



**WHITMAN ROAD CULVERT REPLACEMENT
MASSDOT BRIDGE #H-05-016 (CY3)
Hancock, Massachusetts**



**INVITATION FOR BIDS
BIDS DUE APRIL 22, 2026 AT 11AM
AWARDING AUTHORITY: TOWN OF HANCOCK, MA**

Engineering Plans and Specifications by:
Guntlow & Associates, Inc.
55 North St
Williamstown, MA 01267

DIVISION 0

Bidding and Contract Requirements

SECTION 00030

ADVERTISEMENT FOR BIDS

WHITMAN ROAD CULVERT REPLACEMENT PROJECT

The Town of Hancock invites sealed bids for Whitman Road Culvert Replacement Project in accordance with the documents prepared by Guntlow & Associates, Inc.

The project includes, but is not limited to, the installation of a new 4-sided precast concrete box culvert, and removal of the existing 36"-48" steel culvert. The project will allow the closure of the road for up to 90 days. The new culvert is in a different alignment than the existing culvert, allowing the existing culvert to maintain stream flow during construction of the new culvert. Associated work includes grading to create the inlet and outlet of the new culvert, stream grading to connect the new stream alignment to existing, creation of a wetland mitigation area, and grading/removal/replacement of a portion (approximately 7,200 SF) of the existing road pavement surface.

Bids are subject to M.G.L. c.149 §44A-J and to minimum wage rates as required by M.G.L. c.149 §26 to 27H inclusive. The project is subject to the provisions of MGL, Chapter 30, Section 39M. The project workers shall also be OSHA 10 Certified.

Sealed Bids shall be accompanied by a bid deposit that is not less than five percent (5%) of the greatest possible bid amount, and made payable to the Town of Hancock. A Payment Bond for 50% of the amount of the Contract will be required of the successful Bidder. A Performance Bond is not required. Complete instructions for bidding are included in the Instructions for Bidders.

A pre-bid conference will be held at the site on April 1, 2026 at 10:00am. Sealed Bids will be received at Guntlow & Associates, Inc, either in person between 8am-4pm Monday-Friday or by mail to 55 North Street, Williamstown, MA 01267 until 11:00 am on Wednesday, April 22nd, 2026, and shall be clearly marked "**BID FOR WHITMAN ROAD CULVERT REPLACEMENT PROJECT**" and will be publicly opened, forthwith at Guntlow & Associates, Inc. offices, 55 North Street, Williamstown, MA.

Beginning Wednesday, March 25, 2026, Contract Documents may be examined at the Town of Hancock, 3650 Hancock Rd, Hancock, MA, between 9:00am-12:00pm, Monday through Friday

Contract Documents (a.k.a. "Official Proposals") may be viewed and digital copies obtained by contacting:

Guntlow & Associates, Inc.
55 North Street
Williamstown, MA 01267
(413) 458-2198

Hard copies may be purchased for \$150 per set (non-refundable) through Guntlow & Associates.

The Town of Hancock reserves the right to waive irregularities and to reject any or all bids if it is in the public interest to do so. The preceding sentence shall not be construed to limit the Town of Hancock's rights to accept or reject bids in accordance with Massachusetts Law.

Mr. Sherman L Derby, Sr., Chairman, Board of Selectmen

SECTION 00050

NOTICE TO CONTRACTORS

“Notwithstanding any general or special law to the contrary, all construction contractors funded in whole or in part by the funds authorized by this act or by chapter 86 of the acts of 2008 shall include a price adjustment clause for each of the following: fuel, both diesel and gasoline, and asphalt. A base price for each material shall be set by the awarding authority to agency and included in the bid documents at the time a project is advertised. The awarding authority or agency shall also identify in the bid documents the price index to be used for each material or supply. The adjustment clause shall provide for a contract adjustment to be made on a monthly basis when the monthly cost change exceeds +/- 5 per cent.”

This Contract contains price adjustments for liquid asphalt, diesel fuel, and gasoline. For this project the base prices are as follows: liquid asphalt \$615.00 per ton, diesel fuel \$3.141 per gallon, and gasoline \$2.270 per gallon. See Section 00812 pertaining to applicability of price adjustments for fuel in these specifications. MassDOT posts the Period Prices on the website under Construction Publications at <http://www.massdot.state.ma.us/>.

END OF SECTION

SECTION 00100

INSTRUCTION TO BIDDERS

ARTICLE 1 – DEFINED TERMS

- 1.01** Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
- A. Bidder -- The individual or entity who submits a Bid directly to OWNER.
 - B. Issuing Office -- The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
 - C. Successful Bidder -- The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.
 - D. Owner's Representative -- Authorized to act on behalf of OWNER. Term is interchangeable with "OWNER" throughout this section and of similar import.
 - E. Project Manager and Construction Manager -- have equal meaning and the terms are interchangeable though out this section and Contract Documents.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01** Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.02** OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01** To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request for Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.
- A. Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

- B. Bidder must submit proof of having completed a minimum of 10 hours OSHA Certification.

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

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

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities).
- E. agree at the time of submitting its Bid that no further examinations, investigations explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- F. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- G. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- H. promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder;

4.03 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequence, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has

discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – PERMITS; SITE AND OTHER AREAS

- 5.01** The site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR.
- 5.02** Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 5.03** Permits obtained by OWNER do not necessarily represent all permits required for this project. CONTRACTOR is responsible for obtaining and paying for all other applicable permits.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

- 6.01** All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than two days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.02** Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 7 – CONTRACT TIMES

- 7.01** The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

ARTICLE 8 – LIQUIDATED DAMAGES

- 8.01** Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 9 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 9.01** The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or “or-equal” materials and equipment approved by ENGINEER and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or “or-equal” item. No item of material or equipment will be considered by ENGINEER as a substitute or “or-equal” unless written request for approval has been submitted by Bidder and has been received by ENGINEER at least 5 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. ENGINEER’s decision of approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 10 – PREPARATION OF BID

- 10.01** The Bid form is included with the Bidding Documents. Additional copies may be obtained from OWNER'S REPRESENTATIVE.
- 10.02** All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each listed therein, or in the words "No Bid," "No Change," or "Not Applicable" entered.
- 10.03** A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 10.04** A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 10.05** A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 10.06** A Bid by an individual shall show the Bidder's name and official address.
- 10.07** A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.
- 10.08** All names shall be typed or printed in ink below the signatures.
- 10.09** The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.
- 10.10** The address and telephone number for communications regarding the Bid shall be shown.
- 10.11** The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid form.

ARTICLE 11 – BASIS OF BID; EVALUATION OF BIDS

11.01 *Lump Sum*

- A. Bidders shall submit a Bid on a lump sum basis for the base Bid as described in the Bidding Documents as provided for in the Bid Form.

11.02 *Unit Price*

- A. In addition to the lump sum Bid, Bidders shall submit supplemental unit prices for each item of Work as listed on Bid Form and described in section 5.02 of Bid Form. The supplemental unit prices will be used to adjust the contract price if additional work is requested or scope of project is reduced.

11.03 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 12 – SUBMITTAL OF BID

12.01 Each prospective Bidder is furnished one copy of the Bidding Documents with one separate unbound copy each of the Bid form, and, if required, the Bid Bond. The unbound copy of the Bid form is to be completed and submitted with the Bid security.

12.02 A Bid shall be submitted and received no later than **11:00am on Wednesday, April 22, 2026** and shall be enclosed in an opaque sealed envelope plainly marked with “BID FOR WHITMAN ROAD CULVERT REPLACEMENT PROJECT”, the name and address of Bidder, and shall be accompanied by specified required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to Guntlow & Associates, Inc., 55 North Street, Williamstown, MA 01267.

ARTICLE 13 – MODIFICATION AND WITHDRAWAL OF BID

13.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

13.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 14 – OPENING OF BIDS

14.01 Bids will be accepted at the offices of Guntlow & Associates, Inc, 55 North Street, Williamstown, MA 01267 until **11:00am, on Wednesday, April 22, 2026**, at which time they will be opened.

ARTICLE 15 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

15.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 16 – AWARD OF CONTRACT

16.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming,

nonresponsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

- 16.02** More than one Bid for the same Work from an individual or entity under the same or different names will be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid of the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 16.03** In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 16.04** In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 16.05** OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 16.06** If the Contract is to be awarded, OWNER'S REPRESENTATIVE will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 17

- 17.01** Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to Performance Bonds and Insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 18 – SIGNING OF AGREEMENT

- 18.01** When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 19 – SALES AND USE TAXES

- 19.01** OWNER is exempt from Massachusetts State sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid. Refer to paragraph 6.10 of the Supplementary Conditions for additional information.

END OF SECTION

SECTION 00300

BID FORM

PROJECT IDENTIFICATION:

TOWN OF HANCOCK
WHITMAN ROAD CULVERT REPLACEMENT PROJECT
HANCOCK, MASSACHUSETTS

THIS BID IS SUBMITTED TO:

Mr. Sherman L Derby, Sr., Chairman, Board of Selectmen
Town of Hancock
PO BOX 1084
Hancock, MA 01237

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder is responsible for determination of quantities based on project plans. The intention is to have a complete site package. Any Supplemental Unit Prices specified in Section 5.02 of this Bid Form are for potential additional or unforeseen scope to be added to or for existing scope that may need to be deducted from the complete site package bid, if requested by the owner.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and underground facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and

procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by OWNER and/or others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
- J. The Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5.01 BASE BID

Bidder will complete the Work as shown on the plans and in accordance with all work of Divisions 1, 2, and 3 of the Contract Documents for the following price(s):

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Description</u>
1	Lump Sum	Site Demolition & All Improvements as Shown

The Base Bid Price shall include all labor, materials, services and equipment necessary for the completion of the work shown on the drawings and described in the technical specifications for the work, including, but not limited to: installation and maintenance of erosion control as needed, management of water to maintain stream flow and provide work area "in the dry", installation of new concrete box culvert, removal of existing steel culvert, all necessary grading, guard posts/rails, associated in-stream work, channel reinforcement, creation of wetland mitigation area, road surface pavement removal and replacement, and restoration of all disturbed areas.

LUMP SUM BID PRICE (Item 1)

	\$
(in words)	(figures)

5.02 SUPPLEMENTAL UNIT PRICES

Should certain additional work be required or certain work be deleted or should quantities of certain classes of work be increased or decreased by written order and approval of the Engineer from those on which the BID is based, the undersigned agrees that the following supplemental unit price shall be the basis of payment to him or credit to the OWNER for such additions, omissions, increases, or decreases in the Work.

Supplemental unit prices shall cover all costs, and the prices given shall represent the exact amount per unit to be paid the Contractor (in the case of additions or increases) or to be refunded the OWNER (in the case of decreases). No additional adjustments will be allowed for overhead, profit, insurance or other direct or indirect expense of Contractor or Subcontractor.

Unit Prices – See Section 01025 – Measurement and Payment

Item Number	Description	Unit	Supplemental Unit Price Increase or Decrease
2.	Remove & Dispose of existing pavement	CY	\$ _____
3.	Excavate and Stockpile Topsoil / Earth	CY	\$ _____
4.	Haul & Dispose of Excess Earthworks	CY	\$ _____
5.	Saw Cut Pavement	LF	\$ _____
6.	1 ½" Milling of Pavement	SY	\$ _____
7.	Bituminous Concrete Paving	TON	\$ _____
8.	Gravel Subbase for Roadway	CY	\$ _____
9.	Pavement Striping - 4" Water-borne	LF	\$ _____
10.	Steel Guard Rail	EA	\$ _____
11.	Steel Guard Post	EA	\$ _____
12.	Stone Rip Rap Reinforcement	CY	\$ _____

Note that all unit prices include trucking, excavation, fill, materials, compaction, placement, etc. as required to provide specified service and restoration of services.

Bidder acknowledges that award and payment of the base bid are based on the lump sum price.

6.01 BIDDER hereby agrees to complete work within 150 calendar days from the date of the notice to proceed or in accordance with the provisions of the executed Agreement and Contract Documents. BIDDER further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day thereafter until completed.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

6.03 Bid Securities shall be required and shall be based upon the total amount of Bid.

The following Documents are attached to and made a condition of this Bid.

- A. Bid Deposit (5%)
- B. State Tax Affidavit
- C. Non-collusion Affidavit
- D. Non-discrimination Affidavit
- E. Letter of Intent SOMWBA Certified Enterprise
- F. OSHA 10 Certifications

The terms used in this Bid, which are defined in the General and Supplementary Conditions, have the meanings assigned to them in the General and Supplementary Conditions.

If this Bid shall be accepted by the Town of Hancock and the undersigned fail to Contract as aforesaid and to give a Payment Bond in the sum of 50% of the amount of the Contract with a surety company satisfactory to the OWNER within five (5) days of the date of notice to Bidder from the OWNER that the Contract is ready for signature, then Bidder shall be considered to have abandoned the Contract and Bidder's Bid Deposit accompanying this Bid shall become the property of the Town of Hancock, Massachusetts.

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 herein the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The person signing this Bid shall have such legal authority from the joint venture, partnership, corporation or other business or legal entity.

If Bidder is:

A Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____(SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____.

END OF SECTION

SECTION 00350

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal, and
_____ as Surety, are hereby held and firmly
bound unto _____ as OWNER in the penal sum of _____
for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves,
successors and assigns.

Signed, this _____ day of _____, 20_____.

The Condition of the above obligation is such that whereas the Principal has submitted to
_____ a certain BID,
attached hereto and hereby made a part hereof to enter into a contract in writing, for the _____

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attachment hereto (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for all and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (L.S.)

Surety

By: _____

IMPORTANT – Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

SECTION 00500

**STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between _____

(hereinafter called OWNER) and _____

(hereinafter called CONTRACTOR).

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

ARTICLE 1 – WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

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

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by

who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Dates for Substantial Completion and Final Payment*

A. The Work will be substantially completed on or before _____, _____, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before _____, _____.

4.03 *Liquidated Damages*

A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER **\$250** for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially completed. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER **\$250** for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 5.01.A, 5.01.B, and 5.01.C below:

A. For all Work other than Unit Price Work, a Lump Sum of:

_____ (\$ _____)
(use words) (figure)

All specific cash allowances are included in the above price and have been computed in accordance with paragraph 11.02 of the General Conditions.

B. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this paragraph 5.01.B:

UNIT PRICE WORK

<u>No.</u>	<u>Item</u>	<u>Unit</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Estimated</u>
------------	-------------	-------------	-------------------------------	-------------------	----------------------------

TOTAL OF ALL UNIT PRICES _____ \$ _____ (dollars)
(use words)

As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

C. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payment*

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

6.02 *Progress Payment; Retainage*

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the _____ day of each month during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General conditions:

a. _____ % of Work completed (with the balance being retainage). If the Work has been 50% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may

determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and

- b. _____ % of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to _____ % of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions and less _____ % of ENGINEER's estimate of the value of the Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 – INTEREST

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of _____ % per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIVE

- 8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:
- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions.
 - E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequence, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequence, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.

- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement
 - 2. Performance Bond
 - 3. General Conditions
 - 4. Supplementary Conditions
 - 5. Specifications as listed in the table of contents of the Project Manual;
 - 6. Drawings consisting of a cover sheet and sheets numbered _____ through _____, inclusive, with each sheet bearing the following general title: _____;
 - 7. Addenda (numbers _____ to _____, inclusive);
 - 8. Exhibits to this Agreement
 - a. Notice of Award;
 - b. CONTRACTOR's Bid;
 - c. Documentation submitted by CONTRACTOR prior to Notice of Award;
 - 9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendments;
 - b. Work Change Directives;
 - c. Change Order(s).

- B. The documents listed in paragraph 9.01.A are attached to this Agreement.
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Other Provisions*

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____, _____ (which is the Effective Date of the Agreement).

OWNER

CONTRACTOR

By: _____

[CORPORATE SEAL]

Attest _____

Address for giving notices:

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

By: _____

[CORPORATE SEAL]

Attest _____

Address for giving notices:

License No. _____
(Where applicable)

Agent for service of process:

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. 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, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
29. *Notice to Proceed*—A written notice 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.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *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, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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 a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* 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 information in the Contract Documents and with the design concept of the 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 Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 3. 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 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that 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 Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), 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;
 - 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.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- 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 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *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 the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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 the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then 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 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
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 had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers 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 its consultants, including electronic media versions, or reuse any 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; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract 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 Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

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

4.03 *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.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, 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 Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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.

- 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 permanent improvements are to be made 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.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will 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 and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

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

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
 - 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 Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a 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 otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then 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 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. 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 Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

- Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
 - F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
 - G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
 - H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
 - I. If either party does not purchase or maintain the insurance required of such party by the Contract, 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.
 - J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
 - K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is 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; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, 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, risks, 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 Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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 fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether 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
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable 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.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *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.

7.11 *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. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

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

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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.

7.15 *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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must 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 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall 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 7.16.C.
 3. 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. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.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 will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 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 is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
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;
 6. The issuance of a notice of acceptability by Engineer;
 7. The end of the correction period established in Paragraph 15.08;
 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, 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 officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 7.18.A will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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 such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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 damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
 - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
 - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *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.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
 - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.07. 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.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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, will 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 Contractor under Paragraph 15.06.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 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in 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;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will 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 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of 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, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general 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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. 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.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 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*: Contractor agrees that:
1. 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
 2. 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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- 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. 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. 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, 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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 will 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.

14.07 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 defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and 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; or
 - b. 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;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

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

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- 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 preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- 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. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work 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 15.03 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 6.04 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* 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 have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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. Contractor shall pay all 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.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 the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 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; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 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 16.03.
- 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, 7 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 are not intended to preclude Contractor from submitting a Change Proposal 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 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

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

SECTION 00750

SUPPLEMENTARY CONDITIONS

PART I – AMENDMENTS TO GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemented, remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

Article 1 - DEFINITIONS AND TERMINOLOGY

Add the following defined term at **SC1.01.30.A OWNER'S REPRESENTATIVE** –Any agent authorized to act on owners behalf, to include construction manager's representative, or any other so authorized by owner.

Add the following defined term at SC1.01.10.A - **CONSTRUCTION MANAGER** - the individual or entity authorized to act on behalf of the OWNER with regard to the defined project.

Add the following defined term at SC1.01.27.A – **MUNICIPAL** or **MUNICIPALITY** – the Town of Hancock

Add the following subparagraph **SC1.02.A.2**

"ENGINEER", "OWNER'S REPRESENTATIVE", "RESIDENT PROJECT REPRESENTATIVE", "CONSTRUCTION MANAGER", "CONSTRUCTION MANAGER'S REPRESENTATIVE", or terms of like effect are interchangeable in the Contract Documents with regard to all matters with the exception of design components, conflict resolution, and other such matters of similar import.

Article 2 - PRELIMINARY MATTERS

SC 2.01.A – Delete paragraph 2.01.A in its entirety and insert the following in its place:

2.01.A When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, with a copy to ENGINEER, three (3) copies of the Certificate of Insurance (and other evidence requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with the requirements of Article 5. CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

SC 2.02.A - Amend first sentence of 2.02.A to read as follows: "OWNER shall furnish to CONTRACTOR up to five (5) copies of Contract Documents".

SC 2.05 – Add a new paragraph immediately after paragraph 2.05.C of the General Conditions to read as follows:

SC2.05.D All work done under this contract shall be in conformance with the Massachusetts Highway Department Standard Specifications for Highways and Bridges, latest edition, the Massachusetts Highway Department Construction and Traffic Standard Details, latest edition, the Massachusetts

Highway Department Wheelchair Ramp Standards, latest edition, the Manual on Uniform Traffic Control Devices (latest edition, including the 1993 revision to Part VI), all as amended, the Plans and these Supplementary Provisions.

Article 3 – CONTRACT DOCUMENTS: INTENT, AMENDING REUSE

SC 3.01– Add a new paragraph immediately after paragraph 3.01.C of the General Conditions to read as follows:

SC3.01.D Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion.

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

SC4.04 - Underground Facilities

Add the following paragraphs immediately before 4.04.A

The location of existing underground utilities shown on the Project Plans are approximate, as determined by records, pipe locating equipment and field surveys. The Plan's purpose is to provide a schematic representation of the proposed pipe and valve lay out the Project requires. It shall be the CONTRACTOR's responsibility to investigate and make determinations regarding underground structures.

All underground information relative to piping, water mains, existing services is based on the best available information. It is to be expected that the existing service pipes may require a degree of effort by the CONTRACTOR to accurately locate in preparation for new construction.

Add the following subparagraphs immediately following 4.04.A.2.d -

SC4.04.A.3 The CONTRACTOR shall make his own investigation to assure that no damage to existing structures, drainage lines, traffic signal conduits, and other utilities will occur as a result of his operations. Notification of DIG SAFE and obtaining of a DIG SAFE identification number is required of the CONTRACTOR prior to commencement of construction. "DIG SAFE" Call Center: Telephone 1 888-344-7233.

SC4.04.A.4 Written notice shall be given by the CONTRACTOR to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities of his intention to commence operations affecting such utilities at least one week in advance of the commencement of such operations. The CONTRACTOR shall, at the same time, file a copy of such notice with the ENGINEER. Before commencing work on service connections, the CONTRACTOR shall be responsible for contacting PUBLIC UTILITY PROVIDERS to obtain construction requirements, standards and to give adequate notice of commencement of work.

SC4.04.A.5 It shall be the CONTRACTOR's responsibility to protect and support all existing utilities and make repairs to any damage that may be a result of the construction operations at his expense. The CONTRACTOR has no claim if damage is done to a utility not located as shown, or is present, but not shown.

SC4.04.A.6 The Contractor, in constructing or installing facilities alongside or near sanitary sewers, storm drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults, or other structures shall, at his expense, sustain them securely in place, cooperating with the officers and agents of the various utility companies and municipal departments which control them, so that the services of these structures shall be maintained. The Contractor shall also be responsible for the repair or replacement, at his own expense, of any damage to such structure caused by his acts or neglect, and shall leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall promptly notify the utility owner and shall, if requested by the Engineer, furnish labor and equipment to work temporarily under the owner's direction in providing access to the utility. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Department or by the utility owner that suffers the loss. The cost of such repairs shall be borne by the Contractor, without compensation therefore.

If, as the work progresses, it is found that any of the utility structures are so placed as to render it impracticable, in the judgment of the Engineer, to do the work called for under this Contract, the Contractor shall protect and maintain the services in such utilities and structures and the Engineer will, as soon thereafter as reasonable, cause the position of the utilities to be changed or take such other actions deemed suitable and proper.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in protecting or repairing property as specified in this section, shall be considered included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

SC4.04.A.7 No work is to be performed in the immediate vicinity of PUBLIC ELECTRIC WIRE UTILITY manholes or utility poles, or the PUBLIC COMMUNICATIONS WIRE UTILITY manholes or utility poles or conduit system without prior notice (at least 48 hours) to the affected company.

Article 5 - BONDS AND INSURANCE

SC5.01 PERFORMANCE, PAYMENT & OTHER BONDS

Add the following **SC5.01.D** and **SC5.01.E** immediately following **5.01.C**-

SC5.01.D – CONTRACTOR shall deliver to OWNER fully executed Construction Performance Bonds which CONTRACTOR is required to purchase and maintain as per General Conditions Article 5 and these Supplementary Conditions. Additionally CONTRACTOR shall purchase and maintain a fully executed Construction Performance Bond as described in the General Conditions and Supplementary Conditions naming those so noted below as Additional OWNER/HOLDER.

1. Performance Bond Holders: TOWN OF HANCOCK
3650 Hancock Rd (PO BOX 1084)
Hancock, MA 01237

VINCENT P. GUNTLOW
d/b/a Guntlow & Associates, Inc.
55 North Street
Williamstown, MA 01267

SC5.04 CONTRACTOR'S LIABILITY INSURANCE

SC5.04. Add the following new paragraph immediately after paragraph 5.04B:

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

1. Workers' Compensation, and related coverages under paragraphs 5.04.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal (e.g., Longshoreman's): Statutory
 - c. Employer's Liability: \$1,000,000

2. Comprehensive General Liability under paragraphs 5.04.A.3 through 5.04.A.6 of the General Conditions, 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:
 - a. Bodily Injury:

\$1,000,000	Each Occurrence
\$2,000,000	Annual Aggregate

 - b. Property Damage

\$1,000,000	Each occurrence
\$2,000,000	Annual Aggregate

 - c. Personal Injury, with Employment exclusion deleted

\$1,000,000	Annual Aggregate
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3. Comprehensive Automobile Liability under paragraph 5.04.A.6 of the General Conditions, including all owned (private and others), hired and non-owned vehicles:
 - a. Bodily Injury:

\$1,000,000	Each Person
\$1,000,000	Each Accident

 - b. Property Damage

\$1,000,000	Each Occurrence
-------------	-----------------

4. CONTRACTOR will provide a separate Protective Liability Policy for OWNER, ENGINEER.

Consultants and others listed in the Supplementary Conditions issued by CONTRACTOR's general liability carrier with customary exclusions for Professional liability:

 - a. Protective Liability Policy \$1,000,000

5. With respect to insurance required in these project documents, include as insureds OWNER, ENGINEER, and any other individuals or entities identified in these Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other 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.

a. Insureds:

TOWN OF HANCOCK
3650 Hancock Rd (PO BOX 1084)
Hancock, MA 01237

ENGINEER:
VINCENT P. GUNTLOW d/b/a
GUNTLOW & ASSOCIATES, INC.
55 North Street, Williamstown, MA 01267

and all others as described in the Contract Documents

SC5.05 Delete paragraph 5.05 of the General Conditions in its entirety and insert the following in its place:

SC5.05 CONTRACTOR shall purchase and maintain a separate Owner's Protective Liability policy, issued to OWNER at the expense of CONTRACTOR, including OWNER and ENGINEER as named insured. This insurance shall provide coverage for not less than the following amounts:

SC5.05.A	Bodily Injury	\$1,000,000	Each Occurrence
SC5.05.B	Property Damage	\$1,000,000	Each Occurrence
		\$1,000,000	Annual Aggregate

SC5.06 Delete paragraphs 5.06 through 5.10 inclusive of the General Conditions in their entirety.

Article 6 - CONTRACTOR'S RESPONSIBILITY

6.02 LABOR; WORKING HOURS

SC6.02 Amend first sentence of SC6.02.B to read as follows: "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 – as defined by an 8-hour day, 5-day work week with the Prime Contractor and all subcontractors working the same shift – and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER'S written consent (which will not be unreasonably withheld) given after prior written notice to the ENGINEER.

SC6.02 Add new paragraphs immediately after 6.02.B to read as follows:

SC6.02.C The minority percentage rate to be applied to this job will not be less than five percent (5%).

SC6.02.D Prevailing wage rates will apply to this project.

SC6.02.E Buy America Provisions (23CFR 635.410)
Federal law requires that all manufacturing processes for steel and iron to be permanently incorporated in Federal Aid highway construction projects must occur in the United States. Foreign steel and iron can be used if the cost of the material does not exceed 0.1% of the total contract cost or \$2,500 whichever is greater. The action of

applying a coating to a covered material (i.e., steel and iron) is deemed a manufacturing process subject to Buy America. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to requirements of Buy America.

- SC6.02.F** United States Flag Vessels – Cargo Preference
The CONTRACTOR is advised that the Commerce Department has promulgated a cargo preference regulation requiring fifty (50) percent of the gross tonnage of items which are purchased with funds advanced, loaned, or guaranteed by the Federal Government, and which may be shipped by ocean vessel, to be shipped on privately owned, United States flag, commercial vessels to the extent such vessels are available at fair and reasonable rates for United States flag commercial vessels. This regulation was promulgated on October 25, 1977, and was published in the Federal Register on November 1, 1977 (42 FR 57126), to implement the Cargo Preference Act of 1954.

6.08 PERMITS

- SC6.08A** *delete* first sentence of paragraph in its entirety and replace with "Other than the permits noted in SC6.08A & B, CONTRACTOR shall obtain and pay for all construction permits and licenses."
- SC6.08B** Conservation Commission – Order of Conditions see attached "Order of Conditions" in Appendix of this section. The "Order of Conditions" shall be considered part of the contract specifications for this project.

SC6.10 TAXES

Delete paragraph **6.10.A** and add the following paragraphs:

- SC6.10.A.** OWNER is a tax exempt organization and will take title to materials used in the Project in order to permit tax exemption.
- SC6.10.B** The OWNER will furnish a certificate with the Owner's Tax Exemption number to the CONTRACTOR for appropriate use for the Project.
- SC6.10.C** This exemption shall not apply to machinery, equipment, tools, and other items purchased, leased, rented, or otherwise acquired for the Contractor's use even though the machinery, equipment, tools or other items are used either in part or entirely on the Work. This exemption shall apply only to materials fully incorporated into the Work of the Contract as accepted and approved by OWNER's Representative.
- SC6.10.D** The CONTRACTOR shall, upon request by OWNER, furnish a bill of sale or other instrument indicating the quantities and types of materials purchased directly by the Contractor or subcontractor for incorporation into the Work. Upon delivery of the materials to the site, the Contractor shall mark or otherwise identify materials to be incorporated in the Work. This exemption shall apply only to materials so identified and accepted.
- SC6.11** Add new paragraphs immediately after 6.11.D to read as follows:
- SC6.11.E** PREVENTION OF WATER POLLUTION – SANITARY PROVISIONS
During the performance of all work done under this contract, the Contractor shall adopt such precautions in the conduct of his operations as may be necessary to avoid contaminating water in adjacent streams or pond areas. All moving of equipment, and other operations likely to create silting, shall be so planned and conducted as to minimize

pollution in adjacent streams or pond areas. Water used for any purpose by the Contractor, which has been contaminated with soil, bitumen, salt or other pollutants shall be so discharged as to avoid affecting nearby waters. Under no circumstances shall the Contractor discharge pollutants directly into any stream or pond areas.

When the contractor uses water from natural sources for any of his operations, intake methods shall be such as to avoid contaminating the source of supply and maintain adequate downstream flow when the source is a stream.

6.13 – Safety and Protection

SC6.13.A – Add the following new paragraph immediately before 6.13.A

The Contractor is required to properly plan and control project construction so as to allow for the safety of the public. During construction, the open trench must be kept to approximately three (3) pipe lengths. All trenches must be fully backfilled - and temporarily paved as they are within state numbered highways - at the end of each working day.

SC6.13.B – Add the following new paragraph immediately before paragraph 6.13.B

This project is subject to and will comply with the Safety and Health Regulations of the US Department of Labor as set forth in 29 CFR, part 1926 and all subsequent amendments and revisions thereto, as well as the Massachusetts Department of Labor and Industries, Safety “Rules and Regulations for the Prevention of Accidents in Construction Operations” The OWNER and Engineer shall not be held liable for any fines or penalties resulting from non-compliance or violations of these regulations by the CONTRACTOR.

SC6.13. - Add the following paragraphs immediately after SC6.13.B

SC6.13.C - The CONTRACTOR is required to follow the requirements of State and Local Laws and Regulations with regard to traffic control, as required, for the project.

SC6.13.D - Pedestrian ramps, access ways and other associated features are shown on the Plans graphically only. Contractors shall establish grade elevations at all wheelchair ramp locations, and shall set transition lengths according to the appropriate table in the Construction Standards (or to the details shown on the plans). All wheelchair ramp joints and transition sections which define grade changes shall be formed, staked and checked prior to placing cement concrete. All grade changes are to be made at joints. The Contractor is responsible for constructing all relative work to strict adherence with the requirements of the Massachusetts Highway Department, and the Massachusetts Architectural Access Board.

SC6.13.E The Contractor shall be required, without additional compensation to provide safe and convenient access to all abutters during the prosecution of the work. Necessary access for fire apparatus and other emergency vehicles shall be maintained at all times.

Sweeping and cleaning of surfaces beyond the limits of the project to clean up material caused by spillage or vehicular tracking during the various phases of the work shall be considered as incidental to the work being performed under the Contract and there will be no additional compensation.

6.17 - Shop Drawings and Samples

SC6.17.A&B Substitute “OWNER’S REPRESENTATIVE for “ENGINEER”

Article 8 - OWNER’S RESPONSIBILITIES

SC8.01A Delete in its entirety.

Article 9 - ENGINEERS STATUS DURING CONSTRUCTION

SC9.02.C – Add the following new paragraph immediately before 9.02.B.

No separate office will be required for use by the Project Engineer, however the Engineer will have reasonable access and right to use shelter, toilet and telephone facilities that the CONTRACTOR provides for his own usage without charge.

9.10 - Limitations of Engineers Authorities and Responsibilities

Add the following subparagraph **SC9.10.B.1** –

SC9.10.B.1The OWNER, CONSTRUCTION MANAGER and/or ENGINEER does not accept responsibility for supervising and enforcing the safety practices of the CONTRACTOR and its employees. If unsafe conditions are observed during the course of performing his/her duties on the jobsite, he/she will bring these conditions to the attention of the CONTRACTOR'S Superintendent, and if said conditions are not remedied promptly, the OWNER'S REPRESENTATIVE, CONSTRUCTION MANAGER and/or ENGINEER reserves the right to stop work on the project.

Article 13 - TESTS AND INSPECTIONS

SC13.02 Add the following new paragraphs immediately after paragraph **13.02.A** of the General Conditions which are to read as follows:

Agents of various public service agencies, municipal and State departments may be entering on the work site to remove existing facilities, to construct or place new facilities or to make alterations to existing facilities.

The Contractor shall perform the work in cooperation with the various agencies in a manner which causes the least interference with the operations of the aforementioned agencies and shall have no claim for delay which may be due, or result, from said work of these agents.

SC13.03A Amend paragraph as follows:

Add "and OWNER'S" immediately following the word "ENGINEER" at each occurrence.

SC13.03.C Amend paragraph as follows:

Add "and OWNER'S" immediately following the word "ENGINEER" at each occurrence.

Article 14 – PAYMENTS TO THE CONTRACTOR AND COMPLETION

SC.14.02 – Progress Payments

SC-14.02 Add the following new paragraphs immediately after paragraph **14.02.A** of the General Conditions which are to read as follows:

SC14.03.B- Contract shall indemnify and save OWNER harmless from all claims growing out of the demands of Subcontractors, laborers, workmen, mechanics, material, men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the performance of the Contract.

END OF SECTION

SECTION 00811

SPECIAL PROVISIONS MONTHLY PRICE ADJUSTMENT FOR HOT MIX ASPHALT (HMA) MIXTURES

This provision applies to all projects using greater than 100 tons (91 megagrams) of hot mix asphalt (HMA) mixtures containing liquid asphalt cement as stipulated in the Notice to Contractors section of the bid documents.

Price Adjustments will be based on the variance in price, for the liquid asphalt component only, between the Base Price and the Period Price. They shall not include transportation or other charges. Price Adjustments will occur on a monthly basis.

Base Price

The Base Price of liquid asphalt on a project as listed in the Notice to Contractors section of the bid documents is a fixed price determined by the Department at the time of the bid using the same method as the determination of the Period Price detailed below. The Base Price shall be used in all bids.

Period Price

The Period Price is the price of liquid asphalt for each monthly period as determined by the Department using the average selling price per standard ton of PG64-28 paving grade (primary binder classification) asphalt, FOB manufacturer's terminal, as listed under the "East Coast Market - New England, Boston, Massachusetts area" section of the Poten & Partners, Inc. "Asphalt Weekly Monitor". This average selling price is listed in the issue having a publication date of the second Friday of the month and will be posted as the Period Price for that month. The Department will post this Period Price on its website at <http://www.mhd.state.ma.us/> within two (2) business days following its receipt of the relevant issue of the "Asphalt Weekly Monitor". Poten and Partners has granted the Department the right to publish this specific asphalt price information sourced from the Asphalt Weekly Monitor. This method of period price determination was formerly called the New Asphalt Period Price Method. Separate website postings using both the New Asphalt Period Price Method and the Old Asphalt Period Price Method were discontinued after June 2013.

Price Adjustment Determination, Calculation and Payment

The Contract Price of the HMA mixture will be paid under the respective item in the Contract. Price Adjustments, as herein provided, either upwards or downwards, will be made after the work has been performed using the monthly period price for the month during which the work was performed.

Price Adjustments will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

The Price Adjustment applies only to the actual virgin liquid asphalt content in the mixture placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M3.11.03.

Price Adjustments will be separate payment items. The pay item numbers are 999.401 for a positive price adjustment (a payment) and 999.402 for a negative price adjustment (a deduction). Price Adjustments will be calculated using the following equation:

Price Adjustment = Tons of HMA Placed X Liquid Asphalt Content % X RAP Factor X (Period Price - Base Price)

No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

***** END OF DOCUMENT *****

SECTION 00812

**SPECIAL PROVISIONS
MONTHLY PRICE ADJUSTMENT FOR DIESEL FUEL AND GASOLINE**

Revised: 01/26/2009

This monthly fuel price adjustment is inserted in this contract because the national and worldwide energy situation has made the future cost of fuel unpredictable. This adjustment will provide for either additional compensation to the Contractor or repayment to the Commonwealth, depending on an increase or decrease in the average price of diesel fuel or gasoline.

This adjustment will be based on fuel usage factors for various items of work developed by the Highway Research Board in Circular 158, dated July 1974. These factors will be multiplied by the quantities of work done in each item during each monthly period and further multiplied by the variance in price from the Base Price to the Period Price.

The Base Price of Diesel Fuel and Gasoline will be the price as indicated in the Department's web site (<http://www.massdot.state.ma.us/>) for the month in which the contract was bid, which includes State Tax.

The Period Price will be the average of prices charged to the State, including State Tax for the bulk purchases made during each month.

This adjustment will be effected only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments.

No adjustment will be paid for work done beyond the extended completion date of any contract.

Any adjustment (increase or decrease) to estimated quantities made to each item at the time of final payment will have the fuel price adjustment figured at the average period price for the entire term of the project for the difference of quantity.

The fuel price adjustment will apply only to the following items of work at the fuel factors shown:

ITEMS COVERED	FUEL FACTORS	
	Diesel	Gasoline
Excavation: and Borrow Work: Items 120, 120.1, 121, 123, 124, 125, 127, 129.3, 140, 140.1, 141, 142, 143, 144., 150, 150.1, 151 and 151.1 (Both Factors used)	0.29 Gallons / CY.	0.15 Gallons / CY
Surfacing Work: All Items containing Hot Mix Asphalt	2.90 Gallons / Ton	Does Not Apply

***** END OF DOCUMENT *****

DIVISION 1

General Requirements

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work of the Contract as shown on a set of plans entitled:

TOWN OF HANCOCK
WHITMAN ROAD CULVERT REPLACEMENT PROJECT
Hancock, Massachusetts

Plans issued March 13, 2026

GUNTLOW & ASSOCIATES, INC.
CONSULTING ENGINEERS
55 North Street, Williamstown, Massachusetts 01267

- B. The project includes the installation of a new 4-sided precast concrete box culvert, and removal of the existing 36"-48" steel culvert. The project will allow the closure of the road for up to 90 days. The new culvert is in a different alignment than the existing culvert, allowing the existing culvert to maintain stream flow during construction of the new culvert. Associated work includes grading to create the inlet and outlet of the new culvert, stream grading to connect the new stream alignment to existing, creation of a wetland mitigation area, and grading/removal/replacement of a portion (approximately 7,200 SF) of the existing road pavement surface. All work needs to be completed within 150 calendar days from the date of the Notice to Proceed.

1.02 WORK INCLUDED

1. All work shown on project plans including but not limited to: installation and maintenance of all necessary erosion controls prior to and during construction, excavation and installation of new 4-sided concrete box culvert, grading at both ends of culvert to provide culvert inverts as shown, stream bed construction to plan specifications, construction of wetland mitigation area, removal of existing steel culvert and related backfilling, sawcutting, milling, and repaving of road surface where necessary, all loaming and seeding to stabilize disturbed areas on site. Work also includes all the necessary traffic control and proper signage to manage traffic flow safely until work is complete.
2. The concrete box culvert and attached improvements supporting guard posts/rails will require submittal and approval by both the design engineer (Guntlow & Associates, Inc.) and MassDOT Chapter 85. To facilitate contractor approval timelines for the precast box culvert, a preliminary design has already been provided to MassDOT Chapter 85 for review and approval. If the Contractor chooses to utilize the specified precast supplier's design for review approval (Concrete Systems, Inc.), the submittal review timeframe should be reduced to only shop drawings. Using a different precast supplier is acceptable but will likely result in a longer review and approval time with Chapter 85.
3. The Contractor shall submit a proposed schedule and logistics plan to the Town and Engineer for review and approval. The hope is that the sequencing of the project, ordering of materials, preparation for site work and actual performance of site work can be done in a manner to minimize the time in which the road is closed to the public.

4. Prior to the start of work, the Contractor shall perform the necessary work as noted in the conditions of the Restoration Order of Conditions (see Appendix B).
5. It should be noted that current site conditions from recent snowmelt and rainfall has resulted in partial washout of the roadway and existing culvert. These conditions are not indicated on the design plans; however, the overall intent of the design plans remain. It is expected that the Contractor will need to stabilize the site to maintain flow through the existing culvert during the construction of the new culvert, as outlined in the construction sequence and phasing of work/coffer dam placement. See Existing Conditions Site Photos in Appendix C.

1.03 CONTRACTOR USE OF PREMISES

- A. CONTRACTOR cannot make use of any private property, without the written consent of the OWNER, a copy of which must be furnished to the Engineer.
- B. CONTRACT must limit his construction activity to the Road rights-of-way, or to any construction easements obtained by the Town prior to the start of construction. Any construction activity beyond will be a trespass, at the CONTRACTOR's risk.
- C. The CONTRACTOR may request to the Town, for their approval, to close the road for extended periods during the course of the project. Request for permission to close the road shall be made at least five days in advance of the scheduled work. Appropriate signage for closure and detour shall be provided for review and approval.

1.04 ABBREVIATIONS AND REFERENCES

AASHTO	-	The American Association of State Highway and Transportation Officials
ACI	-	The American Concrete Institute
AISC	-	The American Institute of Steel Construction
AISI	-	The American Iron and Steel Institute
ANSI	-	The American National Standards Institute
API	-	The American Petroleum Institute
ASCE	-	The American Society of Civil Engineers
ASME	-	The American Society of Mechanical Engineers
ASTM	-	The American Society of Testing and Materials
AWWA	-	The American Water Works Association
DIPRA	-	The Ductile Iron Pipe Research Association
Recd	-	Farmers Home Administration
IEEE	-	Institute of Electrical and Electronic Engineers
NEMA	-	National Electrical Manufacturer's Association
OSHA	-	Occupational Safety and Health Administration

It is understood that when the specifications refer to publications and standards throughout the text that the latest revision shall apply. If a conflict exists, the latest revision shall take precedence over these Specifications.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 BASE BID (ITEM 1)

A. MEASUREMENT

1. The work is on a lump sum basis for the complete site work package, including but not limited to: installation and maintenance of erosion control as needed, management of water to maintain stream flow and provide work area "in the dry", installation of new concrete box culvert, removal of existing steel culvert, all necessary grading, resetting of guard posts, associated in-stream work, creation of wetland mitigation area, road surface pavement removal and replacement, and restoration of all disturbed areas.

B. PAYMENT

1. Payment of the lump sum bid for the complete site work package, as described in the Contract Drawings shall include all labor, equipment and materials related thereto.

1.02 REMOVE & DISPOSE OF EXISTING PAVEMENT (ITEM 2)

A. MEASUREMENT

1. Measurement shall be actual cubic yard of pavement removed and disposed of properly offsite where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.03 EXCAVATE AND STOCKPILE TOPSOIL/EARTH (ITEM 3)

A. MEASUREMENT

1. Measurement shall be actual cubic yard of topsoil / earth removed and stockpiled onsite where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.04 HAUL & DISPOSE OF EXCESS EARTHWORKS (ITEM 4)

A. MEASUREMENT

1. Measurement shall be actual cubic yardage of excess earthworks removed and disposed of properly offsite where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.05 SAW CUT PAVEMENT (ITEM 5)

A. MEASUREMENT

1. Measurement shall be actual linear foot cut where shown on the plans and/or directed by the Engineer and shall include all transition areas from new pavement to existing pavement.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.06 1 ½" MILLING OF PAVEMENT (ITEM 6)

A. MEASUREMENT

1. Measurement shall be actual square yard of 1 ½" milling of pavement where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.07 BITUMINOUS CONCRETE PAVEMENT (ITEM 7)

A. MEASUREMENT

1. Measurement shall be for each ton of pavement placed and shall include subbase preparation, tack coat, providing the bituminous concrete, placement, compaction and all other labor, equipment and other appurtenant work required for providing a satisfactory pavement.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.08 GRAVEL SUBBASE FOR ROADWAY (ITEM 8)

A. MEASUREMENT

1. Measurement shall be for each cubic yard of import gravel subbase for roadway and shall include providing the gravel, preparation, placement, compaction and all other labor, equipment and other appurtenant work required for providing a satisfactory pavement.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or quantities are reduced by the OWNER.

1.09 PAVEMENT STRIPING (ITEM 9)

A. MEASUREMENT

1. Measurement shall be for actual linear foot of line installed where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or are reduced by the OWNER.

1.10 STEEL GUARD RAIL (ITEM 10)

A. MEASUREMENT

1. Measurement shall be for each piece of guardrail installed where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or are reduced by the OWNER.

1.11 STEEL GUARD POST (ITEM 11)

A. MEASUREMENT

1. Measurement shall be for each guard post for guardrail installed where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or are reduced by the OWNER.

1.12 STONE RIP RAP REINFORCEMENT (ITEM 12)

A. MEASUREMENT

1. Measurement shall be for each cubic yard of stone rip rap where shown on the plans and/or directed by the Engineer.

B. PAYMENT

1. The supplemental unit prices shall only be used to adjust the Lump Sum Bid Prices should additional work be directed by the OWNER or if certain work or are reduced by the OWNER.

END OF SECTION

SECTION 01026

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Schedule of Values - Provide a detailed balanced breakdown of the Lump Sum Bid showing values for the various portions of the work. The schedule of values shall be submitted within ten (10) calendar days after the date of the Notice of Award and prior to the signing of the Contract.

PART 2 - PRODUCTS

2.01 SCHEDULE OF VALUES

- A. Submit three (3) copies of a detailed breakdown of the elements of the work accompanied by their associated monetary values.
- B. The Engineer will determine the level of breakdown and detail required. The Contractor shall submit additional information when requested. The final document will be the basis of payment requests for the duration of the Contract.

END OF SECTION

SECTION 01046

CONTROL OF WORK

PART 1 - GENERAL

1.01 PLANT

- A. Furnish personnel, materials and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of Work and a rate of progress which will insure the completion of the Work within the Contract Time. If at any time such operations appear to the Engineer to be inefficient, inappropriate or insufficient for securing the quality of Work required or for producing the rate of progress aforesaid, he may order the CONTRACTOR to increase the efficiency, change the character or increase personnel, equipment and the CONTRACTOR shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the CONTRACTOR of his obligations to secure the quality of the Work and rate of progress required.

1.02 PRIVATE LAND

- A. The CONTRACTOR shall not enter or occupy private land, except by written permission of the land owner, or by temporary construction easements obtained by the Town prior to construction.

1.03 PIPE LOCATIONS

- A. Pipelines shall be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the CONTRACTOR's convenience and does not relieve him from laying and jointing different or additional items where required.

1.04 OPEN EXCAVATIONS

- A. 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 his own expense, provide suitable and safe bridges, plates, and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access during construction shall be removed when no longer required. 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. If the excavation becomes a hazard, the Engineer may require special construction procedures such as limiting the length of the open trench or requiring that the trench shall not remain open overnight.
- B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.

1.05 TEST PITS

- A. Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR as required to identify the work required. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer.

1.06 MAINTENANCE OF ACCESS

- A. All excavated material shall be placed so that vehicular and universally accessible pedestrian traffic is maintained at all times during normal business hours. If the CONTRACTOR's operations cause hazards, he shall repair the surfaces, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.
- B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. The CONTRACTOR shall be fully responsible for damage or injuries whether or not traffic officers have been provided.

1.07 CARE AND PROTECTION OF PROPERTY

- A. The CONTRACTOR shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at his expense, to a condition similar to or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Engineer.
- B. Along the location of this work, bushes, trees, shrubbery, and other physical features shall be protected and replaced or restored to their original condition. All grassed areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and seeded.
- C. Trees and underbrush close to the work shall be boxed or otherwise protected against injury throughout construction. The CONTRACTOR shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior approval by the OWNER. Dead plant materials and broken limbs shall be pruned as directed by the Engineer.
- D. Prior to starting construction, the CONTRACTOR shall, for his own protection, photograph existing conditions. Coverage shall include the entire construction area and sufficient distance beyond to encompass all possible disturbed areas. Note particular areas of existing damage to structures, plantings, pavement, etc.

1.08 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, mailboxes, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, electric telephone and cable television, whether or not they are shown on the Drawings, The

CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's operations shall be repaired by him at his expense.

- B. Assistance will be Given the CONTRACTOR in determining the location of existing services, The CONTRACTOR, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.
- C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be part of the work under the Contract and all costs in connection therewith shall be considered incidental to the Contract. This work shall include but is not limited to the following: bracing, hand excavation and backfill, and any other work required for crossing the utility or obstruction.
- D. If, in the opinion of the Engineer, permanent relocation of a utility owned by the Town is required, he may direct the CONTRACTOR, in writing, to perform the work. Work so ordered will be paid for as extra work as described in the General Conditions. If relocation of a privately owned utility is required, the Town will notify the Utility to perform the work as expeditiously as possible. The CONTRACTOR shall fully cooperate with the Town and Utility, and shall have not claim for delay due to such relocation. The CONTRACTOR shall notify all utility companies in writing at least seventy-two (72) hours prior to start of Work.

1.09 WATER FOR CONSTRUCTION PURPOSES

- A. In location where public water supply is available, the CONTRACTOR will be allowed to use water without charge for construction purposes. A hydrant meter must be obtained from town DPW.
- B. The express approval of the TOWN of HANCOCK, shall be obtained before water is used. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of unrestricted use. Hydrants shall only be operated under the supervision of the Town's personnel.

1.10 MAINTENANCE OF FLOW

- A. The CONTRACTOR shall at his own cost, provide for the flow or sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter, The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

1.11 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with General Contractor and his Subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

1.12 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the Work, the CONTRACTOR shall keep the site of his operations in as clean and neat a condition as is possible, He shall dispose of all residue resulting from the construction work and, at the conclusion of the work, he shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operation, and shall leave the entire site of the work in a neat and orderly condition.
- B. The CONTRACTOR shall, during the course of the Work, ensure that all existing site construction debris and residue off site.
- C. In order to prevent environmental pollution arising from the construction activities related to the performance of the Contract, the CONTRACTOR and his subcontractors shall comply with all applicable Federal, State and local laws, and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and elsewhere in the Specifications.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

This section specifies the general methods, formats, and requirements for the submission of the following Work and Product related documentation:

- A. Product Listing and Manufacturer's Qualifications
- B. Shop Drawings
- C. Product Data
- D. Samples
- E. Certificates of Compliance

1.02 RELATED SECTIONS

- A. Documents affecting work of the Section include, but are not necessarily limited to the General Conditions, Supplementary Conditions and all Sections in Division 1 of these Specifications.

1.03 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment will be made for work in this Section. All costs in connection therewith shall be considered incidental to the Lump Sum Bid Price.

1.04 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

- A. SHOP DRAWINGS
 1. Shop drawings, as defined in the General Conditions, and as specified in individual Work Sections include, but are not necessarily limited to, custom-prepared data such as fabrication and erection/installation drawings, schedule information, piece part drawings, actual shop work manufacturing instructions, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certification, as to the Work.
 2. All Shop Drawings submitted by Suppliers for approval shall be sent directly to the CONTRACTOR for preliminary checking. The CONTRACTOR shall be responsible their submission at the proper time so as to prevent delays in delivery of materials. The CONTRACTOR shall be solely responsible for the coordination of submittals for related or interdependent equipment; fragmented submittals will not be accepted for review by the Engineer. The CONTRACTOR shall advise the Engineer in writing of any deviations from the requirements of the Contract Documents.
 3. The CONTRACTOR shall check all Shop Drawings regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the Drawings and Specifications. Drawings found to be inaccurate, not

in compliance, or otherwise in error shall be returned to the subcontractors for correction before submission to the Engineer. Drawings which are current shall be marked with the date, name and approval stamp of the CONTRACTOR. The CONTRACTOR shall advise the Engineer, in writing, of any deviations from the requirements of the Contract Documents.

4. All details on Shop Drawings submitted for approval shall show clearly the relation of the various parts to the main members and lines of the structure, and where correct fabrication of the work depends upon field measurements, such measurements shall be made by the CONTRACTOR and noted on the drawings before being submitted to the Engineer for review and approval.
 5. No Material or Equipment shall be purchased or fabricated especially for the Contract until the required Shop and Working Drawings have been submitted as here in above provided and approved as conforming to the Contract Documents. All such materials and equipment and the work involved in their installation or incorporation into the work shall then be as shown in and represented by said Drawings.
 6. The Engineer's approval of Shop and Working Drawings, calculations, etc., will be general only and shall not relieve or in any respect diminish the responsibility of the CONTRACTOR for details of design, dimensions, etc. necessary for proper fitting and construction of the Work as required by the Contract and for achieving the result and performance specified thereunder.
Should the CONTRACTOR submit for approval equipment that requires modifications to the structures, piping, layout, etc. detailed on the Drawings, he shall also submit for approval details of the proposed modifications. If such equipment and modifications are approved, the CONTRACTOR, at no additional cost to the OWNER, shall do all work necessary to make such modifications
- B. PRODUCT DATA
1. Product Data, as specified in individual Sections, include, but are not necessarily limited to, standard prepared data for Manufactured Products (catalog data), such as the Manufacturer's product specification and installation Instructions, availability of colors and patterns, Manufacturer's print statements of compliance and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing, and printed product warranties, as applicable to the Work.

1.05 CONTRACTOR'S RESPONSIBILITIES

- A. Review Shop Drawings, Product Data and Samples prior to submission and verify and determine:
 1. Field Measurements
 2. Conformance with Specifications. The CONTRACTOR shall advise the Engineer in writing of any deviations from the requirements of the Contract Documents.
- B. Provide Submittal Identification and Information including: the date of submission and dates of previous submissions, project title, contractor identification, specification section, manufacturer and supplier, identified field dimensions, applicable standards and identification of deviations from Contract Requirements.

- C. Provide digital submission of Shop Drawings and Product Data electronically (.pdf file format),.
- D. Apply CONTRACTOR's stamp, initials, or signature certifying that the submission has been thoroughly reviewed for the completeness, compliance with Contract Requirements, coordination with adjacent construction and dimensional compatibility, Item submitted without the stamp, or incomplete, will be returned by the Engineer for rework and resubmission.
- E. List any deviations from Contract Documents and Product or System Limitations which may be detrimental to successful performance of the work.
- F. Space will be provided for the Engineer's review stamps and comments. The Engineer will review Shop Drawings for design, methods of construction and detailing. This review will not be assumed as a complete check nor does it relieve the CONTRACTOR from responsibility for any departures or deviations from the requirements of the Contract Documents unless he has, in writing, calling the Engineer's attention to such deviation at the time of its submission. The Engineer's review of the Shop Drawings does not relieve the CONTRACTOR from the responsibility of proper fitting of the work, or the responsibility of furnishing any work required by the Contract Documents which may not be indicated on the Shop Drawings. The CONTRACTOR is solely responsible for any quantities shown on the Shop Drawings.
- G. A detailed transmittal form will accompany each submission listing the Project name and Submittal Specification Section. The transmittals will be numbered consecutively and dated. Any resubmittals will show the original transmittal number, commencing with the suffix "A".
- H. All changes made on resubmittals will be clearly identified.
- I. All copies of reviewed submittals should be immediately distributed to appropriate parties requesting prompt notice of any inability to meet the provisions and requirements of the work.

1.06 GENERAL PROCEDURES FOR SUBMISSION AND RESUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. **COORDINATION** – Prepare and submit documentation in advance of fabrication and product manufacture, so that the installation will not be delayed, other related work can be properly coordinated, and there is adequate time for review and resubmission, if required. No extension of time will be authorized due to the CONTRACTOR's failure to provide approval submittals sufficiently in advance of the work.
- B. **RESUBMISSION** – Make corrections and modifications required by the Engineer and resubmit until approved. Clearly identify changes made to Shop Drawings and product data and indicate other changes which have been made other than those requested by the Engineer.
- C. **DISTRIBUTION** – Distribute approved Submittal Shop Drawings and approved Submittal Product data to the Project site and elsewhere as required to communicate the information to suppliers, CONTRACTORS and field personnel.

1.07 CERTIFICATES OF COMPLIANCE

- A Provide sworn certificates from the manufacturer or material supplier that the materials and fabrications provided under the Section conform with the pertinent plans, special provisions and Specification of the Contract and processing, product testing and inspection of materials are in conformance with all applicable Specifications, Drawings and/or Standards of the Articles furnished. Certificates of Compliance shall be submitted in triplicate when requested by the Engineer or required by the individual Sections of the Specification. Certificates shall be signed by an officer of the Corporation and witnessed by a Notary Public.

1.08 SUBSTITUTIONS

- A. It will be assumed by the OWNER that the CONTRACTOR has prepared his Bid on the basis of the specified materials and equipment.
- B. If the CONTRACTOR should at any time, wish to make substitutions in materials and/or equipment, he shall submit to the Engineer a written request for such substitution and state the advantage to the OWNER.
- C. The CONTRACTOR shall also state the additional cost or savings to the OWNER and include such cost analysis, comparisons and quotations as are pertinent. The determination as to whether or not such substitutions will be permitted rests solely with the OWNER. All substitutions allowed by the OWNER will be authorized in writing by the Engineer acting at the direction of the OWNER.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Documentation for Completed Work.
- B. Final Clean-up.

1.02 RELATED SECTIONS

- A. Documents affecting work of this Section include, but are not necessarily limited to, the General Conditions, Supplementary Conditions and all Sections in Division 1 of these specifications.

1.03 MEASUREMENT AND PAYMENT

- A. No separate Measure or Payment will be made for work in this Section. All costs in connection therewith shall be considered incidental to the Contract Bid Price.

1.04 SUBSTANTIAL COMPLETION

- A. PROCEDURE
 1. Completion must take place within thirty (30) business days of the signing of the Contract. Completion includes the "punch list" work described in the following paragraphs.
 2. Prior to requesting final inspection and project close-out the CONTRACTOR shall assure that the work is completed in accordance with the specified requirements and is ready for the requested inspection.
 3. Within a reasonable period of time after receipt of the request, the Engineer will inspect the work to review compliance, completeness, and issue a listing of unsatisfactory work. The CONTRACTOR will remedy the deficiencies and the work will be re-inspected.

1.05 FINAL COMPLETION AND PROJECT CLOSE-OUT DOCUMENTS

- A. The Close-out Submittals include but are not necessarily limited to:
 1. Evidence of payment and release of liens.
 2. Written guarantee, as specified.

1.06 FINAL CLEANING

- A. Where material or debris has washed or flowed or has been placed in existing watercourses, ditches, drains, pipe, or structures, for work done under the Contract work limits or elsewhere during the courses of the CONTRACTOR's operations, such material or debris shall be entirely removed and satisfactorily disposed during the progress of the Work, and the ditches, channels, drains, pipes, structures, and work, etc. shall, upon completion of the Work, be left in a clean and neat condition.

- B. The CONTRACTOR shall restore or replace, when as directed, any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the CONTRACTOR shall do as required all necessary highway or driveway, walk and landscaping work. Suitable materials, equipment and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable, as work progresses, and shall not be left until the end of the Contract period.

1.07 COMPLETION

- A. The Contract shall be considered complete and final payment made only when:
1. All provisions of the Contract Documents have been strictly adhered to.
 2. The project and premises have been left in good order, including removal of all temporary construction, CONTRACTOR-owned and extraneous materials, as required.

END OF SECTION

DIVISION 2

Site Work

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SUMMARY

- A. This Section includes the following:
1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns and grasses, and exterior plants.
 2. Excavating and backfilling for buildings and structures.
 3. Drainage course for slabs-on-grade.
 4. Subbase course for concrete walks, pavements.
 5. Subbase and base course for asphalt paving.
 6. Subsurface drainage backfill for walls and trenches.
 7. Excavating and backfilling for utility trenches.
 8. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.
 9. Supply and installation of separation geotextile fabrics for subdrainage.
 10. Supply and installation of subdrain pipework.

1.03 RELATED DOCUMENTS

- A. The following items of related work are specified and included in the other Sections of the Specifications:
1. Section 02270 EROSION AND SEDIMENTATION CONTROL
 2. Section 02500 PAVING
 3. Section 02607 PRECAST CONCRETE STRUCTURES
 5. Section 02900 LOAMING AND SEEDING
 6. Section 03300 CAST IN PLACE CONCRETE

1.04 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer.
 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

- G. Fill: Soil materials used to raise existing grades.
- H. Structures: Buildings, footing, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.05 SUBMITTALS

- A. Product Data: For the following:
 - 1. Each type of plastic warning tape.
 - 2. Geotextile.
 - 3. Controlled low-strength material, including design mixture.
 - 4. Geofoam.
- B. Samples: 12-by-12-inch Sample of subdrainage geotextile.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 1557 for each on-site and borrow soil material proposed for fill and backfill.
- D. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.
- E. Contractor to submit dewatering plan fourteen (14) days prior to excavation.
- F. Method Statements: From Contractor stating intended procedure for related earthwork and site issues. Submit before earthwork begins.
 - 1. Traffic Safety and Control
 - 2. Temporary Fencing
 - 3. Noise & Security
 - 4. Bulk Excavation
 - 5. Handling & Disposal
 - 6. Dewatering (including disposal)
 - 7. Contingency Measures (to be implemented where set action trigger levels require)
 - 8. Quality control & Management System to be employed (including working with and allowing access for any instrumentation and monitoring)

1.06 QUALITY ASSURANCE

- A. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.07 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Engineer's written permission.

- 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.
- C. Prior to submitting his proposal, the contractor shall review and understand the information contained in the Drawings and Geotechnical Investigation Report. The contractor must draw his own conclusions regarding site conditions based up on site visit(s) and from available sources. The Contractor shall assume that subsurface conditions between subsurface explorations could differ from conditions shown in the records of exploration.

PART 2 – PRODUCTS

2.01 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups, GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with a maximum stone size of 3 inches in the largest dimension, per MDOT Specification M1.03.0, Type B.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with a maximum stone size of 2 inches in the largest dimension per MDOT Specification M1.03.0, Type C.
- F. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel; crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- G. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1 1/2 – inch sieve EXCEPT not more than 8 percent passing a No. 200 sieve.
- H. Structural Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand that is classified under AASHTO-M145 as A3, or that portion of A-1 with less than 12% passing the No. 200 sieve as determined by AASHTO-T11 and T27.
- I. Processed Gravel for Subbase: Subbase material of crusher-run gravel, meeting the specifications of MHD M1.03.1.

Sieve Size	Percent Passing by Weight	
	Minimum	Maximum
3-inch	100	
1 1/2-inch	70	100
3/4-inch	50	85
No. 4	30	60
No. 200	0	10

This material is suitable for use as 'Controlled Fill'.

- J. Crushed Stone Course: The free-draining material shall be processed crushed stone and shall be clean, inert, hard durable stone and coarse sand free from Loam or clay, surface coatings,

and deleterious materials. It shall also be double washed and free from ice and snow, roots, sod, rubbish, or organic matter, and shall meet the requirements for MDOT Item M2.01.4, in Standard Specifications for Highways and Bridges, latest edition. The gradation requirements are as follows:

Sieve Size	Percent Passing by Weight	
	Minimum	Maximum
1-inch	100	
3/4-inch	90	100
1/2-inch	10	50
3/8-inch	0	20
No. 4	0	5

- K. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel; crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- L. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passive a No. 8 sieve.
- M. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate graded Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- N. Sand Bedding: ASTM C 33; fine aggregate, natural, or manufactured sand as per MDOT Specification M1.04.0, Type A – Max. particle size 1/4".
- O. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
- N. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand as per MDOT Specification M1.04.0, Type A – Max. particle size 1/4".
- P. Pea stone: Pea stone material, where indicated on the plans, shall be an intermediate size between a finer filter/topsoil course material, and a coarser drainage/gravel course, for the purpose of preventing the migration of a fine material into the coarser material. An acceptable gradation shall be calculated based on selected gradations of the filter course and reservoir course using criteria outlined in the HEC 11 (Brown and Clyde, 1989). A pea-gravel with a median particle diameter of 3/8" is commonplace.
- Q. Dense Graded Crushed Stone for Subbase: Subbase material combining crusher-run coarse aggregates of crushed stone (Trap only, meeting MM2.01.0,1) and fine aggregates of natural sand or stone screenings uniformly premixed with a predetermined quantity of water; MDOT M2.01.7.

Sieve Size	Percent Passing by Weight	
	Minimum	Maximum
2-inch	100	
1 1/2-inch	70	100
3/4-inch	50	85
No. 4	30	55
No. 50	8	24
No. 200	3	7

- R. Crushed Granite Stone Screening: 3/8" minus native broken stone screening material, Williams Stone Company Decomposed Granite, where indicated on the plans. Refer to 'Stabilizer Solutions' manufacturers documentation for mixing and installation procedures.
- S. Embankment/clay check dam fill material shall be a silty and clayey sand and gravel mixture (SC-SM) as defined by the Unified Soil Classification System capable of compacting to a dense state with a permeability rate of 0.028 feet/day or less. No organic matter and no stones larger than 6 inches. Embankment/clay check dam material shall be widely graded with at least 20% passing the No. 200 sieve or as directed by the engineer.

2.02 GEOTEXTILES

- A. Subsurface Drainage Geotextile: New, nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
 - 3. Permittivity: 0.5 per second, minimum; ASTM D 4491.
 - 4. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4355.
- C. Supplier Quality Control: The supplier shall perform quality control tests of geotextile, at a minimum of once for every 5000 square yards to evaluate material's conformance to published material properties. The supplier shall reject rolls for which quality control requirements are not met.
- D. During shipment, the geotextile shall be protected from ultraviolet light exposure, precipitation, mud, dirt, dust, puncture, or other damaging or deleterious conditions. Upon delivery at the job site, the contractor shall ensure that the geotextile rolls are handled and stored in accordance with the manufacturer's instructions as to prevent damage.

2.03 CONTROLLED LOW-STRENGTH MATERIAL

- A. Controlled Low-Strength Material: Low-density, self-compacting, flowable concrete material as follows:
 - 1. Portland Cement: ASTM C 150, Type I or II.
 - 2. Fly Ash: ASTM C 618, Class C or F.
 - 3. Normal-Weight Aggregate: ASTM C 33, ¾-inch nominal maximum aggregate size.
 - 4. Water: ASTM C 94/C 94M.
 - 5. Air-Entraining Admixture: ASTM C 260.
- B. Produce conventional-weight, controlled low-strength material with 140-psi compressive strength when tested according to ASTM C 495.

2.04 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape with metallic tracing wire or a traceable metallic warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer system.

2.05 SUBDRAIN PIPES

- A. Site Subdrain pipes shall be 4" or 6" inner diameter, as specified, perforated Polyethylene or PVC pipe. The pipes shall be perforated with openings compatible with the grading of the surrounding Drainage Course (Section 2.1 above).

PART 3- EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Preparation".
- C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Preparation," and "Erosion and Sedimentation Control", during earthwork operations.
- D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.02 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 - 2. Dewatering shall continue to maintain a dry excavation until the permanent works subdrainage system is in place and fully operational, mat foundation and basement walls are constructed, and backfill has been placed. Obtain confirmation of schedule for installation and commissioning of permanent works subdrainage system.

3.03 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.04 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

3. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
4. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.
5. Battering of temporary slopes for excavation is a temporary works issue and is the responsibility of the Contractor. The Excavation Contractor shall coordinate the excavation work with the main Contractor.
6. Design of temporary slopes shall be submitted to the Engineer for comment/information/record a minimum of 2 weeks prior to commencement of work.

3.05 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
 2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.06 EXCAVATION FOR IMPERVIOUS PAVEMENTS

- A. Excavate surfaces under pavements to indicated lines, cross sections, elevations, and subgrades.

3.07 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe for water lines or force mains below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of conduit and non-plastic pipe. Plastic pipe trenches shall be uniformly over excavated per details to place pipe bedding below the pipe. Shape subgrade or pipe bedding to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp edges along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms or pipe bedding and support pipe and conduit on undisturbed subgrade or bedding material.
2. For pipes and conduits 6 inches or larger in nominal diameter, shape bottom of trench or pipe bedding to support bottom 90 degrees of pipe circumference. Fill depressions with tamped pipe bedding backfill.
3. Excavate trenches 9 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.08 SUBGRADE INSPECTION

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.09 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.
 1. Fill unauthorized excavation under other construction or utility pipe as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavation satisfactory soil material without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust and saturation from precipitation.
 1. Stockpile soil materials away from edge of excavations. Do not store with drip line of remaining trees.
- B. Stockpile topsoil as a separate stockpile removed from other excavated soils. Piles shall not exceed 6 feet in height.

3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 1. Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
 2. Surveying location of underground utilities for Record Documents.
 3. Testing and inspecting underground utilities.
 4. Removing concrete formwork.
 5. Removing trash and debris.

6. Removing temporary shoring and bracing, and sheeting.
 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL (NOT ELECTRICAL UTILITIES)

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete specified in Structural Cast-in-Place Concrete Specifications
- D. Provide 4-inch thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.
- E. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- F. Backfill voids with satisfactory soil while installing and removing shoring and bracing.
- G. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- H. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 1. Under grass and planted areas, use satisfactory soil material as specified by the Landscape Architect.
 2. Under walks and pavements, use satisfactory soil material.
 3. Under steps and ramps, use engineered fill.
 4. Under building slabs, use engineered fill.
 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.
- D. Cover geofabric with subdrainage separation geotextile before placing overlying soil materials.

3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent Modified Proctor.
 - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent Modified Proctor.
 - 3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 84-86 percent Modified Proctor.
 - 4. For utility trenches, compact each layer of initial and initial backfill soil material at 92 percent Modified Proctor.

3.16 GRADING

- A. General: uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Rough Grading
 - 1. Rough grading shall include shaping, trimming, rolling and finishing of the sub-base, shoulders, and earth slopes, and the preparation of the subbase for all landscaped and paved areas. Up to 2 inches in 10 foot tolerance will be permitted on slopes and one inch in ten feet on landscape areas provided the slopes are uniform in appearance and without abrupt changes. All ruts shall be eliminated. Grading of subgrades for paved areas shall be furnished to the required depths and parallel to finish grade within 3/8-inch per 10'-0" tolerance.
 - 2. Grades shall be brought below finish grades in accordance with the depths listed below:
- C. Subgrades shall be surveyed and correlated with the project's elevation datum at one foot contour intervals with an accuracy of +/- 1/2". Planting soils shall not be placed until elevations of subgrades have been approved by the Landscape Architect.
- D. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.
 - 3. Pavements: Plus or minus 1/2 inch.
- E. Grading inside Building Lines: finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.17 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: specified in Part 2 - Products.
- B. Subsurface Drain: Place a 6" layer of Sand/Gravel Mix in bottom of trench. Place a 4-inch course of Drainage Course material on Sand/Gravel Mix to support subdrainage pipe, leaving a 4 to 6" gap, both sides, between edges of material and trench walls. Place Subdrainage Pipe.

Encase subdrainage pipe with a minimum of 6 inches of Drainage Course material around pipe perimeter, again leaving a 4 to 6 inch gap, both sides, between Drainage Course material and trench walls.

1. Compact each Drainage Course material and Sand/ Gravel mix layer to 85 percent of maximum dry unit weight according to ASTM D 1557 with a minimum of two passes of a plate-type vibratory compactor.
- C. Drainage Backfill: Place and compact Sand/Gravel Mix material over inner core of Drainage Course immediately surrounding the 4" pipe and the bottom layer of Sand/Gravel Mix, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick.
1. Compact each Drainage Course and Sand/ Gravel mix material layer to 85 percent of maximum dry unit weight according to ASTM D 1557 with a minimum of two passes of a plate-type vibratory compactor.
- D. The final cross-section through the completed subdrain assembly shall consist of a fabric sock encased, 4" perforated pipe immediately surrounded by an inner core of Drainage Course material, having a minimum thickness of 4 inches as measured radially from the pipes' wall, followed by an unbroken envelope, with a minimum thickness of 6" measures radially from the pipes' wall, of Sand/Gravel Mix backfill.
- E. Refer to Planting Soils Underdrainage for planting subdrains and for coordination of planting underdrains with site subdrainage and drainage system.

3.18 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping side and ends.
 2. Place base course material over subbase course under hot-mix asphalt pavement.
 3. Shape subbase and base course to required crown elevations and cross-slope grades.
 4. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
 5. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 6. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.
- C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders as shown on the plans and of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.19 DRAINAGE COURSE

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place drainage course 6 inches or less in compacted thickness in a single layer.
 3. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.20 FIELD QUALITY CONTROL

- A. Testing Agency: A qualified independent geotechnical engineering testing agency shall be retained, as specified in the Project Documents, to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D 1557, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Test will be performed at the following locations and frequencies:
 - 1. Paved and Building slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than 3 tests.
 - 2. Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for each 100 feet or less of wall length, but no fewer than 2 tests.
 - 3. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet or less of trench length, but no fewer than 2 tests
 - 4. Subgrade under Lawn and Planting Areas: At each compacted backfill layer and on native unfilled subgrade, 1 test for each 500 square feet.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.21 PROTECTION

- A. Protecting Graded Areas: protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Engineer.
 - 1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

3.23 GEOTEXTILE FABRIC

- A. The geotextile shall be handled and laid in accordance with the supplier's and manufacturer's recommendations, standards, and guidelines. The fabric shall be ballasted or pinned temporarily without excessive wrinkling but with due allowance for sagging and to ensure excessive tensile forces are not generated during subsequent fill placement.

- B. Cut geotextile using approved cutter only. Do not entrap in geotextile excessive dust, stones, or moisture that could damage or clog drains or filters.
- C. The geotextile shall be handled in such a manner as to ensure that it is not damaged in any way. Should the Contractor damage the geotextile to the extent it is no longer usable as determined by the specifications or by the Engineer, the Contractor shall replace the geotextile at his own cost.
- D. The installer shall not use heavy equipment to traffic above the geotextile without an approved protection layer.
- E. The geotextile shall be covered as soon as possible after installation and approval. Installed geotextile shall not be left exposed to sunlight for more than 2 days.
- F. Material overlying the geotextile shall be carefully placed to avoid wrinkling or damage to the geotextile.
- G. The geotextile overlap between adjacent strips shall be a minimum of 12 inches.
- H. Repairs: Repair holes or tears in a geotextile with a patch from the same geotextile material, seamed in place with a minimum seam overlap of 12 inches in all directions. Remove any soil or other material that may have penetrated the torn geotextile.
- I. Geotextile should extend horizontally a minimum of 3 feet beyond exterior of mat foundation and should extend vertically to the ground surface outside of the basement walls.

3.24 SUBDRAIN PIPES

- A. Lay pipes and ensure pipes are completely surrounded by granular layer.
- B. Pipes shall be joined using methods recommended by the supplier.

END OF SECTION

SECTION 02270

SEDIMENTATION AND EROSION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The CONTRACTOR shall perform surface protection and erosion control work as shown on the Plans and specified herein. The major portions of the work include:
 - 1. Place and maintain catch basin silt sacks where shown on the Plans or required by the site conditions.
 - 2. Erosion control of all areas disturbed during construction activities.
- B. The Measures specified herein are the minimum requirements with which the CONTRACTOR shall comply to control erosion and siltation. The CONTRACTOR shall provide additional work if necessary to control erosion and siltation throughout the duration of the construction.

1.02 RELATED SECTIONS & DOCUMENTS

- A. Documents affecting the Work of this Section include but are not necessarily limited to the General Conditions, Supplementary Conditions, and all Sections in Division 1 of these Specifications.
- B. Section 02200 – Earthwork
- C. Notice of Intent for the project as filed with the Hancock Conservation Commission and Massachusetts DEP.
- D. Order of Conditions for the project Notice of Intent as issued by the Hancock Conservation Commission.

1.03 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment will be made for work in this Section. All costs in connection therewith shall be considered incidental to the Lump Sum Bid Price.

1.04 SUBMITTALS

- A. Submit to the Engineer, as provided in, Material Specification and Shop Drawings for all materials and equipment furnished under this Section.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Erosion control shall be provided by a “silt sock” type of sedimentation retention product, filled with wood chips or similar organic material.
- B. Temporary sand bag coffer dams shall be provided to provide a dry work area around the new culvert construction area, and existing culvert removal area.

PART 3 - EXECUTION

3.01 SEDIMENTATION AND EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, hay bales around catch basins, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Off-site surface water shall be diverted around the site to a downstream channel ahead of siltation barriers. Flow of surface water into excavated areas shall be prevented.
- B. If portions of the work potentially impact upon wetland areas, the contractor shall fully comply with the erosion control measures required by any permits and this contract.
- C. The contractor shall be responsible during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumen and calcium chloride into adjacent surface waters. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.
- D. As a minimum, the following shall apply:
 - 1. All erosion control measures detailed on the plans.
 - 2. Drainage leaving the site shall flow to water courses in such a manner to prevent erosion.
 - 3. Loaming, seeding and mulching shall take place as soon after construction as practicable.
- E. Silt fence, "silt sock", or other approved means of siltation control, shall be constructed between the wetlands, pond, river or stream bank and the work area. See Plans for erosion control barrier details and the minimum limits. Provide a stockpile of additional erosion control material available for immediate use and repairs equivalent to at least 15 percent of the installed quantity.

3.02 PROTECTION OF STREAMS, DRAINS AND SWALES

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any stream, drain or swale from pollution by debris, sediment or other material, or from the manipulation of equipment and/or material, or from the manipulation of equipment and/or materials in or near such stream, drain or swale.
- B. The contractor shall not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water or any storm sewer. Water from dewatering operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water.
- C. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. Refueling shall be outside of the Buffer Zone.
- D. Compliance with all wetland regulations, in conjunction with wetland permitting.

3.03 PROTECTION OF LAND RESOURCES

- A. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the contractor's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- B. Any trees or other landscape feature scarred or damaged by contractor's equipment or operations shall be restored as nearly as possible to its original condition at the contractor's expense. The engineer will decide what method of restoration shall be used and whether

damaged trees shall be treated and healed, or removed and replaced. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than one (1) inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning, when approved by the engineer, shall be performed in an approved manner by experienced workmen with saws or pruning shears.

- C. The contractor shall be responsible for obtaining adequate storage, and other construction facilities, required temporarily in the performance of the work.
- D. All debris and excess materials will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

3.04 PROTECTION OF AIR QUALITY

- A. Burning - the use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust control - the contractor will be required to maintain all excavations, stockpiles, waste areas, borrow areas, and all other work areas free from dust which cause a hazard or nuisance to others.
- C. Stabilization - an approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the Engineer.
- D. Sprinkling - sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed areas at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the Engineer.
- E. Sweeping - all roads driveways and parking areas shall be maintained in a manner free from debris and dust from tracked soil. The road surface shall be swept when dust is excessive and at a minimum at the end of the work day to prevent dust from traffic.

3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

3.06 NOISE CONTROL

- A. The contractor shall make every effort to minimize noises caused by his operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with State and Federal regulations.

END OF SECTION

SECTION 02500

PAVING

PART 1- GENERAL

1.01 REFERENCES

- A. The GENERAL DOCUMENTS, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made part of this Section.
- B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this trade.

1.02 SCOPE

- A. The work of this Section consists of all concrete pavement work and related items as indicated on the Drawings and/or as specified herein and includes, but is not necessarily limited to, the following:
 - 1. Bituminous concrete roadway

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. The following items of related work are specified and included in the other Sections of the Specifications:
 - 1. Section 02200 Earthworks
 - 2. Section 02860 Reflectorized pavement markings
 - 3. Section 03300 Cast-in-Place Concrete

1.04 DEFINITIONS

- A. The following related items are included herein and shall mean:
 - 1. Standard MDPW Specifications: The Commonwealth of Massachusetts, Department of Public Works, Standard Specifications for Highways and Bridges, latest revisions.
 - 2. ASTM: American Society for Testing and Materials.
 - 3. AASHTO: American Association of State Highway and Transportation Officials.

1.05 SAMPLES AND SUBMITTALS

- A. At least thirty (30) days prior to intended use, the Contractor shall provide the following samples and/or submittals for approval in conformance with requirements of Section 01300, SUBMITTALS. Do not order materials until the Owner's approval of samples, certifications or test results have been obtained. Delivered materials shall closely match the approved samples.
 - 1. Design Mix: Submit a design mix for all bituminous concrete approval prior to ordering materials for the project.

PART 2- PRODUCTS

2.01 BITUMINOUS CONCRETE PAVEMENT

- A. At least thirty (30) days prior to intended use, the contractor shall provide the following samples and/or submittals for approval in conformance with requirements for roadway shall be Class I, Type I-1, furnished in accordance with Section M3, Paragraph 3.11.03 of the Standard Specifications, except as modified herein.

The master range composition tolerance for bituminous concrete materials shall be as follows:

TABLE A (As Modified)

Percent by Weight Passing Square Opening Sieves				
Standard Sieves	Base Course	Binder Course	Top Course	Dense Mix
2"	100	---	---	---
1"	55-80	100	---	---
3/4"	---	80-100	---	---
5/8"	---	---	100	---
1/2"	40-65	55-75	95-100	100
3/8"	---	---	80-100	80-100
No. 4	20-45	28-50	50-76	55-80
No. 8	15-33	---	37-54	48-63
No. 16	---	---	26-40	36-49
No. 30	8-17	8-22	17-29	24-38
No. 50	4-12	5-15	10-21	14-27
No. 100	---	---	5-16	6-18
No. 200	0-4	0-5	2-7	4-8
Bitumen	4-5	4.5-5.5	5.5-7.0	7-8

*For dense mix the maximum aggregate size allowable shall be 3/8".

1. Bituminous concrete for roadway shall consist of two (2) courses of bituminous concrete with a minimum finished pavement depth after rolling of four and a half inches (4 1/2").
 - a. The first course shall be three inches (3") in thickness consisting of one lift of Base Course bituminous concrete as shown above.
 - b. The top course shall be one and a half inches (1 1/2") in thickness consisting of one course of Top Course bituminous concrete as shown above.
- B. Base materials shall be specified under Section 02200, Earthwork. Depths shall be as shown on the Drawings.

2.02 TACK COAT

- A. Tack coat shall consist of asphalt emulsion, Type RS-1 as described in the Standard Specifications under M3.03.0 and M3.11.06.

PART 3- EXECUTION

3.01 BITUMINOUS CONCRETE PAVEMENT

- A. Make any corrections necessary to base material furnished and placed under Section 02200, EARTHWORK, to bring base course materials to sections and elevations shown on the Drawings where applicable.
- B. Place binder and top course bituminous concrete patches and leveling and overlay courses in conformance to application and depth requirements shown on the Drawings and specified herein. All depths referenced shall be compacted thickness. Bituminous concrete for binder course and top course shall be furnished and laid in accordance with Section 460 of the MHD Standard Specifications, and as directed herein and by the details.
- C. The Engineer may require the Contractor to remove and replace at his own expense any defective mix not conforming to the specified job mix formula.

- D. After the bituminous base has hardened, a tack coat of bituminous material as specified shall be uniformly applied by mechanical means to the base surface at the rate of 0.05 gallons per square yard immediately prior to laying the top course of new pavement. If new pavement has become soiled and dirty or for an overlay on milled pavement, prior to installing additional courses above it, it shall be thoroughly cleaned and have tack coat applied immediately prior to placing the additional course(s).
- E. If, at any time before the final acceptance of the work, any soft, imperfect places or spots shall develop in the surface, as such places shall be removed and placed with new materials and then compacted until the edges at which the new work connects with the old become invisible.

F. Bituminous Concrete Placement: General Requirements.

- 1. The mixtures shall be placed and compacted only at such times as to permit the proper inspection and checking by the Owner's Representative.
- 2. The mixtures shall be placed only upon approved surfaces that are clean and dry; and when weather conditions are suitable. No bituminous material shall be applied when the temperature is below 32 degrees F.
- 3. The temperature of bituminous concrete mixture when delivered to the site shall conform to the following, with a tolerance of plus or minus 20 degrees F.

<u>Air Temperature</u>	<u>Projected Delivery Temperatures</u>
35° F	300° F
40° F	290° F
65° F	280° F
90° F, or over	275° F

- 4. The contact surfaces of curbing, manholes, catch basins or other appurtenant structures in pavement shall be painted thoroughly with a thin uniform coating of tack coat just before any bituminous mixture is placed against them.
- G. Machine Spreading
- 1. The equipment for spreading and finishing shall be mechanical, self-powered pavers, capable of spreading and finishing the mixture true to lines, grade, with and crown by means of fully automated controls for both longitudinal and transverse slope.
 - 2. All mixtures shall be deposited in an approved mechanical spreader and immediately spread thereby, and then struck off in a uniform layer to the full width required and of such depth that each course, when compacted, shall have the required thickness and shall conform to the grade and cross section contour specified.
- H. Hand Spreading
- 1. Spreading by hand methods will be permitted only for particular locations in the work with because of irregularity, inaccessibility or other unavoidable obstacles that do not allow mechanical spreading and finishing.
- I. Compaction
- 1. After the paving mixture has been properly spread, compaction shall be obtained by the use of power rollers of approved design and weight per inch of roller. The roller shall be steel wheeled supplemented with pneumatic-tired rollers where required.
 - 2. Along curbs, structures and all places not accessible with a roller, the mixture shall be thoroughly compacted with mechanical tamping devices. The surface of the mixture after compaction shall be smooth and true to the established line and grade.
 - 3. The densities of the completed pavement shall be not less than 95% of the density obtained from laboratory compaction of a mixture composed of the same materials in like proportions.
- J. All areas of finished paving on which water stands or which are found excessively uneven shall be promptly brought to the correct grade and line. When tested with a ten foot (10') straightedge there shall be no deviation from true surface planes represented by the grade elevations shown on the drawings in excessive of one-quarter inch (1/4").

- K. Do any repair or patching to pavements outside the project site damaged by work of the contract. All patching work required shall be in accordance with requirements for new construction.
- L. No vehicular traffic of any kind shall be allowed to pass over the newly finished surface until it has had time to set. Two (2) hours will be considered sufficient time for the pavement to set in most cases, but this period may be reduced or extended by the Owner's Representative as required by weather or other reasons.

END OF SECTION

SECTION 02607
PRECAST CONCRETE STRUCTURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Modular precast concrete catch basin sections for storm drainage systems with lipped male/female joints, with masonry to lid frame, grate, anchorage and accessories.

1.3 RELATED WORK

- A. Section 02200 EARTH MOVING
- B. Section 03300 CAST-IN-PLACE CONCRETE

1.4 REFERENCES

- A. ASTM C1786-19 – Segmental Precast Reinforced Concrete Box Sections for Culverts
- B. ASTM C1577-20 – Precast Reinforced Concrete Monolithic Box Sections for Culverts

1.5 SUBMITTALS

- A. Shop Drawings: Indicate culvert sizes, configuration, elevations, and design strength.
- B. Product Data: Component construction, features, configuration, dimensions, joint gaskets.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 50 degrees F. (10 degrees C.) prior to, during and 48 hours after completion of masonry work

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Culvert shall be reinforced, precast concrete in accordance with ASTM C1577; gaskets in accordance with ASTM C923, structural design compliant with the design plans.

2.2 CONFIGURATION

- A. Section construction: Section shall be rectangular and shall have interlocking joints.
- B. Shape: Rectangular per minimum interior dimensions on plans.
- C. Clear inside dimensions: Unless otherwise noted, 16"W x 6' H.
- D. Design Depth: As indicated.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify items provided by other sections of work are properly sized and located.
- B. Verify that built-in items are in proper location, and ready for roughing into work.
- C. Verify clearance from other utilities, structures and obstructions.

3.2 PREPARATION

- A. Coordinate placement of inlet and outlet, toe walls and wing walls.

3.3 PLACING PRECAST SECTIONS

- A. Place base section, and level surface.
- B. Place sections on subgrade at the slope/elevation indicated on the plan.
- C. Coordinate with other sections of work to provide correct size, shape and location.

END OF SECTION

SECTION 02860
REFLECTORIZED PAVEMENT MARKINGS

PART 1 - DESCRIPTION

1.01 GENERAL

- A. This item of work consists of furnishing materials and the application of ReflectORIZED Pavement Markings in accordance with the Commonwealth of Massachusetts, Department of Public Works, Manual on Uniform Traffic Control Devices, current edition.

PART 2 - MATERIALS

2.01 GENERAL

- A. Materials shall be as specified under the particular payment item being used and shall meet the appropriate requirements specified in the following MDPW Subsections of Division III, Materials:

General Requirements for Paints and Protective Coatings	M7.00.00
White Thermoplastic ReflectORIZED Pavement Markings	M7.01.03
Yellow Thermoplastic ReflectORIZED Pavement Markings	M7.01.04
White Traffic Paint	M7.01.05
Yellow Traffic Paint	M7.01.06
Glass Beads	M7.01.07
White High Heat Rapid Drying Traffic Marking Material	M7.01.08
Yellow High Heat Rapid Drying Traffic Marking Material	M7.01.09
Striping Powder	M7.01.12
Preformed Permanent Plastic Pavement Markings or Legends	M7.01.18
Green Pavement Coatings	M7.01.21
Fast Drying White Water-Borne Traffic Paint	M7.01.23
Fast Drying Yellow Water-Borne Traffic Paint	M7.01.24

PART 3 - CONSTRUCTION METHODS

3.01 EQUIPMENT

- A. All equipment used for the application of pavement markings shall be of standard commercial manufacture. All other equipment and devices necessary for the application of the pavement markings and protection thereof and for the protection to the traveling public shall be as usually required for work of the type and shall be furnished by the Contractor.
- B. The pavement marking equipment shall be operated at the speed and in accordance with other requirements of the manufacturer, unless otherwise directed by the Engineer.
- C. Truck mounted equipment is approved for the application of pavement markings except in such cases where in the Engineer's judgment travel will be unreasonably delayed and/or the quality of the work performed by the machine is unsatisfactory.

3.02 LAYOUT OF WORK

- A. A schedule of pavement marking operations shall be furnished by the Contractor for the approval of the Engineer prior to the application of any pavement markings. This schedule must be in the office of the Engineer 7 days prior to the proposed date of application of any pavement markings.
- B. The Engineer will provide at a convenient location on the roadway a line of reference for use by the Contractor in establishing the location of markings. The line of reference shall be at a maximum of 50 foot intervals by means deemed satisfactory by the Engineer. All markings shall follow the line of reference without deviation. Any line deviation from the establishing control of incorrect width shall be reapplied, as directed by the Engineer in accordance with MDPW Subsection 860.62.

3.03 APPLICATION OF MARKINGS

Pavement markings shall be applied as follows:

Material	Material Application Temperature	Line Thickness	Reflectorized Bead Application
M7.01.05	115° F-125° F	15 mils	6 lbs/gal
M7.01.06	115° F-125° F	15 mils	6 lbs/gal
M7.01.08	180° F-195° F	15 mils	6 lbs /gal
M7.01.09	180° F-195° F	15 mils	6 lbs /gal
M7.01.10	40° F-120° F	15 mils	6 lbs/ gal
M7.01.11	40° F-120° F	15 mils	6 lbs/gal
M7.01.03	400° F-425° F	125-188 mils	1 #/10 SF Drop on
M7.01.04	400° F-425° F	125-188 mils	1 #/10 SF Drop on
M7.01.23	135° F-150° F	15 mils	6 lbs/gal
M7.01.24	135° F-150° F	15 mils	6 lbs/gal

Line thickness above the roadway surface shall meet the minimum requirements regardless of the type of surface on which it is applied.

- A. No thinners shall be used for the above listed pavement marking applications except in accordance with the manufacturer's specifications and at the direction of the Engineer.
- B. No paint or pavement marking material shall be heated above the temperature marked on the container.
- C. Markings shall be applied only in seasonable weather and in accordance with good painting practices. The surface shall be dry and free of sand, grease, oil or other foreign substances prior to the application. The Contractor shall prepare the surface to accept the application as part of this item, with no additional compensation. The Engineer will make the final determination for all of the foregoing.
- D. Bituminous concrete pavements shall have been in place for 48 hours prior to the application of pavement markings except preformed permanent plastic pavement markings which can be applied immediately. When it is necessary to expedite the flow of traffic, the Engineer may reduce the waiting period as is deemed necessary.
- E. If for any reason material is spilled or tracked on the highway, or any markings applied by the Contractor, in the Engineer's judgment, fail to conform to Subsection 860.61, because of a deviation from the desired pattern, the Contractor shall remove such material by a method that is not injurious to the roadway surface and is acceptable to the Engineer, clean the roadway surface and prepare the surface for a reapplication of markings and reapply the markings as directed without additional compensation for any of the foregoing corrective operations.
- F. The ambient (air) temperature for thermoplastic application is to be a minimum of 45°F and rising at the time of marking operations. If work has started and air temperatures fall below 45°F and continuous cooling is indicated, work shall be stopped. In cool weather conditions, temporary drops down to 40°F will be tolerated, providing temperatures also vary upwards. Sustained striping (greater than one hour) at 40° F shall not be allowed. Starting work at air temperatures lower than 45°F shall not be allowed.

3.04 PROTECTION OF MARKINGS

- A. Markings shall remain protected until sufficiently dry to bear traffic on highways that are open to traffic. Markings shall be protected by traffic cones of not less than 28" in height except in the case of markings which cure to a no track condition in 180 seconds or less in the latter case protection may be provided by a convoy of vehicles with suitable warning devices to warn overtaking or on coming traffic that the pavement marking operation is in progress.
 1. Broken Lines

- a. On tangents and on curves of 1000 foot radius or greater at least 1 cone shall be placed on every other bar. On curves of less than 1000 foot radius 1 cone shall be placed on every bar unless otherwise directed by the Engineer.
2. Solid Lines
 - a. On tangents and on curves of 1000 foot radius or greater, cones shall be spaced not over 80 feet apart and on curves of less than 1000 feet radius the spacing shall be not over 50 feet unless otherwise directed by the Engineer. On edge line adjacent to the median wider spacing may be used at the direction of the Engineer. In order to control the proper positioning of the cones during the drying period, the Contractor shall assign sufficient personnel as determined by the Engineer. Such control is dependent on the traffic density, cone widths, etc.

3.05 ACCOMMODATION OF TRAFFIC

- A. All warning signs and traffic control devices as required shall be in accordance with Section 01570 of these Specifications and MassDOT specifications.
- B. No work shall be done on this item on roadways open to traffic on Saturdays, Sundays, the day before a holiday or on a holiday except when otherwise specifically directed by the Engineer.
- C. Both lanes of two-lane highways shall remain open to traffic at all times. On multi-lane highways only one lane shall be closed to traffic at any time.
- D. Work under this item may be suspended, at the discretion of the Engineer, during peak traffic hours or at any other time when, in his judgment, traffic is being unduly hampered or delayed by the work, under this item.

END OF SECTION

SECTION 02900
LOAMING AND SEEDING

PART 1- GENERAL

1.01 SECTION INCLUDES

- A. The repair of trees and lawn surfaces damaged during the course of construction activities.
- B. New loam and seeded areas as required to repair from damages caused during construction or as determined by the Engineer.

1.02 RELATED SECTIONS

- A. Section 02200 – Earthwork

1.03 SUBMITTALS

- A. The name and qualifications of any landscape subcontractor to perform the Work in this Section.
- B. A schedule showing scheduled dates for all loaming and seeding Work.
- C. A test report before delivery of off-site topsoil. Soil analysis shall be made by an independent testing laboratory approved by the Engineer and shall indicate porosity, pH, organic content, mineral content, and percentages of silt, clay and sand.
- D. Manufacturer's Certificates of Compliance for each seed mixture proposed, stating botanical and common name, percentage by weight and percentage of purity, germination, and weed seed for each species.
- E. Samples of all material for inspection and approval upon the Engineer's request.

1.04 PROJECT/SITE CONDITIONS

- A. Do not spread seed when wind velocity exceeds five (5) miles per hour.
- B. Do not plant when drought, excessive moisture, or other unsatisfactory conditions prevail.
- C. Loaming and seeding shall be performed during normal planting seasons.

PART 2- PRODUCTS

2.01 MATERIALS

- A. TOPSOIL
 - 1. Topsoil shall be existing on-site, stripped and stockpiled material, or off-site fertile, friable, natural topsoil typical of topsoil of the locality. It shall be without admixture of subsoil or slag and free of stones, lumps, plants and their roots, sticks, clay, peat and other extraneous matter and shall not be delivered to the site or used while in a frozen or muddy condition.
 - 2. Topsoil shall meet the following analysis:

- a: Sieve Analysis

<u>Sieve Size</u>	<u>Percentage Passing</u>
3/4 inch	100%
No. 4 Sieve	90-100%
No. 200 Sieve	0-100%
 - b. Clay content of material passing No. 200 sieve not greater than sixty percent (60%), as determined by hydrometer tests.
 - c. pH 6.0 to pH7.
 - d. Organic content not less than five percent (5%), as determined by loss of ignition of moisture - free samples dried at one hundred (100) degrees Celsius.
 - e. Free of pests and pest larvae.
- B. Lime shall be ground limestone containing not less than eight-five percent (85%) calcium and magnesium carbonates and be ground to such fineness that at least fifty percent (50%) shall pass a 100-mesh sieve and at least ninety percent (90%) shall pass a 20-mesh sieve.
- C. Fertilizer shall be commercial mix free flowing granules or palletized fertilizer, 10-20-10 (N-P205-K20) grade for lawn and naturalized areas. Fertilizer shall be delivered to the site in original unopened containers each showing the manufacturer's guaranteed analysis, conforming to applicable state fertilizer laws. At least forty percent (40%) of the nitrogen in the fertilizer used shall be in slowly available (organic) form.
- D. SEED
- 1. Seed shall be labeled in accordance with USDA Rules and Regulations under the Federal Seed Act and applicable State seed laws. Seed shall be furnished in sealed bags or containers bearing the date of the last germination, which date shall be within a period of six (6) months prior to commencement of planting operations. Seed shall be from the same or previous year's crop; each variety of seed shall have a purity of not less than eight-five percent (85%), a percentage of germination not less than ninety percent (90%), and a weed content of not more than one percent (1%) and contain no noxious weeds. The seed mixtures shall consist of seed proportioned by weight, as follows:
 - a. Lawn Area Seed Mix

Pennlawn Creeping Red Fescue	40%
Kentucky Bluegrass	40%
Palmer Perennial Ryegrass	10%
 - 2. The seed shall be furnished and delivered pre-mixed in the proportions specified above. Seed shall be delivered in sealed containers bearing the dealer's guaranteed analysis.
- E. MULCH
- 1. Hay mulch shall be clean seed-free hay or straw.
 - 2. Wood cellulose fiber for hydro seeding shall be a specially processed cellulose fiber containing no growth or germination inhibiting factors. It shall be manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material become uniformly suspended to form a homogeneous slurry. When sprayed on the ground, the materials shall allow absorption and percolation of moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air dry weight content and not contain in excess of ten percent (10%) moisture.

PART 3- EXECUTION

3.01 APPLICATION

- A. Unless otherwise shown on the Drawings, topsoil shall be placed to a minimum compacted depth of four inches (4") on all parts of the site not covered with structures, pavement or sidewalk.

- B. For all areas to be seeded:
 - 1. Lime shall be applied at the rate of fifty (50) pounds per one thousand (1,000) square feet, or as determined by the soil analysis.
 - 2. Fertilizer (10-20-10) shall be applied at the rate of thirty (30) pounds per one thousand (1,000) square feet, or as determined by the soil analysis.
 - 3. Seed shall be sown at a rate recommended by the manufacturer.
 - 4. Hay mulch shall be hand spread by shaking out the hay for a loose layer over the seeded area, or mechanically chopped and spread at a rate of fifty (50) pounds per one thousand (1,000) square feet.
 - 5. Fiber mulch shall be applied at the rate of forty (40) pounds per one thousand (1,000) square feet.
- C. After the topsoil is placed and before it is raked to true lines and rolled, limestone shall be spread evenly over the loam surface and thoroughly incorporated by heavy raking to at least one-half (1/2) of the depth of the topsoil.
- D. The application of fertilizer may be performed hydraulically in one (1) operation with hydro seeding and fiber mulching. The CONTRACTOR is responsible for cleaning all structures and paved areas of unwanted deposits of the hydro seeded mixture.

3.02 INSTALLATION

- A. Obtain a good stand of grass, at least equal to the quality of lawn disturbed by the construction and the quality of lawn existing adjacent to the repairs, water and mow as necessary until the stand of grass is satisfactory.
- B. Previously established grades, as shown on the Drawings, shall be maintained in a true and even condition.
- C. In carrying out his excavation, salvage all existing sod and loam. This salvage material shall be machine-excavated and laid to one side.
- D. On backfilling, the salvage shall be placed during the latter stage of backfilling so as to allow for the placement of at least four inches (4") of fresh loam. The total depth of loam furnished on the Project shall be at least four inches (4").
- E. After topsoil has been spread, it shall be carefully prepared by scarifying or harrowing by hand raking. After stiff clods, lumps, roots, liters and other foreign material will be removed from the loamed area and disposed of by the CONTRACTOR. The area shall also be free of smaller stones in excessive quantities, as determined by the Engineer. The whole surface shall then be rolled with a hand roller weighing not more than one hundred (100) pounds per square foot of width, filling any settlements with additional loam for an even finished grade.
- F. Schedules for seeding and fertilizing must be submitted to the Engineer for approval prior to the Work. Seeding as specified herein shall be performed between the period of April 1 to May 31 or August 15 to October 1. Seeding during the period from October 2 to March 31 shall only be undertaken upon approval of the Engineer. Seeding during the period from June 1 to August 14 shall only be performed if irrigation is provided.
- G. When newly graded subgrade areas cannot be topsoiled and seeded because of season or weather conditions and will remain exposed for more than thirty (30) days, the CONTRACTOR shall protect those areas against erosion and washouts by whatever means necessary such as straw applied with a tar tack, wood chips or by other measures as approved by the Engineer. Prior to application of topsoil, any such materials applied for erosion control shall be thoroughly incorporated into the subgrade by disking. Fertilizer shall be applied prior to spreading of topsoil.
- H. On slopes, the CONTRACTOR shall provide against washouts by an approved method. Any washout which occurs shall be regraded and reseeded at the CONTRACTOR's expense until a good sod is established.

3.03 MAINTAIN AND PROVISIONAL ACCEPTANCE

- A. The responsibility for satisfactory results on work carried out under this Section rests entirely on the CONTRACTOR regardless of the prior approval of the materials and methods on the part of the Engineer.
- B. Keep all seeded areas watered, lawn areas mowed and in good condition, reseeding all seeded areas if and when necessary until a good, healthy, uniform growth is established over the entire area and conditions are acceptable. Place suitable signs and barricades.
- C. The Engineer will inspect all work for provisional acceptance at the end of a one (1) week period, upon the written request of the CONTRACTOR received at least two (2) days prior to the anticipated date of inspection. The maintenance period must occur immediately following seeding prior to October 15 and shall include a minimum of one (1) mowing.
- D. The inspection by the Engineer will determine whether maintenance shall continue in any area or manner. Maintenance shall include all regrading, refertilizing and reseeding which may be necessary in the opinion of the Engineer.
- E. After all necessary corrective work and clean-up has been completed, maintenance instructions have been received by the OWNER, and the OWNER has provisionally accepted the lawn areas, the CONTRACTOR's responsibility for maintenance of the lawns, or parts of the lawns ceases.
- F. All seeded areas shall be guaranteed by the CONTRACTOR for not less than one (1) full year from the time of provisional acceptance.
- G. Seeded areas that are not demonstrating satisfactory stands, as determined by the Engineer, shall be renovated, reseeded, and maintained meeting all requirements specified herein.

END OF SECTION

DIVISION 3

Concrete

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 GENERAL

- A. Submittals: Submit the follow evaluation reports for concrete materials and concrete mix designs.
 - 1. Written report to Engineer for each proposed concrete mix at least fifteen (15) days prior to start of concreting. Do not begin concrete production until mixes have been reviewed by the Engineer.
- B. Quality Assurance: Comply with provisions of ACI 301, "Specifications for Structural Concrete for Buildings," ACI 318, "Building Code Requirements for Reinforced Concrete," and CRSI "Manual of Standard Practice," except where more stringent requirements are indicated.
 - 1. Concrete Testing Service: The Owner will engage a testing agency to perform materials evaluation testing. The costs of testing and inspections will be the responsibility of the Contractor.

1.02 RELATED SECTIONS

- A. Section 02500 – Paving

PART 2 – PRODUCTS

2.01 PRODUCTS

- A. Form Materials: Furnish form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.
 - 1. Forms for Exposed Concrete Surfaces: Suitable panel-type material to provide continuous, straight, smooth, exposed surfaces.
- B. Reinforcing Materials: As follows:
 - 1. Deformed Reinforcing Bars: ASTM A 615, Grade 60, unless otherwise indicated.
 - 2. Welded Wire Fabric: ASTM A 185.
- C. Concrete Materials: As follows:
 - 1. Portland Cement: ASTM C 150, Type 1 or 2.
 - 2. Aggregates: ASTM C 33, size No. 7 for supported slabs.
 - 3. Water: Portable.
- D. Admixtures: Provide admixtures that contain not more than 0.1 percent chloride ions.
 - 1. Air-Entraining Admixture: ASTM C 260.
 - 2. Water-Reducing, Retarding, and Accelerating Chemical Admixtures: ASTM C 494.
- E. Related Materials: As follows:
 - 1. Waterstops: Bentonite strips.
 - 2. Vapor Retarder: Clear 8-mil-thick polyethylene.
 - 3. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
 - 4. Moisture-Retaining Cover: Waterproof paper, polyethylene film, or polyethylene-coated burlap, complying with ASTM C 171.
 - 5. Membrane-Forming Curing Compound: ASTM C 309, Type I. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.
- F. Mix Proportions and Design: Proportion mixes complying with mix design procedures specified in ACI 301.
 - 1. Design mixes, for exterior flatwork, to provide normal weight concrete with the following properties:
 - a. 4500-psi, 28-day compressive strength; water-cement ratio, 0.58maximum (non-air-entrained), 0.46 maximum (air-entrained).

- b. Refer to Division 2 specifications for concrete design mixes required for other purposes/uses.
- 2. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - a. Ramps, Slabs, and Sloping Surfaces: Not more than five inches (5").
 - b. Reinforced Foundation Systems: Not less than three inches (3") and not more than five inches (5").
 - c. Other Concrete: Not more than five inches (5").
- 3. Adjust mix designs when material characteristics, job conditions, weather, test results, or other circumstances warrant. Do not use revised concrete mixes until laboratory test data and strength results have been submitted to and reviewed by Engineer.
- G. Use water-reducing, accelerating, and retarding admixtures that have been tested and accepted in mix designs in strict compliance with manufacturer's directions.
- H. Job-Site Mixing: Use drum-type batch machine mixer, mixing not less than one and one half (1-1/2) minutes for one (1) cu. yd. or smaller capacity. Increase mixing time at least fifteen (15) seconds for each additional cu. yd.
- I. Ready-Mix Concrete: ASTM C 94.

PART 3 - EXECUTION

- A. Formwork: Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation, and position. Select form materials to obtain required finishes.
 - 1. Maintain formwork tolerances and surface irregularities within ACI 347 limits, Class A tolerances for concrete exposed to view and Class C tolerances for other concrete surfaces.
 - 2. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms.
 - 3. Clean and adjust forms prior to concrete placement. Apply form-release agents or wet forms as required. Retighten forms during concrete placement, if required, to eliminate mortar leaks.
- B. Vapor Retarders/Barriers: Place vapor retarder/barrier membrane for slabs on grade, with joints lapped six inches (6") and sealed.
- C. Reinforcement: Accurately position and support reinforcement, and secure against displacement. Locate and support reinforcement to maintain minimum cover with metal chairs, runners, bolsters, spacers, and hangers as required. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
 - 1. Install welded wire fabric in lengths as long as practicable; lap at least one full mesh and lace splices with wire.
- D. Joints: Locate and install construction, isolation, and control joints as indicated or required. Locate construction joints so they do not impair strength and appearance of structure. Place isolation and control joints in slabs-on-ground to stabilize differential settlement and prevent random cracking.
- E. Installation of Embedded Items: Set and build anchorage devices and other embedded items required for other work that is attached to or supported by cast-in place concrete. Use setting diagrams, templates, and instructions provided by others for locating and setting.
 - 1. Locate and support waterstops to prevent displacement.
- F. Concrete Placement: comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," for placing concrete in a continuous operation within planned joints or sections. Do not begin concrete placement until other affected work is completed.
 - 1. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping so that concrete is worked around reinforcement and other embedded items and into forms.

2. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placing, and curing.
 - a. In cold weather comply with ACI 306.
 - b. In hot weather comply with ACI 305.
- G. Finish of Formed Surface: As follows:
 1. Smooth-Formed Finish: Provide a smooth finish for concrete surfaces exposed to view and surfaces to be covered with a coating or covering material applied directly to concrete. Repair and patch defective areas, with fins and other projections completely removed and smoothed.
- H. Monolithic Slab Finishes: As follows:
 1. Nonslip Broom Finish: Apply nonslip broom finish to exterior concrete platforms, sidewalks, steps, and ramps, and elsewhere as indicated.
 - a. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route.
 - b. Match existing adjacent concrete finishes.
- I. Curing: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, apply an evaporation-control compound according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
 1. Begin initial curing as soon as free water has disappeared from exposed surfaces.
 2. Continue curing unformed concrete surfaces by water ponding, continuous fog spraying, continuously wetted absorptive cover, or by moisture-retaining cover curing. Cure formed surfaces by moist curing until forms are removed. Keep concrete continuously moist for not less than 72 hours for high-early strength concrete and seven (7) days for all other concrete.
- J. Field Quality Control: The Contractor will employ a testing agency to perform tests and to submit test reports. Sampling and testing for quality control during concrete placement may include the following, as directed by the Engineer.
 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - a. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete: additional tests when concrete consistency seems to have changed.
 - b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
 - c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
 - d. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
 - e. Compressive-Strength Tests: ASTM C 39; one set for the first pour plus one additional set as directed by the Engineer.
 2. The Contractor shall be responsible for notifying the testing laboratory when pours are to be made and shall cooperate with the testing laboratory concerning the storage of test cylinders and performance of their work.
 3. When frequency of testing will provide fewer than five (5) strength tests for a given class of concrete, conduct testing from at least (5) randomly selected batches or from each batch if fewer than five are used.
 4. Test results will be reported in writing to the Engineer, ready-mix producer, and Contractor within twenty-four (24) hours after tests. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure,

design compressive strength at twenty-eight (28) days, concrete mix proportions and materials, compressive breaking strength, and type of bread for both seven (7) day tests and twenty-eight (28) day tests.

5. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
6. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF SECTION

ATTACHMENTS

Notice of Award
Change Order
Certificate of Substantial Completion
State Tax Affidavit
Noncollusion Affidavit
Nondiscrimination Affidavit
Letter of Intent SOMWBA Certified Enterprise
SOMWBA Certified Enterprise (SCE) Participation Schedule
Statement of Compliance

NOTICE OF AWARD

Dated _____

TO: _____
(BIDDER)

ADDRESS: _____

Contact: **TOWN OF HANCOCK**
(Insert name of Contact as it appears in the Bidding Documents)

Project: **WHITMAN ROAD CULVERT REPLACEMENT PROJECT**

OWNER's Cract No. _____

You are notified that your Bid dated _____ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for _____

The Contract Price of your Contract is _____ Dollars (\$ _____).

[Insert appropriate data if Unit Prices are used. Change language for Cost-Plus contracts]

_____ copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award. _____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award, that is by _____.

1. Deliver to the OWNER _____ fully executed counterparts of the Contract Documents. [Each of the Contract Documents must bear your signature.]
2. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders, General Conditions and Supplementary Conditions.

CHANGE ORDER NO.

**Project: WHITMAN ROAD CULVERT REPLACEMENT PROJECT
Hancock, Massachusetts**

Contractor

You are directed to make the following changes in the Contract Documents.

Description:

Purpose of
Change order:

Attachments:

CHANGE ORDER CONT

Change in Contract Price

Original Contract Price \$ _____

Previous change orders \$ _____

Contract Price to Date \$ _____

Net Increase/ (Decrease) \$ _____
this change order

Contract Price with all \$ _____
approved changes

Approved by:

Change in Contract Time

Original Contract Time _____

Previous change orders _____

Contract Time to Date _____

Net Increase/ (Decrease) _____
this change order

Contract Time with all _____
approved changes

Approved by:

Town of Hancock _____ Date _____ Contractor _____ Date _____

Approved by:

Landscape Architect/Engineer _____ Date _____

**TOTAL CHANGE ORDERS CANNOT EXCEED
TWENTY FIVE PERCENT (25%) OF ORIGINAL BID**

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

OWNER _____
CONTRACTOR _____
Contract: _____
Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To _____
OWNER

And To _____
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____

Date

Engineer

By _____

(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____

Date

Contractor

By _____

(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____

Date

OWNER

By _____

(Authorized Signature)

NONDISCRIMINATION AFFIDAVIT

Project: WHITMAN ROAD CULVERT REPLACEMENT PROJECT
HANCOCK, MASSACHUSETTS

Commonwealth of Massachusetts
County of BERKSHIRE

The undersigned being duly sworn, deposes and states that he is the sole owner, partner, president, treasurer, or other duly authorized agent or official of

Name of bidder as appearing in submitted proposal

Address of bidder

Telephone number of bidder

Social Security
or Federal ID #

and certifies, **UNDER THE PENALTIES OF PERJURY**, that to the best of his knowledge and belief, said bidder has not, either directly or indirectly, discriminated against any employee or applicant for employee because of his/her race, color, creed, age, sex or national origin. Additionally, bidder has complied with all provisions and requirements of the Equal Opportunity, Antidiscrimination and Affirmative Action Programs.

Signed under penalties of perjury

Title Date

Sworn to before me this _____ day of _____, 20 _____

Notary Public
My commission expires
_____, 20 _____

LETTER OF INTENT SOMWBA CERTIFIED ENTERPRISE

This form is provided for SOMWBA Certified Enterprises (SCEs) being utilized as MBEs and WBEs on this contract.

This form must be completed by each SOMWBA Certified Enterprise and submitted by the bidder using the SCE. General bidders or filed sub-bidders that are SCEs may omit this form.

TO: General Bidder Name: _____ Street Address: _____ City/Town: _____ Phone: _____ Fax: _____	FROM: SCE Name: _____ Street Address: _____ City/Town: _____ Phone: _____ Fax: _____
---	--

RE: State-Aided Project _____
 (Name of Housing Authority and Project Number)

1. My company intends to perform work in connection with the above project as:

an individual a corporation a partnership
 a joint venture with _____
 other (explain) _____

2. My company is certified by SOMWBA as a MBE WBE in the following categories:

WARNING:
 Misrepresenting your firm's SOMWBA certification may result in disqualification from this and other DHCD funded projects.

3. My company has not changed its ownership, control, or management in any ways that affect certification since obtaining SOMWBA certification.

4. My company understands that if your company is awarded the contract, your company intends to enter into an agreement to perform the work described below for the price indicated. My company also understands that your company will make substitutions only as allowed by Article 15 of the General Conditions for the above project.

5. My company intends to _____
 (Brief description of work)

This Work includes: Labor & Materials Labor Only Materials Only

for a total amount of _____ dollars (\$ _____)

Date: _____

 (Authorized signature of SCE)

 Name and Title

SOMWBA CERTIFIED ENTERPRISE (SCE) PARTICIPATION SCHEDULE

This form must be submitted by the apparent low general bidder within five working days of receipt of bids.

Filed subbidders who are SOMWBA certified MBEs or WBEs or filed subcontractors who intend to subcontract with a SOMWBA certified MBE or WBE may submit this form with their Filed sub-bid.

Letters of Intent from all SCEs listed must be submitted with this Participation Schedule.

State-Aided Project _____
(number) (City or Town)

The undersigned intends to subcontract with the following firms for the listed work and dollar amounts:

Name of Company	Description of Work	MBE or WBE	Supplier or Subcontractor	Dollar Value of Participation
1. _____	_____	_____	_____	\$ _____
2. _____	_____	_____	_____	\$ _____
3. _____	_____	_____	_____	\$ _____
4. _____	_____	_____	_____	\$ _____
5. _____	_____	_____	_____	\$ _____
6. _____	_____	_____	_____	\$ _____
7. _____	_____	_____	_____	\$ _____
8. _____	_____	_____	_____	\$ _____
9. _____	_____	_____	_____	\$ _____
10. _____	_____	_____	_____	\$ _____

Dollar Value of MBE Commitment: \$ _____

Dollar Value of WBE Commitment: \$ _____

Total Dollar Value Commitment: \$ _____

Date _____

(Name of General Contractor)

(Authorized Signature)

(Address)

(City, State & Zip Code)

SOMWBA CERTIFIED ENTERPRISE (SCE) PARTICIPATION SCHEDULE

This form must be submitted by the apparent low general bidder within five working days of receipt of bids.

Filed subbidders who are SOMWBA certified MBEs or WBEs or filed subcontractors who intend to subcontract with a SOMWBA certified MBE or WBE may submit this form with their Filed sub-bid.

Letters of Intent from all SCEs listed must be submitted with this Participation Schedule.

State-Aided Project _____
(number) (City or Town)

The undersigned intends to subcontract with the following firms for the listed work and dollar amounts:

Name of Company	Description of Work	MBE or WBE	Supplier or Subcontractor	Dollar Value of Participation
1. _____	_____	_____	_____	\$ _____
2. _____	_____	_____	_____	\$ _____
3. _____	_____	_____	_____	\$ _____
4. _____	_____	_____	_____	\$ _____
5. _____	_____	_____	_____	\$ _____
6. _____	_____	_____	_____	\$ _____
7. _____	_____	_____	_____	\$ _____
8. _____	_____	_____	_____	\$ _____
9. _____	_____	_____	_____	\$ _____
10. _____	_____	_____	_____	\$ _____

Dollar Value of MBE Commitment: \$ _____

Dollar Value of WBE Commitment: \$ _____

Total Dollar Value Commitment: \$ _____

Date _____

(Name of General Contractor)

(Authorized Signature)

(Address)

(City, State & Zip Code)

STATEMENT OF COMPLIANCE

Project: **WHITMAN ROAD CULVERT REPLACEMENT PROJECT**
Town of Hancock, Massachusetts

Commonwealth of Massachusetts
County of BERKSHIRE

I do hereby state, UNDER PENALTIES OF PERJURY, that I pay or supervise the payment of persons employed by:

Name of contractor or subcontractor

Address of contractor or subcontractor

On the above stated project and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of MGL Chapter 149 Sections 27/27A.

Signed under penalties of perjury

Title

Date

In accordance with MGL Chapter 149, Section 27B "Each such contractor, subcontractor or public body shall furnish to the Commissioner of Labor and Industries within fifteen days after completion of its portion of the work, a statement executed by the contractor, subcontractor or public body or by any authorized officer or employee of the contractor, subcontractor or public body who supervises the payment of wages.

APPENDIX

APPENDIX A-GEOTECHNICAL REPORT

APPENDIX B-ECOLOGICAL RESTORATION ORDER OF CONDITIONS

APPENDIX C-EXISTING CONDITIONS PHOTOS

APPENDIX D-PREVAILING WAGE RATES

APPENDIX E-PROJECT DRAWINGS

APPENDIX A
GEOTECHNICAL REPORT

GEOTECHNICAL ENGINEERING REPORT ADDENDUM
WHITMAN ROAD NEW BOX CULVERT

located at
Whitman Road
Hancock, MA 01267

prepared for:
Guntlow & Associates
Attn: Mr. Vince Guntlow, PE
55 North St
Williamstown, MA 01267

prepared by:
Gifford Engineering
Gregory P Gifford PhD PE
March 2026
File No. 2474



GEOTECHNICAL ENGINEERING REPORT ADDENDUM

New Box Culvert
Whitman Road
Hancock, MA 01267

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INTRODUCTION:

This is a geotechnical engineering report on a subsurface investigation for a new box culvert for a stream crossing on Whitman Road in Hancock, MA. It is reported that the existing steel culvert is undersized and in poor condition and will be replaced. Our services are outlined in the Gifford Engineering, GE, proposal dated November 22, 2024 as authorized by the client.

Two soil borings have been completed by Martin Geo Environmental, located in Belchertown, MA. A location diagram is included with the boring logs and lab test results in the appendix.

The existing culvert is located along a stream that exits a beaver pond and is about 500 feet southeast of the intersection of Hancock Road (Route 43) and Whitman Road. The pond occupies the northeast quadrant of the intersection. Google Maps identifies the stream as the Kinderhook Creek. The 6 to 8 feet wide stream flows southward from the existing culvert with a metal grate covering the inlet end of the culvert.

The cross section for the new precast concrete box culvert will be 6 feet deep by 16 feet wide (inside dimensions) and about 50 feet long. The inside of the culvert will be buried about 2 feet with native soils creating a natural streambed. There will be no wingwalls, instead the ends of the culvert will be tapered down to match the side slopes of the embankment.

Environmental and hydrologic issues are beyond the scope of this report and should be addressed by a qualified engineering firm(s).

This report is intended to; 1) present the findings obtained during the investigation, 2) discuss the analysis of the data gathered during the investigation, and 3) make recommendations for the design and construction of the feasible foundation systems to support the culvert as well as the earthwork requirements of the projects. The AASHTO LRFD evaluation was performed by Mr. Vernon Hoffman, PE, and is appended.

SUBSURFACE INVESTIGATION PROCEDURES:

The borings were advanced with a truck-mounted drill rig advancing a 4.25-inch inside diameter hollow-stem auger. Continuous samples were obtained to 8 feet and at 5 feet increments thereafter by the split-spoon sampling technique in conjunction with standard penetration testing as specified by ASTM D 1586. The number of blows required to advance the sampler two feet, in six-inch increments is recorded on the boring logs. The blow count or N value (blows per foot) is numerically equal to the summation of the middle two.

Samples were examined at the boring site, sealed in glass jars, and taken to the laboratory. The samples were then visually classified and subjected to appropriate testing.

The water level within the boreholes was measured at various times during the investigation. The depth to the water level is affected by boring procedures and may require some period of time to equilibrate. The measurements of water level are given on the boring logs. Borings were backfilled

with cutting immediately. There may be minor settlement of the borehole locations, the client should repair this settlement for safety.

The site was visited by the geotechnical engineer to observe conditions and read the geology. The borehole locations were assigned and laid out by Guntlow & Associates. Overhead wires prevented B-2 from being drilled so B-3 was advanced at the location shown on the boring location diagram.

LABORATORY WORK:

In addition to field identification recorded by the drillers, all samples were examined by a geotechnical engineer. The samples were visually classified using the Unified Soil Classification System as specified by ASTM D 2487. The resulting classification symbol and description are indicated on the soil boring logs. Because the visual classification technique is approximate, variations of a few percent of a particular grain size can result in an inaccurate classification. When inaccurate classification would have a large impact on the recommendations reported herein, further testing was performed or is recommended.

Grain size distribution was measured on samples of granular material by washed mechanical techniques as specified by ASTM D 421, D 422, and D 1140 and the results are included in the appendix.

SITE EVALUATION:

The existing 36 inch diameter steel culvert is located in a rural area along Whitman Road, approximately 500 feet southeast of the intersection with Hancock Road (Route 43). The pavement in the vicinity of the culvert is in fair to good condition. The area to the south, north, and east of the culvert is meadow or woods. To the northeast of the intersection of Whitman and Hancock Roads is a beaver pond, the source of the Kinderhook Creek that flows southward through the culvert. To the west of the culvert the Hancock Elementary School fronts Hancock Rd. There is a paved parking area situated to the north of the inlet end of the new culvert on the east side of the road.

The ground surface, partially frozen pond, and parking area were covered with about 10 inches of snow at the time of the site visit. The inlet of the culvert is covered with a metal grate to prevent debris from entering the culvert. The 36 inch diameter dimension of the steel pipe culvert was provided by the client. Access down the bank to the culvert to confirm that dimension was not safe with the snow and ice cover. Water was flowing from the pond through the culvert into the Kinderhook Creek that meanders to the southeast beyond the outlet end of the culvert. The stream is about 6 to 8 feet wide and with about one foot of water depth.

SUBSURFACE EVALUATION:

The boring logs indicate the specific subsurface conditions at each boring location. The subsurface conditions can vary significantly between locations. To aid in the evaluation, a general description of the subsoil conditions has been prepared.

The borings were advanced off the pavement in the shoulder area. At boring B-1, the soil encountered is primarily moist sand with varying amounts of silt, clay, and gravel and occasional rock fragments. At a depth of 24 to 29 feet there is a layer of nonplastic silt with some sand and trace gravel and clay. The soil column turns wet at a depth of 2 feet and extends to a depth of at least 32 feet, the depth of the boring. Based on blow counts this soil is loose to dense

At B-3 the ground is underlain with moist sand with varying amounts of silt and gravel and extends to a depth of at least 32 feet. The soil column turned wet at a depth of 3 feet. There is a layer of wet nonplastic silt and sand with trace gravel from 2 to 4 feet. A layer of black wet peat was encountered at a depth of about 6 to 9 feet. Subjacent to the peat layer, silt with varying amounts of sand and gravel were encountered to about 18 feet deep. Based on blow counts the granular sand layers are loose to medium dense, the peat layer is medium stiff, and the silt soil is soft to about 13 feet and becomes loose nonplastic to 18 feet. It should be noted that this boring was not along the alignment of the new culvert because of overhead power lines.

Based on the testing performed and experience with similar soils, the following design parameters are recommended.

Material	Unit Weight (pcf)		Friction angle (degrees)	Unc. compressive strength (psf)
	Moist	Saturated		
Sand	110	120	32	---
Nonplastic Silt	110	120	26	---
Peat	25 to 45	70 to 90	20*	---

*Based on experience with similar deposits. All peat under the new culvert shall be removed and replaced with controlled fill.

SUBSURFACE WATER:

The water level measurements taken during the subsurface investigation are presented on the boring logs. This information is coupled with the estimated degree of saturation of the samples to yield an approximate groundwater level. The depth to groundwater is about 2 to 3 feet, similar to the surface elevation of the nearby pond.

Low permeability soils may result in perched water tables at elevations above the phreatic water surface. The flow rates and quantity of water associated with these water tables will however be small to moderate. Seasonal changes in the phreatic water surface and perched water tables are expected due to variable precipitation and runoff.

GEOTECHNICAL CONSIDERATIONS:

This section addresses the geotechnical considerations for the sitework, culvert foundations, and construction procedures which are recommended. Professional services for this investigation are reported and recommendations made in accordance with generally accepted geotechnical

engineering practice. An attachment entitled “Important Information about Your Geotechnical Engineering Report” is prepared by the ASFE, Association of Engineering Firms Practicing in the Geosciences should be reviewed and understood. It contains guidelines and outlines the context in which the report should be used.

It should be understood that this report is based on information provided to us and the results of a limited number of borings. The borings were advanced at specific locations and the overburden soils sampled at limited and specific depths. Conditions are known at these locations to the depths investigated. Conditions may vary at other locations and depths and the differences may impact the conclusions reached and recommendations made. For these reasons it is strongly recommended that Gifford Engineering, GE, be retained to provide construction observation and testing services. No warranty expressed or implied is made.

As the design progresses and plans become finalized, GE should be given the opportunity to review them and evaluate the effects that changes made during the design may have on the recommendations made herein. There may have been interpretations of the geotechnical report during the design, which may or may not have been accurate. Interpretations should be coupled with correspondence directed to the geotechnical engineer to avoid confusion.

Per Chapter 16 of the Massachusetts Building Code, the site class is D. The following values are provided at the SEAC website, confirmed in Section 1615 of the Code, and are recommended for design. The soils encountered at this site are not considered liquefiable in the event of an earthquake.

	Short Period (0.2 Sec)	Long Period (1.0 Sec)
Mapped Spectral Response Acceleration	17.3%g	6.8%g
Site Coefficient	1.6	2.4
Maximum Earthquake Spectral Response	27.6%g	16.4%g
Design Earthquake Spectral Response	18.4%g	10.9%g

The subsurface conditions revealed during this investigation are adequate to support the proposed construction. The proposed 4-sided precast concrete box culvert is 6 feet high by 16 feet wide and about 50 feet long, inside dimensions. The invert of culvert will be buried with about 2 to 3 feet depth of native soils leaving 3 to 4 feet clear space for water flow. The ends of the culvert will be tapered to match the side slopes of the embankment. It is reported that the new culvert will be located north of the existing culvert. It will probably be installed while the flow is channeled thru the existing culvert. After completion, the existing culvert will be removed and roadway replaced and disturbed areas returned to a previous or natural condition.

Sitework:

It is understood that the culvert will be installed on a stabilized subgrade, probably a layer of crushed stone, M2.01.0 or ASTM 57 stone or equal. This layer should be separated from underlying native soils with a woven geotextile such as Mirafi 600X or equal. The engineers should

address possible scour protection and ensure that the culvert will be protected from scour.

Installation of the new culvert will require diversion of the flow in the stream which will probably occur thru the existing culvert. If necessary, the small stream can be diverted with a pump and temporary hoses or piping. The flow can also be diverted or channelized in an oversized excavation at the new culvert, while the culvert is installed adjacent to the temporary channel. The diversions should be designed by a qualified engineer, who should make provisions to handle large storm events that may occur during the construction process. Some designs will let the site flood during a large rainfall event and shut down the project for a few days. All construction work should be performed in the dry by a contractor experienced in culvert replacement.

There was a black wet peat layer encountered at a depth of 6 to 9 feet in B-3, which was not advanced along the alignment of the new culvert. The culvert subgrade should be probed to confirm that there is no peat under the new culvert subgrade. The probes can be test pits that are excavated below the subgrade and are observed and logged by the geotechnical engineer. These pits should be replaced with controlled fill. If peat is identified, the engineers should evaluate its removal and decide on a course of action.

After completion of the culvert, the net change in soil bearing stress at the bottom of the culvert will be about the same as today. The additional weight of the concrete culvert will approximately balanced the weight of air and water within the culvert. However, if peat is encountered along the alignment, it recommended that the peat be removed and replaced with controlled fill.

The culvert subgrade should be proof rolled with a minimum 5-ton static weight vibratory roller making at least 6 passes. The proof roll should be observed by the geotechnical engineer who will judge suitability of the soils to support the structure. Soft wet soils may pump, weave, or rut under the proof roll and the engineer will recommend stabilization techniques.

The following stabilization techniques may be recommended depending upon the site specifics encountered. The first alternative stabilization technique involves a separation or reinforcement geotextile applied to the subgrade and covered with a layer of clean granular fill or crushed stone. The thickness of this layer usually varies between 1 and 3 feet as dictated at the site. The soil should be compacted with a vibratory roller to obtain a stable working mat. It may be necessary to limit vibration during compaction of initial lifts.

A second alternative stabilization technique involves rolling or pounding coarse fill into the upper reaches of a soft spongy subgrade. This coarse material could be rip rap, slag, cobbles, or crushed rock and must be completely embedded to ensure minimal void spaces.

A third alternative stabilization technique involves lowering the groundwater table thereby increasing the stability of the subgrade. The dewatering system may employ temporary or permanent drainage. Tile drains or sump pump dewatering systems may be designed to lower the water table.

Controlled Fill:

A controlled fill can be constructed of granular fill in horizontal lifts not exceeding 9 to 12 inches in loose thickness. If hand operated compaction equipment is used, lift thickness should be limited to 4 to 6 inches. All lifts should maintain a minimum density of 95 percent modified Proctor density, as specified by ASTM D 1557. A material that meets the requirements of Mass Highway M1.02.0, M1.03.0 Type B or C, M1.03.1, M2.01.7 is recommended. The use of M2.01.0 Crushed Stone or ASTM 57 Stone is an acceptable alternative. Excerpts of the Mass Highway specifications are included in the appendix.

Backfill which has been designed to resist structural loading such as pavements, sidewalks, or lateral forces should also meet the compaction requirements above. The requirements of compaction for fill beneath ancillary green space areas can be lessened to 90 to 92 percent of the cited standard, if desired.

The native soils may be suitable for reuse as controlled fill if they are primarily sand and gravel, do not contain deleterious materials, meet the requirements above, and can be readily compacted.

A Quality Assurance, Quality Control, and Special Inspection program should be developed and overseen by the geotechnical engineer of record. Conductance of this quality assurance program is required for proper execution and confirmation that the recommendations contained in this report are followed. Conductance of this program does not relieve the contractor of his responsibility to construct the project in accordance with the plans and specifications, Building Code, and normal industry standards.

Culvert Foundation Recommendations:

A rectangular box culvert can bear on a crushed stone bearing layer because the bottom of the structure acts as the foundation. The stone can be Mass Highway M2.01.0 or ASTM 57 Stone or approved equal. The rigid box spreads the load induced by the culvert, soil, water, overlying soil, pavement, and traffic. The culvert can be backfilled with granular controlled fill such as M1.03.0 Type B or C or M1.03.1. The granular soils encountered may be suitable for use as backfill if approved by the geotechnical engineer.

Care should be exercised during excavation so as not to loosen the subgrade soils. If loosened the soil should be recompacted then proof rolled or removed and replaced with controlled fill or crushed stone.

The foundation of the culvert (its bottom) can be designed for a maximum net allowable bearing capacity of 1.0 TSF. Exterior footings should maintain a minimum 4.0 feet of cover from frost action. Protection from scour should be included in the design. The AASHTO LRFD evaluation was performed by Mr. Vern Hoffman, PE, and is appended.

A controlled freely draining backfill is recommended. This material should extend a horizontal

dimension at least two-thirds the depth of the backfill. The surface material and grade should allow minimal water infiltration. The properly backfilled foundation wall can be designed to resist a linearly increasing soil pressure (equivalent hydrostatic) equal to the unit weight of the soil times the appropriate coefficient in psf per vertical foot. For resistance to sliding, a coefficient of friction for the interface between native soils and concrete of 0.45 is recommended.

Recommended lateral earth pressure coefficients based on Rankine Theory are presented. Values are ultimate and a factor of safety should be applied, particularly to passive. Full passive resistance is mobilized only after significant movement.

Soil	At Rest	Active	Passive
Sand	0.5	0.33	3.0
Silt	0.56	0.39	2.57

CONSTRUCTION RECOMMENDATIONS:

All excavations of more than 4 feet should be braced or laid back as necessary to prevent sloughing of the sidewalls. Site safety as dictated by regulating organizations such as OSHA and the Massachusetts Department of Labor should be addressed and maintained during construction by the contractors.

Special inspections and reports that are required by Chapter 17 of the Massachusetts Building Code should be performed by a qualified engineer to ensure compliance with the recommendations of this report.

Excavations adjacent to existing foundations or improvements should not extend below them without adequate sheeting, bracing, and/ or underpinning having been installed. This should be designed and stamped by a registered professional engineer.

Temporary dewatering may be necessary in excavation or low areas if groundwater is encountered or during wet periods. Water from precipitation should be removed from excavations immediately rather than allowed to percolate into the subgrade.

Temporary access roadways may be necessary during wet or thaw weather. This may include geofabric and/or coarse fill.

All subgrades and fill material should be kept from freezing during construction. Water, snow, and ice should not be allowed to collect in low areas and excavations.

Some obstacles including boulders or rubble may be encountered in excavations. If necessary, rippers, breaking tools, and drilling and blasting may be required to remove such materials.

All proof rolling operations should be witnessed by a qualified geotechnical engineer. All subgrades should be inspected by a qualified geotechnical engineer.

APPENDIX:

General Qualifications
AASHTO LRFD Evaluation
Location Diagrams
Boring Logs
Laboratory Test Results
SEAC Design Maps Summary Report
Mass Highway Specification Excerpts
General Notes
Unified Soil Classification System
Important Information About Your Geotechnical Engineering Report

GENERAL QUALIFICATIONS:

This report has been prepared to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope of the project and location described herein, and description of the project represents my understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the proposed facilities, as outlined in this report, are planned, the geotechnical engineer should be informed so the changes can be reviewed and the conclusions of this report modified in writing, if necessary.

It is recommended that all construction operations dealing with earthwork and foundations be inspected by an experienced geotechnical engineer to ensure that the design requirements are fulfilled in the actual construction. If desired, the geotechnical engineer would review the plans and specifications when they have been prepared to ensure that the geotechnical recommendations have been incorporated into the design, plans, and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and/or test pits performed at the locations indicated on the location diagram and from any other information discussed in the report. This report does not reflect any variations which may occur between these locations. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between subsurface investigation locations and also such situations as groundwater conditions vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.

GEOTECHNICAL REPORT

**For: Report Review
Whitman Road Box Culvert
Hancock, Massachusetts**

File Number: 6558

**Prepared for: Gifford
Engineering, Schenectady, N.Y.**

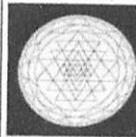
Prepared by:



**Vernon C. Hoffman
Massachusetts PE # 25200**



Dated: March 10, 2026



**VERNON HOFFMAN PE
SOIL AND FOUNDATION
ENGINEERING
21420 BAY VILLAGE DR., UNIT 212
FORT MYERS BEACH, FL 33931**

INTRODUCTION:

The Review for the proposed replacement of New Box Culvert on Whitman Road, in Hancock, Massachusetts, has been completed. Spreadsheets were used to estimate the settlement (Service Limit State I) and Factored, Net, Bearing Resistance or bearing capacity (Strength Limit State I) of the foundations for the proposed culvert. These calculations have been included in the appendix of this report.

The proposed concrete box culvert interior opening will be 16 feet wide by 6 feet high and 50 feet long. No wing walls are included in this design. Given that the foundation width is 18 feet wide in exterior dimension and the culvert base will have some flexibility and not function as a rigid foundation like typical footing foundations I have analyzed the foundation for the purposes of settlement and bearing capacity as two strip foundations loads with a foundation base width up to 8 feet wide with a design factored load of 1 tsf. This is conservative and avoids a more complex analysis as a flexible mat foundation rather than a conventional rigid foundation analysis.

I applied a resistance factor of $\phi = 0.45$ to the R_n or nominal loads to estimate the maximum or factored resistance ($\phi \times R_n$). I estimated the settlement for a range of applied factored loads and depths (Service Limit State I) using a resistance factor of 1.0.

I have assumed the settlement tolerances are normal. Settlement tolerances are considered to include up to 1 inch of total settlement and 3/4 inches along the culvert side walls. The scope of my services has been limited to a review of the Gifford Revised Engineering report of March, 2026, with regard to the application of AASHTO LRFD design standards for bridges and to provide the settlement and bearing capacity calculations using AASHTO LRFD resistance factors.

FIELD INVESTIGATION:

I have used the log of soil boring B-1 included in the Gifford report. The standard penetration values were used to estimate the pressure meter moduli for the settlement analysis.

SITE CONDITIONS:

The stream is described as being 6 to 8 feet wide.

SUBSURFACE CONDITIONS:

The subgrade soils after removal of any shallow organic soils are loose to medium dense silty sands. The soils become dense below a depth of about 20 feet.

I have used a design friction angle of 32 degrees for estimation of the Factored Net Bearing Resistance under strength limit state I. The Vesic bearing capacity factors were based on $\phi = 32$ degrees.

I have used the standard penetration values from boring B-1 to estimate a pressure meter modulus in tons/ft² at 4 X N (blows/ft) to estimate settlements under Service Limit State I.

GROUNDWATER CONDITIONS :

The groundwater levels will follow the stream levels seasonally.

Some fluctuation in hydrostatic groundwater levels and perched water conditions should be anticipated with variations in the seasonal rainfall, surface runoff, and the stream levels.

CALCULATIONS:

Service I Limit State:

Global or Overall Stability is to be checked as part of the Service I limit state and refers to the resistance to a shear movement or failure surface that might pass beneath the proposed foundation. Stability with the existing site terrain and proposed construction does not appear to be an issue.

Extreme Event Limit States: (Seismic)

The seismic analysis of the culvert as a Seismic Design Category A structure is not required.

RESULTS OF CALCULATIONS FOR FACTORED BEARING RESISTANCE AND ESTIMATED SETTLEMENT:

These analyses have been included in the appendix. The factored bearing resistance values are less than the factored loads for the design factored loads.

The estimated settlements are less than the tolerable limits for the factored design loads.

Culvert Design on Whitman Road
Hancock, Massachusetts

Job Number 6558

CONTENTS OF APPENDIX:

1. General Notes
- 2 Boring Locations.
3. Boring Logs
4. Calculations
5. General Qualifications

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS

SS	: Split-Spoon— 1 ^{3/4} " I.D., 2" O.D., except where noted
S	: Shelby Tube — 2" O.D., except where noted
PA	: Power Auger Sample
DB	: Diamond Bit — NX: BX: AX:
CB	: Carboloy Bit — NX: BX: AX:
OS	: Osterberg Sampler — 3" Shelby Tube
HS	: Housel Sampler
WS	: Wash Sample
FT	: Fish Tail
RB	: Rock Bit
WO	: Wash Out

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon, except where noted

WATER LEVEL MEASUREMENT SYMBOLS

WL	: Water Level
WCI	: Wet Cave In
DCI	: Dry Cave In
WS	: While Sampling
WD	: While Drilling
BCR	: Before Casing Removal
ACR	: After Casing Removal
AB	: After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.

CLASSIFICATION

COHESIONLESS SOILS

"Trace"	: 1% to 10%	
"Trace to some"	: 10% to 20%	
"Some"	: 20% to 35%	
"And"	: 35% to 50%	
Loose	: 0 to 9 Blows	} or equivalent
Medium Dense	: 10 to 29 Blows	
Dense	: 30 to 59 Blows	
Very Dense	: ≥ 60 Blows	

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, then clay becomes the principle noun with the other major soil constituent as modifiers: i.e., silty clay. Other minor soil constituents may be added according to classification breakdown for cohesionless soils; i.e., silty clay, trace to some sand, trace gravel.

Soft	: 0.00 — 0.59 tons/ft ²
Medium	: 0.60 — 0.99 tons/ft ²
Stiff	: 1.00 — 1.99 tons/ft ²
Very Stiff	: 2.00 — 3.99 tons/ft ²
Hard	: ≥ 4.00 tons/ft ²

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- Wait The Required Time
- Confirm Utility Response
- Respect the Marks
- Dig With Care

Unauthorized alterations or additions to this plan is a violation of Section 7209 of the New York State Education law. Copies of this plan not bearing the Original seal shall not be considered valid copies. This Plan was prepared for the parties and purposes indicated hereon. Any extension of the use beyond the purpose exceeds the scope of the engagement.

Date	Revisions

- GENERAL NOTES:
- PLAN PROVIDED BY GUNTLOW & ASSOCIATES, INC.
 - BORING LOCATIONS LAID OUT BY GUNTLOW & ASSOCIATES, INC.

LEGEND

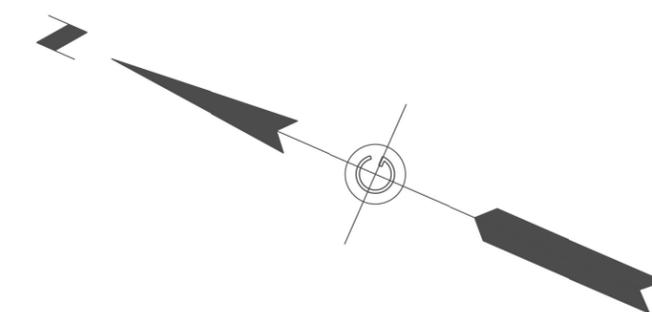


NEW BOX CULVERT
WHITMAN ROAD
HANCOCK, MA 01267

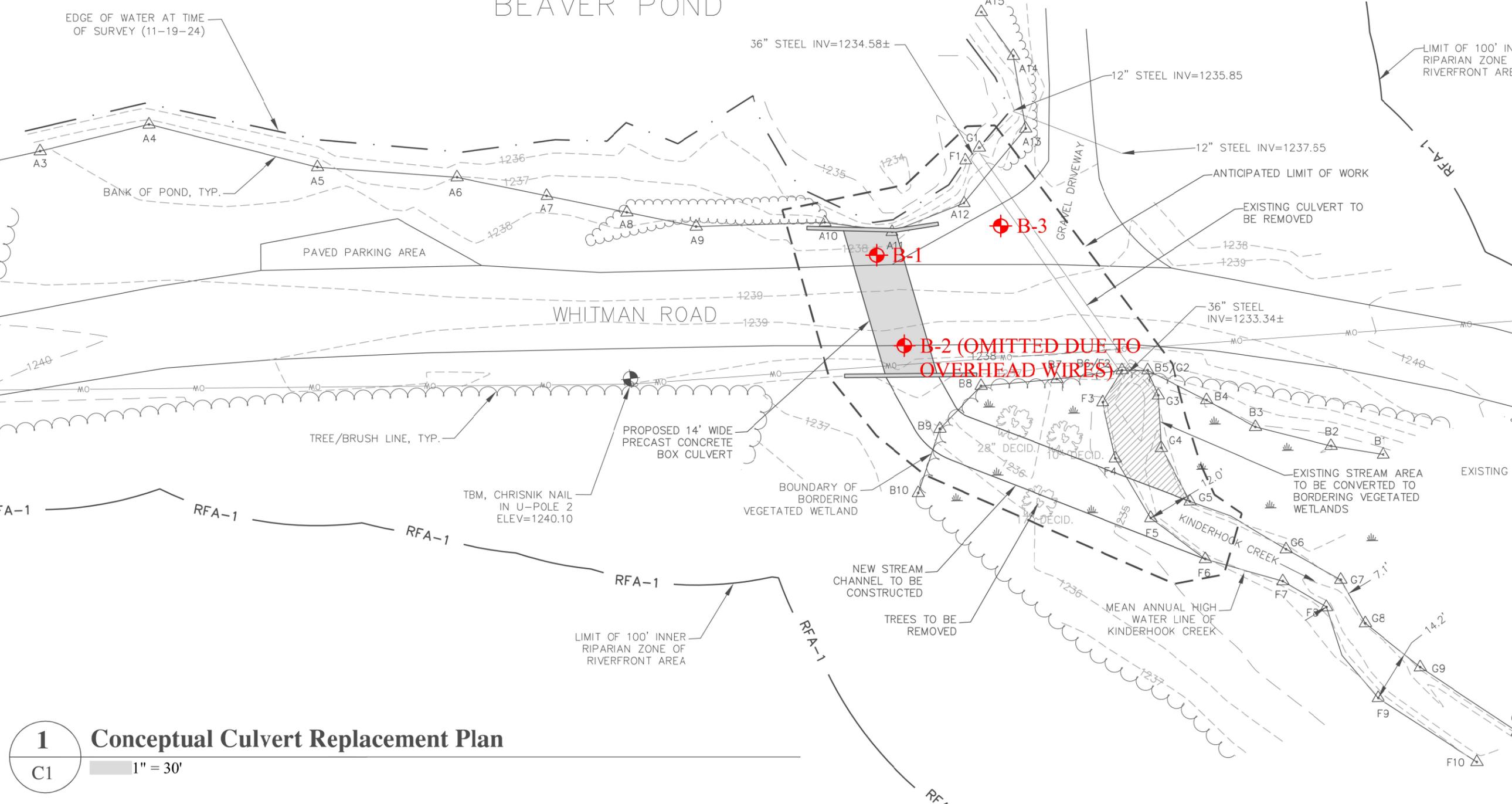
GIFFORD ENGINEERING
Geotechnical and Geoenvironmental Services
1940 Cascade Dr., Unit 11
Naples, FL 34112
(631) 791-3011
giffeng123@gmail.com

**BORING LOCATION
DIAGRAM**

CAD by: JCB Date: 1/23/2025
Approved By: GPG File No.: 2474
Scale: 1" = 30' Sheet: 1 of 1



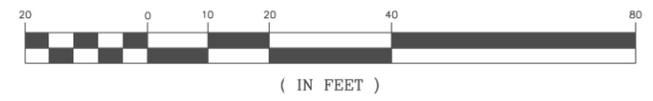
BEAVER POND



1 Conceptual Culvert Replacement Plan

C1 1" = 30'

GRAPHIC SCALE



PROJECT NAME: New Box Culvert							FILE NO.: 2474		
BORING NO.: B-1							CASING	SAMPLER	CORE BARREL
CLIENT: Guntlow & Associates							TYPE:	HSA	SS
SITE LOCATION: Whitman Rd, Hancock, MA 01267							SIZE I.D.:	4.25"	1.375"
BORING LOCATION: See Location Diagram							HAMMER WT:	140#	
SURFACE ELEVATION: See Location Diagram							HAMMER FALL:	30"	
DEPTH	SAMPLE						COL. A	STRATA CHANGE	FIELD CLASSIFICATION AND REMARKS
	NO.	DEPTH RANGE	BLOWS PER 6" ON SAMPLER						
			0-6	6-12	12-18	18-24			
5	S-1	0.0' - 2.0'	10	11			1.4'	4'	Brown/grey, moist, medium dense, Sand, little Gravel, trace Silt, SP, native with rock fragments. Similar except wet.
	S-2	2.0' - 4.0'	6	17	10	9	1.2'		
	S-3	4.0' - 6.0'	6	5	9	5	0.8'		
10	S-4	6.0' - 8.0'	3	3	2	4	0.6'	9'	Grey/brown, wet, loose, Sand, some Gravel, trace Silt and Clay, SM with rock fragments. Similar.
					2	3			
15	S-5	10.0' - 12.0'	3	5			0.8'	18'	Silver/grey, wet, loose, very fine Sand and Silt, little Gravel and Clay, silky texture, SM, with rock fragments. Similar.
					4	4			
20	S-6	15.0' - 17.0'	3	5			0.9'	24'	Grey/brown, wet, medium dense, Sand, little Silt, trace Gravel, SM.
					7	6			
25	S-7	20.0' - 22.0'	4	9			1.5'	29'	Grey/brown, wet, medium dense, nonplastic Silt, some Sand, trace Gravel and Clay, ML.
					9	11			
30	S-8	25.0' - 27.0'	6	13			1.4'	32'	Grey, wet, dense, Sand and Silt, trace Gravel, SM.
					14	18			
35	S-9	30.0' - 32.0'	9	12			1.6'	End of boring at 32 feet.	
					19	25			
40									

STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES. IN-SITU TRANSITION MAY BE GRADUAL.

WATER LEVEL:	Water at about 2 feet.
DRILLER: Martin Geo-Environmental, LLC - JM	DATE: 13-Jan-25
APPROVED BY: JCB	DATE: 17-Jan-25

GIFFORD ENGINEERING
 GEOTECHNICAL & GEOENVIRONMENTAL SERVICES
 1940 Cascades Dr. Unit 11
 Naples, FL 34112
 Phone: (631) 791-3011

PROJECT NAME:		New Box Culvert						FILE NO.:		2474	
BORING NO.:		B-3						CASING		SAMPLER	CORE BARREL
CLIENT:		Guntlow & Associates						TYPE:		HSA	SS
SITE LOCATION:		Whitman Rd, Hancock, MA 01267						SIZE I.D.:		4.25"	1.375"
BORING LOCATION:		See Location Diagram						HAMMER WT:		140#	
SURFACE ELEVATION:		See Location Diagram						HAMMER FALL:		30"	
DEPTH	NO.	DEPTH RANGE	SAMPLE				COL. A	STRATA CHANGE	FIELD CLASSIFICATION AND REMARKS		
			BLOWS PER 6" ON SAMPLER								
			0-6	6-12	12-18	18-24					
5	S-1	0.0' - 2.0'	9	13			1.5'	2'	Brown/grey, moist, medium dense, Sand, little Gravel, trace Silt, SP, native with rock fragments.		
	S-2	2.0' - 4.0'	6	6			1.0'				
	S-3	4.0' - 6.0'	4	2			0.8'	4'	Brown/grey, wet at 3 feet, medium dense, nonplastic Silt and Sand, trace Gravel, ML.		
	S-4	6.0' - 8.0'	2	2			1.1'				
10					6	2		6'	Grey, wet, loose, Sand, and Silt, trace Gravel, SM.		
					4	2					
15	S-5	10.0' - 12.0'	WOH	2			0.4'	9'	Black, wet, medium stiff, Peat, PT.		
					1	2					
20								13'	Grey, wet, soft, Silt, some Clay, trace Sand and Gravel, ML.		
25	S-6	15.0' - 17.0'	3	3			1.7'	18'	Grey, wet, loose, nonplastic Silt and Sand, trace Gravel, ML.		
					4	4					
30								32'	Grey, wet, medium dense, Sand, little Gravel and Silt, SM.		
	S-7	20.0' - 22.0'	9	11			1.3'				
					10	11					
35								32'	Similar.		
	S-8	25.0' - 26.6'	10	14			1.3'				
40					19	50/0.1'		32'	Similar.		
	S-9	30.0' - 30.7'	29	50/0.2'			0.3'				
								32'	End of boring at 32 feet.		

STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES. IN-SITU TRANSITION MAY BE GRADUAL.

WATER LEVEL:	Water at about 3 feet.
DRILLER: Martin Geo-Environmental, LLC - JM	DATE: 13-Jan-25
APPROVED BY: JCB	DATE: 17-Jan-25

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FACTORED RESISTANCE FOR HANCOCK CULVERT

Capacity Load, Rn (ksf)	Rn (tsf)	Factor Strength phi	Factored,Net Resistance			Estimated Degrees of Friction	Vesic Nc	Bearing Nq	Capacity Ngamm	Factor tan phi	Full Saturation		
			Resistance (ksf)	Width (ft) NoteA	Depth (ft) NoteB						gamma pcf	gamma sat(pcf)	cohe- sion-psf
9.82	4.91	0.45	4.42	2	6	32	35.49	23.18	30.22	0.62	120	58	0
12.45	6.22	0.45	5.60	5	6	32	35.49	23.18	30.22	0.62	120	58	0
16.83	8.42	0.45	7.57	10	6	32	35.49	23.18	30.22	0.62	120	58	0
4.44	2.22	0.45	2.00	2	2	32	35.49	23.18	30.22	0.62	120	58	0
7.07	3.54	0.45	3.18	5	2	32	35.49	23.18	30.22	0.62	120	58	0
11.45	5.73	0.45	5.15	10	2	32	35.49	23.18	30.22	0.62	120	58	0

NoteA **widths of 2,5, and 10 feet to indicate the sensitivity to width.**
 NoteB **depths of 2 and 6 shown to indicate the sensitivity to depth**

Factored Resistance at all widths
 2 ft to 10 ft & 2 ft deep are =>1 tsf

Bearing Capacity (Qi) Approach Phi = 32 degrees
 Bearing Capacity for strip foundation estimated using Vesic factors

Nc	Nq	Ngamm	tan phi	gamma	gamma s	cohesion
				pcf	pcf	psf
35.49	23.18	30.22	0.62	120	58	0

$Q_{ult} = cN_c + qN_q + 1/2(\gamma * B * N_{\gamma})$

*Bearing Capacity by Terzhagi(vesic factors)

SETTLEMENTS BY PRESSUREMETER METHOD

For Culvert 18ft wide X 50 ft long 8 feet loaded width with base 10 ft below grade

Hancock Culvert

March, 2026

Subgrade Conditions at B-1 location

Allowable tsf	Ftg Width(ft) Note A	Design tsf Note B	Total Settlements (in) Beneath Culvert Walls and Wing Walls(in)	Distortion(in)	Spherical (in)	Ed tsf	Ec tsf approx E1	Alpha	lambda d	lambda c
1	8	0.5	0.29	0.09533748	0.19762963	84	36	0.667	1.3	2
1	8	0.75	0.44	0.14300622	0.296444444	84	36	0.667	1.3	2
1	8	1	0.59	0.19067496	0.395259259	84	36	0.667	1.3	2
1	8	1.25	0.73	0.2383437	0.494074074	84	36	0.667	1.3	2

Note A-18 feet wide culvert base will transfer load to subgrade mainly beneath side walls. Assume 8 feet wide loaded strips on each side with 1 tsf Design Factored Load

Note B-Lists actual factored load pressures applied to 8 feet wide strip to test sensitivity to load

Calculation of Harmonic Distortion Modulus, Ed

These moduli are estimated for 1/2 ftg width intervals below footing base

The estimated measured pressure meter modulus Em calculated as 4 X N at B-3

Calculation in ft & ton units

convert Settlement to inches

X 12/in per foot

Depth Range	9 ft to 13 ft	13 ft to 17ft	17ft to 29 ft	21ft to 41ft	41 ft-69ft
Average N	9	12	17	17	100
Em	E1 36	E2 48	E345 68	E678 68	E9/16 400

Settlements All Below
Tolerable Limits up to 1.25 tsf

$$1/Ed = 1/4 (1/E1+1/0.85E2+1/E345+1/2.5E678+1/2.5E9to16)$$

$$1/Em = 0.027777778 \quad 0.0245098 \quad 0.014705882 \quad 0.0058824 \quad 0.001$$

$$1/Ed = 0.018468954$$

$$Ed (tsf) = 54$$

$$\text{Settlement} = (2/9Ed)*q*Bo(\lambda d*B/Bo)^\alpha + (\alpha/9Ec)*q*\lambda c*B$$

The length of the foundation is accounted for by the increase in lambda c for long footings.

Lambda c for L/W = 4.5 = 2.0 Lambda d = 1.3 alpha = 0.67 for silts and fine sands

GENERAL QUALIFICATIONS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope of the project and the location described herein, and our description of the project represents our understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the proposed facilities, as outlined in this report, are planned, we should be informed so the changes can be reviewed and the conclusions of this report modified or approved in writing by ourselves.

It is recommended that all construction operations dealing with earthwork and foundations be inspected by an experienced soil engineer to assure that design requirements are fulfilled in the actual construction. If you wish, we would welcome the opportunity to review the plans and specifications when they have been prepared so that we may have the opportunity of commenting on the effect of soil conditions on the design and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and/or test pits performed at the locations indicated on the location diagram and from any other information discussed in this report. This report does not reflect any variations which may occur between these borings and/or test pits. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and also such situations as groundwater conditions vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.

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Date	Revisions

- GENERAL NOTES:
- PLAN PROVIDED BY GUNTLOW & ASSOCIATES, INC.
 - BORING LOCATIONS LAID OUT BY GUNTLOW & ASSOCIATES, INC.

LEGEND

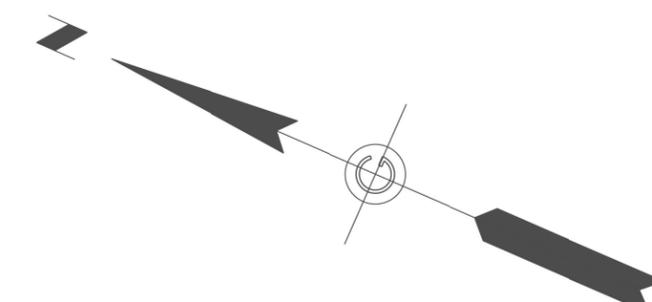


NEW BOX CULVERT
WHITMAN ROAD
HANCOCK, MA 01267

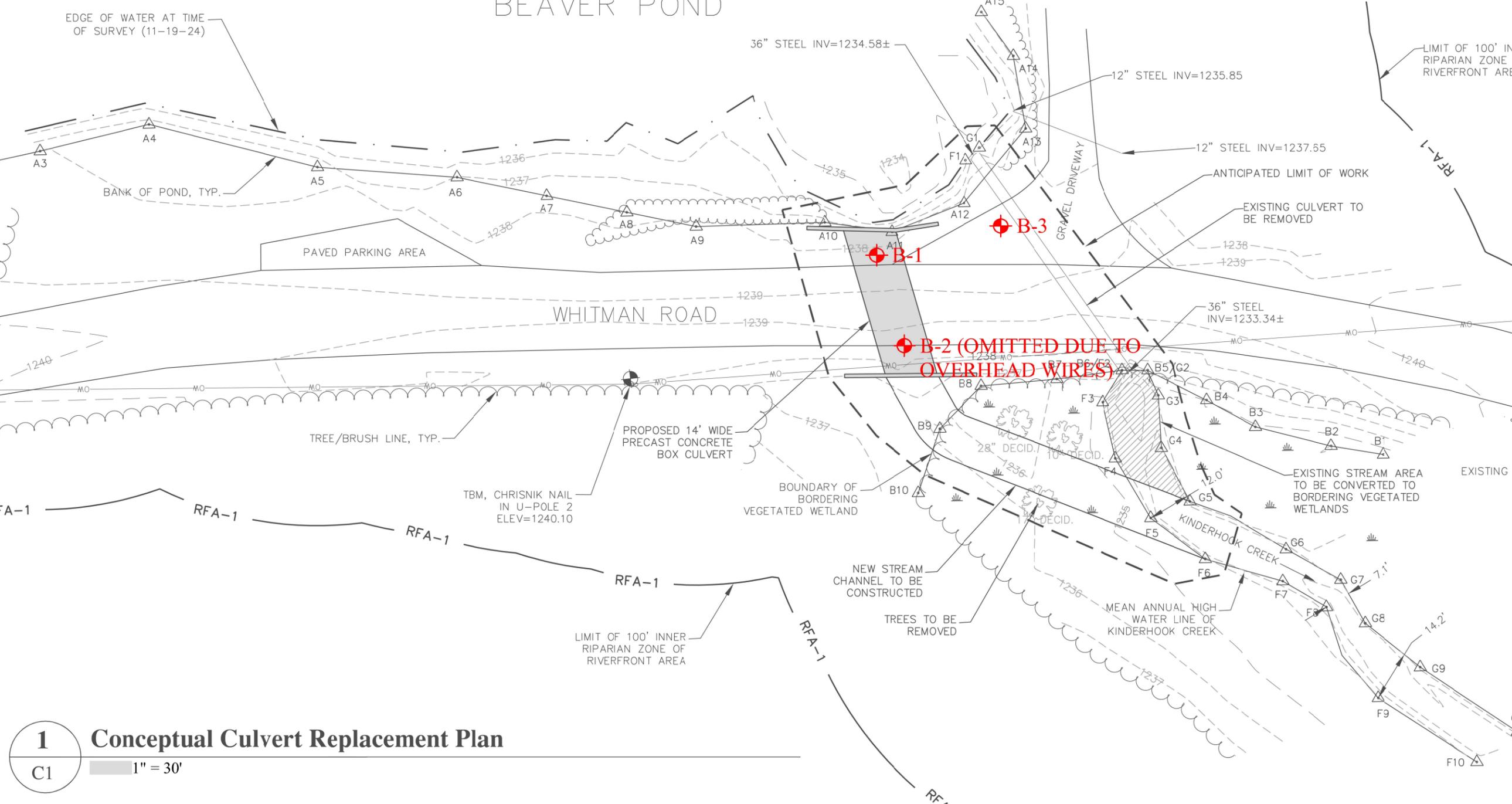
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Naples, FL 34112
(631) 791-3011
giffeng123@gmail.com

**BORING LOCATION
DIAGRAM**

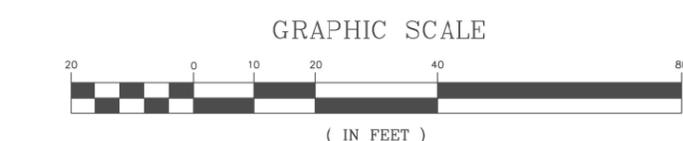
CAD by: JCB Date: 1/23/2025
Approved By: GPG File No.: 2474
Scale: 1" = 30' Sheet: 1 of 1



BEAVER POND



1 Conceptual Culvert Replacement Plan
C1 1" = 30'



PROJECT NAME:		New Box Culvert						FILE NO.:		2474	
BORING NO.:		B-1						CASING		SAMPLER	CORE BARREL
CLIENT:		Guntlow & Associates						TYPE:		HSA	SS
SITE LOCATION:		Whitman Rd, Hancock, MA 01267						SIZE I.D.:		4.25"	1.375"
BORING LOCATION:		See Location Diagram						HAMMER WT:		140#	
SURFACE ELEVATION:		See Location Diagram						HAMMER FALL:		30"	
DEPTH	NO.	DEPTH RANGE	SAMPLE				COL. A	STRATA CHANGE	FIELD CLASSIFICATION AND REMARKS		
			BLOWS PER 6" ON SAMPLER								
			0-6	6-12	12-18	18-24					
5	S-1	0.0' - 2.0'	10	11			1.4'	4'	Brown/grey, moist, medium dense, Sand, little Gravel, trace Silt, SP, native with rock fragments. Similar except wet.		
	S-2	2.0' - 4.0'	6	17			1.2'				
	S-3	4.0' - 6.0'	6	5			0.8'				
10	S-4	6.0' - 8.0'	3	3			0.6'	9'	Grey/brown, wet, loose, Sand, some Gravel, trace Silt and Clay, SM with rock fragments. Similar.		
					2	4					
					2	3					
15	S-5	10.0' - 12.0'	3	5			0.8'	18'	Silver/grey, wet, loose, very fine Sand and Silt, little Gravel and Clay, silky texture, SM, with rock fragments. Similar.		
					4	4					
	S-6	15.0' - 17.0'	3	5			0.9'				
20					7	6		24'	Grey/brown, wet, medium dense, Sand, little Silt, trace Gravel, SM.		
	S-7	20.0' - 22.0'	4	9			1.5'				
					9	11					
25	S-8	25.0' - 27.0'	6	13			1.4'	29'	Grey/brown, wet, medium dense, nonplastic Silt, some Sand, trace Gravel and Clay, ML.		
					14	18					
30	S-9	30.0' - 32.0'	9	12			1.6'	32'	Grey, wet, dense, Sand and Silt, trace Gravel, SM.		
					19	25					
35								End of boring at 32 feet.			
40											

STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES. IN-SITU TRANSITION MAY BE GRADUAL.

WATER LEVEL:	Water at about 2 feet.
DRILLER: Martin Geo-Environmental, LLC - JM	DATE: 13-Jan-25
APPROVED BY: JCB	DATE: 17-Jan-25

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 Naples, FL 34112
 Phone: (631) 791-3011

PROJECT NAME:		New Box Culvert						FILE NO.:		2474	
BORING NO.:		B-3						CASING		SAMPLER	CORE BARREL
CLIENT:		Guntlow & Associates						TYPE:		HSA	SS
SITE LOCATION:		Whitman Rd, Hancock, MA 01267						SIZE I.D.:		4.25"	1.375"
BORING LOCATION:		See Location Diagram						HAMMER WT:		140#	
SURFACE ELEVATION:		See Location Diagram						HAMMER FALL:		30"	
DEPTH	NO.	DEPTH RANGE	SAMPLE				COL. A	STRATA CHANGE	FIELD CLASSIFICATION AND REMARKS		
			BLOWS PER 6" ON SAMPLER								
			0-6	6-12	12-18	18-24					
5	S-1	0.0' - 2.0'	9	13			1.5'	2'	Brown/grey, moist, medium dense, Sand, little Gravel, trace Silt, SP, native with rock fragments.		
	S-2	2.0' - 4.0'	6	6			1.0'				
	S-3	4.0' - 6.0'	4	2			0.8'	4'	Brown/grey, wet at 3 feet, medium dense, nonplastic Silt and Sand, trace Gravel, ML.		
	S-4	6.0' - 8.0'	2	2			1.1'				
10					6	2		6'	Grey, wet, loose, Sand, and Silt, trace Gravel, SM.		
					4	2					
15	S-5	10.0' - 12.0'	WOH	2			0.4'	9'	Black, wet, medium stiff, Peat, PT.		
					1	2					
20								13'	Grey, wet, soft, Silt, some Clay, trace Sand and Gravel, ML.		
25	S-6	15.0' - 17.0'	3	3			1.7'	18'	Grey, wet, loose, nonplastic Silt and Sand, trace Gravel, ML.		
					4	4					
30								32'	Grey, wet, medium dense, Sand, little Gravel and Silt, SM.		
	S-7	20.0' - 22.0'	9	11			1.3'				
					10	11					
35								32'	Similar.		
	S-8	25.0' - 26.6'	10	14			1.3'				
40					19	50/0.1'		32'	Similar.		
	S-9	30.0' - 30.7'	29	50/0.2'			0.3'				
									End of boring at 32 feet.		

STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES. IN-SITU TRANSITION MAY BE GRADUAL.

WATER LEVEL:	Water at about 3 feet.
DRILLER: Martin Geo-Environmental, LLC - JM	DATE: 13-Jan-25
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LABORATORY TEST RESULTS
New Box Culvert
Whitman Road, Hancock, MA 01267
File No. 2474

Grain Size Distribution ASTM D 421, D 422 & D 1140

Size/Sieve	Percent Passing by Weight	
	B-1 4'-6'	B-3 20'-22'
No. 4	70.2%	89.9%
No. 10	59.8%	78.3%
No. 20	47.7%	58.6%
No. 40	36.5%	42.1%
No. 100	24.6%	23.4%
No. 200	19.8%	17.3%
Natural Moisture	17.9%	15.4%



New Box Culvert, File No.: 2474

Latitude, Longitude: 42.57697874, -73.29712627



Date	1/30/2025, 1:51:39 PM
Design Code Reference Document	IBC-2015
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S _S	0.173	MCE _R ground motion. (for 0.2 second period)
S ₁	0.068	MCE _R ground motion. (for 1.0s period)
S _{MS}	0.276	Site-modified spectral acceleration value
S _{M1}	0.164	Site-modified spectral acceleration value
S _{DS}	0.184	Numeric seismic design value at 0.2 second SA
S _{D1}	0.109	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F _a	1.6	Site amplification factor at 0.2 second
F _v	2.4	Site amplification factor at 1.0 second
PGA	0.081	MCE _G peak ground acceleration
F _{PGA}	1.6	Site amplification factor at PGA
PGA _M	0.13	Site modified peak ground acceleration
T _L	6	Long-period transition period in seconds
SsRT	0.173	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.189	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.068	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.077	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGA _d	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA _{UH}	0.081	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C _{RS}	0.912	Mapped value of the risk coefficient at short periods
C _{R1}	0.892	Mapped value of the risk coefficient at a period of 1 s
C _v		Vertical coefficient

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Massachusetts Highway Department Standard Specifications Excerpts

M1.02.0 Special Borrow.

Special Borrow shall consist of one of the following:

a) A native in-situ soil that is classified under AASHTO-M145 as A-3, or that portion of A-1 with less than 12% passing the No. 200 sieve as determined by AASHTO-T11 and T27. Maximum size of stone for testing purposes shall be three (3) inches (nominal). For Muck Backfill only, 15% or less passing the No. 200 sieve will be allowable.

b) A crushed rock, either obtained for ledge excavation on the project or other approved sources, that meets the following requirements:

Percent of wear LA abrasion test	50% Maximum
Plasticity Index	6% Maximum

Gradation Requirements

<u>Sieve Designation</u>	<u>Percent Passing</u>
6 in.	100
2 in.	90-100
No. 4 mesh	20-65
No. 200 mesh	0-12

M1.03.0 Gravel Borrow.

Gravel Borrow shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials.

Gradation requirements for gravel shall be determined by AASHTO-T11 and T27 and shall conform to the following:

<u>Sieve Designation</u>	<u>Percent Passing</u>
1/2 in.	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

Maximum size of stone in gravel shall be as follows:

M1.03.0 Type a	6 inches largest dimension
M1.03.0 Type b	3 inches largest dimension
M1.03.0 Type c	2 inches largest dimension
M1.03.0 Type d	1.5 inches largest dimension

M1.03.1 Processed Gravel for Subbase.

This specification covers the quality and gradation for subbase material of crusher run gravel.

Gravel shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials.

The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

The gradation shall meet the following requirements:

<u>Sieve Designation</u>	<u>Percent Passing</u>
3 in.	100
1 1/2 in.	70-100
3/4 in.	50-85
No. 4	30-60
No. 200	0-10

Massachusetts Highway Department Standard Specifications Excerpts

M2.01.0 Crushed Stone

TABULATION OF STONE SIZES
Percent by Weight Passing Through

Square Opening Sieve	M2.01.1 and M2.01.2	M2.01.3	M2.01.4	M2.01.5	M2.01.6
1 ½ in.	1 ½ in.	1 ¼ in.	¾ in.	½ in.	¼ in.
2 ½ in.					
2 in.	100				
1 ½ in.	95-100	100			
1 ¼ in.		85-100			
1 in.	35-70		100		
¾ in.	0-25	10-40	90-100		
5/8 in.				100	
½ in.		0-8	10-50	85-100	100
3/8 in.			0-20	15-45	85-100
No. 4			0-5	0-15	20-50
No. 8				0-5	0-15
No. 16					0-5

M2.01.7 Dense-graded Crushed Stone for Sub-base

This specification covers the quality and gradation requirements for a subbase material combining crusher-run coarse aggregates of crushed stone and fine aggregates of natural sand or stone screenings uniformly premixed with a predetermined quantity of water.

Coarse aggregate shall consist of hard, durable particles of fragments of stone. Materials that break up when alternately frozen and thawed or wetted and dried shall not be used.

Coarse aggregate shall have a percentage of wear, by the Los Angeles test, of not more than 45.

Fine aggregate shall consist of natural or crushed sand.

The composite material shall be free from clay, loam, or other plastic material, and shall conform to the following grading requirements:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
2 in.	100
1 ½ in.	70-100
¾ in.	50-85
No. 4	30-55
No. 50	8-24
No. 200	3-10

The approved source of bank-run gravel material shall be processed by mechanical means. The equipment for producing crushed gravel shall be of adequate size and with sufficient adjustments to produce the desired materials. The processed material shall be stockpiled in such a manner to minimize segregation of particle sizes. All processed gravel shall come from approved stockpiles.

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS*

SS	Split Spoon – 1 3/8” I.D., 2” O.D.
ST	Shelby Tube – 3” O.D.
OS	Osterberg Sampler – 3” Shelby Tube
DB	Diamond Core – NQ, BX, HQ
WOR	Weight of Rod
WOH	Weight of Hammer
RD	Rotary Drill Bit
DC	Driven Casing, Washed
WB	Washed Boring
HSA	Hollow Stem Auger
OH	Open Hole
MT	Macro Core MC5 Soil Sampling System
MPF	Minutes per Foot
RQD	Rock Quality Designation

WATER LEVEL SYMBOLS**

WL	Water Level
WCI	Wet Cave In
DCI	Dry Cave In
WS	While Sampling
WD	While Drilling
BCR	Before Casing Removal
ACR	After Casing Removal
AB	After Boring

*Standard “N” Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch O.D. split spoon, except where noted.

** Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils, the accurate determination of ground water elevations is not possible in even several days observation, and additional evidence on ground water elevations must be sought.

CLASSIFICATION

COHESIONLESS SOILS

“Trace”	1% - 10%
“Little”	10% - 20%
“Some”	20% - 35%
“And”	35% - 50%
Very Loose	0 – 3 Blows
Loose	4 – 9 Blows
Medium Dense	10 – 29 Blows
Dense	30 – 50 Blows
Very Dense	> 50 Blows

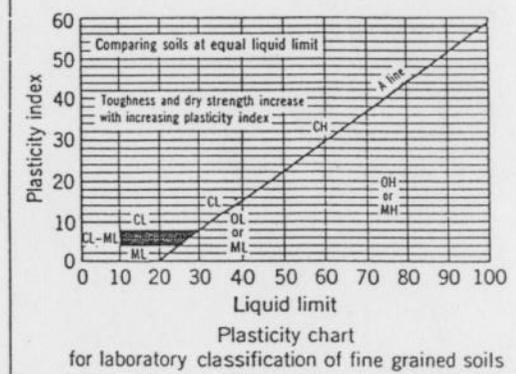
COHESIVE SOILS*

	N (Blows/ft)	Q _c (TSF)
Very Soft	0 – 1	0.00 – 0.25
Soft	2 – 4	0.25 – 0.49
Medium	5 – 8	0.50 – 0.99
Stiff	9 – 15	1.00 – 1.99
Very Stiff	16 – 30	2.00 – 3.99
Hard	> 30	≥ 4.00

* If Clay content is sufficient so that clay dominates soil properties, then Clay becomes the principal noun with the other major soil constituent as modifier: i.e., Silty Clay. Other minor soil constituents may be added according to classification breakdown for cohesionless soils: i.e., Silty Clay, little Sand, trace Gravel. Additional explanation available upon request. See attached Unified Soil Classification sheet.

Table 3.5 Unified Soil Classification

Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights)		Group Symbols ^a	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria			
Coarse-grained soils More than half of material is larger than No. 200 sieve size (For visual classification, the 1/4 in. size may be used as equivalent to the No. 4 sieve size)	Gravels More than half of coarse fraction is larger than No. 4 sieve size	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	GW	Well graded gravels, gravel-sand mixtures, little or no fines	<p>Determine percentages of gravel and sand from grain size curve Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse grained soils are classified as follows: Less than 5% GW, GP, SW, SP More than 5% GM, GC, SM, SC 5% to 12% Borderline cases requiring use of dual symbols</p> $C_u = \frac{D_{60}}{D_{10}} \text{ Greater than 4}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}} \text{ Between 1 and 3}$ <p>Not meeting all gradation requirements for GW</p> <p>Atterberg limits below "A" line, or PI less than 4</p> <p>Atterberg limits above "A" line, with PI greater than 7</p> <p>Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols</p>		
		Gravels with fines (appreciable amount of fines)	Predominantly one size or a range of sizes with some intermediate sizes missing	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines			
	Sands More than half of coarse fraction is smaller than No. 4 sieve size (For visual classification, the 1/4 in. size may be used as equivalent to the No. 4 sieve size)	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes	SW	Well graded sands, gravelly sands, little or no fines			
		Sands with fines (appreciable amount of fines)	Predominantly one size or a range of sizes with some intermediate sizes missing	SP	Poorly graded sands, gravelly sands, little or no fines			
	Fine-grained soils More than half of material is smaller than No. 200 sieve size (The No. 200 sieve size is about the smallest particle visible to naked eye)	Silt and clays liquid limit less than 50	Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)		<p>Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses</p> <p>For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions</p> <p>Example: Clayey silt, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess: (ML)</p>	
			None to slight	Quick to slow	None			ML
		Medium to high	None to very slow	Medium	CL			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Slight to medium	Slow	Slight	OL			Organic silts and organic silt-clays of low plasticity
		Slight to medium	Slow to none	Slight to medium	MH			Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		High to very high	None	High	CH			Inorganic clays of high plasticity, fat clays
Silt and clays liquid limit greater than 50	Medium to high	None to very slow	Slight to medium	OH	Organic clays of medium to high plasticity			
	Highly Organic Soils	Readily identified by colour, odour, spongy feel and frequently by fibrous texture		Pt	Peat and other highly organic soils			



From Wagner, 1957.

^a Boundary classifications. Soils possessing characteristics of two groups are designated by combinations of group symbols. For example GW-GC, well graded gravel-sand mixture with clay binder.
^b All sieve sizes on this chart are U.S. standard.

These procedures are to be performed on the minus No. 40 sieve size particles, approximately 1/4 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

Dilatancy (Reaction to shaking):
After removing particles larger than No. 40 sieve size, prepare a pat of moist soil with a volume of about one-half cubic inch. Add enough water if necessary to make the soil soft but not sticky.
Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.
Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

Field Identification Procedure for Fine Grained Soils or Fractions
After removing particles larger than No. 40 sieve size, mold a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun or air drying, and then test its strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity.
High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

Toughness (Consistency near plastic limit):
After removing particles larger than the No. 40 sieve size, a specimen of soil about one-half inch cube in size, is moulded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eighth inch in diameter. The thread is then folded and re-rolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.
After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.
The tougher the thread near the plastic limit and the stiffer the lump when it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line.
Highly organic clays have a very weak and spongy feel at the plastic limit.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be, and, in general, if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old*.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration*. Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists*.



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APPENDIX B
ECOLOGICAL RESTORATION ORDER OF CONDITIONS



**Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5A – Restoration Order of
Conditions**

Provided by
MassDEP:
174-0094
MassDEP File #

Hancock
City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Please note: this form has been modified with added space to accommodate the Registry of Deeds Requirements

1. From Hancock Conservation commission
Conservation Commission

2. This issuance is for (check one):

- a. Restoration Order of Conditions
- b. Amended Restoration Order of Conditions

3. To: Applicant:

a. First Name _____ b. Last Name _____
 Town of Hancock
 c. Organization _____
 3650 Hancock Rd
 d. Mailing Address _____
 Hancock
 e. City/Town _____ f. State ma g. Zip Code 01237
 _____ f. State _____ g. Zip Code _____

4. Property Owner (if different from applicant):

a. First Name _____ b. Last Name _____
 c. Organization _____
 d. Mailing Address _____
 e. City/Town _____ f. State _____ g. Zip Code _____

5. Project Location:

a. Street Address _____ b. City/Town _____
 c. Assessors Map/Plat Number _____ d. Parcel/Lot Number _____

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. General Information (cont.)

Latitude and Longitude, if known: _____ d. Latitude (in decimal) _____ e. Longitude (in decimal) _____

Note: If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

North Berkshire _____

a. County _____ b. Certificate Number (if registered land) _____

519 _____ 481 _____

c. Book _____ d. Page _____

7. _____ 6/17/2025 _____ 6/25/2025 _____ 11/19/2025

Dates:

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

a. Plan Title _____

Guntlow & Associates _____

b. Prepared By _____ c. Signed and Stamped by _____

NTS

d. Final Revision Date _____ e. Scale _____

Existing Berm Stabilization _____ 9-15-25 _____

f. Additional Plan or Document Title _____ g. Date _____

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the Ecological Restoration Notice of Intent described in Section A 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 (the Act). Check all that apply:

- a. Public Water Supply
- b. Private Water Supply
- c. Groundwater Supply
- d. Flood Control
- e. Storm Damage Prevention
- f. Prevention of Pollution
- g. Land Containing Shellfish
- h. Fisheries
- i. Wildlife Habitat

B. Findings (cont.)

2. This Commission hereby finds the project, as proposed, is an Ecological Restoration Project for:

[Check all of the following boxes for the applicable project type(s)]
Dam Removal

Freshwater Stream Crossing Repair and Replacement

Stream Daylighting

- Tidal Restoration
- Rare Species Habitat Restoration
- Restoring Fish Passageways

Approved subject to:

The following conditions are required in accordance with the Ecological Restoration eligibility criteria 310 CMR 10.13 (1) through (7) and performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Ecological Restoration Notice of Intent for the project described in Section A. The General Conditions in Section C and Special Conditions checked in Section D are incorporated into this Restoration Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Ecological Restoration Notice of Intent, these conditions shall control.

Denied because:

The proposed work does not meet the eligibility criteria in 310 CMR 10.13(1) through (7). Therefore, work on this project may not go forward unless and until a new Notice of Intent (WPA Form 3 or 3A) is submitted and a Final Order of Conditions (WPA Form 5 or 5A) has been issued. The Commission has determined that following the eligibility criteria have NOT been met.

B. Findings (cont.)

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>254</u> a. linear feet	<u>254</u> b. linear feet	<u>235</u> c. linear feet	<u>235</u> d. linear feet
5. <input checked="" type="checkbox"/> Bordering Vegetated	655	655	670	670
6. <input checked="" type="checkbox"/> Wetland Under Waterbodies and Waterways	400	400	815	815
7. <input type="checkbox"/> Bordering Land Subject to Flooding				

		e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8.	<input type="checkbox"/> Isolated Land Subject to Flooding				
9.	<input checked="" type="checkbox"/> Riverfront Area	10135	10135		
	Sq ft within 100 ft	10135	10135		
	Sq ft between 100-200 ft				

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

- | | Proposed Alteration | Permitted Alteration | Proposed Replacement | Permitted Replacement |
|--|---------------------|----------------------|----------------------|-----------------------|
| 10. <input type="checkbox"/> Designated Port Areas | | | | |
| 11. <input type="checkbox"/> Land Under the Ocean | | | | |
| 12. <input type="checkbox"/> Barrier Beaches | | | | |
| 13. <input type="checkbox"/> Coastal Beaches | | | c/y | c/y |
| 14. <input type="checkbox"/> Coastal Dunes | | | c/y | c/y |

Indicate size under Land Under the Ocean, below

Note: No armoring of a Coastal Dune or Barrier Beach is permitted. Indicate size under Coastal Beaches and/or Coastal Dunes below

B. Findings (cont.)

- | | | | | |
|--|----------------|----------------|--|--|
| 15. <input type="checkbox"/> Coastal Banks | _____ | _____ | | |
| | a. linear feet | b. linear feet | | |
| 16. <input type="checkbox"/> Rocky Intertidal Shores | | | | |
| 17. <input type="checkbox"/> Salt Marshes | | | | |
| 18. <input type="checkbox"/> Land Under Salt Ponds | | | | |
| 19. <input type="checkbox"/> Land Containing Shellfish | | | | |
| 20. <input type="checkbox"/> Fish Runs | | | | |

Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above

* 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 (BVW) or B.17.c

21. Land Subject to Coastal Storm Flowage

22. Riverfront Area

Sq ft within 100 ft

Sq ft between 100-200 ft

23. Restoration/Enhancement *:

24. Stream Crossing(s):

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 Restoration Order of Conditions (Restoration Order).
2. The Conditions (Restoration Order) do 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 Restoration 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 Restoration 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 Restoration 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 Restoration Order.
5. This Restoration 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 Restoration Order.
6. If this Restoration Order constitutes an Amended Restoration Order of Conditions, this Amended Restoration Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Restoration Order will expire on _____ unless extended in writing by the Department.
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.

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 Restoration Order.

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

General Conditions for all Ecological Restoration Projects

19. The project shall be conducted in accordance with any preliminary written determination obtained from the Natural Heritage and Endangered Species Program as set forth in 310 CMR 10.11(2) and any time of year restrictions or other conditions recommended in writing by the Division of Marine Fisheries (for projects in coastal Resource Areas) and the Division of Fisheries and Wildlife (for projects in inland Resource Areas) as set forth in 310 CMR 10.11(3), (4) and (5).
20. The applicant shall implement the plan submitted with the Notice of Intent as approved by the Issuing Authority to prevent and control invasive species.
21. If the project involves the dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the dredging and Dredged Material management shall be performed in accordance with the Water Quality Certification submitted with the Notice of Intent.
22. If the project involves infrastructure, the owner shall operate and maintain the infrastructure in accordance with the operation and maintenance plan submitted with the Notice of Intent as approved by the Issuing Authority. Implementation of the operation and maintenance plan as approved by the Issuing Authority shall be a continuing condition that shall be set forth in the Certificate of Compliance.
23. The work associated with this Order (the "Project")
 - (1) is subject to the Massachusetts Stormwater Standards
 - (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the 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 Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 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;

C. General Conditions Under Massachusetts Wetlands Protection Act
(cont.)

- ii. as-built final construction 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 18(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 Pollution 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 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Restoration 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.

C. General Conditions Under Massachusetts Wetlands Protection Act
(cont.)

- 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. Discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Restoration Order of Conditions shall not be changed without the prior written approval of the issuing Authority. 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.

D. Special Conditions for Ecological Restoration Projects

Dam Removal

This project involves dam removal and the following special conditions shall apply in addition to the general conditions set forth in 310 CMR 10.14(1):

- a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the dam removal.
- b) The applicant shall monitor the dam removal site during the first two years following completion of the dam removal. Said monitoring shall include a topographic survey of the longitudinal profile and stream cross-sections from downstream of the former dam through the upstream end of the former impoundment. The survey reference

point shall comprise a permanent marker or recoverable survey point with known coordinates, such as a fixed point shown on the as-built plan, an existing bench mark, or a new benchmark. That marker should be identified or referenced on the plans and on the as-built plans. The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the dam removal site. At least one photo-point location shall be chosen to document a view of the dam pre-restoration and to document the same site after the dam is removed. A second location shall be chosen to document a view of the impoundment pre- and post-restoration. Photos shall be taken for two years after the dam removal is completed.

- c) The applicant shall submit a report detailing the results of this monitoring within six months of the completion of the two year post-construction monitoring period, or within 30 months after the dam removal is complete whichever is sooner. The report shall include a comparison of post-restoration survey data with pre-restoration survey data as illustrated by the photos taken during the monitoring period.

Freshwater Stream Crossing Repair and Replacement Projects

The project involves one or more freshwater crossing repair or replacement and the following special conditions in addition to the general conditions apply:

- a) An as-built plan and/or a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be completed within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.

D. Special Conditions for Ecological Restoration Projects (cont.)

- b) The applicant shall monitor the site by collecting sufficient data within 12 months after construction is complete to evaluate the effect of the structure. At a minimum, when a Certificate of Compliance is requested, the applicant shall provide post-construction photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The photo-points shall be located at the same geographic photo-point latitude and longitude coordinates as required in the Notice of Intent per 310 CMR 10.12(1)(n). The applicant shall submit a report to the Issuing Authority detailing the results of this monitoring within 18 months after construction is complete. The report shall include a comparison of the post-restoration data with pre-restoration data.

Stream Daylighting

The project involves stream daylighting and the following special conditions in addition to the general conditions apply:

- a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project. At a minimum, when a Certificate of Compliance is requested, the applicant shall provide post-construction

photo-points that capture longitudinal views of the upstream and downstream channel beds of the daylighted reach during low flow conditions.

- b) The applicant shall conduct photo-point monitoring by establishing at least three photo-points for pre- and post-restoration monitoring at the stream daylighting site. One photo-point location shall be chosen to document the upstream end of the site and one photo-point location shall be chosen to document the downstream end of the site. A third photo-point shall be chosen to document conditions in the restored channel. Photos shall be taken during high flow and low (summer) flow of each year during the two years following completion of the project.
- c) Within 30 months after the completion of the project, the applicant shall submit a report describing the ecological changes observed at the project site during the two years following completion of the project, as illustrated by the photos.

D. Special Conditions for Ecological Restoration Projects (cont.)

Tidal Restoration Projects

The project involves restoration of tidal influence and the following special conditions in addition to the general conditions apply:

- a) If the project is a culvert or bridge replacement or repair project, an as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.
- b) The applicant shall monitor pre- and post-construction tidal conditions upstream and downstream of the tidal restriction with water level readings measured at an interval no greater than every 10 minutes over a minimum of a one-week period that includes a spring tide. Pre- and post-construction water level readings shall be taken at approximately the same locations and shall be referenced to the same vertical elevation datum. The applicant shall prepare a report detailing the results of this monitoring within 12 months after construction is complete. The report shall include and compare pre- and post-construction tidal elevation monitoring data to assess attainment of the project's predicted post-restoration tidal conditions.

Rare Species Habitat Restoration

The project is a Rare Species Habitat Restoration Project and in addition to the general conditions the following special conditions apply:

- a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan, construction specifications, and the Habitat Management Plan submitted with the Notice of Intent as approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project.
- b) The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the project site. Photos shall be taken for two years after construction is complete. Within 30 months of completion of the project, the applicant shall submit to the Issuing Authority a report describing the ecological changes observed at the project site as illustrated by the photos.

D. Special Conditions for Ecological Restoration Projects (cont.)

Fish Passageway Restoration

The project involves the repair or replacement of a fish passageway and in addition to the general conditions the following special conditions:

- a) The property owner is responsible for maintaining and repairing the fishway in good condition so that it will support safe and efficient fish passage in accordance with an operation and maintenance plan approved by the Division of Marine Fisheries. This requirement is a continuing condition that shall be set forth in the Certificate of Compliance.
- b) a post-construction project summary using surveys, a narrative and photographs as needed, that confirm the fishway slope and entrance and exit elevations shall be submitted to and approved by the Division of Marine Fisheries, prior to submittal of a request for a Certificate of Compliance.

E. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No

2. _____ hereby finds (check one that applies):
Conservation Commission

The a. that the proposed work 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 of Conditions is issued.

b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

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 (if you need more space for additional conditions, attach a text document):

F. Signatures

This Restoration Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

11/19/2025
1. Date of Issuance

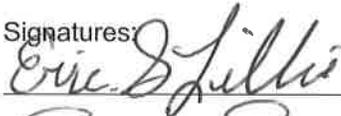
Please indicate the number of members who will sign this form.

3

This Restoration Order must be signed by a majority of the Conservation Commission.

The Restoration 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 and the property owner, if different from applicant.

Signatures:

	_____
	_____
	_____

by hand delivery on

11/16/2025
Date

by certified mail, return receipt requested, on

_____ Date

G. Appeals

The applicant, the owner, any person aggrieved by this Restoration Order, any owner of land abutting the land subject to this Restoration 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 Restoration 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 Restoration 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 Restoration Order of Conditions 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 Restoration Order, or providing written information to the Department prior to issuance of a Superseding Restoration Order.

The request shall state clearly and concisely how the project permitted under the Restoration Order which is being appealed does or does not meet the eligibility criteria in 310 CMR 10.13(1) and the relevant provisions of 310 CMR 10.13(2) through (7). To the extent that the Restoration Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

H. Recording Information

Prior to commencement of work, this Restoration Order of Conditions must be 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 Restoration Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Restoration Order. In the case of registered land, this Restoration Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Restoration Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Restoration Order of Conditions for the Project at:

Project Location MassDEP File Number

Has been recorded at the Registry of Deeds of:

County Book Page

For

Property Owner

and has been noted in the chain of title of the affected property in:

Book Page

In accordance with the Restoration Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number:

**Request for Departmental Action Fee
Transmittal Form**

Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Location of Project

_____	_____
a. Street Address	b. City/Town, Zip
_____	_____
c. Check number	d. Fee amount

2. Person or party making request (if appropriate, name the citizen group's representative):

Name		

Mailing Address		

City/Town	_____	_____
	State	Zip Code
_____	_____	
Phone Number	Fax Number (if applicable)	

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

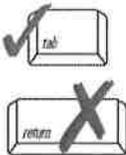
Name		

Mailing Address		

City/Town	_____	_____
	State	Zip Code
_____	_____	
Phone Number	Fax Number (if applicable)	

4. DEP File Number:

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



B. Instructions

1. When the Departmental action request is for (check one):

- Superseding Order of Conditions – Fee: \$120.00 (single family house projects) or \$245 (all other projects)
- Superseding Determination of Applicability – Fee: \$120
- Superseding Order of Resource Area Delineation – Fee: \$120

B. Instructions (cont.)

Send this form and check or money order, payable to the *Commonwealth of Massachusetts*, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/>).
4. 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.

APPENDIX C
EXISTING CONDITIONS PHOTOS

Existing Conditions Site Photos as of 3-13-2026

Whitman Road Culvert Replacement Project

Whitman Road Hancock, MA

On March 13, 2026, the existing upstream portion of the culvert washed out due to blocked flows and standing water on the road. This has resulted in Whitman Road being reduced to a single lane in the area of the culvert. The project plans show existing conditions prior to the collapse that is shown in the photos below. It is still expected that the Contractor will need to stabilize the site to maintain flow through the existing culvert during the construction of the new culvert, as outlined in the construction sequence and phasing of work/coffer dam placement.





APPENDIX D
PREVAILING WAGE RATES



**THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS
Prevailing Wage Rates**

MAURA HEALEY
Governor

KIM DRISCOLL
Lt. Governor

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

LAUREN JONES
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority: Hancock **City/Town:** HANCOCK
Contract Number:
Description of Work: Replacement of Whitman Road culvert with new concrete box culvert and associated site work.
Job Location: 0 Whitman Road

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 updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F “rental of equipment” contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- 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.

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
(2 AXLE) DRIVER - EQUIPMENT	1/1/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$0.00	\$78.90
TEAMSTERS JOINT COUNCIL NO. 10	6/1/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$0.00	\$79.90
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/1/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$0.00	\$81.64
	1/1/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT	1/1/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$0.00	\$78.97
TEAMSTERS JOINT COUNCIL NO. 10	6/1/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$0.00	\$79.97
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/1/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$0.00	\$81.71
	1/1/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT	1/1/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$0.00	\$79.09
TEAMSTERS JOINT COUNCIL NO. 10	6/1/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$0.00	\$80.09
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	12/1/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$0.00	\$81.83
	1/1/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT	8/1/2024	\$117.16	\$10.08	\$11.62	\$12.67	\$0.00	\$151.53
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 3)							
For apprentice rates see "Apprentice- PILE DRIVER"							
AIR TRACK OPERATOR	12/1/2025	\$35.04	\$10.65	\$9.75	\$6.28	\$0.00	\$61.72
LABORERS	6/1/2026	\$37.54	\$10.65	\$9.75	\$6.28	\$0.00	\$64.22
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.96	\$10.65	\$9.75	\$6.28	\$0.00	\$66.64
	6/1/2027	\$41.36	\$10.65	\$9.75	\$6.28	\$0.00	\$68.04
	12/1/2027	\$42.76	\$10.65	\$9.75	\$6.28	\$0.00	\$69.44
	6/1/2028	\$44.26	\$10.65	\$9.75	\$6.28	\$0.00	\$70.94
	12/1/2028	\$45.76	\$10.65	\$9.75	\$6.28	\$0.00	\$72.44
For apprentice rates see "Apprentice- LABORER"							
AIR TRACK OPERATOR (HEAVY & HIGHWAY)	12/1/2025	\$35.96	\$10.65	\$9.75	\$6.60	\$0.00	\$62.96
LABORERS	6/1/2026	\$38.00	\$10.65	\$9.75	\$6.60	\$0.00	\$65.00
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2026	\$39.29	\$10.65	\$9.75	\$6.60	\$0.00	\$66.29
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
ASBESTOS WORKER (PIPES & TANKS)	12/1/2025	\$40.32	\$14.50	\$4.30	\$6.25	\$0.00	\$65.37
HEAT & FROST INSULATORS LOCAL 6							
HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)							
ASPHALT RAKER	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

ASPHALT RAKER (HEAVY & HIGHWAY) LABORERS	12/1/2025	\$35.46	\$10.65	\$9.75	\$6.60	\$0.00	\$62.46
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	6/1/2026	\$37.50	\$10.65	\$9.75	\$6.60	\$0.00	\$64.50
	12/1/2026	\$38.79	\$10.65	\$9.75	\$6.60	\$0.00	\$65.79

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

AUTOMATIC GRADER-EXCAVATOR (RECLAIMER) OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.56	\$13.78	\$12.15	\$3.00	\$0.00	\$68.49
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

BACKHOE/FRONT-END LOADER OPERATOR OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.56	\$13.78	\$12.15	\$3.00	\$0.00	\$68.49
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

BARCO-TYPE JUMPING TAMPER LABORERS	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

BATCH/CEMENT PLANT - ON SITE OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

BLOCK PAVER, RAMMER / CURB SETTER LABORERS	12/1/2025	\$35.04	\$10.65	\$9.75	\$6.28	\$0.00	\$61.72
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$37.54	\$10.65	\$9.75	\$6.28	\$0.00	\$64.22
	12/1/2026	\$39.96	\$10.65	\$9.75	\$6.28	\$0.00	\$66.64
	6/1/2027	\$41.36	\$10.65	\$9.75	\$6.28	\$0.00	\$68.04
	12/1/2027	\$42.76	\$10.65	\$9.75	\$6.28	\$0.00	\$69.44
	6/1/2028	\$44.26	\$10.65	\$9.75	\$6.28	\$0.00	\$70.94
	12/1/2028	\$45.76	\$10.65	\$9.75	\$6.28	\$0.00	\$72.44

For apprentice rates see "Apprentice- LABORER"

BLOCK PAVER, RAMMER / CURB SETTER (HEAVY &	12/1/2025	\$35.96	\$10.65	\$9.75	\$6.60	\$0.00	\$62.96
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
HIGHWAY)	6/1/2026	\$38.00	\$10.65	\$9.75	\$6.60	\$0.00	\$65.00
LABORERS	12/1/2026	\$39.29	\$10.65	\$9.75	\$6.60	\$0.00	\$66.29
LABORERS - ZONE 4 (HEAVY & HIGHWAY)							

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

BOILER MAKER	1/1/2024	\$48.12	\$7.07	\$14.60	\$6.00	\$0.00	\$75.79
BOILERMAKERS LOCAL 29							
BOILERMAKERS LOCAL 29							

Apprentice: BOILER MAKER							
Effective Date: 1/1/2024							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	65.00	\$31.28	\$7.07	\$9.32	\$3.90	\$0.00	\$51.57
2	65.00	\$31.28	\$7.07	\$9.32	\$3.90	\$0.00	\$51.57
3	70.00	\$33.68	\$7.07	\$10.03	\$4.20	\$0.00	\$54.98
4	75.00	\$36.09	\$7.07	\$10.74	\$4.50	\$0.00	\$58.40
5	80.00	\$38.50	\$7.07	\$11.45	\$4.80	\$0.00	\$61.82
6	85.00	\$40.90	\$7.07	\$12.18	\$5.10	\$0.00	\$65.25
7	90.00	\$43.31	\$7.07	\$12.88	\$5.40	\$0.00	\$68.66
8	95.00	\$45.71	\$7.07	\$13.62	\$5.70	\$0.00	\$72.10

Apprentice to Journeyworker Ratio: 1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	2/1/2026	\$56.36	\$12.84	\$15.57	\$5.89	\$0.00	\$90.66
BRICKLAYERS LOCAL 3	8/1/2026	\$58.56	\$12.84	\$15.57	\$5.89	\$0.00	\$92.86
BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)	2/1/2027	\$59.96	\$12.84	\$15.57	\$5.89	\$0.00	\$94.26

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$28.18	\$12.84	\$15.57	\$5.89	\$0.00	\$62.48
2	60.00	\$33.82	\$12.84	\$15.57	\$5.89	\$0.00	\$68.12
3	70.00	\$39.45	\$12.84	\$15.57	\$5.89	\$0.00	\$73.75
4	80.00	\$45.09	\$12.84	\$15.57	\$5.89	\$0.00	\$79.39
5	90.00	\$50.72	\$12.84	\$15.57	\$5.89	\$0.00	\$85.02

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)							
Effective Date: 8/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.28	\$12.84	\$15.57	\$5.89	\$0.00	\$63.58
2	60.00	\$35.14	\$12.84	\$15.57	\$5.89	\$0.00	\$69.44
3	70.00	\$40.99	\$12.84	\$15.57	\$5.89	\$0.00	\$75.29
4	80.00	\$46.85	\$12.84	\$15.57	\$5.89	\$0.00	\$81.15
5	90.00	\$52.70	\$12.84	\$15.57	\$5.89	\$0.00	\$87.00

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice to Journeyworker Ratio: 1:5							
BULLDOZER/POWER SHOVEL/TREE SHREDDER /CLAM SHELL OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.56	\$13.78	\$12.15	\$3.00	\$0.00	\$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
CAISSON & UNDERPINNING BOTTOM MAN LABORERS	12/1/2025	\$49.10	\$10.65	\$9.75	\$9.80	\$0.00	\$79.30
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$50.65	\$10.65	\$9.75	\$9.80	\$0.00	\$80.85
	12/1/2026	\$52.15	\$10.65	\$9.75	\$9.80	\$0.00	\$82.35
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING LABORER LABORERS	12/1/2025	\$47.95	\$10.65	\$9.75	\$9.80	\$0.00	\$78.15
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$49.50	\$10.65	\$9.75	\$9.80	\$0.00	\$79.70
	12/1/2026	\$51.00	\$10.65	\$9.75	\$9.80	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING TOP MAN LABORERS	12/1/2025	\$48.28	\$10.65	\$9.75	\$9.80	\$0.00	\$78.48
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$49.83	\$10.65	\$9.75	\$9.80	\$0.00	\$80.03
	12/1/2026	\$51.33	\$10.65	\$9.75	\$9.80	\$0.00	\$81.53
For apprentice rates see "Apprentice- LABORER"							
CARBIDE CORE DRILL OPERATOR LABORERS	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19
For apprentice rates see "Apprentice- LABORER"							
CARPENTER	3/1/2026	\$44.23	\$8.81	\$11.25	\$6.90	\$0.00	\$71.19
CARPENTERS	9/1/2026	\$45.18	\$8.81	\$11.25	\$6.90	\$0.00	\$72.14
CARPENTERS LOCAL 336 - BERKSHIRE COUNTY	3/1/2027	\$46.08	\$8.81	\$11.25	\$6.90	\$0.00	\$73.04

Apprentice: CARPENTER							
Effective Date: 3/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$19.90	\$8.81	\$0.00	\$1.38	\$0.00	\$30.09

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

COMPRESSOR OPERATOR	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96
OPERATING ENGINEERS LOCAL 98							
OPERATING ENGINEERS LOCAL 98							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

CRANE OPERATOR	12/1/2023	\$43.06	\$13.78	\$12.15	\$3.00	\$0.00	\$71.99
OPERATING ENGINEERS LOCAL 98							
OPERATING ENGINEERS LOCAL 98							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE)	1/1/2026	\$59.56	\$10.35	\$12.00	\$12.60	\$0.00	\$94.51
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 3							

Apprentice: DELEADER (BRIDGE)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.78	\$10.35	\$0.00	\$0.00	\$0.00	\$40.13
2	55.00	\$32.76	\$10.35	\$0.00	\$6.93	\$0.00	\$50.04
3	60.00	\$35.74	\$10.35	\$0.00	\$7.56	\$0.00	\$53.65
4	65.00	\$38.71	\$10.35	\$0.00	\$8.19	\$0.00	\$57.25
5	70.00	\$41.69	\$10.35	\$12.00	\$8.82	\$0.00	\$72.86
6	75.00	\$44.67	\$10.35	\$12.00	\$9.45	\$0.00	\$76.47
7	80.00	\$47.65	\$10.35	\$12.00	\$10.08	\$0.00	\$80.08
8	90.00	\$53.60	\$10.35	\$12.00	\$11.34	\$0.00	\$87.29

Apprentice to Journeyworker Ratio: 1:1

DEMO: ADZEMAN	12/1/2025	\$48.00	\$10.65	\$9.75	\$9.65	\$0.00	\$78.05
LABORERS	6/1/2026	\$49.55	\$10.65	\$9.75	\$9.65	\$0.00	\$79.60
LABORERS - ZONE 4 (BUILDING & SITE)	12/7/2026	\$51.05	\$10.65	\$9.75	\$9.65	\$0.00	\$81.10
	6/7/2027	\$52.65	\$10.65	\$9.75	\$9.65	\$0.00	\$82.70
	12/6/2027	\$54.25	\$10.65	\$9.75	\$9.65	\$0.00	\$84.30

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	6/5/2028	\$55.93	\$10.65	\$9.75	\$9.65	\$0.00	\$85.98
	12/4/2028	\$57.60	\$10.65	\$9.75	\$9.65	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS	12/1/2025	\$49.00	\$10.65	\$9.75	\$9.65	\$0.00	\$79.05
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$50.55	\$10.65	\$9.75	\$9.65	\$0.00	\$80.60
	12/7/2026	\$52.05	\$10.65	\$9.75	\$9.65	\$0.00	\$82.10
	6/7/2027	\$53.65	\$10.65	\$9.75	\$9.65	\$0.00	\$83.70
	12/6/2027	\$55.25	\$10.65	\$9.75	\$9.65	\$0.00	\$85.30
	6/5/2028	\$56.93	\$10.65	\$9.75	\$9.65	\$0.00	\$86.98
	12/4/2028	\$58.60	\$10.65	\$9.75	\$9.65	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS	12/1/2025	\$48.75	\$10.65	\$9.75	\$9.65	\$0.00	\$78.80
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$50.30	\$10.65	\$9.75	\$9.65	\$0.00	\$80.35
	12/7/2026	\$51.80	\$10.65	\$9.75	\$9.65	\$0.00	\$81.85
	6/7/2027	\$53.40	\$10.65	\$9.75	\$9.65	\$0.00	\$83.45
	12/6/2027	\$55.00	\$10.65	\$9.75	\$9.65	\$0.00	\$85.05
	6/5/2028	\$56.68	\$10.65	\$9.75	\$9.65	\$0.00	\$86.73
	12/4/2028	\$58.35	\$10.65	\$9.75	\$9.65	\$0.00	\$88.40

For apprentice rates see "Apprentice- LABORER"

DEMO: CONCRETE CUTTER/SAWYER LABORERS	12/1/2025	\$49.00	\$10.65	\$9.75	\$9.65	\$0.00	\$79.05
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$50.55	\$10.65	\$9.75	\$9.65	\$0.00	\$80.60
	12/7/2026	\$52.05	\$10.65	\$9.75	\$9.65	\$0.00	\$82.10
	6/7/2027	\$53.65	\$10.65	\$9.75	\$9.65	\$0.00	\$83.70
	12/6/2027	\$55.25	\$10.65	\$9.75	\$9.65	\$0.00	\$85.30
	6/5/2028	\$56.93	\$10.65	\$9.75	\$9.65	\$0.00	\$86.98
	12/4/2028	\$58.60	\$10.65	\$9.75	\$9.65	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: JACKHAMMER OPERATOR LABORERS	12/1/2025	\$48.75	\$10.65	\$9.75	\$9.65	\$0.00	\$78.80
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$50.30	\$10.65	\$9.75	\$9.65	\$0.00	\$80.35
	12/7/2026	\$51.80	\$10.65	\$9.75	\$9.65	\$0.00	\$81.85
	6/7/2027	\$53.40	\$10.65	\$9.75	\$9.65	\$0.00	\$83.45
	12/6/2027	\$55.00	\$10.65	\$9.75	\$9.65	\$0.00	\$85.05
	6/5/2028	\$56.68	\$10.65	\$9.75	\$9.65	\$0.00	\$86.73
	12/4/2028	\$58.35	\$10.65	\$9.75	\$9.65	\$0.00	\$88.40

For apprentice rates see "Apprentice- LABORER"

DEMO: WRECKING LABORER LABORERS	12/1/2025	\$48.00	\$10.65	\$9.75	\$9.65	\$0.00	\$78.05
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$49.55	\$10.65	\$9.75	\$9.65	\$0.00	\$79.60
	12/7/2026	\$51.05	\$10.65	\$9.75	\$9.65	\$0.00	\$81.10
	6/7/2027	\$52.65	\$10.65	\$9.75	\$9.65	\$0.00	\$82.70
	12/6/2027	\$54.25	\$10.65	\$9.75	\$9.65	\$0.00	\$84.30
	6/5/2028	\$55.93	\$10.65	\$9.75	\$9.65	\$0.00	\$85.98
	12/4/2028	\$57.60	\$10.65	\$9.75	\$9.65	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DIVER PILE DRIVER LOCAL 56	8/1/2024	\$78.11	\$10.08	\$11.62	\$12.67	\$0.00	\$112.48
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
PILE DRIVER LOCAL 56 (ZONE 3)							
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate							
DIVER TENDER PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 3)	8/1/2024	\$49.19	\$10.08	\$11.62	\$12.67	\$0.00	\$83.56
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate							
DIVER TENDER (EFFLUENT) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 3)	8/1/2024	\$83.69	\$10.08	\$11.62	\$12.67	\$0.00	\$118.06
For apprentice rates see "Apprentice- PILE DRIVER"							
DIVER/SLURRY (EFFLUENT) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 3)	8/1/2024	\$117.16	\$10.08	\$11.62	\$12.67	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"							
DRAWBRIDGE OPERATOR (Construction) DRAWBRIDGE - SEIU LOCAL 888 DRAWBRIDGE - SEIU LOCAL 888	7/1/2020	\$26.77	\$6.67	\$3.93	\$0.00	\$0.16	\$37.53
ELECTRICIAN (Including Core Drilling) ELECTRICIANS LOCAL 7 ELECTRICIANS LOCAL 7	12/28/2025 6/28/2026 1/3/2027	\$53.26 \$54.41 \$55.56	\$13.75 \$14.00 \$14.25	\$8.40 \$8.43 \$8.47	\$6.96 \$7.03 \$7.09	\$0.00 \$0.00 \$0.00	\$82.37 \$83.87 \$85.37

Apprentice: ELECTRICIAN (Including Core Drilling)							
Effective Date: 12/28/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	\$21.30	\$7.65	\$0.63	\$0.00	\$0.00	\$29.58
2	45.00	\$23.97	\$7.65	\$0.70	\$0.00	\$0.00	\$32.32
3	50.00	\$26.63	\$13.75	\$7.53	\$0.00	\$0.00	\$47.91
4	55.00	\$29.29	\$13.75	\$7.61	\$0.00	\$0.00	\$50.65
5	65.00	\$34.62	\$13.75	\$9.84	\$0.00	\$0.00	\$58.21
6	70.00	\$37.28	\$13.75	\$11.30	\$0.00	\$0.00	\$62.33

Apprentice: ELECTRICIAN (Including Core Drilling)							
Effective Date: 6/28/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	\$21.76	\$7.80	\$0.63	\$0.00	\$0.00	\$30.19
2	45.00	\$24.48	\$7.80	\$0.70	\$0.00	\$0.00	\$32.98
3	50.00	\$27.21	\$14.00	\$7.53	\$0.00	\$0.00	\$48.74
4	55.00	\$29.93	\$14.00	\$7.61	\$0.00	\$0.00	\$51.54
5	65.00	\$35.37	\$14.00	\$9.84	\$0.00	\$0.00	\$59.21
6	70.00	\$38.09	\$14.00	\$11.30	\$0.00	\$0.00	\$63.39

Apprentice to Journeyworker Ratio: 2:3

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
ELEVATOR CONSTRUCTOR	1/1/2026	\$69.23	\$16.38	\$11.06	\$10.70	\$0.00	\$107.37
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	\$72.23	\$16.48	\$11.16	\$11.00	\$0.00	\$110.87
ELEVATOR CONSTRUCTORS LOCAL 41							

Apprentice: ELEVATOR CONSTRUCTOR							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$34.62	\$16.38	\$0.00	\$0.00	\$0.00	\$51.00
2	55.00	\$38.08	\$16.38	\$11.06	\$10.70	\$0.00	\$76.22
3	65.00	\$45.00	\$16.38	\$11.06	\$10.70	\$0.00	\$83.14
4	70.00	\$48.46	\$16.38	\$11.06	\$10.70	\$0.00	\$86.60
5	80.00	\$55.38	\$16.38	\$11.06	\$10.70	\$0.00	\$93.52

Apprentice: ELEVATOR CONSTRUCTOR							
Effective Date: 1/1/2027							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$36.12	\$16.48	\$0.00	\$0.00	\$0.00	\$52.60
2	55.00	\$39.73	\$16.48	\$11.16	\$11.00	\$0.00	\$78.37
3	65.00	\$46.95	\$16.48	\$11.16	\$11.00	\$0.00	\$85.59
4	70.00	\$50.56	\$16.48	\$11.16	\$11.00	\$0.00	\$89.20
5	80.00	\$57.78	\$16.48	\$11.16	\$11.00	\$0.00	\$96.42

Apprentice to Journeyworker Ratio: 1:1

ELEVATOR CONSTRUCTOR HELPER	1/1/2026	\$48.46	\$16.38	\$11.06	\$10.70	\$0.00	\$86.60
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	\$50.56	\$16.48	\$11.16	\$11.00	\$0.00	\$89.20
ELEVATOR CONSTRUCTORS LOCAL 41							

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & BEAM RAIL ERECTOR LABORERS	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$45.26	\$10.65	\$9.75	\$6.28	\$0.00	\$71.94

For apprentice rates see "Apprentice- LABORER"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) LABORERS	12/1/2025	\$35.46	\$10.65	\$9.75	\$6.60	\$0.00	\$62.46
LABORERS	6/1/2026	\$37.50	\$10.65	\$9.75	\$6.60	\$0.00	\$64.50
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2026	\$38.79	\$10.65	\$9.75	\$6.60	\$0.00	\$65.79

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST/ROD-BLDG,SITE,HVY/HWY OPERATING ENGINEERS LOCAL 98	6/1/1999	\$18.84	\$4.80	\$4.10	\$0.00	\$0.00	\$27.74
OPERATING ENGINEERS LOCAL 98							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
FIELD ENG.PARTY CHIEF:BLDG,SITE,HVY/HWY OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	6/1/1999	\$21.33	\$4.80	\$4.10	\$0.00	\$0.00	\$30.23
FIELD ENG.SURVEY CHIEF:BLDG,SITE,HVY/HWY OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	6/1/1999	\$22.33	\$4.80	\$4.10	\$0.00	\$0.00	\$31.23
FIRE ALARM INSTALLER ELECTRICIANS LOCAL 7 ELECTRICIANS LOCAL 7	12/28/2025 6/28/2026 1/3/2027	\$53.26 \$54.41 \$55.56	\$13.75 \$14.00 \$14.25	\$8.40 \$8.43 \$8.47	\$6.96 \$7.03 \$7.09	\$0.00 \$0.00 \$0.00	\$82.37 \$83.87 \$85.37
For apprentice rates see "Apprentice- ELECTRICIAN"							
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING ELECTRICIANS LOCAL 7 ELECTRICIANS LOCAL 7	12/28/2025 6/28/2026 1/3/2027	\$53.26 \$54.41 \$55.56	\$13.75 \$14.00 \$14.25	\$8.40 \$8.43 \$8.47	\$6.96 \$7.03 \$7.09	\$0.00 \$0.00 \$0.00	\$82.37 \$83.87 \$85.37
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"							
FIREMAN OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96

Apprentice: FIREMAN							
Effective Date: 12/1/2023							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$23.42	\$13.78	\$12.15	\$3.00	\$0.00	\$52.35
2	70.00	\$27.32	\$13.78	\$12.15	\$3.00	\$0.00	\$56.25
3	80.00	\$31.22	\$13.78	\$12.15	\$3.00	\$0.00	\$60.15
4	90.00	\$35.13	\$13.78	\$12.15	\$3.00	\$0.00	\$64.06

Apprentice to Journeyworker Ratio: 1:6

FLAGGER & SIGNALER (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2025 6/1/2026 12/1/2026	\$28.09 \$29.21 \$29.21	\$10.65 \$10.65 \$10.65	\$9.75 \$9.75 \$9.75	\$6.60 \$6.60 \$6.60	\$0.00 \$0.00 \$0.00	\$55.09 \$56.21 \$56.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
FLOORCOVERER FLOORCOVERERS LOCAL 2168 FLOORCOVERERS LOCAL 2168 ZONE III	3/1/2026 9/1/2026 3/1/2027	\$44.34 \$45.29 \$46.19	\$8.56 \$8.56 \$8.56	\$11.25 \$11.25 \$11.25	\$6.90 \$6.90 \$6.90	\$0.00 \$0.00 \$0.00	\$71.05 \$72.00 \$72.90

Apprentice: FLOORCOVERER							
Effective Date: 3/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$19.95	\$8.56	\$0.00	\$1.38	\$0.00	\$29.89
2	45.00	\$19.95	\$8.56	\$0.00	\$1.38	\$0.00	\$29.89
3	55.00	\$24.39	\$8.56	\$0.00	\$2.76	\$0.00	\$35.71

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	7/1/2027	\$44.98	\$13.54	\$11.01	\$11.12	\$2.13	\$82.78
	1/1/2028	\$46.48	\$13.54	\$11.01	\$11.12	\$2.13	\$84.28

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING -WATER)	9/17/2025	\$52.26	\$12.00	\$10.85	\$7.10	\$0.00	\$82.21
PLUMBERS & PIPEFITTERS LOCAL 104	3/17/2026	\$52.76	\$13.50	\$10.85	\$7.10	\$0.00	\$84.21
PLUMBERS & PIPEFITTERS LOCAL 104	9/17/2026	\$54.76	\$13.50	\$10.85	\$7.10	\$0.00	\$86.21
	3/17/2027	\$58.26	\$12.00	\$10.85	\$7.10	\$0.00	\$88.21
	9/17/2027	\$60.26	\$12.00	\$10.85	\$7.10	\$0.00	\$90.21
	3/17/2028	\$62.26	\$12.00	\$10.85	\$7.10	\$0.00	\$92.21
	9/17/2028	\$64.26	\$12.00	\$10.85	\$7.10	\$0.00	\$94.21
	3/17/2029	\$66.26	\$12.00	\$10.85	\$7.10	\$0.00	\$96.21

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

HVAC MECHANIC	9/17/2025	\$52.26	\$12.00	\$10.85	\$7.10	\$0.00	\$82.21
PLUMBERS & PIPEFITTERS LOCAL 104	3/17/2026	\$52.76	\$13.50	\$10.85	\$7.10	\$0.00	\$84.21
PLUMBERS & PIPEFITTERS LOCAL 104	9/17/2026	\$54.76	\$13.50	\$10.85	\$7.10	\$0.00	\$86.21
	3/17/2027	\$58.26	\$12.00	\$10.85	\$7.10	\$0.00	\$88.21
	9/17/2027	\$60.26	\$12.00	\$10.85	\$7.10	\$0.00	\$90.21
	3/17/2028	\$62.26	\$12.00	\$10.85	\$7.10	\$0.00	\$92.21
	9/17/2028	\$64.26	\$12.00	\$10.85	\$7.10	\$0.00	\$94.21
	3/17/2029	\$66.26	\$12.00	\$10.85	\$7.10	\$0.00	\$96.21

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

HYDRAULIC DRILLS (HEAVY & HIGHWAY)	12/1/2025	\$35.96	\$10.65	\$9.75	\$6.60	\$0.00	\$62.96
LABORERS	6/1/2026	\$38.00	\$10.65	\$9.75	\$6.60	\$0.00	\$65.00
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2026	\$39.29	\$10.65	\$9.75	\$6.60	\$0.00	\$66.29

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

INSULATOR (PIPES & TANKS)	9/1/2025	\$48.27	\$14.75	\$9.52	\$10.09	\$0.00	\$82.63
HEAT & FROST INSULATORS LOCAL 6	9/1/2026	\$51.01	\$14.75	\$9.52	\$10.09	\$0.00	\$85.37
HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)							

Apprentice: INSULATOR (PIPES & TANKS)							
Effective Date: 9/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.14	\$14.75	\$9.27	\$5.05	\$0.00	\$53.21
2	60.00	\$28.96	\$14.75	\$9.32	\$6.05	\$0.00	\$59.08
3	70.00	\$33.79	\$14.75	\$9.37	\$7.06	\$0.00	\$64.97
4	80.00	\$38.62	\$14.75	\$9.42	\$8.07	\$0.00	\$70.86

Apprentice: INSULATOR (PIPES & TANKS)							
Effective Date: 9/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$25.51	\$14.75	\$9.27	\$5.05	\$0.00	\$54.58
2	60.00	\$30.61	\$14.75	\$9.32	\$6.05	\$0.00	\$60.73

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: INSULATOR (PIPES & TANKS)							
Effective Date: 9/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
3	70.00	\$35.71	\$14.75	\$9.37	\$7.06	\$0.00	\$66.89
4	80.00	\$40.81	\$14.75	\$9.42	\$8.07	\$0.00	\$73.05

Apprentice to Journeyworker Ratio: 1:4

IRONWORKER/WELDER IRONWORKERS LOCAL 12 IRONWORKERS LOCAL 12	1/1/2025	\$39.50	\$5.50	\$14.28	\$4.55	\$0.00	\$63.83
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Apprentice: IRONWORKER/WELDER							
Effective Date: 1/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	0.00	\$23.50	\$5.75	\$0.00	\$3.75	\$0.00	\$33.00
2	0.00	\$25.50	\$5.75	\$10.00	\$3.75	\$0.00	\$45.00
3	0.00	\$27.50	\$5.75	\$11.42	\$3.75	\$0.00	\$48.42
4	0.00	\$29.50	\$5.75	\$12.85	\$3.75	\$0.00	\$51.85

Apprentice to Journeyworker Ratio: 1:4

JACKHAMMER & PAVING BREAKER OPERATOR	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

LABORER	12/1/2025	\$34.29	\$10.65	\$9.75	\$6.28	\$0.00	\$60.97
LABORERS	6/1/2026	\$36.79	\$10.65	\$9.75	\$6.28	\$0.00	\$63.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.61	\$10.65	\$9.75	\$6.28	\$0.00	\$67.29
	12/1/2027	\$42.01	\$10.65	\$9.75	\$6.28	\$0.00	\$68.69
	6/1/2028	\$43.51	\$10.65	\$9.75	\$6.28	\$0.00	\$70.19
	12/1/2028	\$45.01	\$10.65	\$9.75	\$6.28	\$0.00	\$71.69

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS	6/1/2026	\$36.79	\$10.65	\$9.75	\$6.28	\$0.00	\$63.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.61	\$10.65	\$9.75	\$6.28	\$0.00	\$67.29
	12/1/2027	\$42.01	\$10.65	\$9.75	\$6.28	\$0.00	\$68.69
	6/1/2028	\$43.51	\$10.65	\$9.75	\$6.28	\$0.00	\$70.19
	12/1/2028	\$45.01	\$10.65	\$9.75	\$6.28	\$0.00	\$71.69

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER	12/1/2025	\$34.29	\$10.65	\$9.75	\$6.28	\$0.00	\$60.97
LABORERS	6/1/2026	\$36.79	\$10.65	\$9.75	\$6.28	\$0.00	\$63.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.61	\$10.65	\$9.75	\$6.28	\$0.00	\$67.29
	12/1/2027	\$42.01	\$10.65	\$9.75	\$6.28	\$0.00	\$68.69
	6/1/2028	\$43.51	\$10.65	\$9.75	\$6.28	\$0.00	\$70.19
	12/1/2028	\$45.01	\$10.65	\$9.75	\$6.28	\$0.00	\$71.69

For apprentice rates see "Apprentice- LABORER"

LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER	12/1/2025	\$33.88	\$10.65	\$9.75	\$5.41	\$0.00	\$59.69
LABORERS	6/1/2026	\$35.92	\$10.65	\$9.75	\$5.41	\$0.00	\$61.73
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$37.21	\$10.65	\$9.75	\$5.41	\$0.00	\$63.02
	6/1/2027	\$38.51	\$10.65	\$9.75	\$5.41	\$0.00	\$64.32
	12/1/2027	\$39.81	\$10.65	\$9.75	\$5.41	\$0.00	\$65.62
	6/5/2028	\$41.16	\$10.65	\$9.75	\$5.41	\$0.00	\$66.97
	12/4/2028	\$42.51	\$10.65	\$9.75	\$5.41	\$0.00	\$68.32

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER	12/1/2025	\$36.29	\$10.65	\$9.75	\$6.28	\$0.00	\$62.97
LABORERS	6/1/2026	\$38.79	\$10.65	\$9.75	\$6.28	\$0.00	\$65.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$41.21	\$10.65	\$9.75	\$6.28	\$0.00	\$67.89
	6/1/2027	\$42.61	\$10.65	\$9.75	\$6.28	\$0.00	\$69.29
	12/1/2027	\$44.01	\$10.65	\$9.75	\$6.28	\$0.00	\$70.69
	6/1/2028	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19
	12/1/2028	\$47.01	\$10.65	\$9.75	\$6.28	\$0.00	\$73.69

For apprentice rates see "Apprentice- LABORER"

LABORER: MASON TENDER (HEAVY & HIGHWAY)	12/1/2025	\$35.46	\$10.65	\$9.75	\$6.60	\$0.00	\$62.46
LABORERS	6/1/2026	\$37.50	\$10.65	\$9.75	\$6.60	\$0.00	\$64.50
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2026	\$38.79	\$10.65	\$9.75	\$6.60	\$0.00	\$65.79

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

LABORER: MULTI-TRADE TENDER	12/1/2025	\$34.29	\$10.65	\$9.75	\$6.28	\$0.00	\$60.97
LABORERS	6/1/2026	\$36.79	\$10.65	\$9.75	\$6.28	\$0.00	\$63.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.61	\$10.65	\$9.75	\$6.28	\$0.00	\$67.29
	12/1/2027	\$42.01	\$10.65	\$9.75	\$6.28	\$0.00	\$68.69
	6/1/2028	\$43.51	\$10.65	\$9.75	\$6.28	\$0.00	\$70.19
	12/1/2028	\$45.01	\$10.65	\$9.75	\$6.28	\$0.00	\$71.69

For apprentice rates see "Apprentice- LABORER"

LABORER: TREE REMOVER	12/1/2025	\$34.29	\$10.65	\$9.75	\$6.28	\$0.00	\$60.97
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS	6/1/2026	\$36.79	\$10.65	\$9.75	\$6.28	\$0.00	\$63.47
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.21	\$10.65	\$9.75	\$6.28	\$0.00	\$65.89
	6/1/2027	\$40.61	\$10.65	\$9.75	\$6.28	\$0.00	\$67.29
	12/1/2027	\$42.01	\$10.65	\$9.75	\$6.28	\$0.00	\$68.69
	6/1/2028	\$43.51	\$10.65	\$9.75	\$6.28	\$0.00	\$70.19
	12/1/2028	\$45.01	\$10.65	\$9.75	\$6.28	\$0.00	\$71.69

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	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

LASER BEAM OPERATOR (HEAVY & HIGHWAY)	12/1/2025	\$35.46	\$10.65	\$9.75	\$6.60	\$0.00	\$62.46
LABORERS	6/1/2026	\$37.50	\$10.65	\$9.75	\$6.60	\$0.00	\$64.50
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	12/1/2026	\$38.79	\$10.65	\$9.75	\$6.60	\$0.00	\$65.79

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

MARBLE & TILE FINISHERS	2/1/2026	\$45.56	\$12.84	\$15.10	\$5.41	\$0.00	\$78.91
BRICKLAYERS LOCAL 3	8/1/2026	\$47.32	\$12.84	\$15.10	\$5.41	\$0.00	\$80.67
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE	2/1/2027	\$48.44	\$12.84	\$15.10	\$5.41	\$0.00	\$81.79

Apprentice: MARBLE & TILE FINISHERS							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$22.78	\$12.84	\$15.10	\$5.41	\$0.00	\$56.13
2	60.00	\$27.34	\$12.84	\$15.10	\$5.41	\$0.00	\$60.69
3	70.00	\$31.89	\$12.84	\$15.10	\$5.41	\$0.00	\$65.24
4	80.00	\$36.45	\$12.84	\$15.10	\$5.41	\$0.00	\$69.80
5	90.00	\$41.00	\$12.84	\$15.10	\$5.41	\$0.00	\$74.35

Apprentice: MARBLE & TILE FINISHERS							
Effective Date: 8/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: MARBLE & TILE FINISHERS							
Effective Date: 8/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$23.66	\$12.84	\$15.10	\$5.41	\$0.00	\$57.01
2	60.00	\$28.39	\$12.84	\$15.10	\$5.41	\$0.00	\$61.74
3	70.00	\$33.12	\$12.84	\$15.10	\$5.41	\$0.00	\$66.47
4	80.00	\$37.86	\$12.84	\$15.10	\$5.41	\$0.00	\$71.21
5	90.00	\$42.59	\$12.84	\$15.10	\$5.41	\$0.00	\$75.94
Apprentice to Journeyworker Ratio: 1:5							
MECH. SWEEPER OPERATOR (ON CONST. SITES) OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.56	\$13.78	\$12.15	\$3.00	\$0.00	\$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
MECHANIC/WELDER/BOOM TRUCK OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
MILLWRIGHT (Zone 3) MILLWRIGHTS LOCAL 1121 MILLWRIGHTS LOCAL 1121 - Zone 3	1/5/2026	\$45.70	\$10.08	\$11.47	\$9.75	\$0.00	\$77.00
Apprentice: MILLWRIGHT (Zone 3)							
Effective Date: 1/5/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	\$25.14	\$10.08	\$0.00	\$5.36	\$0.00	\$40.58
2	65.00	\$29.71	\$10.08	\$0.00	\$6.34	\$0.00	\$46.13
3	75.00	\$34.28	\$10.08	\$11.47	\$7.31	\$0.00	\$63.14
4	85.00	\$38.85	\$10.08	\$11.47	\$8.29	\$0.00	\$68.69
Apprentice Notes							
Step 1&2 Appr. indentured after 1/6/2020 receive no pension.							
Apprentice to Journeyworker Ratio: 1:4							
MORTAR MIXER LABORERS LABORERS - ZONE 4 (BUILDING & SITE)	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19

For apprentice rates see "Apprentice- LABORER"

OILER OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$35.02	\$13.78	\$12.15	\$3.00	\$0.00	\$63.95
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS VI OPERATING ENGINEERS LOCAL 98 OPERATING ENGINEERS LOCAL 98	12/1/2023	\$32.74	\$13.78	\$12.15	\$3.00	\$0.00	\$61.67
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 PAINTERS LOCAL 35 - ZONE 3	1/1/2026	\$59.56	\$10.35	\$12.00	\$12.60	\$0.00	\$94.51
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Apprentice: PAINTER (BRIDGES/TANKS)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.78	\$10.35	\$0.00	\$0.00	\$0.00	\$40.13
2	55.00	\$32.76	\$10.35	\$0.00	\$6.93	\$0.00	\$50.04
3	60.00	\$35.74	\$10.35	\$0.00	\$7.56	\$0.00	\$53.65
4	65.00	\$38.71	\$10.35	\$0.00	\$8.19	\$0.00	\$57.25
5	70.00	\$41.69	\$10.35	\$12.00	\$8.82	\$0.00	\$72.86
6	75.00	\$44.67	\$10.35	\$12.00	\$9.45	\$0.00	\$76.47
7	80.00	\$47.65	\$10.35	\$12.00	\$10.08	\$0.00	\$80.08
8	90.00	\$53.60	\$10.35	\$12.00	\$11.34	\$0.00	\$87.29

Apprentice to Journeyworker Ratio: 1:1

PAINTER (SPRAY OR SANDBLAST, NEW) * * If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 PAINTERS LOCAL 35 - ZONE 3	1/1/2026	\$42.03	\$10.35	\$12.00	\$8.35	\$0.00	\$72.73
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Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) *							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$21.02	\$10.35	\$0.00	\$0.00	\$0.00	\$31.37
2	55.00	\$23.12	\$10.35	\$0.00	\$4.59	\$0.00	\$38.06
3	60.00	\$25.22	\$10.35	\$0.00	\$5.01	\$0.00	\$40.58

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: PAINTER / TAPER (BRUSH, NEW) *							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
8	90.00	\$36.57	\$10.35	\$12.00	\$7.52	\$0.00	\$66.44
Apprentice to Journeyworker Ratio: 1:1							
PAINTER / TAPER (BRUSH, REPAINT) PAINTERS LOCAL 35 PAINTERS LOCAL 35 - ZONE 3	1/1/2026	\$37.95	\$10.35	\$12.00	\$8.35	\$0.00	\$68.65

Apprentice: PAINTER / TAPER (BRUSH, REPAINT)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$18.98	\$10.35	\$0.00	\$0.00	\$0.00	\$29.33
2	55.00	\$20.87	\$10.35	\$0.00	\$4.59	\$0.00	\$35.81
3	60.00	\$22.77	\$10.35	\$0.00	\$5.01	\$0.00	\$38.13
4	65.00	\$24.67	\$10.35	\$0.00	\$5.43	\$0.00	\$40.45
5	70.00	\$26.57	\$10.35	\$12.00	\$5.85	\$0.00	\$54.77
6	75.00	\$28.46	\$10.35	\$12.00	\$6.26	\$0.00	\$57.07
7	80.00	\$30.36	\$10.35	\$12.00	\$6.68	\$0.00	\$59.39
8	90.00	\$34.16	\$10.35	\$12.00	\$7.52	\$0.00	\$64.03

Apprentice to Journeyworker Ratio: 1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) LABORERS	12/1/2025	\$35.21	\$10.65	\$9.75	\$6.60	\$0.00	\$62.21
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	6/1/2026	\$37.25	\$10.65	\$9.75	\$6.60	\$0.00	\$64.25
	12/1/2026	\$38.54	\$10.65	\$9.75	\$6.60	\$0.00	\$65.54

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

PANEL & PICKUP TRUCKS DRIVER TEAMSTERS JOINT COUNCIL NO. 10	1/1/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$0.00	\$78.73
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$0.00	\$79.73
	12/1/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$0.00	\$81.47
	1/1/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$0.00	\$82.07

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 3)	8/1/2024	\$49.19	\$10.08	\$11.62	\$12.67	\$0.00	\$83.56
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For apprentice rates see "Apprentice- PILE DRIVER"

PILE DRIVER PILE DRIVER LOCAL 56 PILE DRIVER LOCAL 56 (ZONE 3)	8/1/2024	\$49.19	\$10.08	\$11.62	\$12.67	\$0.00	\$83.56
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)							
POWDERMAN & BLASTER LABORERS	12/1/2025	\$35.29	\$10.65	\$9.75	\$6.28	\$0.00	\$61.97
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$37.79	\$10.65	\$9.75	\$6.28	\$0.00	\$64.47
	12/1/2026	\$40.21	\$10.65	\$9.75	\$6.28	\$0.00	\$66.89
	6/1/2027	\$41.61	\$10.65	\$9.75	\$6.28	\$0.00	\$68.29
	12/1/2027	\$43.01	\$10.65	\$9.75	\$6.28	\$0.00	\$69.69
	6/1/2028	\$44.51	\$10.65	\$9.75	\$6.28	\$0.00	\$71.19
	12/1/2028	\$46.01	\$10.65	\$9.75	\$6.28	\$0.00	\$72.69
For apprentice rates see "Apprentice- LABORER"							
POWDERMAN & BLASTER (HEAVY & HIGHWAY) LABORERS	12/1/2025	\$36.21	\$10.65	\$9.75	\$6.60	\$0.00	\$63.21
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	6/1/2026	\$38.25	\$10.65	\$9.75	\$6.60	\$0.00	\$65.25
	12/1/2026	\$39.54	\$10.65	\$9.75	\$6.60	\$0.00	\$66.54
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)							
PUMP OPERATOR (CONCRETE) OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.56	\$13.78	\$12.15	\$3.00	\$0.00	\$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PUMP OPERATOR (DEWATERING, OTHER) OPERATING ENGINEERS LOCAL 98	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
READY-MIX CONCRETE DRIVER TEAMSTERS 404 - Construction Service (Northampton)	5/1/2024	\$26.14	\$11.82	\$7.25	\$0.00	\$0.00	\$45.21
For apprentice rates see "Apprentice- LABORER"							
RIDE-ON MOTORIZED BUGGY OPERATOR LABORERS	12/1/2025	\$34.54	\$10.65	\$9.75	\$6.28	\$0.00	\$61.22
LABORERS - ZONE 4 (BUILDING & SITE)	6/1/2026	\$37.04	\$10.65	\$9.75	\$6.28	\$0.00	\$63.72
	12/1/2026	\$39.46	\$10.65	\$9.75	\$6.28	\$0.00	\$66.14
	6/1/2027	\$40.86	\$10.65	\$9.75	\$6.28	\$0.00	\$67.54
	12/1/2027	\$42.26	\$10.65	\$9.75	\$6.28	\$0.00	\$68.94
	6/1/2028	\$43.76	\$10.65	\$9.75	\$6.28	\$0.00	\$70.44
	12/1/2028	\$47.26	\$9.90	\$9.25	\$5.53	\$0.00	\$71.94
	6/1/2205	\$34.29	\$9.90	\$0.00	\$0.00	\$0.00	\$44.19
	12/1/2205	\$36.79	\$9.90	\$9.25	\$5.53	\$0.00	\$61.47
	6/1/2206	\$39.29	\$9.90	\$9.25	\$5.53	\$0.00	\$63.97
	12/1/2206	\$41.46	\$9.90	\$9.25	\$5.53	\$0.00	\$66.14
	6/1/2207	\$43.11	\$9.90	\$9.25	\$5.53	\$0.00	\$67.79
	12/1/2207	\$44.51	\$9.90	\$9.25	\$5.53	\$0.00	\$69.19
	6/1/2208	\$46.01	\$9.90	\$9.25	\$5.53	\$0.00	\$70.69
	12/1/2208	\$45.51	\$10.65	\$9.75	\$6.28	\$0.00	\$72.19
For apprentice rates see "Apprentice- LABORER"							
ROLLER OPERATOR OPERATING ENGINEERS LOCAL 98	12/1/2023	\$38.42	\$13.78	\$12.15	\$3.00	\$0.00	\$67.35
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
ROOFER (Coal tar pitch)	10/2/2025	\$44.73	\$10.60	\$8.70	\$10.00	\$0.00	\$74.03
ROOFERS LOCAL 248	7/16/2026	\$46.73	\$10.60	\$8.70	\$10.00	\$0.00	\$76.03

For apprentice rates see "Apprentice- ROOFER"

ROOFER (Inc.Roofing Waterproofing &Roofing Damproofing)	10/2/2025	\$44.23	\$10.60	\$8.70	\$10.00	\$0.00	\$73.53
ROOFERS LOCAL 248	7/16/2026	\$46.23	\$10.60	\$8.70	\$10.00	\$0.00	\$75.53

ROOFER SLATE / TILE / PRECAST CONCRETE	10/2/2025	\$44.73	\$10.60	\$8.70	\$10.00	\$0.00	\$74.03
ROOFERS LOCAL 248	7/16/2026	\$46.73	\$10.60	\$8.70	\$10.00	\$0.00	\$76.03

For apprentice rates see "Apprentice- ROOFER"

SCRAPER	12/1/2023	\$39.03	\$13.78	\$12.15	\$3.00	\$0.00	\$67.96
OPERATING ENGINEERS LOCAL 98							
OPERATING ENGINEERS LOCAL 98							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

SELF-POWERED ROLLERS AND COMPACTORS (TAMPERS)	12/1/2023	\$38.42	\$13.78	\$12.15	\$3.00	\$0.00	\$67.35
OPERATING ENGINEERS LOCAL 98							
OPERATING ENGINEERS LOCAL 98							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

SELF-PROPELLED POWER BROOM	12/1/2023	\$35.80	\$13.78	\$12.15	\$3.00	\$0.00	\$64.73
OPERATING ENGINEERS LOCAL 98							
OPERATING ENGINEERS LOCAL 98							

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

SHEETMETAL WORKER	7/1/2025	\$43.48	\$12.94	\$11.01	\$8.72	\$2.13	\$78.28
SHEETMETAL WORKERS LOCAL 63	7/1/2026	\$43.48	\$13.24	\$11.01	\$9.92	\$2.13	\$79.78
SHEETMETAL WORKERS LOCAL 63	1/1/2027	\$43.48	\$13.54	\$11.01	\$11.12	\$2.13	\$81.28
	7/1/2027	\$44.98	\$13.54	\$11.01	\$11.12	\$2.13	\$82.78
	1/1/2028	\$46.48	\$13.54	\$11.01	\$11.12	\$2.13	\$84.28

Apprentice: SHEETMETAL WORKER							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$19.57	\$5.82	\$4.95	\$0.00	\$0.85	\$31.19
2	50.00	\$21.74	\$6.47	\$5.51	\$0.00	\$0.94	\$34.66
3	55.00	\$23.91	\$7.12	\$9.91	\$0.00	\$1.15	\$42.09
4	60.00	\$26.09	\$7.76	\$9.91	\$0.00	\$1.23	\$44.99
5	65.00	\$28.26	\$8.41	\$9.91	\$0.00	\$1.31	\$47.89
6	70.00	\$30.44	\$9.06	\$9.91	\$0.00	\$1.39	\$50.80
7	75.00	\$32.61	\$9.71	\$9.91	\$0.00	\$1.47	\$53.70
8	80.00	\$34.78	\$10.35	\$9.91	\$8.72	\$1.78	\$65.54
9	85.00	\$36.96	\$11.00	\$9.91	\$8.72	\$1.86	\$68.45
10	90.00	\$39.13	\$11.65	\$9.91	\$8.72	\$1.94	\$71.35

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: TERRAZZO MECHANIC							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$33.99	\$12.84	\$15.57	\$7.99	\$0.00	\$70.39
2	60.00	\$40.78	\$12.84	\$15.57	\$7.99	\$0.00	\$77.18
3	70.00	\$47.58	\$12.84	\$15.57	\$7.99	\$0.00	\$83.98
4	80.00	\$54.38	\$12.84	\$15.57	\$7.99	\$0.00	\$90.78
5	90.00	\$61.17	\$12.84	\$15.57	\$7.99	\$0.00	\$97.57
Apprentice: TERRAZZO MECHANIC							
Effective Date: 8/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$35.09	\$12.84	\$15.57	\$7.99	\$0.00	\$71.49
2	60.00	\$42.10	\$12.84	\$15.57	\$7.99	\$0.00	\$78.50
3	70.00	\$49.12	\$12.84	\$15.57	\$7.99	\$0.00	\$85.52
4	80.00	\$56.14	\$12.84	\$15.57	\$7.99	\$0.00	\$92.54
5	90.00	\$63.15	\$12.84	\$15.57	\$7.99	\$0.00	\$99.55
Apprentice to Journeyworker Ratio: 1:5							
TEST BORING DRILLER LABORERS	12/1/2025	\$51.95	\$10.65	\$9.75	\$9.80	\$0.00	\$82.15
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$53.50	\$10.65	\$9.75	\$9.80	\$0.00	\$83.70
	12/1/2026	\$55.00	\$10.65	\$9.75	\$9.80	\$0.00	\$85.20
For apprentice rates see "Apprentice- LABORER"							
TEST BORING DRILLER HELPER LABORERS	12/1/2025	\$48.07	\$10.65	\$9.75	\$9.80	\$0.00	\$78.27
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$49.62	\$10.65	\$9.75	\$9.80	\$0.00	\$79.82
	12/1/2026	\$51.12	\$10.65	\$9.75	\$9.80	\$0.00	\$81.32
For apprentice rates see "Apprentice- LABORER"							
TEST BORING LABORER LABORERS	12/1/2025	\$47.95	\$10.65	\$9.75	\$9.80	\$0.00	\$78.15
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$49.50	\$10.65	\$9.75	\$9.80	\$0.00	\$79.70
	12/1/2026	\$51.00	\$10.65	\$9.75	\$9.80	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"							
TRACTORS OPERATING ENGINEERS LOCAL 98	12/1/2023	\$38.42	\$13.78	\$12.15	\$3.00	\$0.00	\$67.35
OPERATING ENGINEERS LOCAL 98							
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
TRAILERS FOR EARTH MOVING EQUIPMENT TEAMSTERS JOINT COUNCIL NO. 10	1/1/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$0.00	\$79.77
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$0.00	\$80.77
	12/1/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$0.00	\$82.51
	1/1/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$0.00	\$83.11

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
TUNNEL WORK - COMPRESSED AIR LABORERS	12/1/2025	\$60.18	\$10.65	\$9.75	\$10.25	\$0.00	\$90.83
LABORERS (COMPRESSED AIR)	6/1/2026	\$61.73	\$10.65	\$9.75	\$10.25	\$0.00	\$92.38
	12/1/2026	\$63.23	\$10.65	\$9.75	\$10.25	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) LABORERS	12/1/2025	\$62.18	\$10.65	\$9.75	\$10.25	\$0.00	\$92.83
LABORERS (COMPRESSED AIR)	6/1/2026	\$63.73	\$10.65	\$9.75	\$10.25	\$0.00	\$94.38
	12/1/2026	\$65.23	\$10.65	\$9.75	\$10.25	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR LABORERS	12/1/2025	\$52.25	\$10.65	\$9.75	\$10.25	\$0.00	\$82.90
LABORERS (FREE AIR TUNNEL)	6/1/2026	\$53.80	\$10.65	\$9.75	\$10.25	\$0.00	\$84.45
	12/1/2026	\$55.30	\$10.65	\$9.75	\$10.25	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR (HAZ. WASTE) LABORERS	12/1/2025	\$54.25	\$10.65	\$9.75	\$10.25	\$0.00	\$84.90
LABORERS (FREE AIR TUNNEL)	6/1/2026	\$55.80	\$10.65	\$9.75	\$10.25	\$0.00	\$86.45
	12/1/2026	\$57.30	\$10.65	\$9.75	\$10.25	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"							
VAC-HAUL TEAMSTERS JOINT COUNCIL NO. 10	1/1/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$0.00	\$79.19
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	6/1/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$0.00	\$80.19
	12/1/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$0.00	\$81.93
	1/1/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$0.00	\$82.53
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS	12/1/2025	\$35.46	\$10.65	\$9.75	\$6.60	\$0.00	\$62.46
LABORERS - ZONE 4 (HEAVY & HIGHWAY)	6/1/2026	\$37.50	\$10.65	\$9.75	\$6.60	\$0.00	\$64.50
	12/1/2026	\$38.79	\$10.65	\$9.75	\$6.60	\$0.00	\$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
WATER METER INSTALLER PLUMBERS & PIPEFITTERS LOCAL 104	9/17/2025	\$52.26	\$12.00	\$10.85	\$7.10	\$0.00	\$82.21
PLUMBERS & PIPEFITTERS LOCAL 104	3/17/2026	\$52.76	\$13.50	\$10.85	\$7.10	\$0.00	\$84.21
	9/17/2026	\$56.26	\$12.00	\$10.85	\$7.10	\$0.00	\$86.21
	3/17/2027	\$58.26	\$12.00	\$10.85	\$7.10	\$0.00	\$88.21
	9/17/2027	\$60.26	\$12.00	\$10.85	\$7.10	\$0.00	\$90.21
	3/17/2028	\$62.26	\$12.00	\$10.85	\$7.10	\$0.00	\$92.21
	9/17/2028	\$64.26	\$12.00	\$10.85	\$7.10	\$0.00	\$94.21
	3/17/2029	\$66.26	\$12.00	\$10.85	\$7.10	\$0.00	\$96.21
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"							

Additional Apprentice Information

All apprentices must be registered with the Division of Apprenticeship Training(DAS) in accordance with M.G.L.c. 23, §§ 11E-11L. Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the hourly prevailing wage rate established by the Commissioner under the provisions of M.G.L.c. 149, §§ 26-27D.

Apprentice ratios are established by DAS pursuant to M.G.L.c. 23, §§ 11E-11L. Ratios are expressed as the allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified. The ratios listed herein have been taken from relevant private collective bargaining agreements(CBAs) and are provided for illustrative purposes only. They have not been independently verified as being accurate or continuing to be accurate.

Parties having questions regarding what ratio to use should contact DAS.

APPENDIX E
PROJECT DRAWINGS
BOUND SEPERATELY

Cover

C1-Title Sheet

C2-General Notes

C3-Boring Logs

C4-Existing Conditions/Preparation Plans

C5-Proposed Conditions & Culvert Cross Section

C6-Box Culvert Layout & Design Parameters

C7-Box Culvert Section Views & Guardrail Details

C8-Misc. Site Details

C9-Misc. Site Plans

C10-Traffic Management & Site Details