94
#20 (850µm)	82
#40 (425µm)	63
#100 (150µm)	39
#200 (75µm)	17.2

A material specification was not provided at this time.

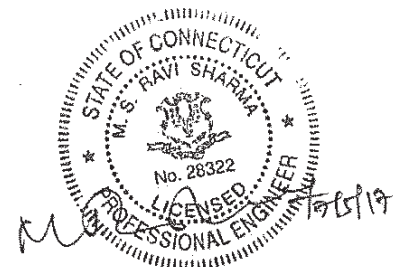
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
1cc: Client
Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1248

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37426

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	73
#20 (850µm)	60
#40 (425µm)	36
#100 (150µm)	29
#200 (75µm)	14.9

A material specification was not provided at this time.

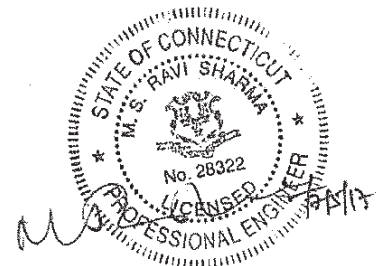
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
To: Client
Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1249

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37427

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	90
#20 (850µm)	63
#40 (425µm)	46
#100 (150µm)	28
#200 (75µm)	17.7

A material specification was not provided at this time.

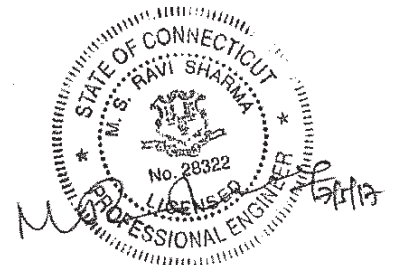
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
To: Client
Attachment: (1) Chain of Custody

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MATERIALS TESTING, INC.

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42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860) 423-1972

DATE: 06-23-17

REPORT: M-1250

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37428

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	57
#20 (850µm)	47
#40 (425µm)	41
#100 (150µm)	30
#200 (75µm)	16.2

A material specification was not provided at this time.

Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

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To: Client
Attachment: (1) Chain of Custody

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42 BOSTON POST ROAD • WILLIMANTIC, CONNECTICUT 06226 • (860) 423-1972

DATE: 06-23-17

REPORT: M-1251

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37429

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	80
#20 (850µm)	71
#40 (425µm)	64
#100 (150µm)	44
#200 (75µm)	34.9

A material specification was not provided at this time.

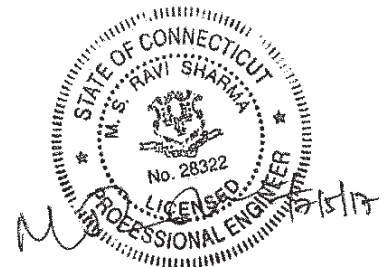
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DATE: 06-23-17

REPORT: M-1252

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37430

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
¼" (6.3mm)	100
#10 (2.0mm)	61
#20 (850µm)	45
#40 (425µm)	38
#100 (150µm)	28
#200 (75µm)	21.4

A material specification was not provided at this time.

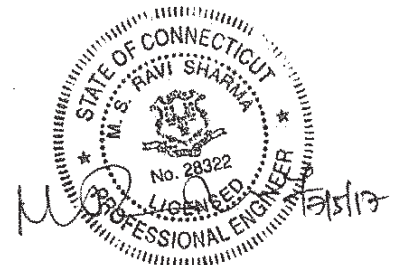
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William J. Soucy

File: Original
To: Client
Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1253

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37431

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
3/8" (9.5mm)	100
1/4" (6.3mm)	88
#10 (2.0mm)	40
#20 (850µm)	28
#40 (425µm)	21
#100 (150µm)	14
#200 (75µm)	11.1

A material specification was not provided at this time.

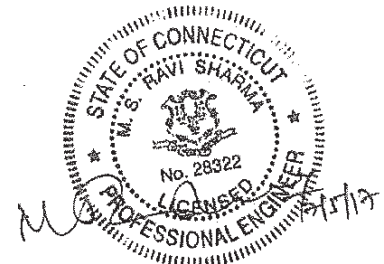
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
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DATE: 06-23-17

REPORT: M-1254

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37432

Sampled: by client and delivered to MTI on 6/14/17

<u>Sieve Size</u>	<u>Percent Passing</u>
¼" (6.3mm)	100
#10 (2.0mm)	83
#20 (850µm)	69
#40 (425µm)	59
#100 (150µm)	47
#200 (75µm)	32.7

A material specification was not provided at this time.

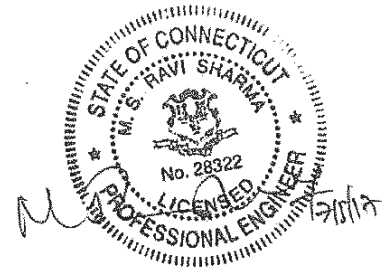
Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
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Attachment: (1) Chain of Custody

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DATE: 06-23-17

REPORT: M-1255

CLIENT: Phoenix Environmental Laboratories, Inc.
PO Box 370
Manchester, CT 06040
Attn: Bobbi Aloisa

PROJECT: Client's Information

SUBJECT: WASHED SIEVE ANALYSIS (ASTM C-136, D1140)

Material: Fine Silty Soil

Source: Client's Sample # BY37433

Sampled: by client and delivered to MTI on 6/14/17

Sieve Size	Percent Passing
1/4" (6.3mm)	100
#10 (2.0mm)	74
#20 (850µm)	54
#40 (425µm)	37
#100 (150µm)	21
#200 (75µm)	12.4

A material specification was not provided at this time.

Materials Testing, Inc.
Richard C. Kearns

William J. Soucy

File: Original
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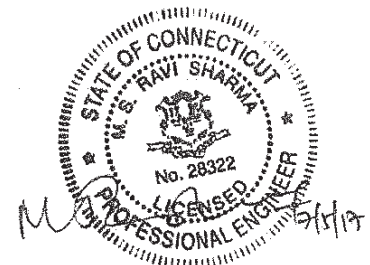


EXHIBIT C

INVASIVE SPECIES MANAGEMENT PLAN

November 5, 2021

Ms. Delia Kaye
Natural Resources Director
Town of Concord
141 Keyes Road
Concord, Massachusetts 01742

*RE: Commonwealth Avenue Access Location Invasive Species Management Plan
Warner's Pond Restoration Project
Concord, Massachusetts
EA Project No. 6373001*

Dear Ms. Kaye,

EA Engineering, Science, and Technology, Inc., PBC (EA) has prepared this invasive species management plan on behalf of the Town of Concord (the Town) for the Town-owned recreational access to Warner's Pond located off Commonwealth Avenue (the Commonwealth Avenue access location). Several invasive plant species have been identified along the perimeter of the existing access drive and parking area at the Commonwealth Avenue access location by the Town and EA. The Town is proposing to manage invasive species at this location as part of the Warner's Pond Restoration Project, which includes improvements to the Commonwealth Avenue access location. This plan summarizes the invasive plant species documented at the site by EA on November 1, 2021 and the proposed methods for managing each invasive species. In this document, the term "invasive plants" includes those species identified as "invasive," "likely invasive," or "potentially invasive" in Massachusetts in *The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts*.

The goal of invasive species management at the Commonwealth Avenue access location is to improve the ecological and aesthetic value of the site in conjunction with other proposed improvements, as well as to prevent the spread of invasive species during construction at the site. With these goals in mind, it is important to note that complete eradication of established invasive species at a site is often infeasible and generally not necessary. Instead, the objective of invasive species management at this site is to improve the ecological, recreational, aesthetic, and other values of the site by reducing the extent and density of invasive species.

Invasive species are typically hardy and aggressive; therefore, invasive species management often requires both a robust initial control effort as well as a dedicated long-term management program. Monitoring (ideally on a twice-annual basis) and follow-up management will be necessary after the initial control efforts to achieve long-term success, minimize the spread of invasive species to new areas at the site, and quickly identify and respond to growths of new species at the site or of existing species in new areas. Invasive species management must also be adaptable to effectively respond to changing conditions at the site. If initial management techniques are not successful, additional strategies may need to be considered. Likewise, if new invasive species are documented

at the site in the future, new management options may be warranted to control these species. Therefore, this plan may be modified or amended in the future to account for changing site conditions. The Town will coordinate with and seek any necessary approvals from the Natural Resources Commission (NRC) regarding substantive modifications to this plan.

INVASIVE SPECIES MANAGEMENT PLAN

The Town is proposing to manage invasive species at the site using three general management techniques: manual removal (hand-pulling), mechanical control (cutting), and chemical treatment (herbicides). Invasive species management will be performed by properly trained professionals and/or volunteers, and in the case of chemical treatments, by properly licensed individuals. All chemicals proposed for use at the site are registered with and approved for use by the United States Environmental Protection Agency (EPA), Massachusetts Department of Environmental Protection (DEP), and the Massachusetts Department of Agricultural Resources (DAR), and will be used in accordance with their labels and safety data sheets (SDSs). All invasive species management activities at the site will be located only in the bordering land subject to flooding (BLSF) resource area and the buffer zone associated with bordering vegetated wetlands (BVW) along the perimeter of Warner's Pond. Invasive species management activities will not occur in the BVW, bank, or land under waterbodies and waterways (LUWW) at the site. A summary of the proposed invasive species management strategies is provided in Table 1.

Table 1. Invasive Species Management Strategies

Common Name	Scientific Name	Manual	Mechanical	Chemical
Glossy buckthorn	<i>Frangula alnus</i>	✓	✓	✓
Tartarian honeysuckle	<i>Lonicera tartarica</i>	✓	✓	✓
Multiflora rose	<i>Rosa multiflora</i>	✓	✓	✓
Asiatic bittersweet	<i>Celastrus orbiculatus</i>	✓	✓	✓
Garlic mustard	<i>Alliaria petiolata</i>	✓	✓	✓

The following sections provide a brief overview of the invasive species documented at the Commonwealth Avenue access location and the corresponding management strategies.

Glossy Buckthorn (*Frangula alnus*)

Species Summary

Leaf-out of glossy buckthorn occurs earlier in the year than most native plants, and this species retains its leaves for a longer period into the fall. This trait allows glossy buckthorn to outcompete native vegetation, resulting in the formation of dense, even-aged thickets under which few other plants can grow. The high nitrogen content in the leaf litter increases soil nitrogen concentrations, which can further discourage the establishment of native species. At the Commonwealth Avenue

access location, glossy buckthorn is found in clusters of plants along the access drive and in a dense patch at the perimeter of the parking lot near the Warner's Pond shoreline.

Proposed Management

Glossy buckthorn will be managed at the site through a combination of manual removal, mechanical control, and chemical treatment, as described below.

Manual removal (hand pulling) will be used to control buckthorn seedlings, which can be pulled from the soil with minimal effort. Hand-pulling of buckthorn seedlings will be reserved for individual plants which have matured to the point that they can be confidently identified through visual inspection of the foliage, and removal will occur only when foliage is present. Seedlings will be pulled from the ground by gripping the base of the stem to avoid breakage and to increase the likelihood that most of the root system will be removed. Removal of mature buckthorns (see below) may increase light availability and stimulate seedling growth during the subsequent growing season. Therefore, areas in and around buckthorn thickets must be closely monitored at least once per growing season to allow for rapid response to new growths. A Weed Wrench (or equivalent) will be used to remove larger stems up to two inches in diameter which cannot be readily pulled by hand.

Like other shrubs, buckthorns often respond to cutting with vigorous production of new shoots. Therefore, cutting alone is not an effective management technique for mature buckthorns. Similarly, soil disturbance associated with grubbing, excavation, or other mechanical removal of mature buckthorns can inadvertently spread buckthorn or other invasive species, which thrive in disturbance. Therefore, a combination of mechanical control (cutting) and chemical treatment will be used to manage buckthorns with a stem diameter of two inches or more.

Three chemical treatment techniques are available for control of buckthorn: cut stump treatment, basal bark treatment, and foliar treatment. All three techniques are likely to achieve success; however, as foliar treatment carries a greater potential for impacts to non-target species compared to the other two options, treatment of buckthorn at the site will focus on cut stump treatment and basal bark treatment. Cut stump treatment entails cutting buckthorn stems a few inches above the ground and applying the herbicides glyphosate or triclopyr to the cut stump immediately following cutting. Smaller stems may be cut with loppers, while a brush saw or chainsaw will be required for larger stems. Cut stump treatment is most effective from August to October when nutrients are being actively transported into the root system. Basal bark treatment involves application of triclopyr in a band around the stem from the base to a height of approximately 12 to 15 inches above ground level. Basal bark treatment can produce effective control year-round; however, winter treatments must be conducted in the absence of snow cover.

All hand-pulled or cut buckthorn stems will be properly disposed of offsite. As buckthorn reproduces by seed, care must be taken to prevent spread of fruits to new areas.

Shrub Honeysuckle (*Lonicera morrowii* and *Lonicera tatarica*)

Species Summary

Shrub honeysuckles form large, dense stands that out-compete native plant species. They alter habitats by decreasing light availability, depleting soil moisture and nutrients, and possibly by releasing toxic chemicals that prevent other plant species from growing in the vicinity. Shrub honeysuckles may also compete with many native species for pollination among local insects. At the Commonwealth Avenue access location, shrub honeysuckles are found infrequently along the access drive and the perimeter of the parking area.

Proposed Management

Techniques for management of shrub honeysuckles at the site will be very similar to those used for buckthorns (see above). Honeysuckle seedlings will be pulled by hand, plants with a stem diameter of up to two inches which cannot be readily pulled by hand will be removed using a Weed Wrench (or equivalent), and plants with stem diameter two inches or more will be chemically treated using the cut stump or basal bark techniques. Timing for chemical treatment of honeysuckles via cut stump and basal bark applications are the same as for buckthorn. All pulled or cut honeysuckle stems will be properly disposed of offsite.

Multiflora Rose (*Rosa multiflora*)

Species Summary

Multiflora rose is a thorny shrub that produces arching stems known as canes and can form dense, impenetrable thickets. This species has a wide tolerance for soil, light, and moisture conditions and therefore can grow in a variety of habitats. Multiflora rose outcompetes native species for space and light due to its aggressive growth habit. Reproduction is via seed and through the production of new root systems from canes that contact the ground. At the Commonwealth Avenue access location, multiflora rose is common along the access drive and is often mixed with bittersweet.

Proposed Management

Techniques for management of multiflora rose at the site will be similar to those used for buckthorns (see above). Multiflora rose seedlings will be pulled by hand, plants with a stem diameter of up to two inches which cannot be readily pulled by hand will be removed using a Weed Wrench (or equivalent), and plants with stem diameter two inches or more will be chemically treated. Timing for chemical treatment of multiflora rose via cut stump and basal bark applications are the same as for buckthorn.

Use of the cut stump and basal bark techniques may be more challenging for the control of multiflora rose compared other invasives species at the site due to this species' often dense, thorny

branches. Therefore, foliar treatment of multiflora rose may be used in instances where the all of the following criteria are met: (1) use of cut stump or basal bark techniques are not feasible due to the density of multiflora rose branches, (2) the area is outside the BLSF and 100-foot buffer zone, and (3) impacts to native species from foliar applications will be negligible. Foliar applications for multiflora rose may use the herbicides glyphosate and triclopyr. Foliar applications of glyphosate are most effective against multiflora rose when applied between the early summer and early fall. Foliar applications using triclopyr may begin slightly earlier in the spring prior to flowering.

All pulled or cut multiflora rose stems will be properly disposed of offsite.

Asiatic Bittersweet (*Celastrus orbiculatus*)

Species Summary

Bittersweet is a vigorously-growing woody vine that climbs over and smothers vegetation which may die from excessive shading or breakage. This species possesses an extensive fibrous root system which is often impractical to completely remove. At the Commonwealth Avenue access location, bittersweet is common along the access drive.

Proposed Management

Management of bittersweet is often challenging due to a number of factors including the species' propensity to climb into the tree canopy, the need to avoid damage to native trees and other non-target vegetation during management, rapid growth rate, an often-substantial seed bank, an extensive fibrous root system, and its ability to produce root sprouts. Bittersweet will be controlled at the site using a combination of manual, mechanical, and chemical techniques, as described below.

Seedlings and small individual plants which have not yet begun climbing into adjacent vegetation will be hand-pulled from the soil with special care taken to remove the entire root system. If large patches of bittersweet seedlings covering the ground surface are present, a foliar application using the herbicides glyphosate or triclopyr may be used to treat such areas in order to avoid extensive soil disturbance. However, foliar applications will not be used within the 25-foot No Disturbance Zone or in areas where bittersweet seedlings are interspersed with native vegetation.

Climbing vines will be cut with loppers, brush saw, or chain saw approximately three to five feet above the ground and then again a few inches above the ground to adequately separate and kill the climbing portion of the plant. For vines climbing upon native vegetation, the upper portion of the plant will be left in place to decompose, as removal may result in damage to the host tree. Vines climbing upon other invasives such as multiflora rose or honeysuckle will be removed after cutting and disposed of offsite. The rooted portion of the vine will then be managed either through pulling (by hand or with tools [Weed Wrench or equivalent]) or via herbicide application. Given the extensive root systems of this species, soil disturbance is to be expected in areas where multiple large stems and their root systems are removed from the ground. In areas where such disturbance

would result in soil erosion, damage to native plants, or other adverse impacts, herbicide application will be used as an alternative to pulling. Herbicides will be applied using the cut stump technique, with application performed immediately after stem cutting. The herbicides glyphosate or triclopyr may be used for cut stump treatments of bittersweet. Cut stump treatment using glyphosate may be conducted at temperatures above 40°F, while triclopyr may be used year-round provided the ground is not frozen. Initial treatment within a given season will focus on the early growing season, before climbing vines are able to spread further throughout host trees.

All pulled or cut bittersweet vines, stems, and root systems will be properly disposed of offsite.

Garlic Mustard (*Alliaria petiolata*)

Species Summary

Garlic mustard is a biennial herbaceous flowering plant with triangular, toothed leaves that produce a garlic odor when crushed. Second-year plants produce clusters of white flowers and may grow up to 3.5 feet in height. Garlic mustard spreads aggressively in the understory of forests and disturbed woodland edges and outcompetes native wildflowers for space, light, moisture, and nutrients. At the Commonwealth Avenue access location, garlic mustard was observed infrequently along the access drive.

Proposed Management

Garlic mustard will be managed at the site through a combination of manual removal, mechanical control, and chemical treatment, as described below.

As a generally small, herbaceous plant, garlic mustard may be effectively controlled by hand pulling alone in cases where the density of plants is sufficiently low for hand pulling to be practical. Hand pulling of garlic mustard is also the preferred management technique where this species is interspersed with native herbaceous plants that would be adversely impacted by more intensive management options. Like seedlings of invasive shrubs, garlic mustard may be manually removed from the ground by gripping the base of the stem and pulling until the primary root is removed from the soil. Hand-pulling may occur throughout the growing season.

Mechanical control of garlic mustard entails the use of hand clippers or a mechanical weed trimmer to sever stems from their root systems. Cutting must be done at or within a few inches of the ground surface to prevent the production of flowers from lower portions of the stem. Cutting of garlic mustard may occur from the late spring to early summer, before seeds have matured and begun dropping from the plant. Mechanical control of garlic mustard will be used where this species occurs in dense monocultures such that hand pulling would be impractical and to prevent impacts to native species.

Similar to mechanical control, chemical treatment of garlic mustard may be used when the species forms dense monocultures that would be impractical to manage by hand pulling and where impacts

to native species from herbicide applications can be avoided. Foliar applications of the herbicides glyphosate and triclopyr may be used for the control of garlic mustard. Foliar applications will be conducted when temperatures are above 50°F and rain is not forecast within the next 8 hours. Impacts to non-target vegetation can be avoided by conducting foliar applications very early in the spring or in the late fall, when most native herbaceous species are dormant. Similar to mechanical control, chemical treatment of second-year plants should be conducted prior to seed drop.

All pulled or cut garlic mustard stems and root systems will be properly disposed of offsite.

Seeding

Application of a native seed mixture to areas where invasive species are managed will help reduce regrowth of invasives by providing native species with a competitive advantage for space, light, and nutrients. Seeding will also improve the ecological value and aesthetics of the Commonwealth Avenue access location. The New England Wildflower Mix available from New England Wetland Plants, Inc. (or approved equivalent) will be used to seed areas where bare ground is exposed due to management of invasive species at the Commonwealth Avenue access location. Seed will be applied at a rate of 23 pounds per acre during the spring or late fall.

SCHEDULE

Initial invasive species management activities are expected to begin during the late summer to early fall of 2022 (Table 2). This timeline is ideal for management of invasive woody shrubs as plants are directing energy into their root systems during the latter part of the growing season. Initial management of bittersweet and garlic mustard will also commence at this time. Monitoring during the start of the 2023 growing season (late April to early May) will help inform the specific management priorities for that year. Given the hardy and aggressive nature of invasive species, management throughout the 2023 growing season is anticipated to be necessary, with a focus on hand-pulling seedlings earlier in the season and chemical treatments later in the season. A follow-up round of monitoring in the late 2023 growing season will allow for an evaluation of the success of the management undertaken that year. Additional monitoring will be performed early in the 2024 growing season, at which point the success of the management efforts completed to that point may be evaluated and any appropriate modifications to the management program may be made.

Table 2. Commonwealth Avenue Access Location Invasive Species Management Schedule, 2022-2024

Management Task	2022			2023			2024		
	Spr.	Sum.	Aut.	Spr.	Sum.	Aut.	Spr.	Sum.	Aut.
Monitoring				✓		✓	✓		✓
Manual/mechanical control (all species)		✓	✓	✓	✓	✓	✓	✓	✓
Cut stump/basal bark treatment of buckthorn, honeysuckle, and rose		✓	✓		✓	✓		✓	✓
Mechanical/chemical control of climbing bittersweet vines		✓	✓	✓	✓	✓	✓	✓	✓
Chemical treatment of garlic mustard			✓	✓		✓	✓		✓
Reporting			✓			✓			✓

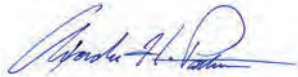
REPORTING

The Town will prepare and submit a brief letter report to the NRC at the end of each year during which invasive species management takes place. The letter report will summarize the management actions undertaken that year and the results of the spring and fall monitoring. The report will also outline the anticipated approach to invasive species management for the following year.

EA appreciates the opportunity to provide professional environmental consulting services to the Town of Concord. If you have any questions or require addition information, please do not hesitate to contact me at apatterson@eaest.com or (401) 287-0369.

Sincerely,

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC



Alexander H. Patterson
Project Manager

Enc. Photographic Log
Seed Mixture Spec Sheet

References

Massachusetts Invasive Plant Advisory Group. 2005. The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts. Available online at: <https://www.mass.gov/doc/invasive-plantlist/download>. Accessed October 2021.

USDA Natural Resource Conservation Service. Pest Management – Invasive Plant Control, Buckthorns (*Rhamnus cathartica* & *Frangula alnus*). Conservation Practice Job Sheet, NH-595. Available online at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081644.pdf. Accessed October 2021.

USDA Natural Resource Conservation Service. Brush Management – Invasive Plant Control, Shrub Honeysuckles – VT Class B Noxious Weeds. Conservation Practice Job Sheet, VT-314. Available online at: <https://efotg.sc.egov.usda.gov/references/public/VT/JS314-Honeysuckle.pdf>. Accessed October 2021.

USDA Natural Resource Conservation Service. Brush Management – Invasive Plant Control, Multiflora Rose – *Rosa Multiflora*. Conservation Practice Job Sheet, NH-314. Available online at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_014999.pdf. Accessed October 2021.

USDA Natural Resources Conservation Service, Brush Management – Invasive Plant Control, Oriental Bittersweet (*Celastrus orbiculatus*). Conservation Practice Job Sheet, NH-314. Available online at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081638.pdf. Accessed October 2021.

Sudbury-Assabet-Concord River Watershed Cooperative Invasive Species Management Area (SuAsCo CISMA), Garlic Mustard Fact Sheet. Available online at: <https://cisma-suasco.org/invasive/garlic-mustard/>. Accessed November 2021.



Photograph No. 1:

Glossy buckthorn along the Commonwealth Avenue access drive



Photograph No. 2:

Shrub honeysuckle along the Commonwealth Avenue access drive



Photograph No. 3:
Multiflora rose along the Commonwealth Avenue access drive



Photograph No. 4:
Asiatic bittersweet along the Commonwealth Avenue access drive



Photograph No. 5:
Garlic mustard along the Commonwealth Avenue access drive

NEW ENGLAND WETLAND PLANTS, INC

820 WEST STREET, AMHERST, MA 01002

PHONE: 413-548-8000 FAX 413-549-4000

EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Wildflower Mix

Botanical Name	Common Name	Indicator
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Elymus canadensis</i>	Canada Wild Rye	FACU+
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Oenothera biennis</i>	Evening Primrose	FACU-
<i>Aster novae-angliae (Symphyotrichum novae-anglia)</i>	New England Aster	FACW-
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Solidago juncea</i>	Early Goldenrod	
<i>Eupatorium fistulosum (Eutrochium fistulosum)</i>	Hollow-Stem Joe Pye Weed	FACW
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW

PRICE PER LB. \$75.00 MIN. QUANTITY 1 LBS. TOTAL: \$75.00

APPLY: 23 LBS/ACRE :1900 sq ft/lb

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.